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Single machine scheduling with deterioration and multi task maintenance policy

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Abstract:

This paper tackles the single machine scheduling problem in which three objective functions are considered simultaneously as minimizing the cost of maintenance activities, minimizing the earliness and tardiness cost and maximizing the job values in makespan. Based on mentioned objectives a mathematical model is developed and because of immense complexity, a calibrate hybrid algorithm based on simulation annealing and Hill climbing is used to obtain near optimal solutions. Furthermore, the proposed model contains a multi task maintenance policy that causes the problem to be more complex.

In computational study, the sensitivity analysis is implemented for deterioration and reduction rate of job values and various instances are presented that show the effectiveness and capability of proposed hybrid.

Keywords: *single machine scheduling; maintenance; deterioration; dependent setup time; job values in makespan*

1-introduction

Single machine scheduling with tardiness and earliness functions is one of the earliest problems in the scheduling area that is applied widely in manufacturing and real industry. In many industries, Manufacturers desire to operate based on a make to order system in order to reduce inventory cost and decrease risk to vulnerabilities. Just-in-time (JIT) has been widely studied in scheduling problems since two decades before. JIT in scheduling literature means that producing the orders on the due date. Problems with such requirements have tardiness and earliness cost. In literature, some papers applied JIT for in single machine scheduling problem by considering tardiness and earliness as the objective function simultaneously. Rabadi et al. [11] presented a branch-and-bound algorithm for the single-machine scheduling problem with sequence dependent setup times to minimize total tardiness and lateness objective whose earliness and tardiness are weighted equally and the due date is common and large for all jobs. Bauman et al. [12] considered single machine sequence dependent setup time scheduling problem with linear earliness and tardiness cost.

Allahverdi et al. [1] provided a comprehensive review of scheduling research involving the setup time considerations and demonstrated that the Presence of sequence dependent setup times increases the complexity of the problem.

In literature, there are many papers considering single machine scheduling problem with dependent setup time by minimizing total weighted tardiness. Rubin and Ragatz [2] solved the problem of single machine scheduling to minimize the total tardiness where setup times are sequence dependent and applied a genetic search to solve the problem. Sun et al [3] developed a Lagrangian relaxation approach for single machine scheduling and formulated Sequence dependent setup times as capacity constraints. Tan et al. [4] considered single machine scheduling problem with sequence dependent setup times to minimize total tardiness. They also compared performance of branch-and-bound, genetic search, simulated annealing and random-start pairwise interchange and showed that simulated annealing and

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random-start pairwise interchange are viable solution algorithms in their study. Lin et al. [5] proposed a simulated annealing (SA) method with swap and insertion search, a genetic algorithm (GA) with mutation operator was performed by a greedy local search, and a tabu search (TS) with a swap and an insertion tabu list to solve single-machine total weighted tardiness problems with sequence dependent setup time. Luo et al [6] developed an algorithm based on branch-and-bound scheme that included the implementation of lower and upper bounding procedures, and dominance rules to solve the single machine scheduling problem with sequence dependent setup time for total tardiness minimization. Liao and Juan [7] proposed an ant colony algorithm for minimizing the weighted tardiness with sequence dependent setup times on a single machine. Valente and Alves [8] proposed an improved beam search for the single machine weighted tardiness scheduling problem with sequence dependent setup. Recently, Anghinolfi and Paolucci [9] proposed a new Discrete Particle Swarm Optimization approach to solve single machine total weighted tardiness scheduling problem with sequence dependent setup time. They enhanced its performance by employing different population initialization schemes based on some constructive heuristics. Ying et al [10] proposed effective iterated greedy algorithm to solve single machine total weighted and un-weighted tardiness problems with sequence dependent setup time.

Objective function of single machine scheduling problem can include other costs. Oguz et al. [13] studied simultaneous order acceptance and scheduling decisions where the orders are defined by their release dates, due dates, deadlines, processing times, sequence dependent setup times and revenues on a single machine environment that appear from make-to-order systems. They also proposed a mixed integer linear programming model to maximize the total revenue from accepted orders and developed three heuristic algorithms to solve large sized problems.

Papers studied single machine scheduling problem with preventive maintenance are divided into two categories. Some papers address single machine scheduling problem where the machine must be under maintenance during certain intervals implying a non-availability of the machine during these periods like Graves and Lee [14]. The second category considers maintenance activity as a variable decision that should be determined in scheduling problem like [15].

Yulan et al. [16] presented the joint determination problem of preventive maintenance planning and production scheduling for a single machine to optimize multi objectives simultaneously, including minimizing the maintenance cost, makespan, total weighted completion time of jobs, total weighted tardiness, and maximizing machine availability. They solved it by multi-objective genetic algorithm. Ji et al. [17] considered a single-machine scheduling problem with several maintenance periods to minimize makespan activities where each maintenance activity is scheduled after a periodic time interval. Chen [18] considered a single machine scheduling problem with periodic maintenance, where the machine is assumed to be stopped periodically for maintenance for a constant time during the scheduling period. Sbihi and Varnier[19] studied a single-machine scheduling problem with several maintenances periods to minimize maximum tardiness. They investigated two situations. In the first one, maintenance periods are periodically fixed and in the second one, the maintenance is depended on the maximum continuous working time of the machine which is allowed is determined. Pan et al. [20] proposed an integrated scheduling model by incorporating both production scheduling and preventive maintenance planning for a single-machine problem to minimize the maximum weighted tardiness. They considered maintenance time as variable and subject to machine degradation. Rebi et al [21] studied the problem of scheduling a set of M preventive maintenance tasks to be performed on M machines to minimize the total preventive maintenance cost. The problem was solved by a branch and bound algorithm, a local search approach and a genetic algorithm. Hsu et al. [22] studied a single-machine scheduling problem with periodic maintenance activity under two maintenance strategies, problem where the machine should be stopped for maintenance after a fixed periodic interval or after a fixed number of jobs have been processed to minimize the makespan.

One of the most important problems that have been considered in scheduling problem with maintenance activities is job deterioration. Job deterioration that is used in some real scheduling problem means that

processing time of jobs increases over time. In literature, there are some papers that considered job deterioration without maintenance activity. Browne and Yechiali [23] introduced job deterioration scheduling problem in which the processing time of a job is a function of its starting time. Mosheiov [24] who was first applied simple linear deteriorating function for single machine scheduling problem, considered this problem to minimize the makespan, total completion time, total weighted completion time, total weighted waiting time, and total tardiness, number of tardy jobs, maximum lateness and maximum tardiness. Wu et al. [25] solved a single-machine problem by a branch and bound algorithm and two heuristic algorithms to minimize the makespan under the piecewise linear deterioration model. Wang et al. [26] solved the single machine scheduling problems with learning effect and deteriorating jobs simultaneously to minimize the total weighted completion time and the maximum lateness. Wang and Wang [27] considered a single machine scheduling problem with deteriorating jobs in which the processing time of a job is defined as a simple linear function of its starting time to minimize the total weighted earliness penalty subject to no tardy jobs. Husang et al [28] considered a single machine scheduling problem with deteriorating jobs by a linear function of time to minimize the total weighted earliness penalty subject to no tardy jobs. Cheng and Ji [29] proposed a single machine scheduling problem, where the jobs were ready to be processed in batches and the processing time of each job was a simple linear function of its waiting time. Wang et al [36] developed a new model for minimizing the total completion time with time dependent deterioration that actual processing for each job was calculated based on the prescheduled jobs in the sequence.

Chen [30] studied a dependent setup single machine scheduling problem with machine maintenance to minimize the completion time. Chen [31] presented the two models and a heuristic for a single machine scheduling problem with multiple periodic maintenance activities to minimize the makespan, where the machine had to be stopped periodically for maintenance for a constant time during the scheduling period. Cheng et al. [32] proposed a new model in which job deterioration, learning effect and setup times are considered concurrently. They considered that the actual processing time of a job is a function of the setup and the processing times of the jobs already processed and the job's own scheduled position in a sequence. Also they showed that the time of solving single machine scheduling problems to minimize the makespan, total completion time, and sum of square of completion times are polynomial. Bahalke et al. [33] addressed the single machine scheduling problem with considering sequence dependent setup time and deteriorating jobs simultaneously to minimize makespan. They also proposed a mathematical model for this problem and solved it by a hybrid genetic and tabu search algorithms. Ghodrattnama et al. [34] presented a new nonlinear mathematical model for a single machine scheduling problem that included some constraints, such as repairing and maintenance periods, deterioration of jobs, and learning effect of the work process. Their objective function was composed of minimizing the sum of the weighted completion times, minimizing the sum of the weighted delay times, and maximizing the sum of the job values in makespan.

Moataghedi et al. [37] presented a new model for the single machine scheduling problem to minimize the earliness and tardiness cost, machine processing cost and maintenance activities that times of jobs are determined according to a simple linear deterioration function.

In this paper we develop a new model for single machine scheduling problem with deteriorating jobs, setup dependent jobs and maintenance activities and the aim is to find a schedule of jobs that minimizes the delay, holding and maintenance costs simultaneously. As well as proposed costs based on Ghodrattnama et al [34], the job value in makespan is considered and tried to be maximized. Furthermore, the operation of machine considered cost consuming for processing jobs. Based on the mentioned literature there are no article that consider the proposed costs simultaneously. In order to solve the suggested model, a hybrid algorithm based on simulation annealing and hill climbing is used that is calibrated by a Taguchi approach.

The remainder of this paper is organized as follows: The notation and problem description are introduced in section 2. Section 3 presents simulated annealing and hybrid algorithm. In section 4, computational experiments are reported and statistical analysis is performed. Finally, some concluding remarks are made in section 5.

2- Problem formulation

In this paper, the problem of sequencing of N jobs on a single machine with sequence dependent setup time, deteriorating jobs and multi task maintenance is considered. The machine works with no idle and all the jobs are ready to be processed at time zero. It is also assumed that processing jobs are cost consuming for machine.

The aim is to find a schedule of jobs that minimizes the costs of maintenance, machine operations, delay (tardiness) and holding (earliness) and maximizes the job values in makespan simultaneously. For this regards a new mathematical model is presented that supports below settings:

- 1) Maintenance time is a predefined constant,
- 2) consideration of earliness and tardiness of jobs simultaneously in objective function,
- 3) The completion time of each job may be changed by maintenance, deterioration and dependent setup,
- 4) Process on a job is cost consuming for machine.

According to deterioration, the processing times of jobs have not constant values and are dependent to their positions. We use of the time dependent deterioration model investigated by Wang et al [37] that is presented as:

$$P_{[i]} = P_i (1 + P_1 + P_2 + \dots + P_{[i]-1})^\delta \quad (1)$$

Where $0 < \delta < 1$ and $P_{[1]} = P_1$.

Furthermore, two types of maintenance activities are defined include minor and fundamental actions that the second takes more time. When a maintenance activity is occurred the index of job deterioration is reset and the next job is processed with its normal processing time. Since the completion time of each job may be changed by maintenance activities, the cost of maintenance is considered as part of machine operation cost.

The variables and parameters of problem are defined as follows:

N	Number of jobs are ready to scheduled
P_i	The normal processing time of job where scheduled in ith position
$P_{[i]}$	The actual processing time of job where scheduled in ith position
E_i	The earliness of ith job
T_i	The tardiness of ith job
c_i	The completion time of ith job
d_i	The due date of ith job
S_{hj}	The setup time of job j when is processed exactly after job h
α	Delay cost (tardiness cost)
β	Holding cost (earliness)
C_M	Operation cost of machine
T_{Mk}	Time of Maintenance type k (k=1,2)
δ	Rate of deterioration
λ	reduction rate of job values

And decision variables are as follows:

$$x_{ij} = \begin{cases} 1 & \text{If job i is executed in priority j} \\ 0 & \text{Otherwise} \end{cases}$$

$$y_{jk} = \begin{cases} 1 & \text{If a maintenance of type K is planned before job in priority j} \\ 0 & \text{Otherwise} \end{cases}$$

And the proposed model is as follows:

$$\text{Min} \quad \sum_{i=1}^n (\alpha T_i + \beta E_i) + \sum_{i=1}^n p_i \cdot C_M - \sum_{i=1}^n w_i e^{-\lambda c_i} \quad (2)$$

St:

$$\sum_j x_{ij} = 1 \quad (3)$$

$$\sum_i x_{ij} = 1 \quad (4)$$

$$c_0 = 0 \quad (5)$$

$$c_j \geq c_{j-1} + y_{jk} T_{Mk} + \sum_{i=1}^n x_{ij} P_{[i]} + \sum_i \sum_{h \neq i} x_{ij} x_{h,j-1} S_{h,i} \quad (6)$$

$$T_i \geq \sum_{j=1}^n c_j x_{ij} - d_i \quad \forall i \quad (7)$$

$$E_i \geq d_i - \sum_{j=1}^n c_j x_{ij} \quad \forall i \quad (8)$$

$$T_i \geq 0 \quad \forall i \quad (9)$$

$$E_i \geq 0 \quad \forall i \quad (10)$$

Equation (2) introduces the objective function and tries to find a schedule of jobs that minimizes the costs of tardiness, earliness and machine performance and maximizes the value of jobs in makespan. Constraint (3) states that in each priority just one job could be planned. Constraint (4) assures that each job lies just in one priority. Constraint (5) mentions that machine is available from time zero. Constraint (6) declares that in any sequence, the value of completion time may be changed based on the maintenance activities, deterioration effect and setup times, constraints (7) and (8) demonstrates how the tardiness and earliness are calculated and finally constraints (9) and (10) states that the tardiness and earliness have positive values.

3- Solution approach

3-1. Simulation Annealing

Simulated annealing (SA) is a class of optimization Meta heuristics that performs a stochastic neighborhood search through the solution space that have been applied widely to solve many combinatorial optimization problems. The immense advantage of SA over classical local search methods is its ability to avoid getting trapped in local optima while searching for a global optimum.

In this case, SA starts with a randomly generated solution which is a sequence of maintenance parameters and jobs. Maintenance parameters are binary in which number 2 is representative of a maintenance operation Type 2; number 1 demonstrates the occurrences of maintenance activity type 1 and number 0 represent the no maintenance activity. A sample string considering 4 jobs is represented in Fig. 1. In this sample, four first elements are representative of maintenance operations and the next ones are related to the sequence of jobs. According to Figure 1 before second and fourth jobs in sequence that are job 4 and 1 respectively, a maintenance operation is scheduled.



Fig. 1 Representation of a sample string

Neighborhood search is also implemented by swapping the two randomly selected positions in the current solution string in both binary and sequence parts separately.

In order to calibrate the proposed SA, a Taguchi approach is presented. This approach is an experimental design methodology that allows choosing a product or process that performs more consistently in the operating environment. Taguchi designs recognize that not all factors that cause variability can be controlled in practice. These uncontrollable factors are called noise factors. Based on this fact, Taguchi attempts to identify controllable factors (control factors) that minimize the effect of the noise factors. During experimentation, the noise factors are manipulated to force variability to occur and then finding the optimal control factor settings that make the process or product robust, or resistant to variation from the noise factors.

Taguchi uses orthogonal arrays, which estimate the effects of factors on the response mean and variation. Orthogonal arrays allow investigating each effect independently from the others and may reduce the time and cost associated with the experiment when fractionated designed are used.

In this paper the S/N ratio considered as nominal is the best and is calculated by:

$$\frac{S}{N} \text{ ratio} = -10 \log_{10} (\text{objective function})^2 \tag{12}$$

The effective factors and their levels are also described within below table:

Table 1- the Taguchi experiment inputs

factor	symbol	levels	type	Degree of freedom
Number of total iterations	A	5	A(1)=250 A(2)=500 A(3)=1000 A(4)=2000 A(5)=5000	4
Number of iterations per temperature	B	5	B(1)=4 B(2)=6 B(3)=8 B(4)=10 B(5)=15	4

The associated degree of freedom for these two factors is equal to 8; therefore according to Taguchi standard table of orthogonal array, the L₂₅ should be selected that fulfils all the minimum necessary requirements.

In order to conduct the Taguchi experiments three important measures are considered contain the S/N ratio (as robust measure), average responses for each combination of control factors and the variability in the response due to the noise (standard deviation).

The results are depicted in below figures.

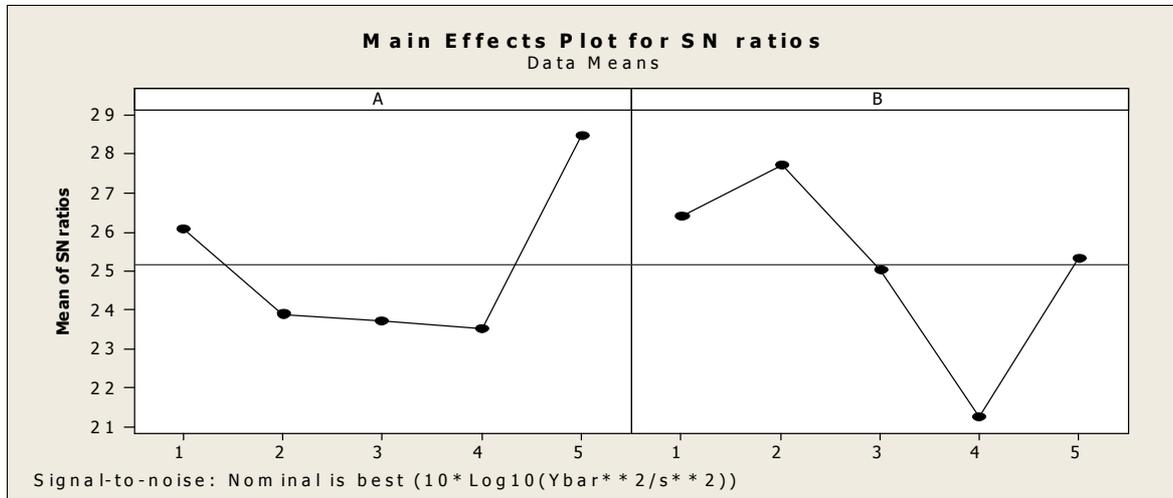


Fig 2- the results for response based on S/N ratio

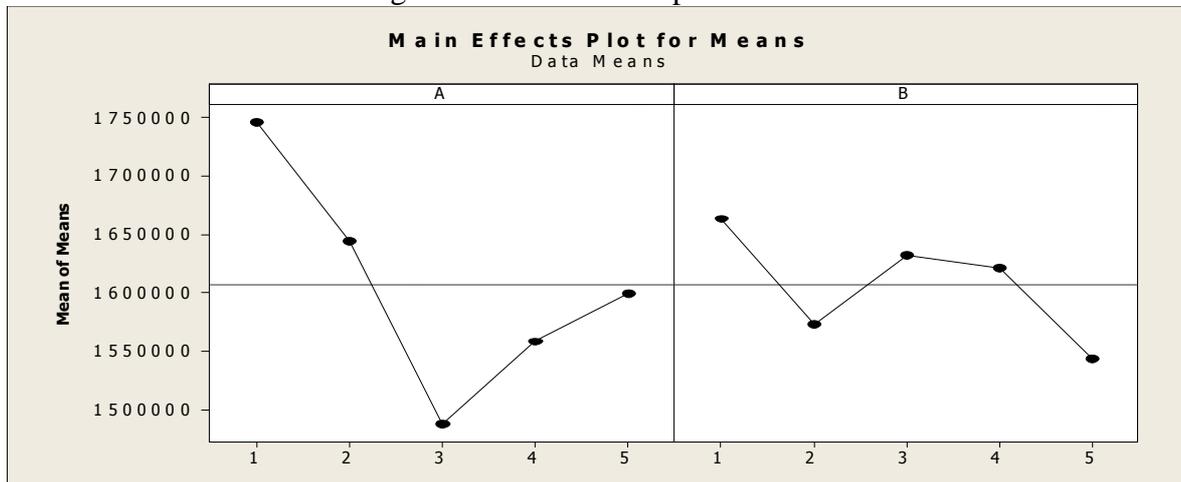


Fig 3- the results for response based on means

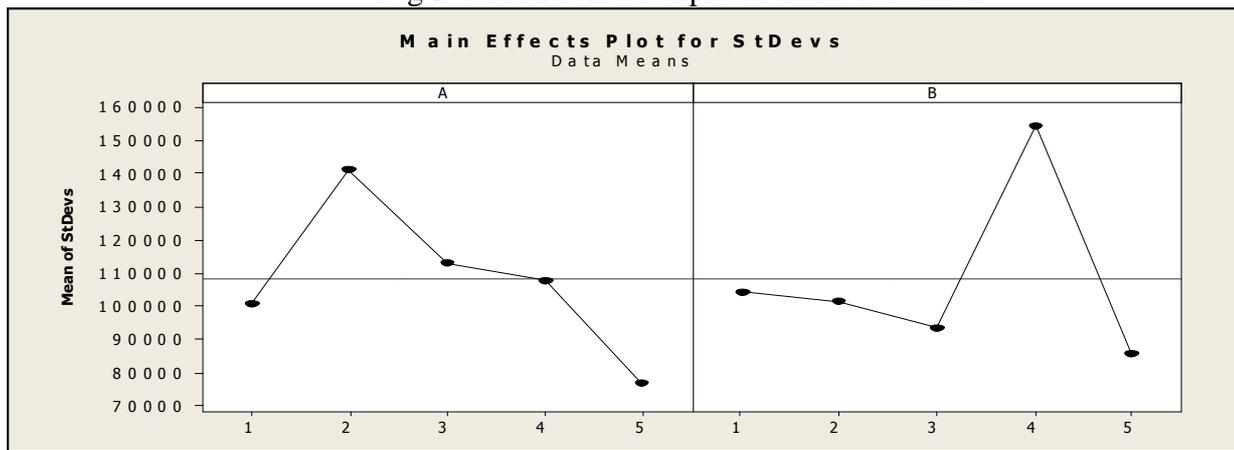


Fig 4- the results for response based standard deviations

In Taguchi designs, a measure of robustness is used to identify control factors that reduce variability in a product or process by minimizing the effects of uncontrollable factors. Figure 2 indicates the robustness of each combination of factors. Clearly it is desired to select a pair of factors that generate the maximum robustness. Therefore, based on this figure A(5) and B(2) should be selected.

Figure 3 shows the average responses for each combination of control factor. Since the objective function is as minimization the minimum value for this measure is desired, so A (3) and B (5) are selected.

Finally figure 4 shows the variability in the response due to the noise that is desired to be minimal, so A (5) and B (5) should be selected.

Based on the mentioned measures, the most efficient combination of proposed factors is as A (5) and B

(5) that better satisfies the response values. However, B(2) also can be considered as a good situation because of the maximum robustness and lower required run time in comparison to other situations.

3-2. hill climbing

Hill climbing starts with a random but not very appropriate solution, and iteratively makes small changes to the solution, each time improving it a little. When the algorithm cannot improve the best solution anymore, it terminates. Ideally, at that point the current solution is near the optimal one, but there is no guarantee that hill climbing will ever come close to the optimal solution.

In simple hill climbing, the first node which is closer to the solution is chosen, whereas in steepest ascent hill climbing all successors are compared and the closest to the solution is chosen. In this paper this approach starts from the first element of the sequence, the place of each job is changed with its adjacent job and then objective function is calculated, in case of objective function reduction, the change is applied, otherwise, the change is not accepted. The procedure continues until all adjacent jobs are examined for a better objective function.

3-3 the proposed hybrid algorithm

The framework of proposed hybrid is as follows:

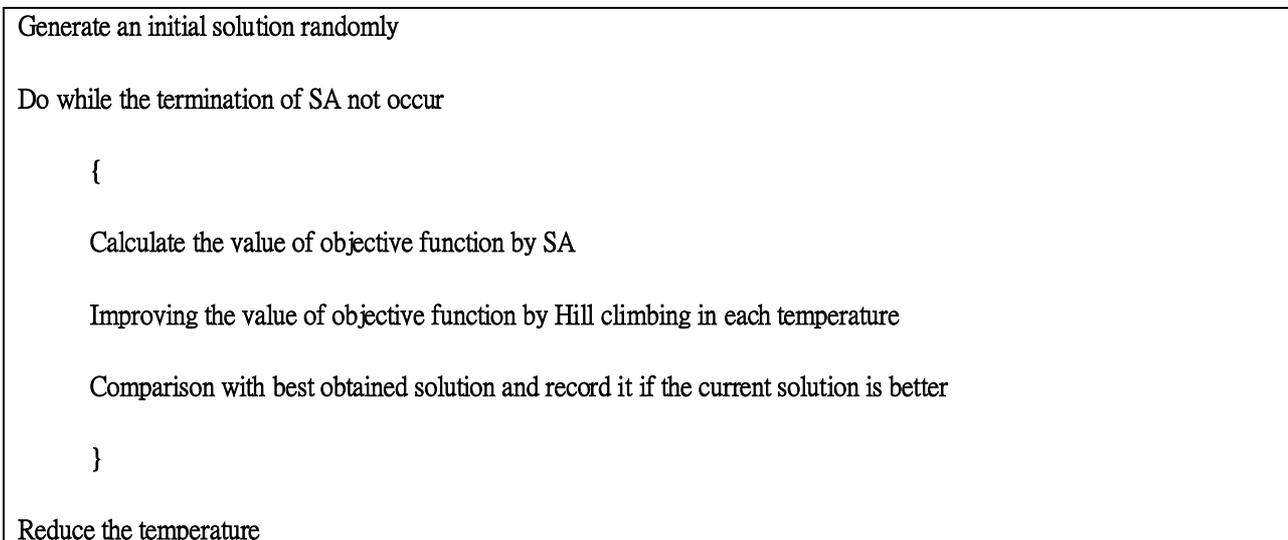


Fig5. The framework of proposed SA

3-4 an illustrative example

Let's consider there are four jobs ready for processing on the machine and their properties are as below.

Job	Processing time	Due date
1	2	10
2	6	8
3	4	6
4	1	2

Furthermore, the setup times between jobs are offer as:

	1	2	3	4
--	---	---	---	---

1	-	1	2	1
2	2	-	3	4
3	2	5	-	1
4	1	5	3	-

The associated times for two kinds of maintenance activities are also considered as $m_1 = 10$ and $m_2 = 20$ respectively.

Regards to the following schedule, the completion time for each job is calculated as below.

0	2	0	1	2	4	3	1
---	---	---	---	---	---	---	---

$C_1 = p_1 = 1$
$C_2 = C_1 + s_{1,2} + m_1 + p_2 = 1 + 1 + 10 + 1 = 13$
$C_3 = C_2 + s_{2,3} + (1 + p_1)^{10} \cdot p_3 = 13 + 1 + 10 = 24$
$C_4 = C_3 + s_{3,4} + m_2 + p_4 = 24 + 1 + 20 + 1 = 46$

Therefore, the values of earliness and tardiness are calculated as:

$E_1 = C_1 - d_1 = 0$
$T_2 = C_2 - d_2 = 13$
$T_3 = C_3 - d_3 = 24$
$T_4 = C_4 - d_4 = 46$

4- Computational results

To illustrate the efficiency and performance of the proposed hybrid, the algorithm procedure was coded in Visual Basic 6 and was run on a Vostro 1500 with 2.2 GHz CPU and 2 GB Ram. All the instances were randomly generated as follows. For each job, an integer processing time was generated from a uniform distribution [1, 100]. For each job, an integer due date was generated from the uniform distribution [0, δP], where P is the sum of the processing times of all jobs and δ is the deterioration rate. Weights and set up times were also randomly generated from uniform distributions of [1, 5] and [1,100] respectively. The results of the hybrid algorithm are compared with simple SA, then the sensitivity analyze of problem is checked to the deterioration rate and reduction rate of job values in makespan. Table 2 illustrates the comparison of the hybrid algorithm with simple SA for different deteriorating rates. It's clear that the hybrid algorithm acts much better than the simple SA.

Table 2- comparison between the results of hybrid and SA

N	δ	SA		Hybrid	
		VOF	Time (Sec)	VOF	Time (Sec)
5	0.2	34142	0	34142	0
	0.4	43622		43622	
	0.8	36471		20831	
10	0.2	363101	0	363101	0
	0.4	389177		389177	
	0.8	543856		304645	
25	0.2	4141013	1	3201679	2

	0.4	4008752		3353239	
	0.8	5621399		3687950	
50	0.2	17512815	1	17512815	20
	0.4	22379055		16191189	
	0.8	29356806		14428721	
75	0.2	53368025	2	37799277	122
	0.4	64410432		43795066	
	0.8	75512342		59054645	

Where N demonstrates the number of jobs and δ represents the rate of deterioration. Columns 3 and 4 also show the performance of hybrid algorithm include value of objective function (VOF) and running time and columns 5 and 6 represent the results of simple SA.

Furthermore, the performance of hybrid and SA are tested by consider of several rate of deteriorations with choose of medium scale of jobs and the results are depicted in table 3.

Table 3- sensitivity analyze based on deterioration rate

δ	Hybrid	SA
	VOF	VOF
0.1	2904959	3509469
0.2	3049109	3690822
0.3	2469869	3372463
0.4	3759849	4312127
0.5	3467239	4711154
0.6	2980549	4392259
0.7	4039459	5759277
0.8	3944670	6623464
0.9	3345769	5187022

Where the value of deterioration rate is shown by δ and second and third columns show the performance of presented hybrid and simple SA. In order to better view, this comparison is depicted in below figure.

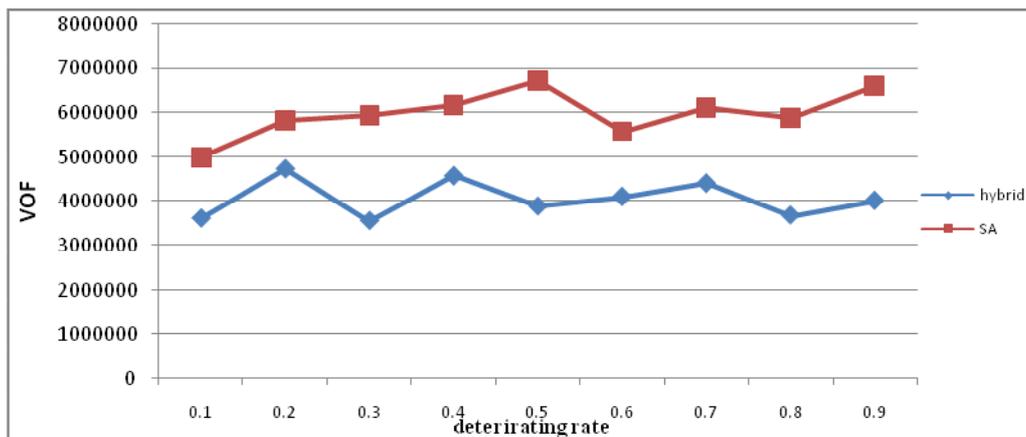


Fig. 6 Comparison of sensitiveness to deterioration rate

As shown in figure 6, the problem has not any sensitivity to deterioration rate and for all the instances the hybrid algorithm yields better solution.

The problem also is considered for the various values for reduction rate of job values that the results are shown in table 4.

Table4- sensitivity analyzing based reduction rate of job values

λ	hybrid	SA
	VOF	VOF
0.1	3620979	4983133
0.2	4736586	5821755
0.3	3562809	5935668
0.4	4579270	6168559
0.5	3895297	6720180
0.6	4112519	5575503
0.7	4412780	6113635
0.8	3689999	5880080
0.9	4024339	6593182

Where the value of job value rate is shown by λ and second and third columns show the performance of presented hybrid and simple SA. In order to better view, this comparison is depicted in figure 6.

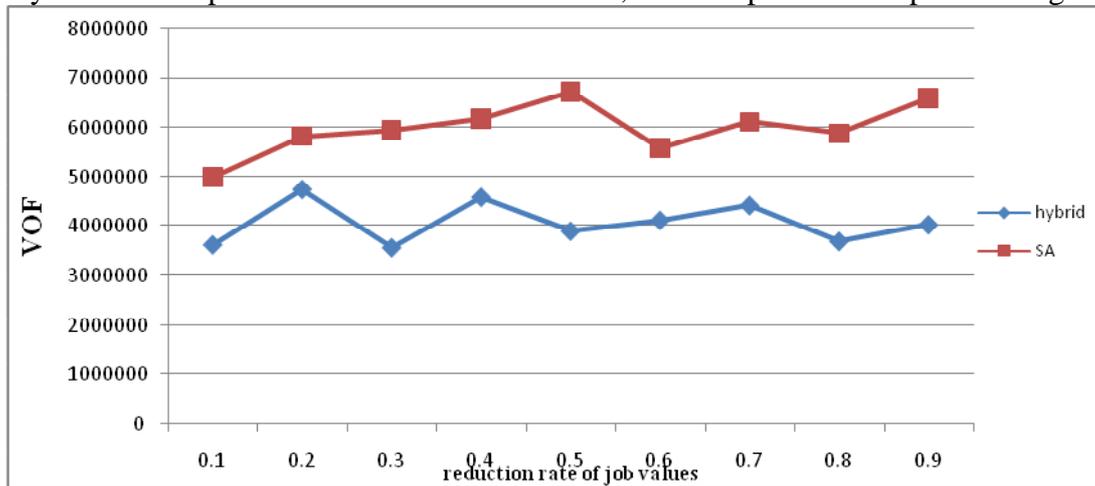


Fig. 6 Comparison of sensitiveness to reduction rate of job values

Based on depicted plot it can be concluded that the proposed hybrid performs much better than simple SA for all the values of reduction rate and generally, there are no relation between this rate and the value of objective function.

5-Conclusion

In this paper, the problem of Single machine scheduling problem was considered and a new model was developed for it based on three objective functions as minimizing the maintenance activities costs, minimizing the earliness and tardiness costs and maximizing the job values in makespan. The model also contained the multi task maintenance policy that caused to increase the complexity of problem. In order to solve the proposed model a hybrid algorithm based on Hill and SA was used that its parameters was calibrated by Taguchi approach . In computational experiments section the problem was solved for various instances and the sensitivity analyze is implemented for some important factors of proposed model.

For future research, solution method can be improved by using other meta- heuristic methods. Developing the model by proposing multi objective functions and assuming more complicated maintenance policies can also be considered as future research area.

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An empirical study on the criterion used for assessing the training and development needs of the middle level managers (A comparative analysis of public and private sector banks)

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ABSTRACT

Training in banks as in other sectors is vital organizational development activity, which aims at developing operational skills, competence and attitudinal changes among employees. Training helps in reducing gap between existing and accepted standards of employee's performance. Training reduces gap between employee's existing performance and expected standards. Difficult task such as attitudinal change can be achieved only with quality training for which training need assessment is necessary. Training interventions need to be well- organized, pro active and continuous in nature. Pro-active attitude aims at developing futuristic attitude and pre emptying undesired features. As the organization invests huge sums on training, it is natural to expect that such investments are cost effective. Training managers have to be accordingly accountable for training effectiveness. Training need assessment is a quantitative study surveying employee performance, knowledge and communication style, etc. For the purposes of this study the term 'training need assessment' will be used and taken to mean the process of gathering, assessing and analyzing data to determine the training needs for an organization. A tool utilized to identify what educational courses or activities should be provided to employees to improve their work productivity and bring in change. Focus should be placed on needs as opposed to desires. This study analysis three criterion of training needs assessment, i.e. individual analysis, task analysis and organizational analysis. The study concludes that respondents of private sector banks agree on all three criterion but public sector bank managers have mixed response towards different criterion for training and development needs assessment.

INTRODUCTION

Assessing Training And Development Needs Of Employees in Banking Industry Sustenance and growth of any organization in general and banking industry in particular depend on the organizational readiness to absorb to societal changes. This is because globalization has led to increase the competition, changes in external and internal environments, and accordingly organizations have to be adaptable and flexible to the changed environment for maintaining competitive advantages. This can be largely attained through training interventions. Training in banks as in other sectors is vital organizational development activity, which aims at developing operational skills, competence and attitudinal changes among employees. Training helps in reducing gap between existing and accepted standards of employee's performance. Several banks have accordingly set up their own staff training colleges (STC's). Apart from in - house training, banks also send their employees for external training programmes at institutions like National Institute Of Bank Management (NBIM-Pune), Banker's Training College (BTC-Mumbai), College of Agricultural Banking (CAB-Pune), Southern India Banker's Training College (SIBSTC - Bangalore), etc. Job and the organizational needs are not static; they change from time to time in the view of technological advancement and change in the awareness of the total quality and productivity. Training improves and moulds employee's knowledge, skill sets, abilities, behavior and attitude towards work . Training reduces gap between employee's existing performance and expected standards. Difficult task such as attitudinal change can be achieved only with quality training for

which training need assessment is necessary (Bulin 2001). Apart from training interventions, there is also need to bring changes in organizational culture. Individuals may become disillusioned with training if it does not bring desired results. Training interventions need to be well- organized, pro active and continuous in nature. Pro-active attitude aims at developing futuristic attitude and pre emptying undesired features. As the organization invests huge sums on training, it is natural to expect that such investments are cost effective. Training managers have to be accordingly accountable for training effectiveness (Amsa, 1988). It is thus desirable to have some training evaluation forces in organizations (Kailash, et al., 2001). Training can yield desired results if it is backed by training needs analysis, involvement of operating executives in training interventions and management commitment towards training.

Training Needs assessment Training need assessment is a quantitative study surveying employee performance, knowledge and communication style, etc. This becomes important when a change has to be ushered into the organization. Since every organization is unique, each training audit should be customized to meet the specific learning needs and requirements of each situation. Organizations should re - educate and retool their workforce using a training need assessment that identifies critical gaps in employee' s workplace knowledge. The main role of training needs assessment is to identify gaps in learning strategies and resources needed to build an effective learning organization. The purpose of these needs assessment is to align learning, to both the individual and organization, with the business strategies of the organization. In most of the organization the emphasis is given on the systematic approach to training in order to achieve the purpose of training and the enhanced level of organizational effectiveness to cope up with the change. An organization has to undergo to cope with changing situation. Pressures of international competition and market globalization constrain Indian companies to match global standards of performance and corporate governance. Various models/ frameworks have been presented which provide the systematic approach / process approach to training function. These frameworks include' Ten Stages Cyclical Process Of Training (Boydell, 1971), Job Description Of Training And Development Professionals (1978), 'Spiral Model Of Three Phase Training Process (Lynton And Pareek, 1978), Transitional Model Of Training Process (Taylor, 1991), 'Process Of Planned Training (Kenney And Reid, 1992), 'A Systematic Approach To Training (Buckley Any Caple, 2000), 'Results Based Training Design Model (Ford, 2002). These frameworks, by and large, contain five phases, viz. 1) Analysis Phase: which includes training analysis, training needs assessment, performance analysis, job/ task analysis, learner's analysis, content analysis, skill gap analysis; 2) Design Phase: which includes stating training objectives, designing project, training scheduling, managing training project and designing blue prints and prototypes for training; 3) Development Phase: which includes drafting and creating reading materials, audio visual aids, videos, software and also tests and feedback instruments; 4) Implementation Phase: which includes classroom and non- classroom, delivery of training and training of trainers; and 5) Evaluation Phase: which includes evaluating trainees reaction, evaluating learning, evaluating transfer of training and evaluating the results of training.'

According To Boydell (1970), there are three levels of training needs assessment:

A) Organizational analysis: looks at the effectiveness of the organization and determines where training is needed and under what conditions it will be conducted. It involves looking at the internal environment of the organization influences that could affect employee performance and determine it fitness with organizational goals and objectives. It is this analysis that provides identification of performance discrepancy at the organizational level. An organizational analysis should provide the following information:

- The mission and strategies of an organization.
- Environment impacts
- State of the economy and the impact on operating costs

- Changing workforce demographics and the need to address cultural or language barriers
- Changing technology and automation
- Increasing global / world market places
- Political trends such as sexual harassment and workplace violence
- Organizational goals (how effective is the organization in meeting its goals), resources available (money, facilities: materials on hand and current, available expertise within the organization).
- Climate and support for training (top management support, employee willingness to participate and responsibility for outcomes).

The information needed to conduct an organizational analysis can be obtained from a variety of sources including:

1. Organizational goals and objectives, mission statements, strategic plans.
2. Staffing inventory, succession planning, long and short-term staffing needs.
3. Skills inventory, both currently available and short and long-term needs.

Organizational Climate Indices: labor / management relations, grievances, turnover rates, absenteeism, suggestions, productivity, accidents, short-term sickness, observation of employee behavior, attitude survey and customer complaints.

Analysis of efficiency indices: costs of labor, costs of materials, quality of products, equipment utilization production rates, costs of distribution, waste, down time, late interviews and repairs. Changes in equipment, technology or automation

- Annual reports
- Stakeholders
- Plans for reorganization or job restructuring
- Audit exceptions reward systems
- Planning systems
- Delegations and control systems
- Employee attitudes and satisfaction

B) Task analysis provides data about a job or a group of jobs and the knowledge, skills, attitudes and abilities needed to achieve optimum performance. There is a variety of sources for collecting data for a task analysis:

Job description A narrative statement of the major activities involved in performing the job and the conditions under which these activities are performed. If an accurate job description is not available or is out of date, one should be prepared using job analysis techniques.

KSA analysis A more detailed list of specified tasks for each job including knowledge, skills, attitudes and abilities required of incumbents.

Performance standards Objectives of the tasks of the job and standards by which they will be judged. This is needed to identify performance discrepancies.

Observation regarding the job or the sample of work.

Job inventory questionnaire Evaluate tasks in terms of importance and time spent performing.

Review literature about the job Research the 'best practices' from other companies, review professional journals.

Questions About the job - of the incumbents, of the supervisor, of upper management.

Analysis of operating problems Down time, waste, repairs, late deliveries, quality control.

C) Individual analysis how well the individual employee is doing the job and determines which employees need training and what kind. Sources of information available for an individual analysis include:

- **Performance evaluation** identifies weaknesses and areas of improvement.
- **Performance problems** productivity, absenteeism or tardiness, accidents, grievances, waste, product quality, down time, repairs, equipment utilization, customer complaints.
- **Observation** observes both behavior and the results of the behavior.
- **Work samples** observe products generated.
- **Interviews** talk to manager, supervisor and employee. Ask employee about what he / she believes he/she needs to learn.
- **Questionnaires** written form of the interview, tests, must measure job related qualities such as job knowledge and skills.
- **Attitude surveys** measure morale, motivation, satisfaction.
- **Checklists or training charts** up-to-date listing of current skills.

Assuming that the need assessment identifies more than one training need, the training manager, working with management, prioritizes the training based on the urgency of the need (timeliness), the extent of the need (how many employees need to be trained) and the resources available. Based on this information, the training manager can develop the instructional objectives for the training and development program. All three levels of needs analysis are interrelated and the data collected from each level is critical to a thorough and effective needs assessment.

REVIEW OF LITERATURE

Prarthana Dwivedi and Prof. Pooja Purang (2007) Studied training need identification and evaluation in different sectors and industries and deal with different type of products and services. These organizations had a progressive HR set up and a training set up and seem to have realized the importance of training for employees and the Indian models of needs identification (to an extent) recommend a three level analyses, i.e. organizational level, functional level and individual level analysis. In the organizations surveyed we see that most of the organizations do not conduct a three level analysis through some organizations do have an established three level analysis in place, which is in line with what has been proposed by the researchers in the west. Other organizations are still using the old traditional method of deriving the needs from the performance management systems and paying more emphasis only to the organizational analysis level. The organizations are not conducting a task or individual analysis while are relying on the data obtained from PMS, which has a lot of drawback in it. The comparison was done with the proposed model for need identification, it has been found that analysis is not done at all levels in all the organizations. Some of the organizations do follow the western models of need identification, but as regards to the proposed model the level of analysis is being conducted at the three mentioned levels in a few organizations completely while they are trying to analyze the other two levels as well. For a few organizations, they are not analyzing any of the levels in the need identification process. Chopra (2002) conducted a study in Gujarat Heavy Chemicals Ltd. had found that the training needs like Assessment centre to assess the training needs at all levels,

competency profiling which linked compensation to the 3Ps (Position, Person and Performance) and employee opinion survey. Further, GHCL intended to create space in innovative training package which took into account the changing operational context of industry. D. Rama Rao, R. Kalpana Sastry, S. K. Soam Rao (2002) described the outcome of a major HRD initiative by ICAR (Indian Council of Agricultural Research). The study is the culmination of the training needs assessment by soliciting employees' opinions through a survey questionnaire, brainstorming on key issues and discussions with senior officers, and standard training needs manuals. The study identified norms for training expenditure, mandatory training of all new recruits, creation of core faculty for training of administrative and finance staff, infrastructure to use the gains particularly in information technology, ethics and morals through yoga and meditation, and finally, training audit. H. K. Sardana, P. P. Arya (2002) Training of engineering students in an industrial environment is an alternative to projects undertaken within the institute. The approach becomes more challenging as it puts them in a new environment with the generally accepted goal of improving their application skills. To implement such a scheme requires a coherent effort from students, faculty members and industry supervisors. In this case, study, we propose a model for making formal need assessment of engineering student's training which then forms the basis of the training's evaluation and effectiveness. The need assessment is outlined in terms of inherent attributes, generic attributes, technical skills and student's basic needs of training. Finally, the student's reaction evaluation and relevance of training to job prospects are presented. J. Meenambigai & R. Netaji Seetharaman (2003) Studied on the training needs of extension personnel in communication and transfer of technology among the extension personal employed in the state department of agriculture under TNA Development Plan. They are varying in their extent of training needs in various sub areas of communication and transfer of technology (TOT). The extension personnel have recognized well the importance and need of communication in their routine work. The major training need identification in this area were presenting programmes thorough TV and radio, writing of articles, preparation of video programmes, preparation of audio visual aids, effective public speech making and teaching equipments . Training is a continuous process and requires regular and short term courses and programmes be implemented. In the process of training the personnel's, planning of curriculum is needed at regular visits. Leat and Lovell (1997) had discussed the weaknesses of current training needs analysis. It was found that there was improper training goal setting and failure of the performance appraisal reviews to diagnose needed areas to improve employee's skills in the working environment. There was variance between actual performance and performance objectives. But these needs should not be limited to that level only. Possible improvement at the organizational and task levels should also be evaluated, as part of training needs analysis. Training expectations should also be developed and detailed after an extensive research into the inter relationship between inner and outer contextual changes and within the organization and individual goals. The authors also indicated that evaluation of training must be linked to the organization's objectives and training approaches should match the organizational culture. Rao, Sastry and Soam, (2002) had conducted a study at Indian Council of Agricultural Research (ICAR) to assess the Training - needs Assessment and action, found that there was need to carry out institute specific training needs assessment followed by the methodology employed in the study. R. Krishnaveni (2005) conducted competency based training analysis in respect of middle level management personnel of deputy manager/ manager levels in a compressor manufacturing unit. Training needs identified was short listed and prioritized in three phases depending on number of responses received for each category. Based on this prioritization training calendar was developed for fulfilling the competency development objectives. This calendar was developed in a manner that it did not affect normal work schedule of the concerned employees. As in many similar studies sample size was more representative rather than comprehensive due to practical constraints. While the study was limited to middle level executives only, but in the same way it can be extended to other grades of employees as well besides deputy managers and managers. Competency models may prove helpful in aligning individual performance with organizational

goals and in the process achieving competitive advantage. The value addition by a competency based approach depends on a number of factors: 1) extent to which the competency study is based on the strategic needs of the organization 2) clarity with which the role or job is defined in relation to the strategy 3) rigor of the process used in defining the competencies; and the accuracy in matching individuals vis-a-vis job needs. Implementation of competency model may, however, invite resistance from certain quarters as sometime it may be in conflict with traditional 'mindsets' and remedial measures may become necessary to overcome 'mental roadblocks'. Training is inside-out approach where as learning is outside - in approach (Mager and Pipe, 1970). A study was done on the competency assessment and need identification for training in Oil Company. The competencies of four different categories of employees were studied, i.e. field sales officers, divisional officer in charge, front line operations officer, and operations local heads. GAP analysis was done in the difference between required capabilities and existing capabilities was observed. These following competency sub categories were observed, i.e. planning the work, taking initiative, communication in writing, managing a team, encouraging participation, listening to others, resolving conflicts, generating creative ideas, strategic thinking, computer skills, goal oriented, business attitude, analyzing problems, technical aptitude. It had found that every category of employee had a gap in the desired skills and his/her competencies need to be improved (Damodar Suar & Abhik Dan 2001). A need assessment is composed of two procedural elements: 1) A need is a gap between current and desired results, a need assessment " is process for identifying the gaps based on the differences between " what is " and "what should be " based on a combination of hard -independently verifiable- soft -personal and private -data : 2) the identified needs are placed in priority order based on what it costs to ignore the need and compared to its impacts and society and the organization. "Need assessment" and "need analysis" are not synonymous terms, needs assessment is a prerequisite procedure for need analysis, and the latter process is the means to identify the causes and reasons, appropriate interventions- such as training, job aids, and jobs redesign, and hiring procedures to meet the need (Kaufman, 1993).

OBJECTIVES OF THE STUDY

1. To find out the criterion of training needs assessment among public and private sector banks.
2. To assess any similarities and dissimilarities in assessing training needs among public and private sector banks.

HYPOTHESIS

Ho: There is no significant difference regarding assessment of training and development needs which are done according to organizational analysis, individual analysis and job analysis of employees of public and private sector banks.

Ha: There is significant difference regarding assessment of training and development needs which are done according to organizational objectives, individual needs and job requirement of employees of public and private sector banks.

RESEARCH METHODOLOGY

Exploratory and descriptive research design was used for the study. The data was collected with personal investigations involving original field interviews with the middle level managers of public and private sector banks. The study of the relevant literature was also useful in this study. In this study Non Probability Purposive sampling technique was used. The questionnaire has been designed on the basis of i.e. functional and operational levels of the organizations. Therefore a structured questionnaire was designed on the basis of data generated from the various literature studies. The whole questionnaire was designed on binary basis i.e. yes and no responses. The final tested questionnaire, written in English (being only the medium of communication) was hand – delivered to 700 respondents working as branch managers in various branches of public and private sector banks. But only 455 of the respondents filled and returned their filled questionnaires. Appropriate statistical techniques were used for the analysis of

the data.

SCOPE OF THE STUDY

The sampling unit was the Middle Level managers working as branch managers at supervisory level in service sector i.e. public & private sector banks. The data were collected from Punjab, Haryana, Delhi and NCR region.

DATA PROCESSING METHODOLOGY

Firstly the returned filled up questionnaires were edited one by one to detect and eliminate errors relating to their accuracy, uniformity and completeness. Cross examination was done for the incomplete portions of the questionnaires left out by the respondents and for the respondents who could not give certain remarks on some portions of the questionnaires. All in competencies were re-examined with the aid of interviews and observation techniques. The questionnaires were arranged organizationally and master sheet was created after scoring of the responses. Finally the data were entered in the excel sheet of Microsoft office. For proper statistical analysis and Descriptive analysis R Software & SPSS Software was used.

RESULTS AND DISCUSSION

RELIABILITY TEST

Cronbach alpha is commonly used to measure reliability for a set of two or more construct indicators. All of Cronbach's alpha values should meet the minimum criterion (alpha greater than 0.60). So, the results will indicate the reliability of likert five point scale and sub scales which was at acceptable level. This reliability test is done for checking the reliability of the scale i.e. likert scale. In this study reliability test is done on the basis of pilot study having sample size of 50. Firstly 25 samples each from HDFC bank and SBOP bank were taken to find out the reliability of the study. The values were calculated on the basis of overall 50 sampled data and not for individual bank. The alpha values calculated as Cronbach alpha values of the factor' s section wise indicating reliability. This table shows the reliability of each section having different number of factors and range of alpha values 0.6009- 0.9197.

TABLE 1

Reliability Test for Different Variables of The Study

Reliability Test for different variables for criterion used for assessment	No. of variables	Alpha values (0.6009-0.9197)
Criterion used for assessing training & development needs of middle level Managers.	3	0.6009

Demographic Analysis of Private Sector Banks

The analysis of table 2 shown below is of Private sector banks regarding allthree variables of demography i.e. sex, age and experience in years in that particular bank. Again on analysis of below table showed maximum of responses were between males and very few respondents were available among females. On comparison of

both the sexes on average male respondents are in the range of 75 % to 80 % as compared to female respondents in range of 20% to 25%. In terms of age, average age is around 35 years for almost all the banks in that sector except Bank of Rajasthan where exception was found in average age which was around 41 years. Similarly, the range for age was also almost similar for all the banks with minimum age ranges around late twenties to maximum with late thirties except in J&K Bank and Bank of Rajasthan where range age was 32-42 years and 35-52 years respectively.

Table 2 showing Demographic Analysis of Private Sector Banks

Private Sector Banks							
Number Of Respondents (229)							
	Total	Male	Female	Age in years		Experience in years	
				Average	Range	Average	Range
HDFC	43	35(82%)	08(18%)	33	28-38	9.1	4-13
Axis Bank	40	31(78%)	09(22%)	34	27-42	9.5	4-15
ICICI Bank	43	34(81%)	09(19%)	35	31-39	10	7-15
Federal Bank	23	18(78%)	05(22%)	35	29-39	10.6	6-14
Indus Ind Bank	20	15(75%)	05(25%)	36	32-39	11.2	8-14
Kotak Mahindra Bank	20	14(74%)	06(26%)	35	30-39	10.6	6-14
J&K Bank	20	16(76%)	04(14%)	36	32-42	11.2	5-15
Bank Of Rajasthan	20	15(75%)	05(25%)	41	35-52	11.2	10-25

Interpretation: Analysis of table 2 showed more experienced staff was available in Bank of Rajasthan with average range of experience of 10 – 25 years but overall for the rest of the banks average age experiences was similar almost 10 years approximately also among rest of the banks they do have the respondents who were quite young in experiences and also with handful of experience as compared to Bank of Rajasthan.

Demographic Analysis of Public Sector Banks

Table 3 showing Demographic Analysis of Public Sector Banks

Public Sector Banks							
Number Of Respondents (229)							
	Total	Male	Female	Age in years		Experience in years	
				Average	Range	Average	Range
SBOP	25	21(84%)	04(16%)	51	40-57	28	15-37
SBI	25	21(84%)	04(16%)	48	35-56	24	08-35
PSB	25	22(88%)	03(12%)	49	40-57	25	16-34
OBC	25	21(84%)	04(16%)	48	39-57	23	14-37
PNB	25	21(84%)	04(16%)	47	33-57	22	08-33
Syndicate Bank	25	20(80%)	05(20%)	47	40-56	23	15-31
Bank of Maharashtra	20	16(80%)	04(20%)	50	42-56	25	18-35
Co-Operative Bank	25	20(80%)	05(20%)	49	40-56	24	15-31
Bank of Baroda	20	16(80%)	04(20%)	48	48	28	28

UCO Bank	14	10(71%)	04(29%)	51	44-58	27	19-33
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Interpretation: Table 3 analysis is of public sector banks with respect to sex, age and experiences of respondents in that particular bank. It was found that among 229 total respondents in public sector banking majority of respondents were again males with maximum percentage of 88% respondents only exception being in UCO Bank with 71% of males respondents. Again it was found female respondents were not too much among all the banks in that sector. In case of age it was found that on an average all the respondents among all the banks were in their late forties or some early fifties with average age slab of 40 - 50 years with exception being in two banks only, i.e. SBI and PNB with average age slab of 34-56 years. Thus, in these two banks bit younger age group was found as compared to other banks in same group. As far as experience was concerned maximum was 28 years in banks like SBOP and Bank of Baroda and with minimum experience of 22 years in bank like PNB. The average range of experience in years was around 18 - 35 years with exception in banks like SBI and PNB where younger respondents were found in terms of experience, i.e. 8 -34 years.

RESULTS AND DISCUSSION

The following table gives the comparative analysis of the private and public sector banks on issues of criterion of assessment of training and development needs.

Criterion used for assessing training & development needs of middle level Managers i.e. organizational analysis, individual analysis, task analysis.	Bank	No.	Mean	Std. Deviation	t-test (456 df)	p-value
	Private	229	1.0349	.11573	-7.003	0.00
	Public	229	1.1397	.19466		

Results: The analysis of the above table showed that there were significant difference among the average responses of the respondents from the both private and public sector banks on issues of criterion of assessment of training and development needs, Statistically as p-values obtained for them were very low i.e. less than 0.05. Thus we reject the null hypothesis and accept the alternative hypothesis.

Analysis and Interpretation of Private & Public Sector Banks (Criterion Used For Assessing Training and Development Needs of Middle Level Managers).

Brief description of variables of the questionnaire:

1. Organizational analysis
2. Individual analysis
3. Task analysis

Summary : In this respondents of both sector of banks were asked to give their response again on binary scale of yes-no to know about the criterion be used for assessing the training and development needs of the managers on three parameters of Organizational, Individual and Task analysis. Again the analysis was divided into two parts of private-public sector banking in which summary report of maximum response of each section of bank was created towards the three parameters.

Criterion used for assessing training and development needs of middle level managers.

Analysis and Interpretation of Private Sector Banks

Summary Table 5 of respondents of Private sector Banks for all 3 Factors.

Summary TABLE 5 of Maximum response of respondents of the questionnaire for each bank on each factor								
A – Agreed			D – Disagreed					
Criterion used for assessing training and development needs of middle level managers:								
Criterion for	HDFC Bank	AXIS Bank	ICICI Bank	Federal Bank	Indus Ind Bank	Kotak Mah.	J&K Bank	Bank of Rajasthan

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The Investigation and Analysis Effective Factors on Electronic Banking System and its Role in Modern Business for Economical Development

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Abstract: With the phenomenal growth of B2C e-commerce, most industries including banking and financial services sector have been influenced, in one way or another. Several studies suggest that customers have not adopted B2C e-commerce in the same degree primarily because of risk concerns and trust-related issues. This paper extends an area of information systems research into a marketing of financial services context by look in into the element of trust and risk in e-banking. A conceptual model of trust in e banking is proposed with two main antecedents that influence customer's trust: perceived security and perceived privacy.

Trust is being defined as a function of degree of risk involved in the e-banking transaction, and the outcome of trust is proposed to be reduced perceived risk, leading to positive intentions towards adoption of e-banking.

Keywords: Electronic Banking, Economical Development, Modern Business, satisfaction, Quality

INTRODUCTION

With the development of the internet, more knowledge is accessible to people anywhere at anytime. Facilitating communication, data transmission, and global interaction, the internet is a playing field unlike any other. Transcending the traditional barriers of time and space, the internet is redefining the world of banking. The internet has created new methods for carrying out a variety of financial transactions. With these developments, a new era of banking has emerged which has come to be known as "e banking". E-banking encompasses an array of financial transactions, once done through the tangible exchange of information, now are done electronically. While the benefits of such advancements have been welcomed, there also have been drawbacks. Issues such as security, fraud, and theft have deterred people from participating in the internet e banking revolutions [1].

The extension of money and banking to the cyberspace is an inevitable development in the information age. Over the past few years, many financial institutions have launched e-retail banking over the internet. Given the requirements of matching marginal gains against marginal costs, evaluating the profitability of market development along specific dimensions and segments, and determining whether the new technology would be accepted, it is imperative that this decision is continually re-evaluated. commercial banks face significant challenges on both the supply side and demand side, associated in particular with competition, product-service quality and differentiation, transaction security, cost efficiency, and demographic change [2].

Many banks have hired qualified teams of network administrators as a part of their IT departments to ensure the safety of both the customer and the institution that operate from and log into the banks network. Future compliance with these security measures also will lead to techniques such as biometrics and electronic fingerprint ability. Banks are also encouraged to focus on security from within by exploring scenarios of disgruntled employees or hackers from within the organization. The responsibility for safety and protection also

lies with the customer[3]. The development of customer identification numbers, passwords, and other forms of customer identifications permitting users to into a banks web site and make secure transactions are the main emphasis behind consumer protection. Password protection is the one of the biggest problems facing customers. Creating passwords that are not easily recognizable prevents outside parties with malicious intent from computer hacking. Many banks now require passwords to be case sensitive, include a certain number of characters, and contain both numbers and letters. In addition, customers are recommended, and in some cases required, to change their password on a regular basis[4,3].

Customers' trust on electronic banking transactions as compared with face to transactions have some unique dimensions, such as the extensive use of technology for transactions, the distant and impersonal nature of the online environment, and the implicit uncertainty of using an open technological infrastructure for transactions. The spatial and temporal separation of the bank branch and the customer, and that of the customer.

And the financial advisor increases fears of opportunism arising from product and identity uncertainty. Customers trust in an internet environment thus, is very important as there is little guarantee that the online vendor will refrain from undesirables, unethical, opportunistic behavior, such as unfair pricing, presenting inaccurate information, distributing personal data and purchase activity without prior permission [4,5]. To further complicate the situation there is a concern about the reliability, of the underlying internet and related infrastructure the banks and financial service providers employ to interface with customer. Overall, these unique differences reduce customer perceptions of control over their online transactions, increasing their apprehension about adopting e-banking and providing unique challenges to banks and financial service providers to find ways in which to initiate and foster electronic relationships with their customers[6]. It is important to understand the factors that might influence consumers intentions to engage in banking and financial services over internet. As discussed in the next

section an important factor that is recognized as key for the continued growth of electronic banking is the concept of trust. Congruent with this, the aim of this paper is to explore the nature, drivers and consequences of customers trust on the banking and financial services over internet. such understanding of customers trust will provide the practitioners and researchers with a set of manageable, strategic levers to build such trust, which will promote greater acceptance of electronic banking and financial services[7,8].

THEORETICAL PERSPECTIVE AND DEFINITION OF TRUST

Trust has long been considered as a catalyst in many buyer – seller transactions that can provide consumers with high expectations of satisfying exchange relationships [9]. Many researchers have argued that trust is essential for understanding interpersonal behavior and economic exchanges[10,11] The notion of trust has been examined in various contexts over the years ar related to bargaining [12], industrial buyer–seller relationships[13], distribution channels[14], partner co-operation in strategic alliances[15], 1998), and the use of market research[16] personality psychologists traditionally have viewed trust as an individual characteristic[17]. They have conceptualized trust as a belief, expectancy, or feeling deeply rooted in the personality and originating in the individuals early psychological development, also known as disposition to trust. However, this approach can only be taken into account but is an uncontrollable factor that cannot be influenced by the web merchant[18].

RESEARCH ON TRUST IN E-BANKING

The particular case of electronic banking that lacks the physical presence of bank branch and a physical interaction between the bank personnel and the customer, render a unique environment, in which trust is of paramount importance. Retail banks can build mutually valuable relationships with customers through at rust–based collaboration process[19]. However, the way in which trust may be gained and the impact it has on online banking outcomes are not yet well understood [20]. Trust in electronic banking is a new and emerging area of interest in the filed marketing of financial services research. Extant literature on trust related to online banking is scarce and focused on more general issues of e- commerce.

BACKGROUND TO E-BANKING AND ITS SUCCESS FACTORS

Some researchers in the field of e-banking have been engaged in quantifying the current provision of electronic services by the banks from an innovation and marketing point of view [21]. Liao and Cheung (2002), have explored the perception of customers about e banking. king and liou (2004) and compared the e-channel with other channels. Some strategic issues such as outsourcing of e- banking initiatives have been discussed by Cantoni and Rossignoli (2000) or competitive advantage of e-banking by Griffiths and Finlay (2004), but the area of strategic organizational issues of e–banking has generally not been covered adequately by the current body of the literature. This research was aimed to help bridge this gap. This section summarises some of the research done in this area. We have divided these factors into three categories: strategic, operational and technical. This categorization will help to explain our findings in terms of the nature of success factors in e- banking adoption [22,23].

STRATEGIC FACTORS

The interactive nature of e-banking also creates an opportunity to gain a much deeper understanding of the customer during his/ her interaction with the bank can be

analysed using data mining techniques and this marketing decision capability may ultimately determine the success of the banks internet channel [4]. To succeed in the e-banking arena, companies need to transform their internal foundations to be effective because of the reasons mentioned above. The new type of business would consist of finely tuned integration of business, technology and processes [24]. Therefore one critical issue is re-engineering of the business processes, which also includes technological processes.

OPERATIONAL FACTORS

The most common factor cited by many in literature, is good customer service [25] Legislation has increased customers rights while technology and competition have increased their choice of products and providers. The increasing amount of information on the internet and changes in social behaviors has reduced the loyalty factor considerably. These changes will result in the growth of users with sophisticated needs and new channels are required to serve most of these needs. Harden (2002) argues that e–channels erode a direct relationship with customers and stresses the need for personalization in customer communication. According to Jayawardhena and Foley (2000), banks must continually invent new products and services in light of changes brought by the internet and also make existing products more suitable for online delivery. Similarly , Riggins (2000) identified a number of critical success factors of internet banking in the context of the Australian banking industry. These include: developing the will to innovate rapidly, aggressively marketing the banks website address to generate first time visitors, online decision support tools for personal financial management, the creation of an online virtual community for financial services, and bundling of products/ services [26].

TECHNICAL FACTORS

Security, which may include protection of consumers personal data and safe transactions to prevent misuse, is paramount for the growth of any sort of online trade, including e- banking. security in this context includes secure transactions as well as secure front and back up systems [25,27].

Franco and Klein (2006) stress the importance of upgrading existing technological infrastructure (which may still largely depend on slow and fragmented legacy systems) to bring it up to the speed with the internet trade. Storey, Thompson, Bokma, and Bradnum (2000) state that technology failures lead to loss of custom, often forever. Shortcomings in technological infrastructure are often the biggest hurdle in adoption of the e banking channel and its integration with other channels [11].

A MODEL OF E-TRUST FOR ELECTRONIC BANKING

The literature on trust provides a useful basis for investigating consumer trust and its antecedents in the context of electronic commerce, but as pointed out by Mayer et al. (2005) many researchers confuse trust with its antecedents. This section aims to remove this confusion by proposing a simple yet parsimonious model of trust on electronic banking, with strong support from literature. While proposing their model of organizational trust Mayer et al. (2005) suggested that a parsimonious model with a manageable number of factors should provide a solid foundation for the empirical study of trust on another party. Based on the above discussion and the review of literature, a theoretical model for of trust in e-banking is proposed in fig.1.

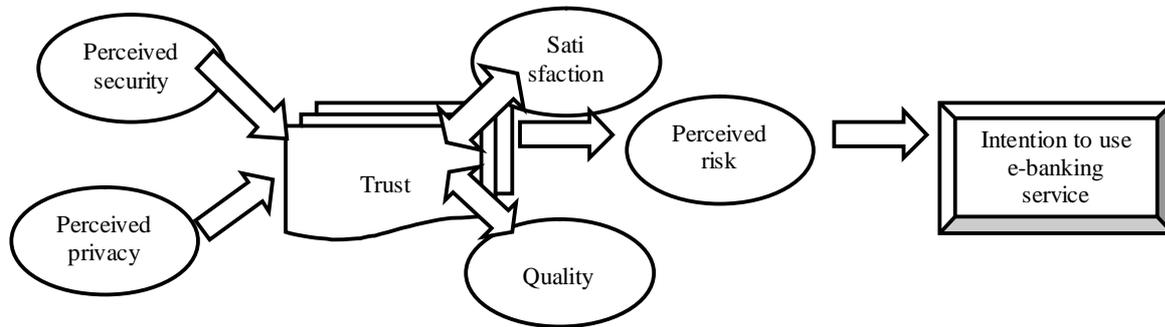


Fig 1. The proposed model of e-trust for e-banking [28].

PERCEIVED SECURITY

Security is being defended as a threat which creates circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service, an/or fraud, waste, and abuse [22] under this definition, in context of electronic banking threats can be made either through network and data transaction attacks or through unauthorized access to the account by means of false or defective authentication. Perceived security, then is the customers perception of the degree of protection against these threats. Security has been widely recognized as one of the main obstacles to the adoption of electronic banking seems to remain one of the most significant barriers for adoption. The rapid developments in technology have made significant contributions to securing the internet for electronic business. However, the challenges remain in this area, and security remains a substantial issue for the development of electronic businesses, especially electronic banking. The need for security has already been recognized within the electronic banking community and a number of technologies have been developed to secure electronic transactions [29,30].

PERCEIVED PRIVACY

Privacy has been identified to be a major, if not the most critical, impediment to e-commerce: In our view, the single, overwhelming barrier to rapid growth of e-commerce is a lack of consumer trust that consumer protection and privacy laws will apply in cyberspace. Consumers' worry, deservedly, that supposedly legitimate companies will take advantage of them by invading their privacy to capture information about them for marketing and other secondary purposes without their informed consent [2] Consumers in online environment in contrary to traditional retail environments, perceives little control over information privacy and this has a striking influence on their willingness to engage in exchange relationships with merchants. Due to the fall in cost data transmission and emerging technologies, it is now easier to collect personal information from customers and share it with third parties.

According to stone and stone (2000) customers are likely to have positive perceptions about privacy when: (a) information is collected in the context of an existing relationship. (b) They perceive that they have the ability to control the future use of the information. (c) The information collected or used is relevant to the transaction, and (d) they believe that the information will be used to draw reliable and valid inferences about them [31].

PERCEIVED TRUSTWORTHINESS

People make important buying decisions based, in part, on their level in the product, salesperson, or the company. similarly, electronic banking decision involves trust not simply on the

transaction medium but also between the customer and the bank or financial service provider. Mayer and his colleagues have identified and validated three main element of trustworthiness: integrity (trustee honesty and promise keeping), benevolence (trustee caring and motivated to act in the trust or's interest and competence [1].

QUALITY

Quality can be defined as excellence. Dabholkar (2000) posited that within service contexts, the evidence supports an assertion that customers who view technology based service as easy-to-use, reliable, and enjoyable also perceive service quality in such technology-mediated service offerings (i.e.-service). Perceived service quality is believed to contribute to positive business outcomes such greater levels of customer satisfaction and, by extension, favorable marketing behaviors such as repurchase and positive word-of-mouth behaviors [32].

SATISFACTION

Satisfaction, on the other hand, is the consumer fulfillment response (Oliver, 2007). Szymanski and Hise (2000) argued for the impotence of e-satisfaction in technology-mediated relationships. The authors suggested that the conceptual domain of e-satisfaction appears similar to that understood from the general marketing literature. This assertion further supports our reliance on Oliver's (2007) constitutive definition for purposes of this research study. In addition, satisfaction judgments are generally believed to be superior to quality perceptions.

B2B, or business-to-business e-businesses, are companies that sell to one another online. B2C, or business-to-consumer e-businesses, are companies who sell to consumers via websites (Lerouge & Picard, 2000; Morrish, 2001) some writers argue that integrating both B2B and B2C capabilities may become essential to respond to customer demands and streamlining their supply chain management .C2B refers to trade between consumers and businesses, and is best exemplified by companies like Priceline. Com. C2C refers to trade between consumers and is best exemplified by companies like eBay.

The relationship between satisfaction and loyalty has also enjoyed a measure of attention in the recent literature. This research study envisions loyalty as super ordinate to satisfaction in that loyalty can capture long-term relationship elements that lie outside the domain of satisfaction in a business-to business (B2B) context (Barnes et al, 2000). This B2B perspective appears consistent with Heskett, Sasser, and Schlesinger (2007) and Hunter (2007) who asserted that three primary measurements of customer loyalty commonly known as the three R's included [33]:

1. Revenues and profits from retention of loyal customers.
2. Repeat sales
3. Referrals

From a practitioner perspective, Pastore (2001) suggested that customer loyalty and satisfaction will continue to play key roles as companies evaluate spending budgets based on a study by NFO prognostics(proprietary). In fact while the study suggested that satisfaction scores and reference ratings are generally strong, many professional service buyers are shopping around with each new IT project. Such shopping around behavior is an indicant of a weak marketing relationship. This finding strengthens the basic premise of this research study calling for relationship–marketing-based models specific to the e banking industry. In summary, the weight of the evidence to date suggests that satisfaction should be subordinate to loyalty in the formation of customer behaviors .Assuming a base level of satisfaction, the research expects loyal customers to engage in activities that support and strengthen their relationship with the sponsoring e-banking company, as well as engage in positive word–of mouth activities within the professional Community.

DISCUSSION AND CONCLUSION

Trust is been identified as key to e-commerce. If trust is vital, then building trust is even more crucial. This paper provides several preliminary insights into the role of perceived security, perceived privacy and the perceived trustworthiness

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attributes on the issue of trust in electronic banking. The paper also highlights the importance of using security and privacy as two distinct concepts, even though they are conceptually related. It has attempted to review the nature of customer's trust on e banking and proposed a research model of customer trust on e-banking. The model presents the major relationship between customer trust and two major potential antecedents perceived security and perceived privacy. The trust model presented in this paper provides a coherent framework for further empirical research on the phenomenon of trust in e–banking.[34]

This paper, tell the e-banking practitioners which trust antecedent to focus on in order to increase customer trust and thus increase the adoption rate of e- banking. Bearing in mind that we have proposed that trust antecedents are perceptual in nature, they can be influenced by appropriate advertising and marketing campaigns, visible privacy policies and the web site design of the bank. Finally, research into the trust model developed in this paper will help accelerate the adoption of e-banking by removing one of the major obstacles to its development, namely, lack of trust.

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Inter-dependence Relationship Studies among Non-financial Support Services, Performance and Growth of the Enterprise: A Study of Selected SMEs in Bangladesh

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Abstract

Present study investigated the interdependence relationship among non-financial support services, performance and growth of the selected small enterprises in Bangladesh. It is found in the study that factors relating to the supply of non financial services and characteristics of the service providing institutions are significantly important for performance and growth of the enterprises. Supervision by the support institutions should to be used as a tool for facilitating enterprise development, enhancing promptness of the employees of support institutions, higher degree of awareness of the entrepreneurs regarding support institutions and their support mechanisms are notable factors that have positive influence on the studied firms. When support service receiving status has been evaluated it is found that firms receiving more non-financial services including finance are more successful while credit rationing is controlled for. Providing services by making relevancy of enterprise problems and giving appropriate service as per necessity of the organizations are also important. Finally, the study suggested integrating important policy options while designing the support mechanism, especially, when non-financial support services are provided to the SMEs.

Key Words: Non-financial support services, performance, growth, integrated support mechanism.

Introduction

The interest, into the development methodologies and approaches to supporting business start up and growth has been increasing globally. To this end in the last decade or so, governments of various Asian countries have formulated national agendas and development policies addressing the issue of support services to promote entrepreneurship in small and medium sector enterprises. SMEs' in Asian countries, especially the SMEs in Bangladesh, are not contributing

to the economy at the similar level as it is with SMEs in developed countries. Many new enterprises fail as a result of the excessive costs of entry relative to their fragile financial positions at startup, or inability to secure permits, access to finance or obtain business / technical support, while other fail because of high costs of operation, such as cost of servicing debt, inaccessible business information (e.g. how to export), and either burdensome state regulation (e.g. onerous tax compliance) or inadequate state regulation (e.g. weak contract enforcement). Therefore, various challenges and impediments prevent SMEs in realizing their full potentials. One of which is the lack of access to the specific support services by considering their appropriateness in terms of level of growth and development. Therefore, support services play an important role for the creation and development of enterprises especially in the small and medium scale enterprises for developed and developing countries. The same is true for the entrepreneurship development in Bangladesh.

In explaining importance of support services Veciana et. al. (2002, P. 147) in their research highlighted that the assistance policy to enterprise creation and entrepreneurship development has a positive impact on employment generation (Phillips 2000), economic growth (Carree and Thurik 2005), and innovation (Drucker 1984, Pavitt, Robson, Townsend 1987). The subject of assistance to business start-ups and development has also attracted the interest of researchers. Present study aimed at investigating inter-dependence among non-financial Support Services, Performance and Growth of the Enterprise. Here, performance of the enterprises has been measured through the Entrepreneurs Economic Success Index (EESI) and afterwards classified them into different quartile forms, which again categorized as low success, moderate success, high success and super success category to evaluate the interdependence relationship between non-financial support characteristics and enterprises performance. For evaluating interdependence relationship cross tabulation as a tool has been used and statistical significance has been measured by using Kendall tau b and c statistics.

Classifications of Support Services

There is no straight way for classifying the services and the issue is fully debatable. From the various viewpoints support services are classified into the different categories. The literature of ILO (1961) classified support services into two groups. They are **extension services**: advisory services, counseling, training, research and information and other supporting activities; **financial services**: loans, grants, subsidies and infrastructural facilities etc. and **physical facilities**: industrial estates, export processing zones, shed, land, water, power, gas and other important

services related with the development of physical facilities for entrepreneurship development. Singh (1989, P. 146-149) identified government incentives for growth of small entrepreneurship into two categories. These are incentives involving **financial assistance** and **non financial services** like infrastructural facilities. The notable financial services are providing subsidized capital, granting loan, and special employment scheme etc. meanwhile non financial assistance includes providing training; giving assistance for preparing project report and conducting feasibility studies, giving marketing assistance and assisting through provide land and industrial shed with other infrastructural support services etc. Ball (1991: P.24) classified support services into six types of activities while studying in 13 Commonwealth countries including Bangladesh and referred by Sarder (2000: P. 21). These services are information, advice / counseling, consultancy, training, logistic support and financial assistance. The Small Industries Service Institute, Hyderabad, India was established in the year 1956 typified their service rendering functions for the promotion and development of small scale industries into eight broad heads: (1) economic advisory services; (2) technical advisory services; (3) management and technical training services; (4) enterprise counseling; (5) common facilities services; (6) financial assistance; (7) ancillary development services and (8) promotional activities which includes important set of activities like arranging hire-purchase of machinery, export promotion, arranging seminar and exhibitions etc (Rao 1986, P. 97-98).

Therefore, from the above literature review, it is obvious that in spite of having many classifications, functional aspects might be the better basis for classifying the support services. These are financial and non-financial services. Out of the financial services loans, credit, grants, subsidies, tax breaks and other financial services are notable. The major non-financial services are management training, entrepreneurship education and counseling, technical assistance, marketing and promotional services, information and extension services etc.

Inter-dependence Relationship Studies among Non-financial Support Services,

Performance and Growth of the Enterprise: Here interdependence among the characteristics of non financial support services, performance and growth of the enterprises have been evaluated through cross-tabulations and presented in this section.

Impact of Promptness of Providing Services on the Performance of the Enterprises after

Controlling for Frequency of Supervision: The mode of providing service, when provided, how frequently the enterprises are supervised after supplying the services and how promptly the services are provided etc. have an important influence on the performance of the served enterprises. It is generally assumed that when knowledgeable and skilled employees of

support institutions supervise the enterprise frequently, understand the overall problems and progress of the enterprise and advice them on the occasion of post-supervision perspective, enterprise could make effective utilization of the services for creating surplus through the operations. Promptness is also essential. It is generally assumed that performance and promptness are positively correlated to each other. Table - 1 shows how supervision and promptness influence the performance of the enterprises. The results of the study shows that out of the 86 enterprises two percent enterprises are found in the never supervised category, 22 percent enterprises belongs to the category of occasionally supervised, 70 percent enterprises opined that their enterprises are supervised sometimes and only 5 percent enterprises were of the opinion that their enterprises are supervised most often. In terms of promptness 2 percent enterprise are found in the no prompt category, 43 percent enterprise are found in the somewhat and moderately prompt category, 42 percent enterprises belongs to mostly prompt category and finally 13 percent enterprises were found in the very prompt category. In the total enterprises studied 94 percent belongs in the group of moderately to very prompt category. And 50 percent enterprises of this category have been found in the high and super success categories of performance. Out of the total enterprises occasionally and sometimes supervised enterprises are 80 percent from which 59 percent enterprises achieved high and super success category of economic success index. In cross table, promptness of services rendered by support institutions is found to be effective toward the better economic performance of the enterprise. This is found true even after controlling of supervision. However, supervision is not equally effective for economic performance of the enterprise when promptness has been controlled.

These findings tend to support the argument that supervision of support institution is viewed by the enterprise as the controlling mechanism rather than facilitating tool for the enterprise development. From the above discussion it appears that *supervision by the support institutions should be used as a tool for facilitating enterprise development objectives rather than control mechanism and promptness of the employees of support institutions should be enhanced in providing services for increasing the success possibility of the enterprises.*

Impact of the Degree of Awareness of the Entrepreneurs Regarding Support Institutions on the Performance of the Enterprises after controlling mode of awareness: Knowledge of the support institutions and their different support programs help entrepreneurs in taking the decisions whether they will take or reject services of the support institutions. Entrepreneurs become aware of the support institutions from different sources. The notable sources are support institutions and their promotional measures, business network and acquaintances, friends and relatives and other sources. Degree of awareness of the enterprises has been measured through

the low degree, medium degree and high degree awareness of the support institutions. Enterprises aware of the two institutions have been included in the low degree awareness category, knowledge about the three to four institutions is categorized in medium degree awareness and knowledge of more than four institutions is treated as the high degree awareness of the support institutions.

Table no. 2 depicts that 43 enterprises obtained knowledge about the support institutions from the support institutions themselves and their promotional programs. Fortyone percent enterprises become aware of the support institutions from the business network and their acquaintances, ten percent enterprise obtain knowledge from friends and relatives, and finally five percent enterprises collected the information about the support institutions from other sources.

In terms of awareness the percentage of the low degree, medium degree and high degree aware firms are 10 percent, 82 percent and 7 percent respectively. The positive association between degree of awareness and performance of the enterprises is indicating that *the higher degree of awareness about the support institutions may lead to the higher degree of performance of the enterprises*. This turned out to be more effective and statistically significant when the awareness is carried through the mode of friends and relatives and these modes are controlled for. However, when the mode of support institutions and their promotional measures are controlled for, the association between the degree of awareness and economic success turned out to be negative although statistically significant.

The above findings show in the table implies that the support institutions should provide promotional measures i.e. campaign of their promotional activities in raising awareness of the potential entrepreneurs along with delivering support services. Furthermore, statistical significance of the results testifies to the fact that support institutions and their promotional efforts are essential for the entrepreneurs to collect information and obtain knowledge about them. And degree of awareness can assist the entrepreneurs in taking business decisions by considering pros and cons of the support services available in the market.

Impact of the Promptness of the Support Institutions as Perceived by the Entrepreneurs on the Performance of the Enterprises after controlling Time for Receiving Services:

Time is another resource in the hands of entrepreneurs. The less the time requires in receiving the support services the more possibility that enterprise will obtain success through their operations if services are utilized properly. The empirical data in table no. 3 shows that out of the 80 enterprises, 60 percent enterprises were found receiving support services by one month time, 26 percent received support services by two months time and 14 percent enterprises received the same by more than two months time.

Promptness is another important variable for enterprise success and improvement. The less the time taken to provide services the most likely that the institutions will be more prompt for the same. Thus, less time in receiving services and more promptness of the institutions are positively correlated. And both the factors amalgamate the opportunities for achieving success by the enterprises. The 48 enterprise who received support from the institutions within one month time horizon perceived that the support institutions were mostly prompt in supplying the services

meanwhile 'very prompt' by 65 percent enterprises, 'moderately prompt' by 33 percent enterprises and only 2 percent enterprise perceived support institutions as 'somewhat prompt'. Again in this category 58 percent enterprises belongs to the category of two upper quartile of success index and 42 percent enterprises were found in the lower quartiles of success index categories. In case of two months service receiving time horizon still success rate is found higher for most of the enterprises. The results speak that 57 percent out of 21 enterprises are more successful compared to 43 percent in the lower success category of the enterprises in terms of quartile measures. When service receiving time is more than two months 73 percent out of 11 enterprises were found in the first quartile of success index and only 27 percent enterprises were found in the fourth quartile of success index categories. *In terms of statistical significance it has been found that promptness and enterprises economic success achievement are positively related even when service receiving time is controlled. But when promptness is controlled it is found that less time in providing services bear more positive result for the enterprises economic performance.* So, it is essential for the support institutions to provide prompt services by taking less time. This will assist the entrepreneurs to utilize the services when they are needed and it would be helpful for the achievement of economic success through their operations.

Impact of Support Service Receiving Status (Categorical) on the Performance of the Enterprises after control for Credit Rationing Status:

Support services play the vital complementary role for achieving success of the enterprises with other important factors. In the 100 enterprises studied 85 percent found receiving services of different kinds and 15 percent enterprises didn't receive any service from the institutions. The table no. 4 shows that out of 20 enterprises those didn't apply for financial services, 70 percent of them are in the category of first two quartiles of the success index. Out of total 100 enterprises the percentage of 'no rationing', 'partial rationing' and 'full rationing' enterprises are 13 percent, 62 percent and 5 percent respectively. In the no rationing category total number of enterprises is thirteen from which 54 percent enterprises are found in the first two quartiles of the success index category and 46 enterprises belongs to the category of upper two quartiles. Probably these discriminated results may have been produced due to some moderating variables in the uncontrolled environment. The number of enterprises in the partial rationing category is 62 from which 56 percent enterprises belong to the higher quartile success category and 44 percent enterprises are in the lower quartiles. For the full rationing firms 60 percent out of 5 enterprises found in the highest category of success index and only forty percent enterprises are in the lowest category. The overall conclusion that can be made from the study that support services are key important success factors with other factors of the enterprise development. *In terms of service receiving status it has been found that firms receiving more non financial services including finance are more successful when credit rationing is controlled. But when service receiving status of the enterprises is controlled credit rationing has the lesser but still has positive impact on the enterprise performance.*

Impact of Credit Rationing Status of the Enterprises on the Performance of the

Enterprises after control for Support Service Received (Dummy):

The table no. 5 depicts that out of 15 enterprises that didn't receive support service only 27 percent achieved 4th quartile of the success index meanwhile a major portion, 73 percent enterprises in this category obtained 1st and 2nd quartiles of the success index category. It is evident from the results that out of 85 enterprises who received support services 54 percent enterprises found obtaining two upper quartiles of the success index category and 46 percent enterprises obtained another two lower quartiles success index category. In the service receiving group 10 enterprises didn't apply for financial services but received non financial support of different kinds from which the number of enterprises is equal for both the group of success index quartiles. In the no rationing category, out of 13 enterprises, the percentage of enterprises in the upper and lower quartiles success index category is 46 and 54 respectively. For partial rationing firms 56 percent out of 62 enterprises are found in the upper quartile success index group while only 44 percent enterprises belongs to the lower quartile success index category. When association between credit rationing status and entrepreneurs' economic success index is studied by controlling the service receiving status dummy it has been found that support services are important for the entrepreneurs to achieve success through entrepreneurs operations. It is essential to provide support services to the entrepreneurs by considering their necessity. The result also evidenced 54 percent enterprises with no rationing and partial rationing of the credit service receiving belongs to the category of two upper quartile of success index category. The association between support receiving and economic performance of the enterprises also found positive although statistically is not significant.

Impact of Credit Rationing Status on the Performance of the Enterprise after control for Frequency of Receiving Financial Services:

It is generally assumed that a firm, that could obtain and utilize credit from the financial institution as and when they are necessitated, becomes successful through their operations. The table no.6 studies the relationship among credit rationing and frequency of receiving financial services and enterprise performance. It is apparent in the table that out of 75 entrepreneurs 49 percent entrepreneurs received only one time services, 31 percent entrepreneurs received two times services and 20 percent entrepreneurs received financial services more than two times. Out of 37 firms who received only one time financial services 51 percent achieve economic success index at the upper two quartiles and 49 percent was found in the two lower quartiles of the success index scores.

In case where financial services received two times by the enterprises out of them 61 percent entrepreneurs were found in the upper quartiles and 39 percent entrepreneurs were in the lower quartiles of success index category. Entrepreneurs who received the financial services more than two times in their case 53 percent enterprises obtained two upper quartiles of the success index besides, 47 percent entrepreneurs achieved the lower quartiles of the success scores. The data regarding no rationing and partial rationing of the credit services provides the knowledge that out of 62 entrepreneurs who received support services with partial rationing 56 percent entrepreneurs are categorized in upper quartiles of the success index scores and 44 percent entrepreneurs are in the category of 1st and 2nd quartiles of the success index scores.

Overall Evaluation of the Support Institutions by Entrepreneurs Economic and Performance of the Enterprises while Weighted Score of the Human Resources controlled

for: In the table no. 7 performance of the enterprises are measured by weighted score of the human resources and overall evaluation of the support institutions by entrepreneurs. It is learnt from the table that out of 83 entrepreneurs 5 percent entrepreneurs perceived services of the institutions as fair, 87 percent entrepreneurs evaluated the support institutions as average and satisfactory levels and only 8 percent entrepreneurs perceived support institutions from which they received the services as best. *The study of the weighted score of the human resources of the support institutions as perceived by entrepreneurs provides the knowledge that low/moderate success of the firm can be attributed to the poor weighted scores on human resources.*

The data show that out of nine entrepreneurs who obtained weighted human resource score of 1 – 2.99 only 22 percent enterprises obtained highest category of success index and remaining 78 percent entrepreneurs are found in the 1st two quartiles of success index category. Out of 83 entrepreneurs seventy four percent evaluated the human resources of the support institutions and found their weighted score of human resources in the category 2.991 to 3.991 and above. In this category 57 percent entrepreneurs obtained their success index score at two upper quartiles and remaining 43 percent entrepreneurs are found in the two lower quartiles of success index category. However, out of these 74 entrepreneurs 88 percent evaluated their support institutions positively from average to the best order of satisfaction. Therefore, from the study of overall evaluation of the support organizations by entrepreneurs provide us the knowledge that high performance of the enterprises are depended on both the factors like human resources and overall optimistic view for evaluation of the support institution as perceived by the entrepreneurs. When statistical relationship among the positive evaluation of the support institutions and economic success of the enterprise is determined by controlling the weighted score of the human resource the higher order evaluation provides more significant achievement and vice versa for

the high weighted score of the human resources. It is also noted that weighted score of the human resources have been calculated by using the attitude of the employees of the support institutions towards their clients, their problems understanding capability of the served enterprises and tendency towards the rapid response for accommodating the clients' application or complaints. Therefore, human resources and positive evaluation of the entrepreneurs regarding the services both are important for the performance of the enterprises.

Impact of the Promptness of Support Institutions on Growth of the Enterprises after controlled for Frequency of the Supervision: The table no. 8 shows the relationship among perceptions of the entrepreneurs regarding promptness of the support institutions, frequency of supervision and growth status of the firms. The frequency of supervision has been measured through the order of 'never', 'occasionally', 'sometimes', 'most often' and 'very frequently' categories. On the other hand perception of entrepreneurs regarding promptness of the entrepreneurs has been measured through the 'no prompt', 'somewhat prompt', 'moderately prompt', 'mostly prompt' to 'very prompt' category. The growth of the firms has been measured through dichotomous variables like 'growth' and 'no growth' firms.

The result of the table no. 8 depicts that in the total number of 86 enterprises 2 percent enterprises stated that they were never supervised by support institutions. Twenty two percent enterprises exposed that they are occasionally supervised by support institutions. Meanwhile, highest 70 percent entrepreneurs stated that they are supervised sometimes. And finally only 6 percent entrepreneurs stated that they are supervised most often by the support institutions. Here one notable finding is that in the total number of enterprises only 5 percent are not pursuing growth. Although they opined that their firms are supervised by support service institutions in varying degrees. This finding suggests that supervision play very minor role in the achievement of growth of the enterprise. One explanation to support the present findings is that most of the support institution especially the financial institution in our country supervised the firms from controlling viewpoints. In some incidents the financial institutions supervised the lending firms for checking the non repayment behavior of the loan installment which sometimes create pressures to the entrepreneurs in time of business crises. Even sometimes employees of the support institutions don't supervise their clients to provide them right counseling in solving their practical business problems rather they supervise the firms as a routine job which generally bears very negligible meaning to the entrepreneurs. The same findings also have been found in the table no. 7.10 where the relationship between promptness of the support institutions and enterprises economic performance was studied by controlling the frequency of supervision. In this section the positive relationship is found between the promptness of the support institution in providing

services and growth of the enterprise when frequency of supervision is controlled. But when promptness is controlled supervision doesn't play the same role in pursuing the growth of the enterprises. Therefore, here it is suggested to enhance the promptness by the support institutions while providing support services to the entrepreneurs and supervision should be made from facilitating viewpoints to address the problem issue of the entrepreneurs rather than supervision for only realizing the loan amount or to check the non repayment.

Service Receiving Status of the Enterprises, Credit Rationing Status and Growth of the

Enterprises: Support service also plays an important role for the growth of the enterprise as like as economic performance of the enterprises. Here it is evident in the data that out 100 enterprises 20 percent entrepreneurs didn't apply for financial services. But out of that 20 entrepreneurs 50 percent enterprises (10 firms) received different non financial services from the support institutions. From this category 75 percent entrepreneurs belong to the growth firms and 25 percent belong to the non growth group. Therefore, in this case importance of support services for obtaining the growth and development of the enterprises can not be ignored. All the entrepreneurs in the category of no-rationing are found to be growth firms. In the category of partial rationing, 94 percent entrepreneurs were found with growth status while 6 entrepreneurs were traced in the non growth category. The total number of entrepreneurs in the full rationing category is five. Out of five entrepreneurs 4 entrepreneurs were in the growth status. In spite of full rationing some entrepreneurs did well. The rationality behind the success of all these firms is that although they didn't receive financial support they might manage it from other sources. Another argument is that finance is a complementary factor with other set of factors to obtain the growth of a firm. So, here entrepreneurs' access to other sources of resources might help to obtain the growth. When entrepreneurs obtain finance according to their desired amount and time and could utilize them properly it would help them to pursue more growth for the firms. If we make the category wise analysis of the entrepreneurs in terms of receiving services it is evident that out of 15 entrepreneurs who didn't receive support services 60 percent entrepreneurs were found in the growth category where only 40 percent were traced as non growth firms. Out of 14 firms who receive only finance 86 percent were traced in the growth category while only 14 found as non growth firms. In the category of receiving credit with any other single non financial services, the percentage of growth and non growth firms are 96 percent and 4 percent respectively. The number of firms receiving more than one non financial service including finance is 48 from which all the firms were traced as growth firms. Again firms that received only single or multiple non financial services were also found as the growth firms. Therefore from the data of the table no. 9 it can easily be concluded that non-financial support

services have tremendous impact on the growth of the firms if they are provided with credit. Statistical result is also found significant when impact of service category is measured on the growth of the firms by controlling the credit rationing status. But when service category is controlled to measure the impact of credit rationing on the growth of the firms the result doesn't make significance in the same way. However apart from the statistical significance the table shows *the positive impact of support services and credit rationing status on the growth of the firms if they can be pursued properly.*

Time Taken to Receive the Services, Promptness of the Support Institutions as Perceived By the Entrepreneurs and Growth of the Enterprises:

It is found in the study that the relationship between promptness of providing services and growth of enterprise is positively related when time taken to receive the services is controlled and vice versa. So, support service organization may increase their operational efficiency by making previous plan in providing services and lessening the time so that entrepreneurs obtain the services when it is needed. And enhancement of the promptness of the support institutions is also important to obtain the benefits of the support services in full extent. Result shows in the table no. 10

Relationship among Service Receiving Dummy Status of the Firms, Credit Rationing and Growth of the Enterprise: One important issue in the Table-11 is that 100 percent firms who received non financial services although didn't apply for financial services become the growth firms. In the no rationing category 13 firms who obtained full services become the growth firms. In case of partial rationing the total number of firms is sixty two out of which 94 percent of the enterprises are pursuing the growth. Therefore, the result is still much satisfactory. In the full rationing case out of 5 firms 4 firms obtain the growth might be due to their personal skills to run the enterprises and ability to obtain the resources from various sources other than finance from the formal financial institutions. So, entrepreneurs' personal ability can supplement the growth of the firms with services from the formal institutions. In another analysis of this study it has been found that at the initial phase small enterprises obtain assistance from informal sources like friends and relatives with flexibility and more soft terms and conditions although they don't access to the formal sources of financial institutions. Therefore, findings of this table also provide the same conclusion. The findings of the table no. 11 show that both no rationing and partial rationing firms are pursuing the growth in proportionate extent when service receiving status (dummy) is controlled. But when credit rationing is controlled the impact of support receiving status (dummy) is not found influenced in the same manner. Probably the impact of support services is moderated by some other pre-conditional factors that would make the supply of support services more effective and goal oriented to produce the better results in terms of growth

of the enterprises.

Growth of the Enterprises by Weighted Score of the Human Resources and Approaches to Service Provision: Through minimalist approach institutions provide only finance without giving other kinds of services. In an integrated approach with financial services other kinds of non financial services are also provided. The extent of integration by the support institution is measured through five point likert's scale qualitatively from 'minimalist' through 'integrated to some extent', 'fairly integrated', and 'mostly integrated' to the 'fully integrated' approach. The table no. 12 shows that out of 83 firms 5 firms belongs to the category of minimalist approach to receive the service. That means they receive only finance from the financial institutions. In the minimalist category 80 percent firms are growth firms while only 20 percent firms in the non growth category. However, in the 'integrated to some extent' category the total number of firms is 20 where 90 percent firms belong to the growth category with remaining 10 percent in the non growth firms. When services are provided in fairly integrated manner 95 percent out of 19 firms were found in the category of growth firms and only 5 percent firms were observed in the non growth category. In case of mostly integrated and fully integrated category the total number of firms is 37 from which 100 percent firms found to be as the growth firms. So, from the findings of the table no. 12, two important issues emerge. First, minimalist approach of service provision is proved worthy to the firms in the sense that in this approach the overall operational cost of the support institutions is minimal and they can cover wide geographical area through their service strategy. On the reverse direction through integrated approach support institutions can meet the entrepreneurs' requirements in a better way but it necessitates more investment of the different kinds of resources from the institutional viewpoints. With insufficient resources support institutions could not cover wide geographical area of operations but they can serve the diversified group of customers at a time within the limited geographical area. So, entrepreneurs could avail the right assortments of their services from an institution that provides the services through fully integrated strategy. But statistical results clearly evidenced that high weighted score of the human resources are contributing towards the growth of the enterprises when approaches to the service provision is controlled. On the contrary if weighted score of the human resources is controlled better results is evidenced through the firms that perceived that the support services of the institutions are fairly integrated to the fully integrated. Therefore, it is essential for the support institutions that they train their people to change the attitude from negative and indifferent to the positive towards the service requests of the entrepreneurs, to understand the real business problems of the enterprises and rapidly respond to the request of the entrepreneurs to meet their needs of the business. And provisions of service should be in the more integrated manner as far

as possible to cover the overall requirements of the entrepreneurs within one stop point with minimum possible price of services.

Conclusion:

Non-financial services along with the modes and characteristics by which services are provided have influences over the performance of the enterprises. In this chapter it is identified that some factors relating to the supply of non financial services and characteristics of the service providing institutions are playing important role towards the performance and growth of the service receiving enterprises. It is learnt that for enhancing the effectiveness and efficiency of providing non financial support assistance, supervision by the support institutions should be used as a tool for facilitating enterprise development. Enhancing promptness of the employees of support institutions in providing services is another essential issue. Higher degree of awareness of the entrepreneurs regarding support institutions and their support mechanisms helps to attain higher degree of performance of the enterprises. It is also found that promptness and enterprises success achievement are positively related to each other and less time in providing services have significant positive influence on the enterprises performance and growth. In terms of service receiving status it has been found that firms receiving more non financial services including finance are more successful when credit rationing is controlled. But when service receiving status of the enterprises is controlled credit rationing has the lesser but still has positive impact on the enterprise performance. But to obtain positive impact of support services and credit rationing status on the growth and performance of the enterprises both of these should be pursued properly. The results of the weighted score of the human resources reveal that low/moderate success of the firm can be attributed to the poor weighted scores of the human resources of the support institutions. Out of the important perceived characteristics, providing services by making relevancy of enterprise problems and giving appropriate service as per necessity of the organizations have the positive impact on the improvement of the organizational success possibility and growth of the enterprises. Thus, support institutions need to include important policy options while designing the support mechanism, especially, when non-financial support services are provided to the small entrepreneurs.

Appendix:

Table – 1: Impact of Prompt Services on Performance of the Enterprises after controlling for Frequency of Supervision

Frequency of Supervision	Success Categories In Quartile Forms of EESI	Opinion of entrepreneurs regarding promptness of the support intuitions					Total
		Not Prompt	Somewh at prompt	Moder ately prompt	Mostly prompt	Very prompt	
Never	High Success	----	1	1	----	----	2
	Sub Total	----	1	1	----	----	2
Occasionally	Low Success	1	----	3	----	1	5
	Moderate Success	----	----	----	3	----	3
	High Success	----	1	1	----	----	2
	Super Success	----	----	5	3	1	9
	Sub Total	1	1	9	6	2	19
Sometimes	Low Success	----	1	8	5	----	14
	Moderate Success	1	----	5	7	3	16
	High Success	----	----	6	9	3	18
	Super Success	----	----	4	5	3	12
	Sub Total	1	1	23	26	9	60**
Most often	Low Success	----	----	1	----	----	1
	Moderate Success	----	----	----	1	----	1
	High Success	----	----	----	2	----	2
	Super Success	----	----	----	1	----	1
	Sub Total	----	----	1	4	----	5*
	Grand Total	2	3***	34**	36	11	86

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 2: Impact of the Degree of Awareness of the Support Institutions by Entrepreneurs on the Performance of the Enterprises after controlling mode of awareness

Mode of Awareness	EESI Categories In Quartile Forms	Degree of Awareness about the Support Intuitions			Total
		Low Degree Awareness	Medium Degree Awareness	High Degree Awareness	
Support Institutions and Their Promotional Measures	Low Success	----	8	3	11
	Moderate Success	2	9	----	11
	High Success	1	10	----	11
	Super Success	2	8	----	10
	Sub Total	5	35	3	43***
Business Network and Acquaintances	Low Success	2	8	1	11
	Moderate Success	1	9	1	11
	High Success	----	11	----	
	Super Success	----	8	----	
	Sub Total	3	36	2	41
Friends and Relatives	Low Success	2	1	----	3
	High Success	----	2	----	2
	Super Success		3	2	5
	Sub Total	2	6	2	10***
Others	Low Success	----	1	----	1
	Moderate Success	----	1	----	1
	High Success	----	1	----	1
	Super Success	----	2	----	2
	Sub Total	----	5	----	5
---	Grand Total	10***	82	7***	99

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 3: Impact of Prompt Services on the Performance of the Enterprises after controlling Services Receiving Time

Service Receiving Time	EESI Categories In Quartile Forms	Opinion of entrepreneurs regarding promptness of the support intuitions					Total
		Not Prompt	Somewhat prompt	Moderately prompt	Mostly prompt	Very prompt	
One Month	Low Success	----	----	7	1	1	9
	Moderate Success	----	----	3	5	3	11
	High Success	----	1	1	8	2	12
	Super Success	----	----	5	7	4	16
	Sub Total	----	1	16	21	10	48*
Two Months	Low Success	----	----	2	3	----	5
	Moderate Success	----	----	----	4	----	4
	High Success	----	1	7	2	----	10
	Super Success	----	----	2	----	----	2
	Sub Total	----	1	11	9	----	21***
More than Two Months	Low Success	1	1	2	1	----	5
	Moderate Success	1	----	2	----	----	3
	Super Success	----	----	1	2	----	3
	Sub Total	2	1	5	3	----	11*
---	Grand Total	2	3***	32	33**	10	80

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 4: Impact of SupportService Receiving Status (Categorical) on the Performance of the Enterprises (EESI) after control for Credit Rationing Status

Credit rationing status	EESI Categories In Quartile Forms	Service Receiving Status of the Enterprise (Categorical)					Total
		No Service Received	Only finance received	Received any other single service including	More than one NFS including finance	Receiving any one or more NFS other than finance	
Didn't apply	Low Success	6	----	----	----	3	9
	Moderate Success	3	----	----	----	2	5
	High Success	----	----	----	----	4	4
	Super Success	1	----	----	----	1	2
	Sub Total	10	----	----	----	10	20**
No rationing	Low Success	----	2	1	----	----	3
	Moderate Success	----	1	2	1	----	4
	High Success	----	----	3	----	----	3
	Super Success	----	2	1	----	----	3
	Sub Total	----	5	7	1	----	13
Partial rationing	Low Success	----	3	10	----	----	13
	Moderate Success	----	1	11	2	----	14
	High Success	----	1	15	2	----	18
	Super Success	----	4	10	3	----	17
	Sub Total	----	9	46	7	----	62
Full rationing	Low Success	2	----	----	----	----	2
	Super Success	3	----	----	----	----	3
	Sub Total	5	----	----	----	----	5
---	Grand Total	15	14	53	8	10	100

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 5: Impact of Credit Rationing Status on the Performance of the Enterprises after control for Support Service Status (Dummy)

Service Receiving Status of the Enterprise	EESI Categories In Quartile Forms	Credit rationing status of the Enterprise				Total
		Didn't apply	No rationing	Partial rationing	Full rationing	
Didn't Receive Support Service	Low Success	6	---	---	2	8
	Moderate Success	3	---	---	---	3
	Super Success	1	---	---	3	4
	Sub Total	10	---	---	5	15
Support Services Received	Low Success	3	3	13	---	19
	Moderate Success	2	4	14	---	20
	High Success	4	3	18	---	25
	Super Success	1	3	17	---	21
	Sub Total	10	13	62	---	85
----	Grand Total	20*	13	62	5	100

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 6: Impact of Credit Rationing Status on the Economic Performance of the Enterprise after Control for Frequency of Receiving Financial Services:

Frequency of Receiving Financial Services	EESI Categories In Quartile Forms	Credit rationing status of the Enterprise		Total
		No rationing	Partial rationing	
One time received financial services	Low Success	2	7	9
	Moderate Success	2	7	9
	High Success	1	7	8
	Super Success	---	11	11
	Sub Total	5	32	37**
Two times received financial services	Low Success	---	5	5
	Moderate Success	1	3	4
	High Success	1	7	8
	Super Success	2	4	6
	Sub Total	4	19	23
More than two times received financial services	Low Success	1	1	2
	Moderate Success	1	4	5
	High Success	1	4	5
	Super Success	1	2	3
	Sub Total	4	11	15
----	Grand Total	13	62	75

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 7: Overall Evaluation of the Support Institutions by Entrepreneurs and

Performance of the Enterprises (EESI) while Weighted Score of the Human Resources are controlled for.

Weighted score of the human resources of the Support Institutions	EESI Categories In Quartile Forms	Overall Evaluation of Support Institutions by Entrepreneurs				Total
		Fair	Average	Satisfactory	Best	
1 – 1.990	Low Success	1	----	----	----	1
	Sub Total	1	----	----	----	1
1.991 – 2.990	Low Success	----	4	----	----	4
	Moderate Success	----	2	----	----	2
	Super Success	1	1	----	----	2
	Sub Total	1	7	----	----	8**
2.991 – 3.990	Low Success	----	5	5	----	10
	Moderate Success	----	6	7	----	13
	High Success	----	10	7	----	17
	Super Success	1	4	6	----	11
	Sub Total	1	25	25	----	51
3.991 and above	Low Success	1	----	2	1	4
	Moderate Success	----	1	3	1	5
	High Success	----	----	5	2	7
	Super Success	----	----	4	3	7
	Sub Total	1	1	14	7	23*
----	Grand Total	4	33	39	7	83

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 8: Impact of the Promptness of Support Institutions on Growth of the Enterprises after controlled for Frequency of the Supervision:

Frequency of the supervision by the support institutions	Growth status of the firms	Perception of the entrepreneurs regarding promptness of the support institutions					Total
		Not prompt	Somewhat Prompt	Moderately Prompt	Mostly Prompt	Very Prompt	
Never	No growth firms	----	----	----	----	----	----
	Growth firms	----	1	1	----	----	2
	Sub Total	----	1	1	----	----	2
Occasionally	No growth firms	----	----	----	----	1	1
	Growth firms	1	1	9	6	1	18
	Sub Total	1	1	9	6	2	19*
Sometimes	No growth firms	----	----	1	1	----	2
	Growth firms	1	1	22	25	9	58
	Sub Total	1	1	23	26	9	60
Most often	No growth firms	----	----	1	----	----	1
	Growth firms	----	----	----	4	----	4
	Sub Total	----	----	1	4	----	5*
----	Grand Total	2	3	34*	36	11	86

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 9: Relationship among Service Receiving Status (Categorical), Credit Rationing Status and Growth of the Enterprises

Credit rationing status	Growth status of the firms	Service Receiving Status of the Enterprise (Categorical)					Total
		No Service Received	Only finance received	Received any other single	More than one NFS	Receiving any one or	
Didn't apply	No growth firms	5	----	----	----	----	5
	Growth firms	5	----	----	----	10	15
	Sub Total	10	----	----	----	10	20***
No rationing	No growth firms	----	----	----	----	----	----
	Growth firms	----	5	7	1	----	13
	Sub Total	----	5	7	1	----	13
Partial rationing	No growth firms	----	2	2	----	----	4
	Growth firms	----	7	44	47	----	58
	Sub Total	----	9	46	47	----	62*
Full rationing	No growth firms	1	----	----	----	----	1
	Growth firms	4	----	----	----	----	4
	Sub Total	5	----	----	----	----	5
----	Grand Total	15	14*	53*	8	10	100

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 10: Time Taken To Receive the Services, Promptness of the Support Institutions As Perceived By the Entrepreneurs and Growth of the Enterprises

Time taken to receive the services	Growth status of the firms	Perception of the entrepreneurs regarding promptness of the support institutions					Total
		Not prompt	Somewhat Prompt	Moderately Prompt	Mostly Prompt	Very Prompt	
One month	No growth firms	----	----	2	1	1	4
	Growth firms	----	1	14	20	9	44
	Sub Total	----	1	16	21	10	48
Two months	No growth firms	----	----	----	----	----	----
	Growth firms	----	1	11	9	----	21
	Sub Total	----	1	11	9	----	21
More than two months	No growth firms	----	----	----	----	----	----
	Growth firms	2	1	5	3	----	11
	Sub Total	2	1	5	3	----	11
----	Grand Total	2	3	32*	33	10	80

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table – 11: Relationship among Service Receiving Status (Dummy), Credit Rationing and Growth of the Enterprises

Service Receiving Status	Growth status of the firms	Credit rationing status of the Enterprise				Total
		Didn't apply	No rationing	Partial rationing	Full rationing	
Didn't Receive Support Service	No growth firms	5	----	----	1	6
	Growth firms	5	----	----	4	9
	Sub Total	10	----	----	5	15
Support Services Received	No growth firms	----	----	4	----	4
	Growth firms	10	13	58	----	81
	Sub Total	10	13	62	----	85
----	Grand Total	20	13	62	5	100

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

Table –12: Growth of the Enterprises by Weighted Score of the Human Resources and

Approaches to Service Provision (From Minimalist to Integrated Approach)

Approaches to service provision (Minimalist to integrated)	Growth status of the firms	Weighted score of the human resources of the Support Institutions				Total
		1 – 1.990	1.991 – 2.990	2.991 – 3.990	3.991 and above	
Minimalist	No growth firms	----	----	----	1	1
	Growth firms	----	2	2	----	4
	Sub Total	----	2	2	1	5*
To some extent integrated	No growth firms	1	----	----	1	2
	Growth firms	----	2	10	6	18
	Sub Total	1	2	10	7	20
Fairly integrated	No growth firms	----	----	1	----	1
	Growth firms	----	1	9	8	18
	Sub Total	----	1	10	8	19
Mostly integrated	No growth firms	----	----	----	----	----
	Growth firms	----	2	26	5	33
	Sub Total	----	2	26	5	33
Fully integrated	No growth firms	----	----	----	----	----
	Growth firms	----	1	2	1	4
	Sub Total	----	1	2	1	4
----	Grand Total	1	8	50	22**	83

Note: ***, ** and * represents the statistical significance at 1 percent, 5 percent and 10 percent level of significance as measured by Kendalls tau b & c .

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AN ASSIDUOUS STUDY ON THE INTELLECTUAL PROPERTY RIGHTS AS A TOOL FOR MITIGATING THE GREY MARKET

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Abstract

The study focuses on the grey market banes and the ways of mitigating it. The purpose of the study is to uphold the evils that grey market that has invaded the Indian economy that is becoming a threat to the existence of few of the major sectors of India. This is a very extensive study regarding the effects Indian economy has due to the grey market invasion which is basically eating up the whole economy. Thus this needs to be controlled and mitigated. The grey market can be mitigated in number of ways. But the intellectual property rights can prove to be a very powerful weapon if used in a proper way. Intellectual property right makes the original organization the legal owner of the product or service they produce. There are Indian laws that have protected the ownership rights of the organization. But the powers of intellectual property rights are yet to be cultivated.

The premise of the study is to generate the awareness amongst the people regarding the potential of the weapon that the study has taken upon, against the grey market. Moreover, the study discusses about the usefulness of the competitive intelligence regarding the grey market mitigation with the help of intellectual property rights. In precise, grey market can be mitigated with the help of intellectual property rights. But the weapon needs a catalyst for its effectiveness and competitive intelligence is the catalyst which gives a competitive edge to the mitigating weapon. Unfortunately the India is yet to discover the worth of the subject while the rest of world moves on its principles.

Keywords: Globalization, Copyright, Patent, Competitive Intelligence, Intellectual Property rights, Watch movements, Competition

Introduction

Grey market in present economy is seriously one of the major concerns which has literally called in an economic war in every form in every market across the globe resulting to a huge loss. The study has thus taken this concern into account and an effort is being made to find a strategy to beat this concern to restore the economic bliss in the society. One of the very useful tools is intellectual property rights (IPR), the importance of which is yet to be understood by the organizations. The study mainly explores the potential of the IPR in combating the grey market losses.

Grey marketing is the trading of the legal goods across the global market against the wishes of the

copyright or the trademark owner or the authorized importer or the authorized distributor of the products. The concept of grey marketing is something that is not new. But the problems arising out of this is very much critical now days. Grey marketing has evolved due to the very fact that price of one product varies in different markets across the globe and that is due to price differentiation. The grey marketers enjoy the quasi monopoly in literal terms. The goods get infringed into the grey market in three different ways:

- a) The export quality of goods, i.e., the products sent for export is diverted back to the home ground for the sale here without the consent of the producer.
- b) Goods produced in abroad and imported unauthorized.
- c) Foreign produced goods imported to compete with the licensed authorized dealer of the same goods.

From the consumers point of view the grey market situation is heaven. But the trademark holders or the original producers can get bankrupt if the grey market thrives. Moreover the grey marketers don't consider the responsibility towards the society, i.e. , they are free of tax payments. This accounts to a heavy loss for the government that may lead to government bankruptcy, which is a huge problem on the integrity of the country. This needs to be checked as far as possible since it is really tough to break through the grey market chain completely. But we can use intellectual property rights as the weapon to fight against the grey marketing. However, few countries like India and china supports the phenomenon since grey marketing stands for the interest of the ordinary country nationals. In North America, every year, the accounted loss of the government is 100 billion dollar approximately. So there has to be a law that needs to protect the corporate and government interest. Hence the study concentrates on designing strategies using the intellectual property rights (IPR) to fight against the economic war called in by the grey marketing.

Literature Review

Grey marketing is the legal marketing of the products without the consent of the original producer. Famous Canadian lawyers, François M. Grenier* and LEGER ROBIC RICHARD, defined grey marketing as “Grey marketing is hardly a new phenomenon but in a world market characterized by the facility with which goods become internationally known circulated, the problems caused by the practice are more acute today.” Now, a trademark, patent or intellectual property right, makes the original organization the legal producer of the product. According to the ROBIC, Patent & Trademark Agent Centre CDP Capital, “Trademarks and copyrights can be used to stop grey marketing and prevent the flow of goods bearing the Trademarks or in association with which copyrighted material is used, even if such goods are genuine, provided that appropriate legal protection (flowing from a combination of the law and the facts) exists.”

The competitive intelligence is the analysis tool that gives the insight regarding the future market environment. John L. Colley Jr., Jacqueline L. Doyle and Robert D. Hardie said in their book, Corporate Strategy, “Competitive analysis is critical for managers formulating corporate or divisional strategies. Executives and planners must be aware of the levels and trends in performance of their competitors to determine the best direction for their divisions and parent corporations. They also must be capable of critically assessing their own organization's performance, over time, relative to its competitive peers.”(<http://www.exinfm.com/training/course12-1.doc>) . Again, Steven M. Shaker and Mark P. Gembicki said in their book, the War Room Guide to Competitive Intelligence, “Success for every business, whether it's a one-person operation or a Fortune 500 corporation, increasingly depends on a timely awareness by key executives of the rapidly changing events impacting their organizations. Yet in most corporate settings, executives consistently work with massive amounts of raw data, small amounts of value-added information derived from analysis, and very little intelligence. Competitive intelligence reverses this traditional trend toward data and information and redirects it toward actionable intelligence.”(<http://www.exinfm.com/training/course12-1.doc>)

Objectives of the study:

- a) To find how Indian economy is subjected to risk of grey marketing.
- b) The awareness of the grey marketing risks among the nationals.
- c) To find the strategy to mitigate the grey market losses through the implications of IPR.
- d) The implication of competitive intelligence in identifying the risks of grey marketing
- e) The organizational awareness in Indian economy regarding the usefulness of competitive intelligence

Limitations of the study:

- a) The study has been centered round the Indian economy majorly.
- b) The study mainly explores the potential of IPR to restore the economic bliss in terms of grey marketing. However other ways can also be scooped out.
- c) Grey marketing is a vast concept that is been administered in different genres of the economy, for instance, the stock market, the service market, etc. the study however considers only the product market.
- d) The small scale watch industry is being considered in order to establish the view.

Research methodology:

The study is based on secondary data which are qualitative in nature. The source of the data used has their roots in several books and articles. The study also considered the latest research papers put up in several websites. The list of the sources is given in the end of this paper.

Data analysis and interpretation:

The study mainly focuses on the secondary data and the interpretation is categorized as the following five factors, viz., A, B, C, D, and E.

A) Indian economy and the importance of IPR:

India undoubtedly is one of the fastest growing countries with minimum six percent annual growth. But still India has yards to cover. It still is a developing country where half of the population is still below poverty. However the prospect here is really bright. Over the years India has called in many foreign investments. Amidst the globalization, India got her driver. Indian economy is vast. It includes agriculture, technology, basics like stationery, FMCG, soaps, automobiles and other luxury items. These industries need to be copyrighted so that the infringement does not affect these industries. Every sector, be it telecom, or FMCG, or a petrochemical or any basic industries like the small scale industry needs to be copyright protected or patent protected. Every sector has some innovations that has the potential to keep the sector grow fast and gain much profit. For instance, the telecom sector or the IT sector whose main basis is the technology, noticed a rapid growth as soon as they got copyrighted. They enjoyed a hike in rate of growth of 48% in less than a decade, compared to its usual rate of 35%. It is said, if the government keeps up its support for intellectual property right, the number will grow more and the software export revenue generation can go up to \$50 billion in next few years. But the importance has to be laid also on other sectors. For instance, let the small scale industries be considered. Small scale industries are those whose machine cost is not above 1 lac. Let the small scale industry be the watch industry. The time pieces like watches, wall clocks, and alarm clocks are now days facing a tough competition against the grey marketed watches. To protect the Indian watch industry, the government of India canceled the regulation of the special import license. But on the contrary, it started a new regulation where the basic duty currently on watches and clocks is 35%, the surcharge on basic customs duty is 3.5%, the additional duty is 16%, the Special additional duty is 4%; and the total duty is 67.08%. Since then the watch industry got adversely affected. This triggered the grey marketing or marketing of fake products. The fake products have fake addresses. The grey market of India started to import the “watch movements”, i.e., that is just the machine of the watch. Then the grey marketers of India get the machines their cases and the glasses and sold that in the market at a much cheaper rate than the other reputed brands. They just had to bear the cost the import duty. They do not need to pay the sales tax. A reputed watch industry of India, Jaina times industries has seen its worse times due to this when it had to see their factory of 900 workers being shut down cause there was no sales of its watches and without sales, production is unjustified for the industry. That will lead to loss. So Indian watch industries should be patented or copyrighted. For instance, the titan watches now days have reduced the price to a huge margin

just because they need to survive the competition in the market caused by the grey market. The parallel effect by the grey market goods is casting an adverse effect on the goods that are legally imported or legally produced inside the country. In fact the goods if imported legally cost more than the Indian counterparts. The main intention behind the amendment of the government of India was that if the imported goods cost more than the local brands will survive. But that didn't happen. That triggered the grey market and grey market survived because it supported the public interest. India is a developing country with a majority of low or middle income groups. Hence the brand consciousness is low considerably than the developed countries with a majority of high income groups. The government of India needs to regulate proper policies to support the small scale industries. It is said that over 1 lac smuggled "watch movements" transactions are going on at present approximately over the country. This is a huge threat to the existence of the national and multinational investments in small scale industries. Apart from this, the tax evasion is also a major concern. The government of India although backs the grey market since it has a public interest, but still it suffers from a loss of huge money.

B) *Grey marketing-a critical approach to people awareness for HOPE(higher order purpose of existence):*

The public awareness regarding intellectual property rights and the patent rights are very low in India. The mass market specially prefers low cost products which is the key characteristics of the grey market. This makes the grey market famous to the ordinary mass market. But awareness should be spread regarding the pros and cons of the grey marketing to the customers. The importance of the intellectual property rights and the patent rights should also be taught to the public. The awareness of the worth of quality over quantity should be spread. For instance, the pirated CD's and VCD's, which is a major part of the grey market, is now so popular for its cheap rates among the low and middle income groups which forms the majority of the population of the country that it will be really tough to eradicate the grey economy completely but the adverse effect of the grey economy should be preached. People should get aware of the future consequences and the possible threats from the grey marketing to the Indian market. A market sustains only because of the popularity among the buyers. And, buyers are quite obviously are the Indian nationals. Only if they are made aware of the pros and cons of grey marketing, and only if they stop supporting the grey marketed goods, the grey market can be controlled.

One of the leading multinational watch company Seiko, as a precautionary measure from grey marketing has taken up a retail model which goes like this: they have got their authorized dealers in various countries. Since grey marketing is not illegal, customers have full liberty to buy the watch from any place, be it from their dealers or from the grey market. But then, the difference comes in servicing. The customers buying from the dealers are offered servicing and repairs which they officially refuse to do if the customer cannot show the warranty card or the manual which one can only have if the watch is bought from an authorized dealer.

But the grey marketing has found a solution in this too. One of the grey market customers was asked what if grey the Grey Market Orange Monster needs repair or service. The answer was "Theoretically Authorized Seiko Repair centers refuse (that is the official Seiko text) to repair those watches. Practically they cannot refuse your original Seiko watch, because you could simply tell them that your received this watch as a gift or you could tell them, that your partner threw the manual and warranty card into the trash bin during spring cleaning. Thus, there is actually nothing to worry." and, it is certainly not that the products are forged or defectives. It is been surveyed that all the products are as fresh as that of the products with the authorized dealers and it is said that all comes straight from the factory. Basically the grey marketing thrives because of its cost efficiency. But people should be aware of the consequences that the market faces and their government faces. Perhaps that's why the battle against the pirated CDs is still on.

c) *Organization and use of IPR:*

In a present time watch industry, the priority is not only the machine. The priority of a watch has shifted from just a time piece to a luxury item, the substitutes of a time piece being the mobile industry and the computer industry. Over the years the best watches are the Swiss watches. The

famous Rolex watches, the swatch watches, the Swiss timer watches, etc, are now the luxury items that ordinary people aspire to have in their closet. The IP rights holder organization of these brands have their nose high up in the air exclusively taking pride in their product as the luxury item that will be dream to the affinity and the mass market. Their target is the luxury market and that too the people who stands out in the crowd. One of their tag line reads like this- “Do not wear this watch to see the time”. These organizations have each of their products trademarked and the IP righted. They have their own authorized retailers and suppliers all round the world. But still the products find their way into the grey market. They mainly get their way inside the market from the factory through the suppliers and the dealers and the factory workers. Indian market of watches does not even stand close in the market competition when it comes to the imported watches. Apart from this, access to the lucrative watches, that is now a status symbol of the society, to the Indian mass, it is feverish. Any person in the market will prefer a Rolex watch or the other Swiss watch or any other Japanese or Chinese watch, to the Indian watches. Moreover, the watches in the cheap or grey market is so low priced that the mass market prefers to have access in the grey market only. This costs the Indian market a lot. The Indian brands like sonata, titan, and hmt are suffering a huge loss. In fact they are now a lost identity. The weapon that can be used here is that the brands should be trademark and the IP right protected. Once the products are copyrighted and IP right protected, the grey marketing can be mitigated to a large extent. This is because, with this rights comes the powers of eliminating the grey market of their goods to a large extent. It will be wrong to say that with these rights; their goods will never get grey marketed, since the grey market is to some extent backed by the government itself for the mass interest. But surely the level can be lowered.

D) *Indian laws and protection against grey marketing:*

The Indian government out of vested interest supports the grey marketing. The reason is that India is developing and its people are still in middle level and lower level income group. Globalization has helped to get India the cheap market which has been accepted by mass market. For an ordinary middle class Indian, buying an android cell phone in the grey market in much lower cost is like receiving an incentive. However, the Indian government did not overlook the importance of industry and its rights. They have formed several laws that can be filed in case any organization wants the justice against the infringement. This trading of grey goods are however, legal worldwide. The laws that are being passed keeping in mind the interest of the industry are as follows:

1)patent act:

In case of any technology, a patent is a monopoly right granted to a person who has invented the new and useful article or a new process of making the article.

2) Copyrights act:

Copyright act is mainly meant for the arts of audio and video.

3) Designs act:

This act grants monopoly rights to the new configurations, unique shapes, and never before seen patterns.

4) Trademark act, 1999:

The trademark act gives the products of a particular organization the “certification trade mark” that gives the products its identity. Eventually, this becomes the identity of the firm or the organization to which the product belongs to. For instance, Apple has its trademark that speaks for the organizations. What happened in china also shows how a trademark can fool customers as it eventually becomes the face of the organization. There a store with apple logo was successful in fooling the customers. Even though it wasn't an apple store and it dint have “APPLE” anywhere written in the shop, the customers got fooled just by the logo. Such is the power of trademark.

5) Geographical indications act, 1999:

This act enables a product to get identified by the geographical indications. For instance, we have the Darjeeling tea. Customers know that tea is best cultivated in Darjeeling. And thus the sales increases automatically.

E) *Competitive intelligence, grey marketing and intellectual property rights:*

Before going into how the art of competitive intelligence can prove to be a driver in the war against the grey marketing, the concept of competitive intelligence deserves a special mention.

Know thy-self, know thy competition, and get it right almost every time.

Know thy-self, not know thy competition, and get it right about half the time.

Not know thy-self, not know thy competition, and get it wrong almost every time.

Quoted by: SUN TZU, THE ART OF WAR source:www.refspace.com/quotes/the_art_of_war

(<http://www.exinfm.com/training/course12-1.doc>)

The form of present market is highly competitive. There are more than thousand companies in India itself. But only the fortune five hundreds are considered to be large and have the reputation of being a market leader. In the present market, if you do not act smart, you can get eliminated from the competition. The grey market runs basically on the competitive intelligence failure. The analysis tool that is widely used in abroad is yet to find its way inside India. If the tool needs to be used in an effective manner, then people should know what it is and its importance. It is said, the knowledge that is of no use is just a sheer wastage. The importance of knowledge lies in its application.

Competitive intelligence is an analysis tool of planning, collection, analyzing and dissemination of data that helps in anticipating about the competitors move in the market and safeguarding the organization from facing the competition. it is based on three pillar of actions, viz., hindsight, insight and action. The competitive analysis gives the insight of future actions and reactions.

It has been discussed about the importance of the intellectual property rights in mitigating the grey marketing. But the role of competitive intelligence lies in the execution of getting the products and services copyrighted or IP righted. Only IP rights cannot mitigate the grey market. Law says that if a product or service is copy righted then the original organization or the authorized organization has the full and legal right to voice against their products or services been grey marketed. For instance, it is known that online transactions undertaken by the legal site e-bay.com is grey. Any kinds of advertisement regarding the grey goods or services can be petitioned to remove by the original or authorized organization. But in order to undertake this step, the authorized organization needs to have the information which is a task of the competitive intelligence.

Again, grey marketing is done mainly by the suppliers of the original organization. For instance, the goods mainly get marketed from the factories, that is, from the lot of the market ready goods. So, one way of mitigating the graying of goods from white is checking the backgrounds of suppliers and to see if they have any history in grey market. This again is the task of competitive intelligence. It figures out the grey history of every suppliers if they have any. That is called due diligence of the suppliers.

The use of competitive intelligence can go deep. If it can be studied properly then it can be noticed that it is some more than just a driver. As in the epic Mahabharata, lord Krishna was just a driver. But only that made all the difference.

Key points:

In order to mitigate grey market, we can take up the following steps:

- a) The organizations should necessarily trademark and IP right the products and services.
- b) Constant vigilance on the market to keep a check on the grey marketed goods.
- c) In case of any infringements, for instance advertisements of grey goods, petitions can be filed to remove it.
- d) Keep a check on the suppliers. If any suppliers are caught with hands in grey market, then the organizations will have full right to cancel the order as they will have the IPR protection.
- e) Restricted supply in the cheap markets. It forms the base of grey marketing.
- f) Any product always has the warranty card with it. An IPR protected organization always has the right to dismiss the servicing of the products that do not have the warranty card. For instance, the warranty time period servicing is always done once you show the receipt and the warranty card of the product in any of the authorized showroom of the original organization.

- g) The IPR protected organization should have the authorized retail shops. Then their technology will be serviced by them only.
- h) Considerable attention should be given on local packaging so that if a good is traded in then it can get located, i.e. if grey marketed then it will get identified.

Conclusion and recommendations:

Indian economy is on a bear run. They should get more flexible and get accustomed to new technology and new procedures. Once a great man told that there is nothing inside the box. You need to get out of the box and see things. Moreover, Indian industry should take up competitive intelligence seriously if they want to have effective IP rights practices. IP rights or patents alone cannot help Indian industry to safeguard against the vulnerability of the grey market.

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- 9) <http://www.fhs.ch/en/history.php>
- 10) <http://www.rolexforums.com/showthread.php?t=54649>
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- 12) <http://www.tz-uk.com/forum/viewtopic.php?f=1&t=62716>
- 13) <http://www.flyertalk.com/forum/hong-kong/802475-getting-rolex-hk.html>
- 14) <http://www.wipo.int/about-ip/en/>
- 15) <http://www.ias.ac.in/currensci/jun102000/editorial.pdf>
- 16) <http://www.thenews.com.pk/NewsDetail.aspx?ID=22128&title=Piracy-termed-a-bane-of-economy>
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The Study and Analysis of the Application Effects on Performance Improvement and Technical Efficiency (Case Study: Insurance Industries of Iran)

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Abstract

Traditional DEA models treat the DMU as a “black box.” Inputs enter and outputs exit, with no consideration of the intervening steps. Consequently, it is difficult, if not impossible, to provide individual DMU managers with specific information regarding the sources of inefficiency within their DMUs. Traditional DEA models ignore the internal process of production systems and are not able to identify the cause of deficiency in efficiencies measuring. At this research traditional DEA model and two-stage DEA model were used to measure efficiency of Iranian private insurance companies during 2006-2007. The results indicated that the traditional DEA model is not suitable for such kind of network systems. In marketing perspective Iran Moein Company was efficient during the study period. But this company is not efficient due to weakness in investment sub-process in year 2007.

Key words: Data Envelopment Analysis, Insurance industry, Marketing sub-process, Investment sub-process, Network system

Introduction

Insurance companies extend the productivities and services activities with providing safety and confidence. Insurance industry also cause stability and reduce the anxiety due to indemnification. These companies

accomplish the governmental social program as well as allocate the sources in a rational manner. Furthermore, these companies have positive effects on economics growth of the country. Therefore, the efficiency of the insurance companies is always under the question mark. Efficiency measurement in the insurance companies increases the quality of their activities and also assists them to identify and solve the problems (Kueng, 2000).

Measuring the performance of a production system is an important task for purpose of control and planning. Data envelopment analysis (DEA) is a technique that widely applied to measure the relative efficiency of a set of production systems, or decision making units (DMUs) which apply the same inputs to produce the same outputs. This method identifies all of the DMUs with weak performance and also shows the sources of inefficiency (Fortuna, 2000). Traditional studies in DEA view systems as a whole, ignoring the performance of their component processes to calculate the relative efficiency of a set of the production systems. The first deficiencies are that the efficiency score may not properly represent the aggregate performance of the processes of a system. The second deficiencies are that the traditional DEA does not show which process causes the low efficiency of an inefficient system. In order to identify the source of inefficiency, it is possible to calculate the efficiency of each process independently. However, the relationship between the efficiency of the system and those of the processes is not revealed (Kao, 2009). There are several studies show the deficiency of traditional DEA model such as: Chen & Zhu, 2004; Luo, 2003; Chen *et al*, 2006; Kao and Hwang, 2010; Kao, 2009. Traditional DEA is considered the DMUs activities as a black box and ignore the intermediate measures (Chen *et al*, 2006). Traditional DEA may give high score to the overall efficiency but in fact that the sub-processes are not efficient (Kao, 2009)

There are many studies are dealt with network system that include internal processes. Seiford and Zhu (1999) divide a commercial banks production process into the stages of profitability and marketability. The input of the bank production process is employees, assets and shareholders equity, which are also the inputs of the first stage. The output of the bank production process is market value, total return on investments, and earning per share which are also the output of the second stage. Although there are two intermediate products, revenues and profits,

which are the outputs of the first stage as well as the inputs of the second stage. Kao and Hwang (2008) measured the efficiency of non-life insurance companies with two-stage DEA model in Taiwan. They divided production process of non-life insurance companies to two sub-processes premium acquisition and profit generation. Two-stage DEA model partially improve these deficiencies. Recently DEA has been extended to examine the efficiency of two-stage processes, where all the outputs from the first stage are intermediate measure that makes up inputs to the second stage (Chen *et al.*, 2010). Insurance industry provides services to their clients to generate profit. There are several studies which used the DEA technique to measure the managerial performance of this industry (Fecher *et al.*, 1993).

The profit is not earned from insurance service alone. Insurance company use the insurance premium acquired through the systems of agencies, broker, solicitors, etc (Kao and Hwang, 2008). Zha and Liang (2010) considered production to describe the cooperation between different stages efficiency and banks overall assessment.

Production process in the insurance industry is consisted with two sub-processes called marketing and investment. The output of the marketing sub-process is the input of the investment sub-process.

The aim of this research is to measure the efficiency of private insurance companies via two-stage DEA model in Iran during 3 years. There are several studies dealt with the efficiency measurement of insurance companies in Iran, but they have used traditional DEA method that ignores the internal process of production systems. Therefore, this research is different from the previous studies which treat the whole production process and the two sub-processes as independent. Moreover, this paper takes the series relationship of the two sub-processes into account in measuring the efficiencies of the Iranian private insurance companies.

Material and Methods

Data was collected from 14 private insurance companies in Iran from 2006 to 2007.

Input and output was earned from financial sheet of the companies (Iranian Central Insurance, 2010). Marketing and investment sub-processes were considered (Figure 1). Marketing sub-process inputs includes operation expenditures (x_1), insurance expenditures (x_2). Marketing sub-process outputs includes direct written premiums (z_1) and reinsurance premiums (z_2) which inputs of the investments sub-process.

Output of investments sub process consist underwriting profit (y_1) and investment profit (y_2). Operation costs and insurance costs in sub-process of marketing are covered by clients and the other insurance companies. Clients pay direct written premiums and reinsurance premiums paid by the other insurance companies. In sub- process of investment premiums are invested in a portfolio to earn profit.

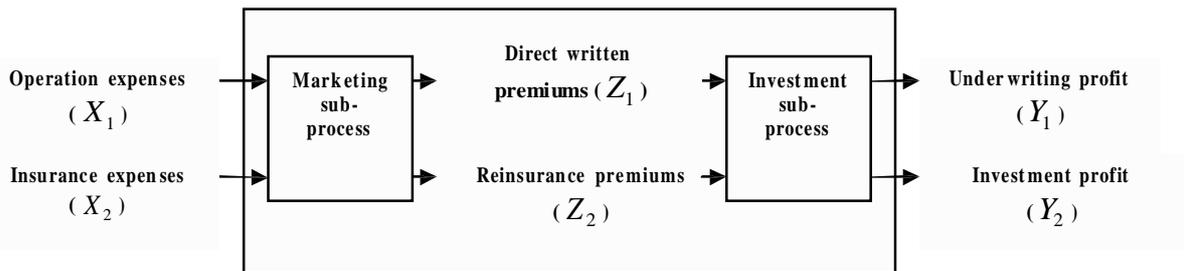


Figure 1: Production system of the private insurance companies in Iran.

Inputs of the system, which are also the input of the first stage (marketing), are as below:

Operation expenses (x_1): Salaries of the employees and various types of costs incurred in daily operation such as personnel costs, administrative and public costs)

Insurance expenses (x_2): expenses paid to agencies, brokers and solicitors, and expenses associated with marketing the service of insurance such as reinsurance premium, wage of damages and etc.)

Intermediate products in the system, which are the outputs of the marketing sub-process as well as the inputs of the investment sub-process, are as below:

Direct written premiums (z_1): Premiums received from insured clients.

Reinsurance premiums (z_2): Premiums received from ceding companies.

Outputs of the system, which are also the outputs of investment stage, are as below:

Underwriting profit (y_1): Profit earned from the insurance business.

Investment profit (Y_2): Profit earned from the investment portfolio includes banking deposit revenue, coupon-bond revenue, loan revenue and etc.

Insurance production of Iranian industry is based on two-stage network structure (Figure 1). Therefore the traditional DEA model is not a rational manner to measure the efficiencies of this industry.

Kao and Hwang (2008) was used a two-stage DEA model to measure the efficiencies on non-life insurance companies in Taiwan. Therefore, at this research their model was used to measure the efficiencies of Iranian private insurance companies.

First of all, the overall efficiency was measured. Then, the first stage efficiency was measured consider to the overall efficiency. The second stage efficiency was determined whereas the overall efficiency was divided to the first stage efficiency. As mentioned before that the private insurance companies in Iran have the network system with series structure, hence these kinds of systems will be discussed.

Network Systems

Systems with more than one process connected with each other called networks (Kao, 2009). Outputs of the first stage are as the inputs of the second stage that they called as intermediate data (Zha and Liang, 2010). There are two basic structures for the network systems, series and parallel, in the both systems efficiency and deficiency can be divided into efficiency and deficiency of internal process.

In a series structure the whole internal processes are connected in a series form where as the outputs of the each process are as the inputs of the next process that they called as intermediate data. Intermediate data of the last process are the outputs of the system. The number of intermediate products can be different for each process. At this status, a DMU is efficient only if all its processes are efficient. The system efficiency will be low if there is a process which is very inefficient and will be high only when all processes have high efficiencies. In a parallel structure the whole internal processes are connected in a parallel form. At this status the sum of input for all processes is equal to the input of the system of this is the same for the output. If a process is efficient in the parallel system, it will be preferable to use this process alone for production. Since the underlying assumption of the CCR model is constant returns to scale, the system will be efficient if this efficient process consumes all of the inputs for production (Kao, 2009). To measure the efficiency of a network system a network DEA model is needed. Different from the traditional DEA model, the network DEA model does not have a standard form. It depends on the structure of the network in question.

There are four procedures exist for two-stage systems: Standard DEA approach; efficiency decomposition approach; network-DEA approach and game-theoretic approach. Except for the standard DEA approach, all other approaches attempt to correct for the above-referenced conflict issue (Cook *et al.*, 2010).

At this research the procedure of efficiency decomposition and two-stage DEA model were used and these methods will be discussed. DEA models treat the DMU as a "black box" Inputs enter and outputs exit, with no consideration of the intervening stages. Consequently, it is difficult, if not impossible, to provide individual DMU managers with specific information regarding the sources of inefficiency within their DMUs (Lewis & Sexton, 2003).

Two-stage DEA model

Denote X_{ik} , $i=1, \dots, m$ and Y_{rk} , $r=1, \dots, s$ as i th input and r th output, the traditional DEA model for measuring

the efficiency of DMU k under the assumption of constant returns-to-scale is the CCR model:

$$\begin{aligned}
 E_k &= \max \sum_{r=1}^s u_r Y_{rk} \\
 s.t \quad &\sum_{i=1}^m v_i X_{ik} = 1; \\
 &\sum_{r=1}^s u_r Y_{rj} - \sum_{i=1}^m v_i X_{ij} \leq 0; \quad j = 1, \dots, n \\
 &v_i, u_r \geq \epsilon, \quad i = 1, \dots, m, \quad r = 1, \dots, s
 \end{aligned} \tag{1}$$

E_k is the relative efficiency of DMU k . $E_k = 1$ shows the DMU k is efficient and $E_k < 1$ indicate the DMU k is inefficient.

Consider a two-stage network structure or processes as shown in Figure 2, for each of a set of n DMUs, we

assume each DMU_j ($j=1,2,\dots, n$) has m inputs X_{ik} , ($i=1,2,\dots, m$) to the first stage, and q outputs Z_{pk} , ($p=1,\dots,q$) from that stage. These q outputs then become the inputs to the second stage and will be referred to as

intermediate measures. The outputs from the second stage are Y_{rk} , ($r=1,2, \dots, s$). We denote the efficiency for the first stage as E_k^1 and second stage as E_k^2 , for each DMUj.

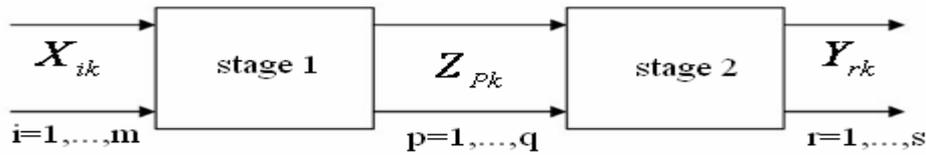


Figure 2. Two-stage system of DMU k

Seiford and Zhu(1999) use model(1) to measure the overall efficiency and the models 2,3 cited below to measure the efficiencies of first stage(E_k^1), and second stage(E_k^2).

These models ignore interrelationship between internal processes and calculate the stages efficiencies independently.

$$\begin{aligned}
 E_k^1 &= \max \sum_{p=1}^q w_p Z_{pk} \\
 \text{s.t.} \quad & \sum_{i=1}^m v_i X_{ik} = 1; \\
 & \sum_{p=1}^q w_p Z_{pk} - \sum_{i=1}^m v_i X_{ik} \leq 0; \quad j = 1, \dots, n \\
 & v_i, w_p \geq \varepsilon, i = 1, \dots, m, p = 1, \dots, q
 \end{aligned} \tag{2}$$

v_i is a weight given to input i , w_p is a weight given to intermediate p , X_{ik} is the data value i from DMU k and Z_{pk} is the intermediate data value p from DMU k .

$$\begin{aligned}
 E_k^2 &= \max \sum_{r=1}^s u_r Y_{rk} \\
 \text{s.t.} \quad & \sum_{p=1}^q w_p Z_{pk} = 1; \\
 & \sum_{r=1}^s u_r Y_{rk} - \sum_{p=1}^q w_p Z_{pk} \leq 0; \quad j = 1, \dots, n \\
 & w_p, u_r \geq \varepsilon, p = 1, \dots, q, r = 1, \dots, s
 \end{aligned} \tag{3}$$

w_p is a weight given to intermediate p , u_r is a weight given to output r , Z_{pk} is the intermediate data value p from DMU k and Y_{rk} is the data value output r from DMU k

Kao and Hwang(2008) introduced the models(2,3) which are the same as model(1). Therefore, the efficiencies of the whole process and two sub-processes are calculated independently. To link the two sub-processes with the

overall process, a model must describe this series relationship between the overall process and two sub-processes. Model (4) was introduced by them according to this concept:

$$\begin{aligned}
 E_k &= \text{Max} \sum_{r=1}^s u_r Y_{rk} \\
 \text{s.t.} & \sum_{i=1}^m v_i X_{ik} = 1; \\
 & \sum_{r=1}^s u_r Y_{rj} - \sum_{i=1}^m v_i X_{ij} \leq 0; \quad j = 1, \dots, n \\
 & \sum_{p=1}^q w_p Z_{pj} - \sum_{i=1}^m v_i X_{ij} \leq 0; \quad j = 1, \dots, n \\
 & \sum_{r=1}^s u_r Y_{rj} - \sum_{p=1}^q w_p Z_{pj} \leq 0; \quad j = 1, \dots, n \\
 & v_i, w_p, u_r \geq \varepsilon, i = 1, \dots, m, p = 1, \dots, q, r = 1, \dots, s
 \end{aligned} \tag{4}$$

v_i is a weight given to input i , w_p is a weight given to intermediate p , u_r is a weight given to output r , X_{ij} is the data value i from DMU j and Z_{pj} is the intermediate data value p from DMU j and Y_{rj} is the data value output r from DMU j .

Overall efficiency and internal process efficiency are calculated after solving model 4 and determining the coefficients of u_r^*, v_i^*, w_p^* .

$$E_k = \frac{\sum_{r=1}^s u_r^* Y_{rk}}{\sum_{i=1}^m v_i^* X_{ik}}, \quad E_k^1 = \frac{\sum_{p=1}^q w_p^* Z_{pk}}{\sum_{i=1}^m v_i^* X_{ik}}, \quad E_k^2 = \frac{\sum_{r=1}^s u_r^* Y_{rk}}{\sum_{p=1}^q w_p^* Z_{pk}}$$

The optimal coefficients solved from model 4 may not be unique; consequently, the decomposition of

$E_k = E_k^1 \times E_k^2$ would not be unique. This makes the comparison of either E_k^1 or among E_k^2 all DMUs lack a common basis.

TO solve this problem we may find the set of coefficients which produces the largest E_k^1 while maintaining the overall efficiency score at E_k calculated from Model (4). Therefore, model 5 was presented by Kao and Hwang (2008) as below:

$$\begin{aligned}
 & E_k^1 \quad \text{Max} \quad \sum_{p=1}^q w_p Z_{pk} \\
 & = \\
 & \text{s.t.} \quad \sum_{i=1}^m v_i X_{ik} = 1 \\
 & \sum_{r=1}^s u_r Y_{rk} - \sum_{i=1}^m v_i X_{ik} = 0 \\
 & \sum_{r=1}^s u_r Y_{rj} - \sum_{i=1}^m v_i X_{ij} \leq 0, \quad j = 1, \dots, n \\
 & \sum_{p=1}^q w_p Z_{pj} - \sum_{i=1}^m v_i X_{ij} \leq 0, \quad j = 1, \dots, n \\
 & \sum_{r=1}^s u_r Y_{rj} - \sum_{p=1}^q w_p Z_{pj} \leq 0, \quad j = 1, \dots, n \\
 & u_r, v_i, w_p \geq \varepsilon; r = 1, \dots, s; i = 1, \dots, m; p = 1, \dots, q
 \end{aligned} \tag{5}$$

Case Study

The sample sizes at this research were 14 private insurance companies in Iran (Table1). These companies include Moalem, Parsian, Tosieh, Razi, Karafarin, Sina, Melat, Iran Moein, Omid, Hafez, Day, Saman, Novin and Pasargad.

Data such as operation expenses (x_1), insurance expenses (x_2), direct written premiums (z_1), reinsurance premiums (z_2), investment profit (y_1) and underwriting profit (y_2) were collected during 2006-2007 (Iranian Central Insurance, 2010).

Two stage DEA techniques via LINGO 8 software were used in order to measure the efficiencies of the insurance companies.

Results:

Data such as input, intermediate and output from 14 Iranian private insurance companies have been shown in table 1 in year 2006.

Table 1: Input (X), intermediate (Z) and output (Y) from 14 Iranian private insurance companies in year 2006 (Iranian Million Rial).

Investment profit (y_2)	Underwriting profit (y_1)	Reinsurance premiums (z_2)	Direct written premiums (z_1)	Insurance expenses (x_2)	Operation expenses (x_1)	Insurance companies
10239	11596	3080	47332	25393	15764	Moalem
53909	194944	314655	2007088	1929459	34758	Parsian
11152	5900	2896	23747	19046	9140	Tosieh
42579	23856	26083	292438	230353	14249	Razi
25942	76929	50783	541405	458962	64387	Karafarin
38292	46812	48621	431699	363161	31479	Sina
207460	201025	35905	1065067	575364	26059	Melat
7929	12881	4173	42386	26967	1199	Iran Moein

2493	1020	7084	11421	12210	2593	Omid
2452	3588	657	70526	68797	3888	Hafez
28306	39240	24029	174017	149012	39054	Day
11720	21061	3498	109573	92207	10698	Saman
2510	19102	4103	82070	45790	7263	Novin
19405	109	248	659	249	1291	Pasargad

Overall efficiency and internal process efficiency of insurance companies were calculated using traditional DEA approach and models 1, 2 and 3 that presented in previous section. Although, the overall efficiency of the insurance companies was calculated using two-stage DEA model through model 4. Marketing sub-process efficiency was calculated based on model 5 (Tables 2, 3). Investment sub-process efficiency also was calculated with the following ratio:

$$E_k^2 = \frac{E_k}{E_k^1}$$

Results of traditional DEA model indicate that the companies such as Iran Moein and Pasargad are efficient ($E_k = 1$) in year 2006 (Table 2). But pasargad insurance company is not efficient in marketing and investment process simultaneously. Result of two-stage DEA model shows that the Iran Moein company is efficient ($E_k = 1$) in year 2006. In marketing point of view the companies such as parsian, iran moein and omid are efficient ($E_k^1 = 1$). In investment perspective all of the companies except iran moein and pasargad are deficient in year 2006. ($E_k^2 \neq 1$).

Table 2: Efficiency of Iranian private companies in year 2006.

Two-stage DEA model			Traditional DEA model			
$E_k^2 = \frac{E_k}{E_k^1}$	E_k^1 (model 5)	E_k (model 4)	E_k^2 (model 3)	E_k^1 (model 2)	\bar{E}_k (model 1)	Insurance companies
0.80	0.05	0.04	0.88	0.05	0.04	Moalem
0.30	1	0.30	0.65	1	0.30	Parsian
0.57	0.64	0.37	0.47	0.64	0.41	Tosieh
0.24	0.65	0.16	0.26	0.65	0.22	Razi
0.45	0.59	0.27	0.48	0.59	0.27	Karafarin
0.33	0.63	0.21	0.36	0.65	0.21	Sina
0.62	0.91	0.57	0.89	0.80	0.69	Melat
1	1	1	0.97	1	1	Iran Moein
0.14	1	0.14	0.33	1	0.15	Omid
0.1	0.50	0.05	0.31	0.56	0.05	Hafez
0.66	0.65	0.43	0.79	0.65	0.45	Day
0.66	0.62	0.41	1	0.62	0.41	Saman
0.75	0.66	0.50	1	0.76	0.52	Novin
1	0.26	0.26	1	0.28	1	Pasargad
0.54	0.65	0.33	0.64	0.66	0.40	Average

The results of traditional DEA model in the left side of the table 3 shows that the companies such as Iran Moein and Pasargad are efficient ($E_k = 1$) in year 2007 (Table 3). Whereas, these two companies are just efficient in one marketing and investment sub-process. Therefore, there is doubt about the validity of traditional DEA model. There is a contradictory between the result of this model and two-stage DEA model. Result of two-stage DEA model shows that the Iran Moein company has the highest overall efficiency with score efficiency of 0.94 ($E_k = 0.94$). This means that this company is efficient in marketing and investment sub-process. In marketing point of view the companies such as Parsian, Melat, Iran Moein, Hafez and Novin are efficient ($E_k^1 = 1$), but all of the above mentioned companies are deficient in investment sub-process ($E_k^2 \neq 1$).

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Table 3: Efficiency of Iranian private companies in year 2007.

Two-stage DEA model			Traditional DEA model			
E_k^2 E_k E_k^1	E_k^1 (model 5)	E_k (model 4)	E_k^2 (model 3)	E_k^1 (model 2)	E_k (model 1)	Insurance companies
0.23	0.59	0.14	0.25	0.74	0.21	Moalem
0.22	1	0.22	0.22	1	0.65	Parsian
0.02	0.72	0.02	0.66	0.72	0.75	Tosieh
0.20	0.99	0.20	0.20	0.99	0.71	Razi
0.36	0.61	0.22	0.36	0.71	0.28	Karafarin
0.28	0.75	0.21	0.28	1	0.37	Sina
0.21	1	0.21	0.21	1	0.81	Melat
0.94	1	0.94	0.94	1	1	Iran Moein
0.23	0.52	0.12	0.27	1	0.18	Omid
0.08	1	0.08	0.83	1	0.22	Hafez
0.48	0.56	0.27	0.54	1	0.32	Day
0.77	0.62	0.48	0.77	0.62	0.54	Saman
0.54	1	0.54	0.54	1	0.82	Novin
1	0.72	0.72	1	0.72	1	Pasargad
0.39	0.79	0.31	0.50	0.89	0.56	Average

The efficiency comparison of the insurance companies shows Iran Moein company is efficient in marketing process during 2006 and 2007. Therefore, the investment weakness is the main reason of overall deficiencies.

Discussion:

Traditional studies in DEA view systems as a whole, ignoring the performance of their internal processes in calculating the relative efficiency of a set of production systems. The deficiencies are, firstly, that the efficiency score may not properly represent the aggregate performance of the processes of a system. The objective of efficiency measurement is to detect the weak areas so that appropriate effort can be devoted to improve performance. An issue which is of greater concern to the inefficient DMUs is what factors that causes the inefficiency? To answer this question, much effort has been devoted to breaking down the overall efficiency into components so that the sources of inefficiency can be identified. One type of decomposition focuses on the structure of the DEA model.

Traditional DEA models consider all DMU activities as a black box and ignore the intermediate products. Therefore, the two-stage DEA model was used in this research.

Kao and Hwang (2008) measured the efficiency of non-life insurance companies with two-stage DEA model in Taiwan. They showed that there is a significant difference between marketing efficiency average and investment efficiency average. Although, they indicated that investment sub-process weakness is the main reason of insurance companies' deficiencies. The result of this research is similar to study of Kao and Hwang (2008). A two-stage DEA model is used to measure the dual impacts of operating and business strategies for the Canadian life and health (L&H) insurance industry (Yang, 2006). His result indicated that the Canadian L&H insurance industry operated fairly efficiently during the period examined (the year 1998). The result also showed that operation and business performances have significantly mutual effects. Therefore, efficiency analysis should be considered simultaneously which is similar to the result of this study that emphasis this issue.

A two-stage DEA model was used for efficiency evaluation of banks (Luo, 2003). He found that the real problem of bank inefficiency is due to marketability efficiency rather than profitability efficiency. However, there is a contradictory between his result and the result of this paper. Here we found that the investment weakness is the main reason of Iranian private insurance companies' deficiencies in the study period.

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EFFECTS OF PRIVATIZATION OF STATE OWNED FIRMS (Review Article)

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ABSTRACT

Privatization is the most common prevailing economic tactics of structural adjustment of present time. World bank and IMF have conditioned their financial support to many countries with privatization. Privatization affects all the ingredients of economy like government, organizations, employees and general public, through economic phenomena such as income, investment, efficiency, quality, wages, employment and prices.

1. INTRODUCTION

In the last two decades a massive privatization process of productive and other activities previously considered public services has taken place across the world. Privatization in developing countries has been spurred since the IMF and the World Bank started to make their assistance conditional on privatization (Perotti, 2004).

Privatization is critical and politically sensitive government activity that has led to fundamental shifts in the relationship between the private and public sectors of the jurisdictions of many countries. The role and scope of privatization have increased both in the form of contracting out of public services and in the outright purchase of government enterprises by the private sector on the national and international levels (Prizzia, 2005).

A change in ownership changes the structure of information, incentives and control, affecting operating decisions and thus economic performance. Privatization, by limiting the state's ability to redirect the enterprises' activities in ways that promote short-term political objectives, enhances economic efficiency. The key difference between public and private firms is that the former maximize an objective function that is a weighted average of social welfare and the bureaucrat's personal agenda. Under competitive market conditions, private and social objectives are more closely aligned and externalities smaller, so that private ownership is likely to have an advantage. In conclusion, private ownership has efficiency advantages over public ownership under a competitive market structure (Anonymous, n.d).

Within the basic welfare services, privatization has been used to refer to an increase in the individual's responsibility for his or her own welfare. This arises from the state's attempt to delineate more explicitly its commitment to citizens' welfare and may also reflect citizens' own demands for alternative services (ILO, 2001).

Privatization encompasses a wide range of social consequences, and a growing concern over the negative repercussions of privatization has spawned research worldwide (Prizzia, 2005). In this regard researchers have conducted several studies to evaluate the benefits and drawbacks of privatization. Following are few researches wherein different aspects of privatization causing benefits and harms have been studied. This study is dedicated to find out the negative and positive aspects of privatization on the society.

1.1 Definition of Privatization

Privatization encompasses the many ways in which the private sector assumes functions that were previously carried out by the government (Aktan, n.d.). According to Pamacheche et al. (2007) privatization is supposed to be undertaken to re-deploy assets from the public to the private sector, where the assets are expected to be used more efficiently.

Pamacheche et al. quoted a definition of privatization by the World Bank as:

“A transaction or transactions utilizing one or more of the methods resulting in either the sale to private parties of a controlling interest in the share capital of a public enterprise or of a substantial part of its assets”, or “the transfer to private parties of operational control of a public enterprise or a substantial part of its assets”

According to ILO (2001) privatization is the transfer from the public to the private sector of assets in terms of ownership, management, finance or control. In its narrowest sense it is the sale of public assets to the private sector, but it has also been linked to a reduced regulatory role of government, linked to policies of liberalization and deregulation.

2. WHY PRIVATIZATION

Privatization encompasses the many ways in which the private sector assumes functions that were previously carried out by the government. Privatization also fosters competition and thereby results in efficiency and effectiveness within sectors. Competition is very important to obtain more efficient and effective public services (Aktan, n.d.). Beginning in the mid-1980s governments and citizens came to recognize the drawbacks of government control of enterprises. Competition was restrained, which resulted in lower quality of goods and reduced innovation. Citizens were deprived of lower prices and of choice. The international competitiveness of state-controlled enterprises was suffering, which often resulted in the need for growing government subsidies. In addition, rather than focusing on the business aspects, many governments-controlled corporations had become grazing grounds for political appointees

or vote winners through job allocations. As a result, many government-owned enterprises excelled in losing money and governments are increasingly recognizing that it is possible to reduce the cost of governing by changing their role and involvement in the economy (Nalingigwa, n.d.).

Therefore according to Charles W. Howe Professor of Economics University of Colorado at Boulder The World Bank and The International Monetary Fund has been pushing client countries toward privatization and Perotti, (2004) **asserted that** in developing countries the IMF and the World Bank has made their assistance conditional on privatization. Similarly Borner (2004) of University of Munich in discussion paper revealed that during the last decade, international organizations have promoted privatization as a prerequisite for economic development. The idea is that privatization of the state-owned sector enhances the efficiency and competitiveness of an economy.

3 EFFECTS OF PRIVATIZATION.

3.1 EFFECTS ON GOVERNMENT REVENUE AND COSTS

One of the objectives of privatization would be to raise revenues for the government. This strategy would be important when the government encounters financial crises (Aktan n.d.). Therefore many governments have seen privatization as a source of fiscal revenue and have initiated privatization programs with this as an important objective. This is particularly true of governments that must reduce fiscal deficits as part of structural adjustment programs.

Nalingigwa (n.d.) is of the view that through privatization, governments can cut their budget cost and can use proceeds from privatization to fund other pressing domestic needs and still ensure that more efficient not fewer services are provided to their citizens. Similarly Pamacheche and Koma (2007) reported that reducing government debt a number of governments have been able to raise huge sums of money from privatization transactions. These financial resources have enabled the governments to sustain macroeconomic stability and repay huge portions of government debts. As a result of privatization, many governments have also reduced the need for huge subsidies to public enterprises that can be redirected to other development initiatives with the consequent impact of strengthening their fiscal positions. Pamacheche and Koma also found out that during the period 2000-2005, Sub-Saharan Africa raised US\$ 11 billion in privatization proceeds, representing 3% of the global total for developing countries. A total of 960 transactions were conducted in 37 countries of the region, and this represents the third highest number of transactions, behind Europe and Central Asia and Latin America.

But Nancy and Nellis (2003) by analyzing many research reports gave an alternate view that privatization's economy-wide effects on the government budget growth, employment and investment are less established. The IMF reviewing 18 privatizing countries, reported that substantial gross receipts from privatization, accounting for nearly 2% of annual GDP. Governments have generally ended up with about half that amount reflecting the high costs of financial clean-ups, labor downsizing and sales assistance. Even 1% of GDP is substantial, but the long-run effects on government revenue generally come not from

sales proceeds (a one time infusion) but from the elimination of subsidies to state enterprises and from subsequent increased tax revenues from more profitable and productive private enterprises. Governments as diverse as Mexico, Cote d'Ivoire and Mozambique received, in the first few years following sales, more from privatized firms in taxes than from direct proceeds of sales. A "flow of funds" analysis in Bolivia shows, in the first four years following sales, a positive financial return to government of US\$ 429 million—and this in a case where government received not a penny of the sales proceeds. The IMF concluded that markets and investors regard privatization as a healthy signal of the political likelihood that government will stick with its overall reform program, implying somewhat higher investment rates in the economy overall. Nalingigwa (n.d.) also pointed out that in Tanzania the objective of raising money directly by selling has not been met since the contribution of money from sales averagely per year was below 5% in domestic revenue. On the other hand the objective of generating additional tax revenue has been met since most privatized enterprises have increased production capacity with corresponding high profit, hence contributed high revenue by tax.

3.2 EFFECTS ON GENERAL PUBLIC

3.2.1 Effects On Public Welfare

How much welfare to the citizens is brought by privatization is embedded in following reports.

Nalingigwa (n.d.) is of the view that privatized goods and services are often more competitive and more innovative as in Tanzania after privatization the quality of goods and services improved and some of them have been awarded international quality certification.

Pamacheche and Koma (2007) concluded that privatization in Africa brought about numerous benefits, and empowered the private sector. The benefits that accrued to the nation include efficiency gains, stable and reduced prices, reduced government subsidies that can be redirected to other development initiatives, at times, payment of dividends to government and increase in employment, to mention a few. Pamacheche and Koma further argue that the majority of cases studied show that consumers are benefited from privatization. This is as a result of lower prices emanating from the efficiency improvements following privatization. For example, privatized energy firms were able to reduce prices sharply as a result of their ability to limit the amount of stolen or unbilled electricity. Also, because investment constraints were removed, privatized firms were in a better position to avail their products to the public. Evidence suggests that privatized firms seek more aggressively to improve quality and introduce new products to satisfy the consumer.

Khalid (2006) quoted Clarke et al (2003) who using a combination of country case studies and cross-country analyses concluded that privatization of banks improves performance as compared to continued state ownership.

However privatization caste negative impacts on public as revealed by some research studies.

Nancy and Nellis (2003) reported negative impacts of privatization by stating that at the heart of popular criticism is a perception that privatization is fundamentally unfair in both concept and implementation: it is seen as harming the poor, the disenfranchised, the workers, and even the middle class; throwing people out of good jobs and into poor ones or unemployment; raising prices for essential services; giving away national treasures— and all this to the benefit of the local elite, agile or corrupt politicians, and foreign corporations and investors. Nancy and Nellis concluded that the complaint is that, privatization has a negative effect on the distribution of wealth, income and political power.

Prizzia, (2005) in a paper titled “An International Perspective of Privatization and Women Workers” asserted negative impacts. According to his example, a privatized hospital in the USA, gave rise to “prestige medicine” for the rich and “no care zones” for the uninsured working poor, chronically ill and disabled. The privatization of a water system in Bolivia and an energy system in Thailand increased unemployment and decreased consumer welfare in both countries, resulting in the sudden rise of prices that culminated in a series of mass protests.

About Japan Cato (2008) expressed that the studies on mixed oligopolies revealed that in an industry that is sufficiently competitive (i.e., the number of firms in the market is sufficiently large), privatization improves welfare. Cato also opined that the sectors that are structurally complex, such as the energy industry and the water industry, are beginning to be privatized. One of the features of such industries is that the firm’s production activity often leads to environmental damage. In other words, the degree of negative externality is high, and emission or pollution make the environment harmful for the residents of the surrounding areas. While Wang et al (2009) opined that privatization unambiguously reduces the pollution levels of firms. Namely, privatization does improve the environment. Moreover, by implementing partial-privatization policy, social welfare can be enhanced.

3.2.2 Effects on Prices

In the view of Megginson and Netter (2001) it is unrealistic to expect that the effects of privatization on prices will be the same in every industry. However market structure of an industry, as well as firms’ productivity will affect consumer prices. Studies that examine the effect of privatization on allocative efficiency are rare.

According to Pamacheche and Koma (2007) the majority of cases studied show that consumers benefit from privatization. This is as a result of lower prices emanating from the efficiency improvements following privatization. For example, privatized energy firms were able to reduce prices sharply as a result of their ability to limit the amount of stolen or unbilled electricity.

Prices by privatization decrease, because cost become low as reported by Lindqvist (2007) that being residual claimants, private owners have stronger incentives to cut costs than public employees.

La Porta and Lopez-De-Silanes (1999) & Nancy and Nellis (2003) analyzed Mexican firms from a variety of industries and found that consumer prices increase after privatization. In their

analysis of the water and sewerage industry of England and Wales, Saal and Parker (2001) found that output prices increased, and furthermore, total price performance indices revealed that increase in output prices have outstripped increase in input costs. Prizzia (2005) reported that the privatization of a water system in Bolivia and an energy system in Thailand increased unemployment and decreased consumer welfare in both countries, resulting in the sudden rise of prices.

4.2.3 Effects on Quality of Goods and Services

Nalingigwa (n.d.) in his paper “Impact of Privatization on Public Enterprises Case of Tanzania” asserted that quality of goods and services improved and some of them have been awarded international quality certificates, for example The Mbeya Cement Company (MCC) which recently became the East Africa’s first cement company to earn ‘International ISO 9002 Award’ for quality standard in the year 2000, Tanga Cement Company and Tanzania Cigarette Company, Tanzania Breweries Limited, Mtibwa Sugar Company, Kilombero Sugar Company, Tanzania Tea Packers and Canvas Mills. Nalingigwa also stated that improving the quality of goods has led them to compete to the international markets, for example products from Blanket & Textiles Manufacturing Ltd, products from Handcrafts Marketing Company. Tanzania Cigarette Company and Tanzania Breweries Limited are among top 20 competitive companies in Africa. Now Cement from Tanzania is marketable to neighborhood countries such as Malawi, Zambia, Rwanda and Burundi. Beers from TBL are sold to Kenya, Uganda and other neighborhood countries. Canvases from Canvas Mills are sold to Army of NATO.

Pamacheche and Koma (2007) reported that the implementation of the Nigerian privatization program led to positive results in many areas. A number of firms recorded improvements in output in the post privatization years. Majority of cases studied show that consumers benefited from privatization. Evidence suggests that privatized firms seek more aggressively to improve quality and introduce new products to satisfy the consumer.

1-1-1-1-3.3 EFFECTS ON FIRMS

1-1-1-2- 3.3.1 Effects on Efficiency, Performance and Profitability of Firm

Several researchers studied the impacts of privatization on efficiency, performance and profitability concluding positive and negative impacts. Few are quoted here:

Privatized goods and services are often more competitive and more innovative (Nalingigwa, n.d.) because privatization fosters competition and thereby results in efficiency and effectiveness within sectors. Competition is very important to obtain more efficient and effective public services (Aktan, n.d.). Further under private ownership, the firm attempts to maximize profit, which is a component of social welfare, so that private ownership is likely to have an advantage (Anonymous, n.d).

Nalingigwa (n.d) expressed that the facts have demonstrated that privatization in some cases has improved the levels of production and profits after investment, and changes in management and labour practices. However Willner and Parker (2002) suggested after their analysis that the way in which a company is organized may be more important than ownership from the standpoint of cost efficiency.

Megginson and Netter (2001) after reviewing 65 empirical studies at the firm level, in a wide range of sectors and across countries in different regions and of different income levels, concluded that “privately-owned firms are more efficient and more profitable than otherwise-comparable state-owned firms”

Nancy and Nellis (2003) asserted that the shift to private ownership usually improves a firm’s performance and post-privatization profitability has generally increased. Technical analyses of the outcomes of privatization are generally positive. Privatization has increased profitability, returns to owners and investors, economic efficiency, welfare and growth.

Nancy and Nellis quoted examples of improvement of efficiency of firms after privatization such as: 1- in Peru, a state-run electricity utility was inefficient initially, with poor management, high technical losses, poor revenue collection, and irrational pricing. Its performance was highly inequitable, providing virtually no services to poor neighborhoods, while under-pricing or failing to charge and collect fees in middle-class and rich neighborhoods or from large industrial users. Privatization increased efficiency with offsetting effects on overall. 2- in the United Kingdom, privatization of the electricity sector provided large initial efficiency gains, but underestimation of these gains, combined with non-aggressive or incomplete regulation in the years immediately after sale, meant that the new owners, and not consumers, captured most of the initial gains. 3-in Brazil, privatization of state telecommunications monopolies brought huge efficiency gains, with greatly increased coverage and quality for consumers and for productive sectors for which communications is a critical input. But underpricing of the firm to ensure the sale was successful.

Khalid (2006) quoted Clarke et al (2003) who using a combination of country case studies and cross-country analyses concluded that privatization of banks improves performance as compared to continued state ownership. However Khalid analyzed the privatization effects of banking sector in Pakistan and expressed that the results obtained show little evidence of improvement in most of the indicators of financial health as a result of the privatization and liberalization policies pursued so far in the banking sector of the country. In particular, the performance of the privatized banks has been less than satisfactory due mainly to the poor showing of the Allied Bank, the ownership of which was transferred to its employees group. Khalid opined that benefits of privatization in the form of improved performance indicators are likely to emerge over a longer period of time.

Pamacheche and Koma (2007) opined that several studies on privatization in Africa reveal that it brings about numerous benefits, and empowers the private sector. The benefits that accrue to the nation

include efficiency gains, stable and reduced prices, reduced government subsidies that can be redirected to other development initiatives. The majority of cases studied show that consumers benefited from privatization. This is as a result of lower prices emanating from the efficiency improvements following privatization. Pamacheche and Koma further reported that in almost all cases studied, company performance improved after privatization. They referred a World Bank research pointing out a performance improvement in eight out of nine developing country cases studied. They also referred sample of sixty company cases (studied by Megginson et al. 1994), which revealed a substantially improved performance in 75% of the cases. Generally, company profitability surged in a majority of cases and privatization removed existing constraints on new investment and access to capital. Also, through output growth outpacing the growth of labor and other inputs, privatization has the effect of raising productivity and efficiency. This is the situation in a number of cases such as Togo, where performance was observed to have dramatically improved following privatization. In situations like this, enterprises were able to adapt their production to meet real demand. However, cases in other countries such as Mali did not yield similar results. The poor handling of the privatization process itself explained the lack of improvement in efficiency and productivity. Companies were sold to buyers who lacked the ability to run such enterprises or the ability to pay the purchase price, payable in installments. Another source of difficulty in some countries was continued government interference in the aftermath of privatization. In almost all cases studied, company performance improved after privatization. However according to Earle (2006) “efficiency effect” of privatization, however, implicitly assume that the firm’s output remains constant or at least does not increase.

Pamacheche and Koma (2007) are of the view that privatization encourages competition and hence leads to all the benefits associated with it such as improved customer service and reduced prices. Privatization has given impetus to market reforms in many countries. To have an impact, it is important to coordinate the activities of the bodies responsible for privatization and those responsible for competition.

1-1-1-3-3.3.2 Effects on Administration of Companies

Khalid (2006) is of the opinion that generally, the case for privatization of state owned enterprises can be grouped around three main themes, i.e., competition, political intervention and corporate governance. The competition argument states that privatization will improve the operation of the firm and the allocation of resources in the economy, if it results in greater competition. Privatization can improve efficiency even without changing market structure if it hinders interventions by politicians and bureaucrats who would like to use the SOEs to further their political or personal gains.

Carreira and Deza (2009) asserted that privatization implies a change in the administration of companies. One of the main differences between public and private firms is the diversity of goals. While state-owned enterprises tend to combine specific strategies with objectives of general interest, apart from

the purely corporate ones, private businesses, by contrast, are exclusively profit-oriented

3.3.4 Effects on Firms Mechanization by Introducing Modern Technologies

Technological advancement or progress encompasses invention and innovation. Aktan (n.d) expressed that privatization fosters and initiates technological advancement, because, competition as a result of privatization forces entrepreneurs to introduce new methods of production which will generate additional output with the same amount of inputs.

Nalingigwa (n.d.) concluded that introduction of modern technology is as a result of privatization. In Tanzania production of privatized companies increased due to mechanization. Sugar Companies have led to the increase of sugar production. Similarly computerized beer production by TBL and the use Automatic Teller Machine by National Micro-finance Bank and Cooperative Rural Development Bank employ the withdrawal of money courtesy of the gains of privatization.

3.4 EFFECTS ON EMPLOYEES

3.4.1 Employee Layoffs

Politically the most difficult and feared impact of privatization is employee layoffs. The fear is justified because many public enterprises are greatly overstaffed, as they are often used as instruments of job creation (Anonymous n.d).

Prizzia (2005) asserted that commonly accepted trade-offs that occur throughout the privatization process typically create an imbalance of accrued benefits to various segments of the workforce and members of the community in general. There is concern that privatization negatively impacts the most vulnerable segments of the workforce. Prizzia illustrated that the privatization of a water system in Bolivia and an energy system in Thailand increased unemployment and decreased consumer welfare in both countries. Therefore Earle (2006) asserted that the greatest opposition to privatizing a firm usually comes from the firm's own employees, who are fearful of wage cuts and job losses.

According to Aghaei, et al. (2010) on privatization employees, feel job insecurity and have fear losing their jobs. Fear can pass to other employees and trigger a chain reaction that ultimately leads to the widespread fear in employees, of losing their jobs which causes increased job stress. Nancy and Nellis (2003) are of the view that at the heart of popular criticism is a perception that privatization is fundamentally unfair in both concept and implementation: it is seen as harming the poor, the disenfranchised, the workers, and even the middle class; throwing people out of good jobs and into poor ones or unemployment. It is clear that public enterprises were overstaffed, often severely so; that in preparing for privatization, public enterprise employment numbers declined, sometimes greatly, and that these declines generally continued post-privatization. Overall, the evidence indicates that more people have lost jobs than gained them through privatization.

3.4.2 Effect of Privatization on Employment

According to Nalingigwa (n.d.) the fear of job losses is the stumbling block to privatization.

Where the government's power base is in urban centers, trade unions make employment the number one issue in the privatization deal. Despite the concern about possible job losses, studies undertaken by World Bank showed that "African government have done very little to track the effects of privatization on employment." Not only that privatization is causing unemployment in Tanzania, most of workers lost their jobs before Privatization started, because more than 70 enterprises were closed and workers lost their jobs. The reduction of human labour force is necessitated by the fact that new and modern technologies are efficient and mechanized. Also the employment has been increased outside the enterprises for example all cement industries, and this has made to rapid increase of construction works and production of bricks business also has given the employment to owners of transport vehicles and of sugar industries have increased employment of cutting sugar canes and out growers. Nalingigwa concluded that despite all these successes the government goal to employment rate has not been met since most of workers lost their job at aftermath of privatization. The very fact that privatization has made it possible for a low income and low saving's countries like Tanzania to avoid institutional failure inherent in a public sector company has to be highly appreciated.

In the light of evidences Pamacheche and Koma (2007) suggested that privatization is in the interest of employees, although there are a few exceptions to this. Such benefits take three forms: (a) employment levels tended to increase after privatization; (b) remuneration packages tended to improve after privatization, and; (c) many employees bought shares at discounted prices in the privatized firms and these benefited when share prices eventually rose. In cases where employees lost their jobs as a result of privatization, such employees tended to receive generous severance packages. Severance and retirement incentives buy labour support and allow privatization and its benefits to happen and, where unemployment insurance systems are not in place, mitigate the social impact of layoffs. In some cases, the reduction in the level of employment took place prior to privatization and as such, could be attributed to the need for greater efficiency, and not just privatization. In cases where shut down enterprises were re-opened by private investors, employees benefited directly.

3.4.3 Effect on Wages

In a research about Tanzania Nalingigwa (n.d) reported that salaries and other incentives for workers have been increased and improved, for example before privatization the lowest salary plus other incentives at Tanga Cement Company was 120 USD per month, now after privatization the salary is more than 360 USD. Tanzania Breweries Limited for lowest salary was 72 USD per month before privatization and after raised to 96 USD per month.

Earle (2006) is of the view that the implications of privatization for wages are also ambiguous. New owners may reduce wages as part of a general cost-cutting policy, but if the firm expands, it may have to offer higher wages to attract new workers. New private owners may also be more likely to adopt skill-biased technologies, resulting in a compositional shift toward higher-paid workers. Depending on

the relative strength of such factors, wages may either rise or fall as a result of privatization. The Upjohn Institute, in collaboration with partners from Heriot-Watt University in Edinburgh and the Central European University Labor Project in Budapest, has recently undertaken an empirical analysis of the effects of privatization on the wage bill, employment, and wage rates of firms in Hungary, Romania, Russia, and Ukraine—countries where thousands of businesses were privatized in a relatively short period of time during the 1990s. These four countries had varied success with privatization reforms. Hungary was considered one of the most successful, Russia and Ukraine were less successful, and Romania was somewhere in the middle. The new research in this project, however, finds no evidence of large systematic negative consequences of privatization for employment and wages.

According to Pamacheche and Koma (2007) privatization is in the interest of employees and after privatization; remuneration packages tended to improve.

3.4.4 Effects on Employees' Health and Performance

McCarthy et al expressed results of their study that majority of respondents reported deterioration in conditions of employment and operational participation since privatization.

Aghaei, et al. (2010) concluded that trust is a cornerstone of cooperative relationship among people. Once an organization begins changing, its employees may face threats to their jobs, roles, positions, and resources. These threats can lower the employees' trust in their organization as a whole which can be negatively reflected in employees' attitudes toward their work. Aghaei, et al found that stress is a general and global phenomenon encompassing man's psychological, physical, familial, and social dimensions. Researchers have made great efforts studying the effects of this stress on mental and physical health of employees to better understand its nature. When individuals contemplate the stress of organizational change, their perceptions, choice of reactions, and working attitudes all strongly influence whether the change will be successful and if the newly reconstituted organization will function efficiently or not. Aghaei et al concluded that after privatization, the job stress of employees increased significantly. This increase was associated with a decrease in mental health. They illustrated a recent study conducted in Thailand, which concluded that the organizational change has a significant association with more psychological stress, which in turn, resulted in poor job performance. In Canada after privatization employees of a large healthcare provider surviving from downsizing had a higher degree of delay and also a higher degree of stress due to less control exercised over their jobs. Consequently, they enjoyed less job satisfaction and living standards and worse general health. In this respect, International Labor Organization (2002) discussing safety and job health, reported that privatization, organizational restructuring and increasing the number of small business units increase unemployment, stress, alcoholism, job insecurity and prolongation of work hours, all of which lead to psychic trauma at work and private life. Moreover, it has been shown that stress and its related diseases lead to an increase in the incidence rate of indigestion, heart disease and mental disorders.

3.5 GENERAL EFFECTS

3.5.1 Effects on Capital Investments

Many researchers pointed out that privatization causes increase in investment. Nalingigwa (n.d.) expressed that in privatization the conversion of government monopolies into market-driven activities tends to attract foreign investments capital, bringing additional know how and financing to enterprises.

According to Pamacheche and Koma (2007) privatization indirectly signals the level of a government's commitment to freer markets and as such, encourages greater green-field investment and other forms of investment not directly related to privatization. Therefore through privatization, many countries have been able to attract significant amounts of foreign investment. This is the case in many Latin American countries. In some African countries, however, privatization accounts for a minimal share of foreign investment due to restrictions placed on such investments. For depicting the quantitative impact of privatization on investment Pamacheche and Koma referred a World Bank study by Frank Sader (1993) who suggests that privatization has a huge impact on investment decisions and further states that an extra 38 cents in new investments is generated for every dollar of privatization revenue. It further documents that financial and infrastructure privatizations have the greatest impact on foreign direct investment. The findings of the study by Adam Smith Institute support privatization efforts and emphasize the need to pursue privatization more rigorously in the years ahead.

3.5.2 Effects on Industrial Relations

McCarthy et al (n.d) asserted that privatization could be expected to create significant changes in the industrial relations environment of enterprises that move from public to private ownership. Employees believe that privatization has resulted in a substantial strengthening of the bargaining position of management despite employees' substantial shareholdings within the firm. Furthermore, increased collaboration between unions and management is associated with advantages to management rather than unions.

According to Nalingigwa (n.d.) the government's power base is in urban centres, where trade unions make employment the number one issue in the privatization deal. They impose collective bargaining and set the levels of end of service benefits and severance pay.

Hebdon (2006) who studied labor effects of privatization of public services in New York State found that local government privatization have some harmful effects on workers. Few local employers had adjustment policies to protect affected employees and disproportionate negative impacts were found on women and minorities. Privatization was also found to have significant de-unionizing effects.

4. PUBLIC PERCEPTIONS OF PRIVATIZATION

Nancy and Nellis (2003) narrated that public perceptions of privatization are generally negative—and they are getting worse. For example: a majority of people surveyed in 2001 in 17 countries

of Latin America disagreed with the statement “the privatization of state companies has been beneficial” and the extent of disagreement was much greater than three years earlier. More than two thirds of 1,600 Russians interviewed in 2001 thought that they had lost more than gained from the privatization of state property; only 5% said the opposite. Of Sri Lankans polled in 2000, most thought that privatization had increased poverty and raised the cost of living, and over 60% opposed the privatization of the remaining state-owned firms. In Uruguay, a plebiscite revoked a privatization law narrowly passed by parliament; South African Nongovernment Organization (NGOs) and community activists have formed an Anti-Privatization League; in Mexico President Vincente Fox has been unable to make any progress on a promise to begin privatization of the energy sector; and in India parliamentary opposition halted (temporarily) the national privatization program in September of 2002.

5. CONCLUSION

In the light of the literature studied and cited it is concluded that through careful structuring of the market and regulatory arrangements, communities and citizens stand to gain much through the judicious use of privatization as well as other reforms (Prizzia 2005) because privatization encourages competition and hence leads to all the benefits associated with it such as improved customer service and reduced prices (Pamacheche and Koma 2007).

Most technical assessments classify privatization as a success but Borner (2004) concluded that the success of privatization depends on efficient incentives of the political leadership, supported by a functioning economic environment. Whereas for the success of privatization Bradburd (1992) suggested that greater consideration must be given to other objectives of regulation including distributional concerns and the creation of confidence in the stability of the environment for business

Privatization, especially in transitional and developing economies, is seen as fundamentally unfair both in conception and execution, and it is widely and increasingly unpopular. However the overall point is that there can be no simple prediction about the distributional effects of privatization; the impact depends on at least three factors: initial conditions, the sale event, and the post-privatization political and economic environments (Nancy and Nellis 2003).

6. RECOMMENDATION

The lesson learnt from the studies of many researchers it is recommended that:

- 1- Privatization has given impetus to market reforms in many countries. To have an impact, it is important to coordinate the activities of the bodies responsible for privatization and those responsible for competition (Pamacheche and Koma 2007)
- 2- Failure to recognize the inequities and social costs, brought about by a growing global economy dominated by privatization, is not only politically dangerous, it is socially irresponsible. International studies show that social factors such as job security, occupational stress, equity, social services, the welfare of consumers, and responsibility to all stakeholders in the affected community and its natural environment should be serious considerations in privatization activities (Prizzia 2005).
- 3- If privatization is to yield strong benefits to society as a whole, it needs to be managed to ensure transparency, equity, and fairness and consideration must be given to its impact on workers, employers,

owners and investors, consumers, management and all other stakeholders (Prizzia 2005).

Moreover, privatization's promised benefits of private ownership for the affected communities appear to have exceeded the measured gains to date. Perhaps the message from measured outcomes or past privatizations is the need for thoughtful consideration of qualitative factors..

4- to lessen the side effects of privatization, organizations should support their employees sufficiently to enable them to adapt themselves to the changes, through allowing their employees to participate in making decisions concerning the functional changes in the system to prevent or reduce the subsequent job stress (Aghaei et al. 2010).

5- As the benefits of privatization in the form of improved performance indicators are likely to emerge over a longer period of time (Khalid 2006) so it also required to wait observe the effects patiently and should not make any conclusion immediately.

6- Greater consideration must be given to other objectives of regulation including distributional concerns and the creation of confidence in the stability of the environment for business (Bradburd, 1992).

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COST BASED RISK EFFICIENCY IN INDIAN COMMERCIAL BANKS

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ABSTRACT

Failure to recognize undesirable outputs under states the cost efficiency of a decision making unit, in this case a commercial bank. Price inefficiency is found pervading the public, private and foreign sector banks as they fail to procure their inputs at constant prices. Non-Performing Assets (NPAs) is an undesirable output that harms the performance of a commercial bank. This study decomposes economic efficiency of 63 commercial banks into the product of Price, Risk and Farrell's input cost efficiency.

The foreign sector banks operate relatively in a risk free environment but at relatively high price inefficiency. The public sector banks operate at a relatively high risk environment.

Keywords: DEA, Non-Performing Assets, Cost efficiency, Price Efficiency and Cost Based Risk efficiency.

JEL Classification: G21.

1. INTRODUCTION:

Planning era of India commenced from the year 1950. At that time it was recognized that banking sector was a key instrument for rapid economic development of India. Then the Imperial Bank of India was nationalized in the year 1955, renamed as State Bank of India, now, the largest of all Public, Private and Foreign sector banks. In the year 1959 the State Bank of India Act was passed and by enclosing seven states as its associated banks the domain of SBI expanded. SBI and its associates were assigned the task of serving India towards economic development by meeting the credit needs of the economy. All other banks were privately owned till 1969. During 1947-1960 the commercial bank credit was channeled more to meet the requirement of urban based customers, Industry and Trade than Agriculture and Small scale Industries. To fulfill the social objectives like the welfare and well being of all sections of people and for uniform distribution of bank credit, under nationalization Act 14 the largest private banks were nationalized in first phase. In second phase another 6 private banks were nationalized in the year 1980.

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The private and public sector banks coexisted in highly regulated environment where their activities were closely monitored and controlled through regulated entry and strict branch licensing.

During 1969-1990, 3000 rural branches were opened where commercial banks did not exist (Kumar and Gulati, 2009). All the regulatory measures led to a phenomenal growth of Indian Banking Sector, in particular the public sector banks. In 1990 ninety percent of commercial bank business was accounted for by Public Sector Banks. Rapid growth, excessive focus on social objectives rendered many banks inefficient, unprofitable and under capitalized (A.Sensarma, 2005).

In 1991 Indian commercial banks were found to face financial repression. To make these banks perform better the Govt., and RBI intervened and introduced anti-repression policies following the Narasimham Committee (I) recommendations in 1991. The reforms included interest rate liberalization, entry deregulation, reduction of reserve requirements (CRR and SLR) and removal of credit allocation.

While the first stage reforms were in progress the second stage reforms were introduced in the year 1998 by the policy makers. These reforms were based on Narasimham Committee (II) recommendations. The objectives of these reforms were to increase Capital Adequacy Ratio (CAR) from its minimum level, recognition of market risks and their effective management. The reforms also required introduction of Asset Quality Management system, transparency and disclosure practices.

RISK IN COMMERCIAL BANK BUSINESS:

Risk is integral part of bank business. The risk faced by a bank is a combination of environmental and volitional risks. The former is viewed to occur due to exogenous factors such as changes in macro-economic variables. The later risk arises due to endogenous factors inherent in the decision made by a bank (Joshi and Joshi, 2002). The policies, laws, regulations and informal controls which prevent proper functioning of the banking sector lead to exogenous risk. Banks also face systematic risk which is exogenous, that tends to increase in depression and decrease during expansion.

Regulation of Cash Reserve Ratio (CRR) and Statutory Liquid Ratio (SLR) promote or ease exogenous risk in banking business. During 1960s and 1970s the Cash Reserve Ratio was about 5% and in 1991 it reached a level of 15%. 3% and 5% were legal minimum and maximum levels of CRR respectively. In 1992 SLR was 38.5% while the upper limit existed at 40%. The Indian commercial banks were left with 14.5% of bank credit at their disposal to perform their own business. To improve banks' environment Govt., and RBI intervened. Even in intervention of the reforms the commercial banks still faced exogenous risk due to non-discretionary factors, while some of them ease and some promote risk.

2. NON-PERFORMING ASSETS:

Credit is most certainly the largest class of risk faced by commercial banks all over the world. We assume exogenous credit risk is captured by the size of non-performing assets. Prior to the

implementation of first stage reforms in 1991 the Indian commercial banks in particular the public sector banks suffered from the presence of Non-Performing Assets (NPAs). NPA means an asset or account of borrower, which is classified by a bank as substandard, doubtful or loss asset according to the norms suggested by the country's Central Bank. NPA does not yield any income to the lender bank in the form of principal and interest payments. NPAs reflect the health of a commercial bank and the presence of credit defaults affects the profitability and net worth of the bank.

Management of NPAs requires provisions which reduce the overall profits and shareholders value. RBI imposed provision norms against asset classification. It ranges from 0.25% to 100% from standard to loss assets respectively (Joshi and Joshi, 2002).

A raise in NPAs and their provisions lead to depletion of loanable funds, insufficient funds for investments, fall in the value of equity share and failure to attract deposits. The monetary constraints additionally imposed by NPAs fail to usher new technology and to use human resource to their potential. Thus, NPAs and the associated provisions lead to deterioration of the productivity of inputs such as labour and fixed capital; and non-interest income. **Thus, an increase in NPA deteriorates input cost and technical efficiency which signals input losses.**

3. MODELLING COMMERCIAL BANKS – CHOICE OF TECHNOLOGY:

Performance of banks and bank branches were studied by a number of analysts, but unfortunately there is no general consensus not only in choice of technology but also inputs and outputs (Humphrey 1985, 93; Berg, et.al., 1991, 93; English et.al., 1993; DeYoung. R, 1997; Mester Loreta 1997; Casu and Giradone 2002; Sathey 2003);

The commercial banks can be modeled in either production or intermediation perspective. The production approach (Benston, 1965) views a commercial bank as a financial institution that combines its inputs to produce services to the customers.

Under the intermediation approach financial institutions are viewed to intermediate funds between depositors and borrowers (Sealey and Lindley, 1977; Piyu, 1992). This approach views that banks produce intermediation services using deposits and other liabilities such as loans, securities, and other investments as inputs (Kumar and Gulati, 2009). While the production approach views deposits as output, the intermediation approach treats the same as input.

In this study we have followed production approach to model a commercial bank. Number of Employees and fixed assets are DEA inputs. Applying stepwise method (Wagner J.M et.al., 2007), DEA outputs are selected. Deposits, Loans and Advances and non-interest income are outputs of DEA.

4. DATA:

The data used in this study are collected from Reserve Bank of India Bulletins (2007). Since the

analysis required to compute factor minimal cost, input prices are necessary. To find unit price of labour, total wages is divided by number of employees. Cost of funds proxy unit price of fixed assets.

5. METHODOLOGY:

R.W. Shephard (1970) proposed input set $L(u_0) = \{x : x \text{ produces } u_0\}$. u_0 is exogenously given output vector. The input sets are built on axiomatic foundations. Factor minimal cost, can be viewed to arise solving optimization problems:

$$Q(u_0, p_0) = \text{Min}_x \{px : x \in L(u_0)\}$$

where $Q(u_0, p_0)$ is minimum cost, u_0 and p_0 are exogenously given output and input price vector, respectively.

(a) COST EFFICIENCY:

Cost efficiency estimation dates back to Farrell (1957), who provided a non-parametric method of estimation. The following figure illustrates Farrell’s cost efficiency.

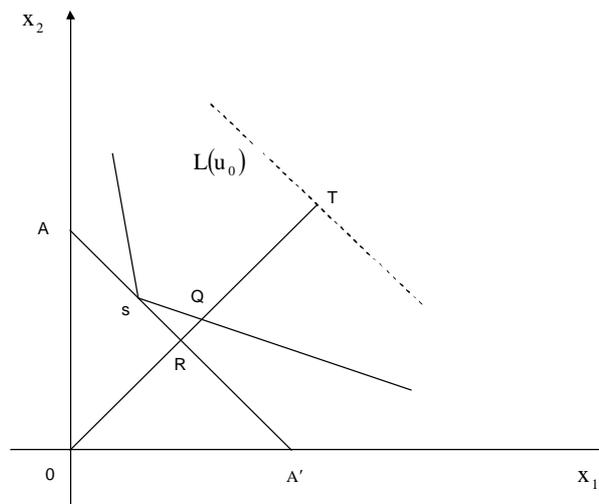


Figure (1): Farrell’s Cost Efficiency

In the above figure $L(u_0)$ is the input level set bounded below by its isoquant. The production unit that operates at ‘T’ is inefficient. AA' is the cost line which is tangent to the isoquant of $L(u_0)$ at S at which factor cost is minimum.

$$\text{Cost at T: } p_{10}x_1^T + p_{20}x_2^T$$

$$\text{Cost at } S : \quad p_{10}x_1^s + p_{20}x_2^s = Q(u_0, p)$$

$$\text{Farrell's Cost Efficiency :} \quad \frac{Q(u_0, p)}{p_{10}x_1^T + p_{20}x_2^T}$$

(b) COST BASED RISK EFFICIENCY:

Inherent in every activity of a commercial bank, there is an element of risk. Risk is the potentiality that both the expected and unexpected events cause an adverse effect on the bank's capital and earning. Among all risks faced by a commercial bank the most important one is credit risk.

Two important contributors to exogenous risk are govt's intervention into banks' business through its monitory policies, intervention of Reserve Bank of India through its monitory policies. Depressed economy promotes risk and an expanding economy eases risk. Thus, the state of economy also contributes to exogenous risk. Due to liberalization world over, competition from within and outside the country has increased which resulted in multiplicity of risks both in number and volume resulting in volatile markets. The credit risk of a commercial bank reflects in its non-performing assets (NPAs) and the provisions allocated to control them. Such provisions to control NPAs lead to depletion of inputs of a commercial bank.

Assuming NPAs as an undesirable output (given an input status), to find factor minimal cost in the presence of NPAs ($= u_{b0}$), the following optimization problem may be solved (Fare et.al., 1996):

$$\begin{aligned} Q(u_0, p_0, u_{b0}) &= \text{Min}_x \{px : (x, u_{b0}) \in L(u_0)\} \\ &= \text{Min}_x \{px : f(u_{b0})x \in L(u_0)\} \\ Q(u_0, p_0, u_{b0}) &= [f(u_{b0})]^{-1} \text{Min}_x \{p f(u_{b0})x : f(u_{b0})x \in L(u_0)\} \\ &= [f(u_{b0})]^{-1} \text{Min} \{p \hat{x} : \hat{x} \in L(u_0)\}, \text{ where } \hat{x} = f(u_{b0})x \\ &= [f(u_{b0})]^{-1} Q(u_0, p) \\ f(u_{b0}) &= \frac{Q(u_0, p)}{Q(u_0, p, u_{b0})} \\ Q(u_0, p) &\leq Q(u_0, p, u_{b0}) \\ &\Rightarrow 0 \leq f(u_{b0}) \leq 1 \\ u_{b0} = 0 &\Rightarrow f(u_{b0}) = 1 \\ u_{b1} \leq u_{b2} &\Rightarrow Q(u_0, p, u_{b1}) \geq Q(u_0, p, u_{b2}) \end{aligned}$$

$f(u_b)$ measures environmental input cost efficiency. In the present case (environmental) cost based risk efficiency. $f(u_b)$ exhibits neutral impact on the conventional inputs employed in Data Envelopment

Analysis. More is u_b , smaller is $f(u_b)$ and smaller are inputs made available for production of desirable outputs.

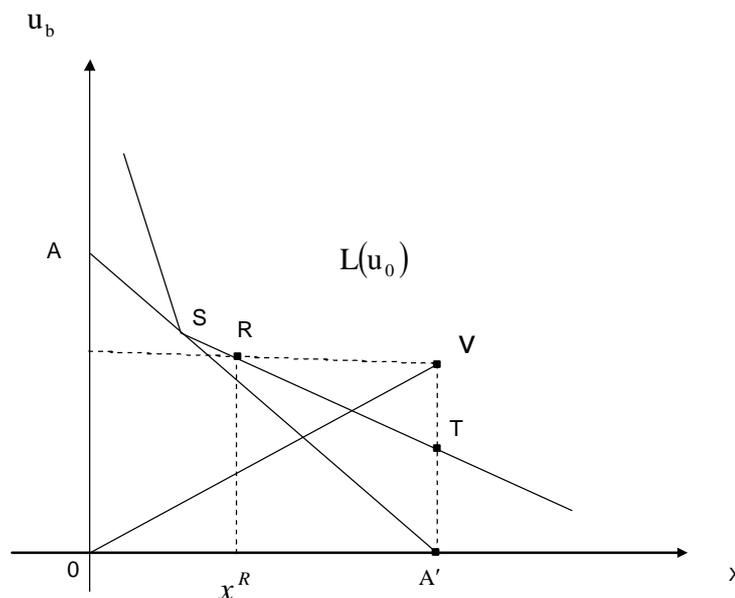


Figure (2)

In the above figure $L(u_0)$ is the input level set constituted by all the input vectors capable to produce output u_0 . The conventional input ‘x’ and NPAs ($= u_{b0}$) are measured along horizontal and vertical axis respectively. The commercial bank V is inefficient. V is compared with the point S at which minimal cost can be attained by V. Since it is assumed that u_b^v is exogenously given to estimate cost efficiency of V, it is compared with all points falling on the line segment RT. The minimum cost is attained at a point on RT which is denoted by, $Q(u_0, p, u_b^v)$

It is assumed that u_0 , p and u_b^v are exogenously given. Clearly, we have,

$$Q(u_0, p) \leq Q(u_0, p, u_b^v)$$

Following Fare et.al (1996), $Q(u_0, p)$ and $Q(u_0, p, u_b^v)$ are obtained solving the following linear programming problems:

$$Q(u_0, p) = \text{Min}_x px$$

subject to

$$\sum_{j=1}^n \lambda_j x_j \leq x$$

$$\sum_{j=1}^n \lambda_j u_j \geq u_0$$

where $\lambda_j \geq 0$

x_j and u_j are the input and output vectors of jth production unit.

$$Q(u_0, p, u_{b0}) = \text{Min}_x px$$

subject to

$$\sum_{j=1}^n \lambda_j x_j \leq x$$

$$\sum_{j=1}^n \lambda_j u_j \geq u_0$$

$$\sum_{j=1}^n \lambda_j u_{bj} \leq u_{b0}$$

where $\lambda_j \geq 0$

The ratio $f(u_{b0}) = \frac{Q(u_0, p)}{Q(u_0, p, u_{b0})}$ measures **cost based risk efficiency**.

(c) PRICE EFFICIENCY:

The public, private and foreign sector banks which operate on Indian soil procure their inputs at different prices. Price variation exists not only between sectors but within sectors also. Such commercial bank that procures its inputs at lowest cost is considered to be price efficient.

Let

$$p_i^{\min} = \text{Min}_{1 \leq j \leq n} p_{ij}, \quad i = 1, 2, \dots, m$$

where p_{ij} is unit price of ith input of jth commercial bank. Allowing no price variation we solve the following linear programming problem:

$$Q(u_0, p^{\min}) = \underset{x}{\text{Min}} \sum_{i=1}^m p_i^{\min} x_i$$

subject to

$$\sum_{j=1}^n \lambda_j x_{ij} \leq x_i \quad , \quad i = 1, 2, \dots, m$$

$$\sum_{j=1}^n \lambda_j u_{rj} \geq u_{r0} \quad , \quad r = 1, 2, \dots, s$$

$$\lambda_j \geq 0$$

We disentangle the influence of price variation from $Q(u_0, p^{\min})$, solving the linear programming problem,

$$Q(u_0, p) = \underset{x}{\text{Min}} \sum_{i=1}^m p_i x_i$$

subject to

$$\sum_{j=1}^n \lambda_j x_{ij} \leq x_i \quad , \quad i = 1, 2, \dots, m$$

$$\sum_{j=1}^n \lambda_j u_{rj} \geq u_{r0} \quad , \quad r = 1, 2, \dots, s$$

$$\forall x \in L(u_0), \quad p^{\min} x \leq px$$

$$Q(u_0, p^{\min}) = \underset{x}{\text{Min}} \{p^{\min} x : x \in L(u_0)\} \leq \underset{x}{\text{Min}} \{px : x \in L(u_0)\}$$

$$= Q(u_0, p)$$

$$Q(u_0, p^{\min}) \leq Q(u_0, p)$$

The ratio $\frac{Q(u_0, p^{\min})}{Q(u_0, p)}$ measures price efficiency of the commercial bank whose cost efficiency is under evaluation. From $Q(u_0, p)$ the influence of risk variation can be disentangled solving for $Q(u_0, p, u_{b0})$.

The ratio $\frac{Q(u_0, p)}{Q(u_0, p, u_{b0})}$ measures cost based risk efficiency. The overall cost efficiency can be multiplicatively decomposed into price, risk and Farrell cost efficiency measures.

$$\underbrace{\frac{Q(u_0, p^{\min})}{\sum_{i=1}^m p_{i0} x_{i0}}}_{\text{Overall cost efficiency}} = \underbrace{\left(\frac{Q(u_0, p^{\min})}{Q(u_0, p_0)}\right)}_{\text{Price efficiency}} \underbrace{\left(\frac{Q(u_0, p_0)}{Q(u_0, p, u_{b0})}\right)}_{\text{Cost based risk efficiency}} \underbrace{\left(\frac{Q(u_0, p, u_{b0})}{\sum_{i=1}^m p_{i0} x_{i0}}\right)}_{\text{Farrell's cost efficiency}}$$

6. EMPIRICAL INVESTIGATION:

28 public sector, 12 foreign sector and 23 private sector banks are exposed to a common frontier, while their cost efficiencies are evaluated. Three variants of cost efficiencies are evaluated for each commercial bank. Giving no importance to price variation and credit risk variation, $Q(u_0, p^{\min})$ are calculated solving appropriate linear programming problems. Allowing price variation $Q(u_0, p_0)$ are calculated; again, solving linear programming problems. Following A.S. Camanho and Dyson (2009) the two factor minimal costs are used to measure price or market efficiency. For all the commercial banks predominant input cost is the total wages paid to the employees. A careful examination of price efficiency scores reveal that the bargaining power of private sector banks appears to be more than public and foreign sector banks.

No commercial bank operated procuring its inputs at minimum prices. Given below are the average price efficiency scores of public, private and foreign sector banks:

Table (1): Price Efficiency

Sector	Minimum	Maximum	Mean	Standard Deviation	Coefficient of Variation
Public Sector Banks	0.3963	0.6568	0.4827	0.0598	12.3913
Private Sector Banks	0.2713	0.9316	0.5141	0.1605	31.2217
Foreign Sector Banks	0.0451	0.6997	0.2190	0.1736	79.2385

Foreign sector banks procured their inputs (labour and fixed assets) at predominantly higher prices than public and private sector banks. The relevant price efficiency variation is observed to be the least for public sector banks as measured by their standard deviation (=0.0598), implying that inputs are procuring nearly at constant prices. For public sector banks standard deviation per unit mean is the lowest. Largest coefficient of variation (=79.2385) is observed for foreign sector banks. The difference between mean price efficiency scores of public and private sector banks is not significantly different from zero, while such difference for public and foreign; private and foreign are significantly different from zero at $p < 0.01$.

- Due to price inefficiency input losses are more for foreign sector banks than public and private sector banks.
- Private sector banks have greater bargaining power than public and foreign sector banks.
- Greater price variation is observed in foreign sector banks.

The factor minimal cost $Q(u_0, p_0)$ is not free from credit risk differences. This study assumes non-performing assets (NPAs) capture the impact of credit risk on cost of production. NPAs = u_{b0} are given input status. The ratio, $f(u_{b0}) = \frac{Q(u_0, p_0)}{Q(u_0, p_0, u_{b0})}$ measures environmental (risk) efficiency. Larger is

this ratio greater are inputs left available to produce bank's outputs.

Table (2): Cost Based Risk Efficiency

Sector	Minimum	Maximum	Mean	Standard Deviation	Coefficient of Variation
Public Sector Banks	0.2305	0.6627	0.5630	0.0763	13.5470
Private Sector Banks	0.5404	1.0000	0.6861	0.1426	20.7831
Foreign Sector Banks	0.5602	1.0000	0.8238	0.1882	22.8433

Due to exogenous risk efficiency public sector banks experienced larger input losses than private and foreign sector banks. Risk efficiencies of public sector banks are distributed over a smaller scale than foreign and private sector banks. Thus, risk stability is observed more in public sector banks.

The difference between mean efficiency scores of public and private; public and foreign; and private and foreign sectors are significantly different from zero at $p < 0.05$.

- Cost based risk efficiency is the lowest for public sector banks.
- Public sector banks relatively have more stable risk distribution
- Lower input losses are observed in foreign sector banks.

Finally, the ratio, $\frac{Q(u_0, p, u_{b0})}{\sum_{i=1}^m p_{i0} x_{i0}}$ measures Farrell's input cost efficiency.

Table (3): Farrell's input Cost Efficiency

Sector	Minimum	Maximum	Mean	Standard Deviation	Coefficient of Variation
Public Sector Banks	0.3172	1.0000	0.4908	0.1677	34.1648
Private Sector Banks	0.0563	1.0000	0.4222	0.2357	55.8331
Foreign Sector Banks	0.2087	1.0000	0.7032	0.3027	43.0368

When it comes to Farrell's cost efficiency foreign sector banks perform better than public and private sector banks. The difference between mean Farrell efficiency of public and private; public and foreign; and private and foreign sectors are statistically significantly different from zero at $p < 0.05$.

- Foreign sector banks perform better
- The efficiency distribution of Farrell's efficiency scores is more stable
- Public sector banks perform better than private sector banks

7. CONCLUSIONS:

The Indian commercial banking industry is constituted by public, private and foreign sector banks. These banks procure their inputs such as labour and fixed assets at varying prices. Departure from minimum prices leads to price or market inefficiency. This study discovered that private sector banks

procured their inputs at lower prices than public and foreign sector banks. As revealed by their standard deviation that public sector banks procured their inputs nearly at constant prices. This is expected because any commercial bank's expenditure on inputs is dominated by the wages paid to the employees. The employees unions are able to bargain for wage revisions from time to time. This is not so with other sector commercial banks.

Of all the risks associated with various activities of a commercial bank credit risk is the most important one. We assume, this is captured by the size of the non-performing assets. NPAs are identified as an input and it is shown that larger NPAs are smaller are the conventional inputs made available to banks for their business. We quantify exogenous risk efficiency. In this study the public sector banks are found to experience more input losses due to (credit) risk. This trend is observed historically in the case of Public sector banks. To reverse this several reforms were introduced at two stages (1991 and 1998) considering Narasimham committee recommendations. To improve Capital Adequacy Ratio (CAR) in order to address the problem of NPAs and the constituted risk more effectively, public sector banks were allowed to go for partial privatization.

Between private and foreign sector banks, the later sector performed better by loosing smaller amounts of inputs due to cost based risk inefficiency. When it comes to the traditional Farrell cost efficiency foreign sector banks perform better than public and private sector banks. Among public and private sector banks the former sector performed better.

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APPENDIX-I

Table-1

DMU	Bank Name	$Q(u_0, p^{\min})$	$Q(u_0, p_0)$	$Q(u_0, p, u_{b0})$	$\sum_{i=1}^m P_{i0} X_{i0}$ (OBSERVED COST)
Nationalized Banks					
1	State Bank of India	82456.8100	198489.0000	861152.1000	861151.8918
2	State Bank Bikaner & Jaipur	5200.2470	12417.5500	20597.3300	53842.0399
3	State Bank of Hyderabad	7339.0280	16342.1800	28496.8600	55018.4814
4	State Bank of Indore	3773.9970	7513.5790	12097.4000	24801.8227
5	State Bank of Mysore	4099.7780	8369.2400	13619.1700	37517.1806
6	State Bank of Patiala	7224.7530	14744.4000	24474.1600	43791.5769
7	State Bank of Saurashtra	2844.7600	4960.6170	8406.1480	24217.0170
8	State Bank of Travancore	5982.9470	11640.3400	19407.3700	45462.6037
9	Allahabad Bank	10656.7900	19207.6100	34166.2900	74169.7670
10	Andhra Bank	7305.6020	16524.3600	28593.0500	60199.8293
11	Bank of Baroda	21958.8800	55412.2900	96300.8400	188138.4694
12	Bank of India	21695.0500	49440.9700	84092.3700	183263.3763
13	Bank of Maharashtra	5990.9190	11784.2400	20550.8300	52487.5445
14	Canara Bank	25452.4600	38751.9700	92416.2300	194374.4959
15	Central Bank of India	14071.7100	25024.6700	46499.3400	134119.0616
16	Corporation Bank	7657.3770	14646.0300	25098.7400	44054.9635
17	Dena Bank	4836.7340	10512.3500	18191.0000	43722.6834
18	IDBI Ltd.	12055.8200	25191.5700	38011.4500	38011.4444
19	Indian Bank	7951.2180	19031.1200	34283.7400	97617.2734
20	Indian Overseas Bank	12222.2700	29287.9200	50392.5000	110681.9022
21	Oriental Bank of Commerce	11421.9500	23974.6000	42237.3200	60088.4292
22	Punjab & Sind Bank	3237.6220	7405.5540	13215.0700	41662.2734
23	Punjab National Bank	24979.8500	56788.4300	97463.1300	252391.1800
24	Syndicate Bank	13694.5700	31581.4400	56425.1500	110216.7696
25	UCO Bank	11875.0700	23315.0400	40062.9800	94554.5959
26	Union Bank of India	15685.1000	28578.3800	49108.4600	97865.6320
27	United Bank of India	6172.3920	12157.2600	22602.3800	65327.9956
28	Vijaya Bank	6484.5730	14320.9700	25467.3100	45869.1651
Foreign Sector Banks					
29	ABN Amro bank	3830.2780	20977.3600	30738.0700	39061.9341
30	Abu Dhabi Commercial Bank	71.3625	519.9591	519.9591	593.6152
31	American Express Bank	465.6442	1765.7540	3152.0520	14680.4976
32	Bank of Bahrain & Kuwait	54.8711	167.8355	167.8355	470.3881
33	Bank of Ceylon	13.0272	18.6171	18.6171	89.4619
34	Bank of Tokyo-Mitsubishi UFJ	294.2115	2488.6510	2488.6510	2488.6509
35	Chinatrust Commercial Bank	24.3196	91.8211	91.8211	155.0714
36	Citi Bank	7653.2830	49830.3500	69684.5800	69684.5731
37	Deutsche Bank	1262.9990	27973.9000	45863.0200	45863.0160
38	Hongkong & Shanghai Banking Corporation	6099.1870	35045.0200	55804.7700	75858.7136
39	JB Morgan Chase Bank	251.0184	5413.4490	5413.4680	5413.4484
40	Standard Chartered Bank	6965.5960	32244.1900	46731.8700	69907.4091
Other Scheduled Commercial Banks					
41	Axis Bank	10005.6600	24065.3300	44530.3400	48884.7980
42	Bank of Rajasthan	1697.6340	4047.2290	7254.4420	18331.9948
43	Catholin Syrian Bank	812.7229	1515.1340	2311.9590	10060.7602
44	Centurion Bank of Punjab	2781.4330	2985.6360	5139.4260	29312.8769
45	Citi Union Bank	850.4089	1245.0300	1600.3470	5234.4984
46	Development Credit Bank	736.7562	1746.7520	2652.5340	8562.5597

47	Dhanalakshmi Bank	512.6504	944.3644	1299.6160	5044.3530
48	Federal Bank	3853.9860	9649.0430	16084.3900	29595.9047
49	HDFC Bank	12168.4400	25758.8200	45511.6500	90502.8692
50	ICICI Bank	46030.9700	135649.9000	208308.3282	208308.3282
51	IndusInd Bank	3005.3100	6435.3930	11672.0100	12928.4492
52	Ing Vysya Bank	2929.8010	7856.4220	11968.1700	27395.9410
53	Jammu & Kashmir Bank	4457.3170	7936.5080	13728.6900	23688.4147
54	Karnataka Bank	2488.2830	3848.8140	7078.8070	14033.7028
55	Karur Vysya Bank	1746.3870	2965.3890	4673.8350	10820.7060
56	Kotak Mahindra Bank	2405.7360	8866.8860	12766.6900	39481.8355
57	Lakshmi Vilas Bank	915.8918	1573.9900	2315.3680	6302.8719
58	Lord krishna Bank	297.9227	334.9499	374.6466	2504.6065
59	Ratnakar Bank	146.6146	333.5833	333.5833	2463.7708
60	Sangli Bank	199.7065	358.2878	358.2878	6360.5424
61	SBI Comm.& Intl Bnak	86.1465	239.6410	239.6410	735.1539
62	South Indian Bank	2115.1650	4332.0760	7404.9390	15364.3489
63	Tamilnad Mercantile Bank	1060.4720	2427.2360	3729.3910	9870.1782

TABLE -2

DMU	Bank Name	$\frac{Q(u_0, p^{\min})}{Q(u_0, p_0)}$	$\frac{Q(u_0, p_0)}{Q(u_0, p, u_{b0})}$	$\frac{Q(u_0, p, u_{b0})}{\sum_{i=1}^m p_{i0} x_{i0}}$
Nationalized Banks				
1	State Bank of India	0.4154	0.2305	1.0000
2	State Bank Bikaner & Jaipur	0.4188	0.6029	0.3826
3	State Bank of Hyderabad	0.4491	0.5735	0.5180
4	State Bank of Indore	0.5023	0.6211	0.4878
5	State Bank of Mysore	0.4899	0.6145	0.3630
6	State Bank of Patiala	0.4900	0.6024	0.5589
7	State Bank of Saurashtra	0.5735	0.5901	0.3471
8	State Bank of Travancore	0.5140	0.5998	0.4269
9	Allahabad Bank	0.5548	0.5622	0.4607
10	Andhra Bank	0.4421	0.5779	0.4750
11	Bank of Baroda	0.3963	0.5754	0.5119
12	Bank of India	0.4388	0.5879	0.4589
13	Bank of Maharashtra	0.5084	0.5734	0.3915
14	Canara Bank	0.6568	0.4193	0.4755
15	Central Bank of India	0.5623	0.5382	0.3467
16	Corporation Bank	0.5228	0.5835	0.5697
17	Dena Bank	0.4601	0.5779	0.4161
18	IDBI Ltd.	0.4786	0.6627	1.0000
19	Indian Bank	0.4178	0.5551	0.3512
20	Indian Overseas Bank	0.4173	0.5812	0.4553
21	Oriental Bank of Commerce	0.4764	0.5676	0.7029
22	Punjab & Sind Bank	0.4372	0.5604	0.3172
23	Punjab National Bank	0.4399	0.5827	0.3862
24	Syndicate Bank	0.4336	0.5597	0.5119
25	UCO Bank	0.5093	0.5820	0.4237
26	Union Bank of India	0.5488	0.5819	0.5018
27	United Bank of India	0.5077	0.5379	0.3460
28	Vijaya Bank	0.4528	0.5623	0.5552
Foreign Sector Banks				
29	ABN Amro Bank	0.1826	0.6825	0.7869

30	Abu Dhabi Commercial Bank	0.1372	1.0000	0.8759
31	American Express Bank	0.2637	0.5602	0.2147
32	Bank of Bahrain & Kuwait	0.3269	1.0000	0.3568
33	Bank of Ceylon	0.6997	1.0000	0.2081
34	Bank of Tokyo-Mitsubishi UFJ	0.1182	1.0000	1.0000
35	Chinatrust Commercial Bank	0.2649	1.0000	0.5921
36	Citi Bank	0.1536	0.7151	1.0000
37	Deutsche Bank	0.0451	0.6099	1.0000
38	Hongkong & Shanghai Banking Corporation	0.1740	0.6280	0.7356
39	JB Morgan Chase Bank	0.0464	1.0000	1.0000
40	Standard Chartered Bank	0.2160	0.6900	0.6685
Other Scheduled Commercial Banks				
41	Axis Bank	0.4158	0.5404	0.9109
42	Bank of Rajasthan	0.4195	0.5579	0.3957
43	Catholin Syrian Bank	0.5364	0.6553	0.2298
44	Centurion Bank of Punjab	0.9316	0.5809	0.1753
45	Citi Union Bank	0.6830	0.7780	0.3057
46	Development Credit Bank	0.4218	0.6585	0.3098
47	Dhanalakshmi Bank	0.5429	0.7266	0.2576
48	Federal Bank	0.3994	0.5999	0.5435
49	HDFC Bank	0.4724	0.5660	0.5029
50	ICICI Bank	0.3393	0.6473	1.0000
51	IndusInd Bank	0.4670	0.5514	0.9028
52	Ing Vysya Bank	0.3729	0.6564	0.4369
53	Jammu & Kashmir Bank	0.5616	0.5781	0.5796
54	Karnataka Bank	0.6465	0.5437	0.5044
55	Karur Vysya Bank	0.5889	0.6345	0.4319
56	Kotak Mahindra Bank	0.2713	0.6945	0.3234
57	Lakshmi Vilas Bank	0.5819	0.6798	0.3674
58	Lord Krishna Bank	0.8895	0.8940	0.1496
59	Ratnakar Bank	0.4395	1.0000	0.1354
60	Sangli Bank	0.5574	1.0000	0.0563
61	SBI Comm.& Intl Bank	0.3595	1.0000	0.3260
62	South Indian Bank	0.4883	0.5850	0.4820
63	Tamilnad Mercantile Bank	0.4369	0.6508	0.3778

The Effect of Financial Ratio on Stock Return for ISO 9001 Certified Companies

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Abstract

This research aims to examine financial ratio's impact on stock Return for ISO 9001 certified companies. The financial ratios examined in this research are current ratio (CR), gross profit margin (GPM), Return on equity (ROE), debt to ratio (DER), financial leverage (FL), total asset turnover (TATO), and earnings per share (EPS). The samples of this study are 36 listed ISO 9001 certified companies that actively trade in Indonesian Stock Market between 2007 and 2009. The research result shows that the financial ratios have no significant impact on stock Return for ISO 9001 certified companies.

Keywords: Stock Return, Financial Ratio, ISO 9001

1. Introduction

Stock market is one of the important elements in the investment world today. The stock market opens up opportunities for companies to obtain additional capital for their business (Chin and Hong, 2008). On the other hand, market stock increases the potential investors' possibilities and accessibilities to invest in a company. Related to market stock, one important issue that continually being discussed by academics and business practitioners is stock returns and the factors that influence it (Laverde, Varua, and Ozane, 2009; Grinblatt and Moskowitz, 2004; Samitas and Kenourgios, 2007; Pedro and Rossen, 2000; Wang, 2010; Bashir and Hassan, 1997; Gultekin, 1983; Rahardja, 2005; Nur, 2001; Kennedy, 2003; Martani, et.al., 2009; and Harahap 2001).

In the existing literature, financial ratio is considered as the determinant of the stock return (Dhatt, Kim dan Mukherji, 1999; Lewellen, 2004; Floros, Jaffry, and Ghulam, 2009; Aono and Iwaisako, 2011; Zekic, 1998). Financial ratio analysis is one of the financial statement analyses that often used by business practitioners (Palepu, Healy, and Bernanrd, 1999). It provides a quick and effective indicator for the

company's operation, performance, and position within an industry sector (Fotwe, Price, and Thorpe, 1996). Furthermore, it is also useful for predicting company's financial failure (Beaver, 1966; Shirata, 1998; Ohlson, 1980).

Financial ratios could be classified into five ratio types, i.e. profitability ratio, liquidity ratio, leverage ratio, activity ratio, and market value ratio (Shim and Shiegel, 2008). At Indonesia context, numerous researchers have examined the impact of financial ratios on the stock return, such as Martani, et.al (2009); Mythi (2007); Nur (2001); Rahardja (2005); Harahap (2001); and Kennedy (2003). Even so, the findings of each researcher are dissimilar and inconsistent from each other, as shown in Table 1.

Profitability ratio and stock return. Research finding from Martani et.al (2009) showed that profitability ratio affected the stock return significantly. Contrast to Martani's result, a research by Rahardja (2005) showed that profitability ratio did not significantly affect the stock return for LQ-45 companies. The research of Kennedy (2003) also showed that the profitability ratio did not significantly affect the stock return in the year of 2002. Furthermore, Nur's (2001) research result showed that profitability ratio did not affect the stock return for medium and big companies.

Liquidity ratio and stock return. The research of Martani et al. (2009) showed that liquidity ratio did not significantly affect the stock return. However, this research result was not supported by Mythi's (2007) research. Mythi's (2007) finding showed that liquidity ratio could predict the stock return.

Leverage ratio and stock return. Kennedy's (2003) research showed that leverage ratio significantly affected the stock return in the year of 2001. However, other researchers (e.g. Martani et.al (2009) and Harahap (2001)) showed that leverage ratio did not significantly affect the stock return.

Activity ratio and stock return. The research of Martani et.al (2009) showed that activity ratio significantly affected the stock return. Meanwhile the findings of Rahardja (2005) and Nur (2001) showed that activity ratio didn't affect the stock return.

Market value ratio and stock return. Kennedy's (2003) research showed that market value ratio significantly affected the stock return on 2001. This finding was also supported by Nur's (2001) finding. Nevertheless, Rahardja (2005) found out that market value ratio didn't significantly affect the stock return.

Aside from the contradictive results, there are no previous researches on the relationship between financial ratios and stock return that were conducted for ISO 9001 certified companies. ISO 9001 certification becomes popular recently, especially for companies. Up to 2009, there are 1,064,785 ISO 9001 certified organizations. Most of these organizations come from Europe (47%) and Far East (37.4%)

region (ISO, 2009). ISO 9001 certification shows that a company has fulfilled minimum characteristic of good management practices (Van den Heuvel et. al, 2009; Magd et al., 2003). This good management practices certification will lead companies' financial performance improvement as shown by Dick et al. (2008); Haversjo (2000); Casadesus and Gimenez (2000); Chua et al. (2003); Corbett et al. (2005); and Casadesus et al. (2000). Furthermore, the ISO 9001 certification will also lead the corporate image to be improved (Sampaio et. al, 2009). Those benefits of ISO 9001 certification may give some effect to the relationship between financial ratios and stock return. Hence, it is interesting to discuss the relationship of both constructs for ISO 9001 certified companies.

Referring to the above explanation, this research aims to examine financial ratio's impact on stock return for ISO 9001 certified companies. More specifically, the research questions that will be answered are, "Is there any significant effect of profitability ratio on stock return for ISO 9001 certified companies? Is there any significant effect of liquidity ratio on stock return for ISO 9001 certified companies? Is there any significant effect of leverage ratio on stock return for ISO 9001 certified companies? Is there any significant effect of activity ratio on stock return for ISO 9001 certified companies? Is there any significant effect of market value ratio on stock return for ISO 9001 certified companies?"

In this research, only one ratio in each financial ratio category is tested. For profitability ratio, return on equity (ROE) ratio is the only ratio tested. Meanwhile, for liquidity ratio, leverage ratio, activity ratio, and market value ratio, the ratio tested are current ratio (CR), debt equity ratio (DER), total asset turnover (TATO), and earnings per share (EPS), respectively.

2. Literature Review and Hypotheses Development

Financial ratios could be classified into five ratio types, i.e. profitability ratio, liquidity ratio, leverage ratio, activity ratio, and market value ratio (Shim and Shiegel, 2008). Profitability ratios are financial ratios used to investigate company's capability's effectiveness in gaining profit (Shim and Siegel, 1998). If the profitability ratio of a company is higher, then the company's ability in gaining profit will be more effective.

One of the most frequent used profitability ratios is return on equity (ROE). It is also a ratio that usually has significant relationship with various economic phenomena (Nur, 2001). ROE is earnings available to common stakeholder compared to average stakeholders' equity (Shim and Siegel, 1998).

An empirical research by Martani et.al (2009) conducted during 2001 to 2006 in 39 manufacturing companies showed that ROE affect stock return positively. The higher the ROE of a company, the higher

stock returns gained by the company (Martani, et.al, 2009). This finding was also supported by other studies conducted by Kennedy (2003), and Nur (2001). Based on the previous discussion, the first hypothesis of this research is:

“Profitability Ratio (ROE) has a significant effect on stock return”

Leverage ratios are financial ratios used to measure enterprise's ability in fulfilling its long-term obligations (Shim and Siegel, 1998). Leverage ratios are related to company's risk into bankruptcy (Nur, 2001; Hadiano and Helina, 2010). The higher the leverage ratio of a company, the higher the possibility of a company went into bankruptcy (Nur, 2001).

Debt Equity Ratio (DER) is one kind of leverage ratios (Shim and Siegel, 1998). DER is the relative proportion of debt and shareholders' equity (Shim and Siegel, 1998; Hadiano and Helina, 2010). DER is the most frequently used ratio. It is also a ratio that usually has significant relationship with various economic phenomena (Nur, 2001). Empirically, a study by Kennedy (2003) on LQ 45 index companies showed that DER significantly affected stock return in the year of 2001. Based on the previous description, the author proposed the following hypothesis:

“Leverage Ratio (DER) has a significant effect on stock return”

Liquidity ratios are financial ratios used to expresses a company's ability to repay short-term creditors out of its total cash (or its current assets) (Shim and Siegel, 1998). Company's liquidity will determine the survival ability of a company and the company's image in the future (Nur, 2001). Moreover, Shim and Shiegel (1998) stated, “Liquidity is essential to conducting business activity, particularly in times of adversity, such as when a business is shut down by a strike or when operating losses ensue due to an economic recession or a steep rise in the price of a raw material or part”. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover its short-term debts (Nur, 2001).

Current ratio (CR) is one of liquidity ratios (Shim and Siegel, 1998). This ratio compares a firm's current assets to its current liabilities (Shim dan Siegel, 1998). Empirically, Mythi (2007) stated that CR is the best ratio that can be used in predicting stock return. Based on the previous explanation, the third hypothesis of this research is as follows:

“Liquidity Ratio (CR) has a significant effect on stock return”

Activity ratios are financial ratios used to measure a firm's ability to convert different accounts within their balance sheets into cash or sales (Shim and Siegel, 1998). In other words, this ratio will provide an

overview of company's effectiveness in managing its assets (Nur, 2001; Harahap, 2005). The higher the activity ratio of a company, the more effective it will be in managing its assets.

One of the most frequent used activity ratios is total asset turnover (TATO). It is also a ratio that usually has significant relationship with various economic phenomena (Nur, 2001). TATO is a comparison between net sales and average total assets (Shim and Shiegel, 1998). Empirically, a research by Martani, et.al (2009) in 39 manufacturing companies showed that TATO has a significant impact on stock returns for the period of 2002 to 2009. Based on the previous description, the fourth hypothesis for this research is as follows:

“Activity ratio (TATO) has a significant effect on stock return.”

Market value ratios relate an observable market value, the stock price, to book values obtained from the firm's financial statements (Nur, 2001; Shim and Siegel, 1998). One of the most frequent used market value ratios is earning per share (EPS). It is also have significant relationship with various economic phenomena (Nur, 2001).

Empirically, Nur's research (2001) shows that EPS has a significant effect on stock return. Nur (2001) showed that this effect occurs in all size of company, i.e. small, medium, or big. Kennedy (2003) also argued that EPS is affecting stock returns. Based on the previous discussion, the fifth hypothesis of this research is as follows:

“Market Value Ratio (EPS) has a significant effect on stock return.”

3. Research Methodology

3.1 Research Design

A quantitative approach is applied into this research. To be more specific, this quantitative research is designed as a hypotheses testing research using causal-comparative research type. A causal-comparative research is a study of the relationship between two or more variables identified as dependent variables (variables that are affected) and independent variables (affecting variables) (Indriantoro and Supomo, 2002).

3.2 Variables and Measures

The independent variables of this research consist of return of equity (ROE), Debt equity ratio (DER), Current Ratio (CR), Total asset turnover (TATO), and earnings per share (EPS), while the dependent

variables of this study is stock return. Thus, visually, the conceptual framework of this research is showed in Figure 1.

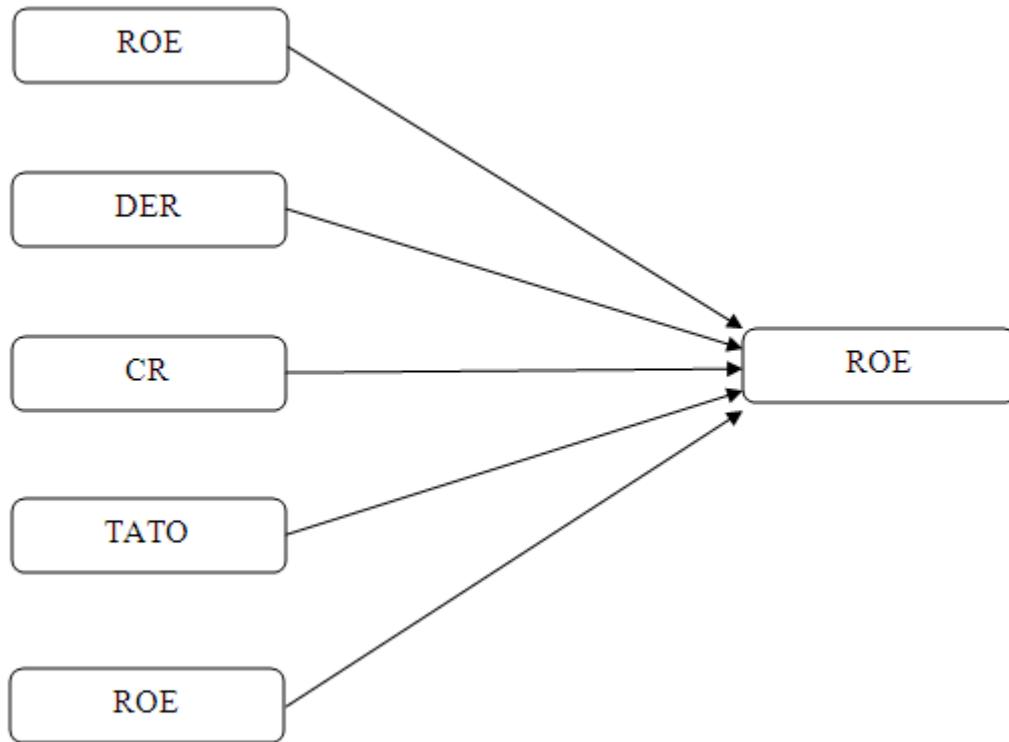


Figure 1. The Research Conceptual Framework

Table 1. The Contradictive Results of Previous Researches

Author(s)	Profitability Ratio (ROE)	Liquidity Ratio (CR)	Leverage Ratio (DER)	Activity Ratio (TATO)	Market Value Ratio (EPS)
Martani, et.al. (2009)	Significant	Not Significant	Not significant	Significant	n.a.
Rahardja (2005)	Not significant for LQ-45 companies but significant for non LQ-45 companies	n.a.	n.a.	Not significant	Not significant
Kennedy (2003)	Significant on 2001 but not significant on 2002	n.a.	Significant on 2001 but not Significant on 2002	n.a.	Significant on 2001 but not Significant on 2002
Nur (2001)	Not Significant for small companies but significant for medium and big companies	n.a.	n.a.	Not Significant	Significant
Harahap (2001)	n.a.	n.a	Not significant	n.a.	n.a.

Note: n.a. = variable was not examined

According to Tsoukalas et.al (2005), Ang and Liu (2007), Nur (2001), Harahap (2001), and Rahardja (2005), stock return as dependent variable is only measured using capital gains, regardless of the dividend yield. Jacob Petit (1998 in Harahap (2001)) stated that this is allowed, since the number of shared dividend is small, so that it has no effect whether it is taken into account or not. The measures of each independent and dependent variables can be seen in Table 2.

Table 2. Research Variables and Measures

Variables	Financial Ratio	Measures	Type	Source
Independent	CR	$\frac{\text{Current assets}}{\text{Current debt}}$	Liquidity Ratio	Shim and Siegel, 1998
	ROE	$\frac{\text{Net profit}}{\text{Equity}}$	Profitability Ratio	Shim and Siegel, 1998
	TATO	$\frac{\text{Earnings}}{\text{Average total assets}}$	Activity Ratio	Shim and Siegel, 1998
	DER	$\frac{\text{Total Debts}}{\text{Equity}}$	Leverage Ratio	Shim and Siegel, 1998
	EPS	$\frac{\text{Dividends on preferred stock}}{\text{Average outstanding shares}}$	Market Value Ratio	Shim and Siegel, 1998
Dependent	Stock Return	$\frac{(\text{Stock price } t+1) - (\text{stock price } t)}{(\text{Stock price } t)^*}$	Capital Gains	Tsoukalas, Darayseh, and Abuizam, 2005

Note: * t = year

3.3 Data and Samples

Data used in this research is secondary data and consists of two types, i.e. financial reports of companies obtained from Jakarta stock exchange and company's stock price obtained from Yahoo! Finance for the period of 2007-2009.

Population that becomes the object of this research is whole ISO 9001 certified companies listed on Jakarta stock exchange. The samples of this research are 36 ISO 9001 companies listed on Jakarta stock exchange. The samples are having the following criteria:

1. Companies were ISO 9001 certified from 2007 to 2009.
2. Companies were publishing their financial reports from 2007 to 2009, and their fiscal years were ended in December.
3. Companies were not having negative equity.

3.4 Analysis Methods

The analysis method used in this research is multiple regression analysis. It is the most frequent used analysis method and used to forecast dependent variable based on independent ones (Hair, et.al, 1998). Multiple regression analysis is used when the dependent and independent variables are metric. The multiple regression model to be tested in this study is:

$$Y_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 ROE_{it} + \beta_3 TATO_{it} + \beta_4 DER_{it} + \beta_5 EPS_{it} + e_{it}$$

where

Y_{it} = company i stock return on the year t

CR_{it} = company i current ratio on the year t

ROE_{it} = company i return on equity on the year t

$TATO_{it}$ = company i total asset turnover on the year t

DER_{it} = company i debt to equity ratio on the year t

EPS_{it} = company i earning per share on the year t

Hypotheses testing will be done by applying partial t-statistic testing at 5% significance level. As a rule of thumb, if the p-value (sig.t) is lower than 0.05, we reject the null hypothesis and accept the alternative hypothesis (Suliyanto, 2005).

3.5 Testing the Multivariate Assumptions

In multiple regression analysis, there are some random noises that cause bias in the resulted regression model. In a study evaluating financial ratio and stock return, there are at least three important noises to be observed. First is the non-normal residual distribution of research variables, which can be referred as normality symptom. Hair, et.al (1998) stated that the non-fulfillment of normality assumption is a usual noise of multiple regression analysis. Second is the multicollinearity symptom. It is a symptom of strong relationship between its independent variables (Hair, et.al, 1998). In this research, there is a high possibility of multicollinearity exists, because the author used the same data on financial ratios calculations (Nur, 2001; Harahap, 2001; Rahardja, 2005). Third is the existence of heteroscedasticity. This is a condition where the variance error is not constant for each independent variable (Hair, et.al, 1998). According to Nur (2001), this symptom is likely to occur in the research evaluating the stock return, taking into account the constantly changing stock price.

Given these conditions, researchers conducted a normality test, multicollinearity test, and heteroscedasticity test prior to regression analysis. In normality test, we used the Kolmogorov-Smirnov test. The test results showed that the model meets the normality assumption because of the standardized residual value curve shows the value of the p-value greater than α (0.05) (Suliyanto, 2005). To test the

model's heteroscedasticity, we used Gleyser park method. The result showed that the p-value is greater than the alpha value (0.05) which means that the model does not have a constant variables variance (Suliyanto, 2005). In the multicollinearity test, the results showed the value of VIF (variance inflation factor) of all independent variables are smaller than 10, which means that for all the independent variables, there were not any correlation between independent variables towards the dependent variable (Suliyanto, 2005). Thus, this multiple regression model is spared from disturbances mentioned in the previous description.

4. Result and Discussion

4.1. Descriptive Statistic of Research Variables

This research is using six variables with metric scale. The variables consist of five independent variables and a dependent variable. The independent variables of this research are return of equity (ROE), debt equity ratio (DER), current ratio (CR), total asset turnover (TATO), and earnings per share (EPS), while the dependent variable is stock return. Decriptive statistics of each research variables can be seen in Table 3.

Table 3. Descriptive Statistic of Research Variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROE	78	-82,890	163,566	1,152	20,868
DER	78	0,118	36,741	2,702	5,288
CR	78	0,076	17,197	1,927	2,740

TATO	78	0,058	6,847	1,431	1,445
EPS	78	-128,000	2480,00	183,749	456,467
SR	78	- 0,746	2,238	0,009	0,518

4.2 Multiple Regression Analysis Results

Multiple regression analysis result for the research model can be seen on Table 4. It can be inferred that the significant value t (p-value) of independent variables (ROE, DER, CR, TATO, and EPS) are higher than the alpha significant value (0.05). This shows that those variables do not significantly affect stock return. Thus, the first to fifth hypotheses of this research are rejected.

Table 4. Regression Analysis Result

Variables	Stock Return	
	Coefficient	Sig. t
C	0,017	0,562
CR	-0,014	0,535
ROE	0,000	0,872
DER	-0,007	0,582
TATO	0,005	0,907
EPS	0,000	0,620

R-squared	0,014
Adjusted R ²	- 0,054
F _{count}	0,205
Sig. F	0,959

Moreover, we also investigate whether the research variables has a significant effect on dependent variables simultaneously. We conducted an F-test with the significant level of 0.05. As a rule of thumb, if the p-value (F significant value) is lower than alpha significant value (0.05), it means that there is a significant effect of independent variables toward dependent variable simultaneously. Based on the information derived from Table 4, F significant value (0.991) is greater than 0.05. Thus, the independent variables (ROE, DER, CR, TATO, and EPS) have no significant effect on stock return simultaneously.

4.3. Discussion

Theoretical Implications. The first hypothesis stated that ROE has a significant effect on stock return. The result of this research is refusing the proposed hypothesis. Thus, this research finding shows that ROE does not have a significant effect on stock return. This finding supports the previous research finding by Rahardja (2005), Nur (2001), and Kennedy (2003).

The second hypothesis stated that DER has a significant effect on stock return. The finding of this research shows a reversed-result from the proposed hypothesis. This research shows that DER does not have a significant effect on stock return. It supports the finding of Martani, et.al (2009) and Harahap (2001).

The third hypothesis of this study stated that the CR has a significant effect on stock return. The third

hypothesis is not supported by research results. In other words, this study suggests that CR has no significant effect on stock return. This finding supports the findings of Martani, et.al. (2009).

The fourth hypothesis of this study indicates that TATO has a significant effect on stock return. This study found that the fourth hypothesis is rejected or that TATO does not have a significant effect on stock return. This finding is consistent with the findings of Rahardja (2005) and Nur (2001).

The fifth hypothesis of this study propose that EPS has a significant effect on stock return. The findings of this study is not in line with the fifth hypothesis. This means that the EPS does not have a significant effect on stock return. These findings are consistent with the findings of Rahardja (2005).

In addition to partial results, results from this study also showed that the ROE, DER, CR, TATO, and EPS simultaneously have no significant effect on stock returns. We assumed that, given the stock return is reviewed by the basis of capital gains, there are several things that caused the company's financial ratios do not have an influence into stock return of ISO 9001 certified companies.

The first cause is the global financial crisis that emerged in the period covered by the study. In the 2007-2008, financial crisis in America emerged, triggered by the collapse of Lehman Brothers in global stock market, so it impacted on stock prices in other countries, including stock prices in Indonesia (Park, 2010). Thus, the stock return is not affected by the financial ratios.

In addition, if associated with the context of the studied companies, the un-influenced financial ratios on stock return can also be caused by investor perceptions that the ISO 9001 certified companies have been improving its management's quality (Wilopo and Priyambodo, 2008). This condition can make the stock prices of ISO 9001 certified company remains good despite its financial ratios have not been encouraging. In other words, the stock return is not affected by the financial ratios. Furthermore, some researchers, such as Hendricks dan Singhal, (2001), Easton dan Jarrell, (1998) Downen dan Docking, (1999), Nicolau dan Sellers, (2002), also revealed that ISO 9001 certification as the implementation of total quality management may directly influence the company's stock return.

Managerial Implications. The insight regarding factors affecting stock return is useful for many interested parties, i.e. investors and issuers (companies). For the investors, the findings of this research can affect their decision in investing their money, wherein that in making investment, the investors should not be solely based on the consideration of financial aspects alone. Other aspects need to be considered by the investors are non financial aspects such as maturity of company's management, human resource development programmes, business strategies executed, corporate's image, as well as corporate's attention to social and environmental issues.

For the issuers (companies), the findings of this research indicate that it is important for the company to focus not only on performance measurement of financial aspects in order to increase stock return in capital gain perspective. Kaplan and Norton (2000) proposed Balanced Scorecard model that balances all aspect of performances, both financial and non financial (i.e learning and growth, internal business process, and customer perception) aspects.

ISO 9001 certification is one of fundamental efforts conducted by the company to have good management system and focus on customer satisfaction and continuous improvement. Effectiveness of ISO 9001 certification of a company can be utilized to boost stock price, that will be increasing stock return.

5. Conclusion, Limitations, and Future Research

Nowadays, stock market is one of the most important elements in investment world. One of the critical issues related to stock market often debated is the effect of financial ratios to stock return. This research aims to investigate the effect of financial ratios to stock return in ISO 9001 certified companies.

The research result shows that financial ratios, i.e. return of equity (ROE), Debt equity ratio (DER), Current Ratio (CR), Total asset turnover (TATO), and earnings per share (EPS) do not have significant effect on ISO 9001 certified companies' stock returns either partially or simultaneously. This condition can be caused by two things, i.e. global financial crisis impact emerging on research period and linkage with the context of the research objects, i.e. ISO 9001 certified companies.

In addition to the previous explanation, there are several limitations to this study. First, this research only tested five financial ratios. Research result might be different if more financial ratios are used. Second, this research did not consider other factors that might affect the relationship between financial ratios and stock return or factors that might affect the stock return directly whether can be controlled by the company or not. The uncontrollable factors are, for example, crime rate of a country (Laverde, Varua, and Ozane, 2009), stock price movements (Grinblatt and Moskowitz, 2004), macro-economy (Samitas and Kenourgios, 2007), political situation (Pedro and Rossen, 2000), government policy (Wang, 2010), interest rate (Bashir and Hassan, 1997), and inflation rate (Gultekin, 1983). Meanwhile, the controllable factors are, for example, company's size (Nur, 2001) and non-financial performance. Third, this research also had limitations on the sample size and observation period. The research result, therefore, may not be generalized for entire listed ISO 9001 certified companies in Indonesia.

Given mentioned limitations, in the future research, the author suggest to develop research model – particularly on research variables, objects, and observation period – in assessing the impact of financial ratios on stock return in ISO 9001 certified companies. Moreover, the authors also suggest testing the direct influence of ISO 9001 certification to stock return.

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ENTREPRENEURIAL INCLINATION FOR ENTREPRENEURIAL CARRIER: A CASE STUDY OF MANAGEMENT STUDENTS OF ISLAMIA UNIVERSITY OF BAHAWALPUR, PAKISTAN

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Abstract

Entrepreneurship is the vital source of the sustained economic development of the country. Assuming this factor as significant in the economic development, the study was conducted to analyze the entrepreneurial inclination of the MBA students of the Islamia University of Bahawalpur. This study revealed some important factors that seem to be somewhat different from the rest of knowledge available. This study will help the institution and other concern agencies regarding entrepreneurship to frame those policies and strategies, which would be helpful for those who after completing their degrees want to set up the business. It will also help the institutions to revise their curriculum regarding entrepreneurship. Using the statistical technique of association, significant factors were highlighted so that their importance can be considered on logical ground.

Keywords: Entrepreneurship, university students, MBA, courses and curriculum, role model

Introduction

The entrepreneurship is considered to be one of the most important factors in the development of the country. The policy makers of the country, business man, economists and the students are also talking about this concept. Every year different workshops, seminars and other activities related to the

entrepreneurship is being organized which emphasis its importance not only for the country development but also for the society and the development of the individuals (Bécharde & Toulouse 1998; Schaper & Volery 2004; Matlay & Westhead 2005). It has been observed that almost 12 percent of the adult population of the world is involved in entrepreneurial activities (Prof G.S Gopli, 2010). The concept of entrepreneurship is becoming more important in the countries like Pakistan where we are facing the problems of the poverty and where the unemployment rate is almost 15.2 % (2009). However, the entrepreneurship activities are very limited in Pakistan. According to World Bank report 2007, the average annual entry rate of Pakistan is 7 % as compared to the average annual rate of the World industrial countries which is 10.2 % (Matthieu Chemin, 2008).

Literature Review

Today the concept of entrepreneurship has become one of the most vital and important strategy for the sustained economic development of the country and to face the challenges regarding globalization (Schaper & Volery, 2004; Venkatachalam & Waqif, 2005).

The role of institutions in promoting entrepreneurship.

The popularity of this concept among most of the people is due to the fact that it is working as catalyst for the generation of wealth and opportunities of the jobs and services (Postigo & Tamborini, 2002; Othman, Ghazali et al. 2005; Gurol & Atsan, 2006). Entrepreneurship is working like an engine which is motivating the economic development, creation and innovation in many nations (Scarborough & Zimmerer, 2003; Kuratko & Hodgetts, 2004). Most of the researches and the research have revealed the positive association between the economic development and the entrepreneurship regarding job creation and opportunities, ultimate survival and the change of technology (Gorman, Hanlon et al. 1997; Lena & Wong 2003; Karanassios, Pazarskis et al. 2006). As a result, this concept has emerged as an important research area in the academics circles to study its importance and involvement in the society (Lee, Chang et al. 2005). The courses of entrepreneurship are becoming very famous among the students both at school and college level (Brown 1999). Over the last ten years the interest in entrepreneurship has been increased in both graduates and under graduates (Solomon, Weaver et al. 2005). The main reason for this is that the employment of wages and the secure government jobs is not the guarantee nowadays for the graduates of the university (Collins, Hannon et al. 2004; Kamau-Maina 2006; Postigo, Iacobucci et al. 2006). Nowadays, there is an environment that jobs are limited and one has to secure the job because the jobs are limited in numbers. This results in the low ratio of getting jobs by the students after their graduation. That is why students are searching for such business education and courses which can furnish them with the knowledge of business and skills so that they can run their own business and can develop jobs from them (Brown 1999; Henry 2003). That is the reason that many universities and other institutions are offering different courses regarding entrepreneurship to the students so that they can develop the interest and skill in them about different entrepreneurship careers (Postigo & Tamborini, 2002). Different studies and research has been done on the field of entrepreneurship which has exponentially risen internationally (Hill, Cinneide et al. 2003; Raichaudhuri, 2005).

The course contents and curriculum regarding entrepreneurship

The course contents being taught in the institution play an essential role in developing entrepreneurial qualities. The emphasis of the curriculum should be focused on encouraging, innovation and creativity as well as venturesome. The instructive approach should motivate students in making decisions and mistakes should be taken as part of learning process (Ibrahim & Ellis, 2002). In the United States of America, various universities and colleges have developed entrepreneurship curriculum since 1960s. Many schools introduced Entrepreneurship related courses such as “Entrepreneurship and Venture Creation,” “Small Business Management,” “Enterprise Development,” etc. as a vital part of their courses. In 1971, there were only sixteen colleges and universities where entrepreneurship was being taught. However, the scenario was changed by year 1997, more than 800 colleges, and universities were offering entrepreneurship and management courses (Fiet, 1997). Similarly, China has shown interest towards entrepreneurship education, especially for students in higher level. Since its financial system largely depends upon the state owned enterprises (SOEs), entrepreneurial courses focus on entrepreneurship management or industrial management education rather than self-business. Recently, the Chinese Central Education Committee decided to focus on entrepreneurship courses such as SMEs management, New Venture Creation, Small and medium Industry Management, Corporation Management, because Chinese state owned enterprises are facing serious unemployment problem (Li & Sebor, 2001). The Universities are playing the essential and vital role in promoting the education of entrepreneurship for the national and regional economic development (Binks, Starkey et al. 2006; Co and Mitchell 2006). Mahlberg (1996) also agrees with this point of view and states that institutions have an important role to play for developing entrepreneurship skills since these institutions can be considered ideal place where we can shape and develop entrepreneurship skills the and aspirations among the students (Autio, Keeley et al. 1997; Landstrom 2005). Therefore it is the responsibility of the educational institutions that they make themselves as a center of entrepreneurship by making essential contributions in promotion an entrepreneurial atmosphere that together with the factors that can add to the entrepreneurship development (Gnyawali and Fogel 1994). Therefore it is essential to present a positive picture of entrepreneurship as an option of career to draw the attention of the students in the university by providing the facilities available to them. We should remember this fact that although students have entrepreneurial knowledge, they do not have positive picture about entrepreneurship (Alberti, Sciascia et al. 2004).

The contribution of “Role Models” in promoting entrepreneurship

The impact of the role models towards entrepreneurship has been widely discussed in the research literature (see Ghazali, Ghosh et al. 1995; Deakins, Glancey et al. 2005; Van Auken, Stephens et al. 2006; Kirkwood 2007). Role models are those ‘individuals influencing an entrepreneur’s career choice or styles (Hisrich, Peters, & Shepherd,2005), It is based on the supposition that after meeting or seeing the successful business man in the society, the student will have the motivation to impersonate to become a flourishing business man (Caputo & Dolinsky, 1998). The responsibility of the teachers is vital as they ‘arrange, persuade and grow students’ (Boyle 2007, p.12). Teachers are important part for the development of effectual enterprise education initiatives (Hytti & O’Gorman, 2004).The role of the teachers and the educators, in this case, is to guide and inspire the students actively towards

Hypotheses

1. The role of the university and the concerned institutions increases the interest in entrepreneurship among the students of the Islamia University of Bahawalpur.
2. The course contents and the curriculum being taught create interest in the entrepreneurship among the students of the Islamia University of Bahawalpur.
3. The role model plays an essential role in developing interest regarding entrepreneurship among the students of the Islamia University of Bahawalpur.

Methodology

To examine and analyze the mentioned hypotheses, data was collected from a questionnaire conducted among university students in the Islamia University of Bahawalpur. Our unit of analysis was the student in MBA department at the Islamia University of Bahawalpur. The response of the students was gathered through questionnaire which consisted of closed ended questions so that non-response may be avoided at maximum. The questionnaire was adapted and designed through different sources which were used as mean for data collection. The sample of 341 students was chosen through simple random sampling technique. After examining, 300 questionnaires were filled properly which resulted in the response rate of 87%. The scales used in the questionnaire was based on a 5-point Likert scale (with 1 for strongly disagree, 2 for disagree, 3 for no opinion, 4 for agree, 5 for strongly agree) for each close-ended question. The technique of chi-square was used for the testing of hypotheses. The significance level was set at 5%. SPSS 15 was used for the data analysis.

Data Analysis, Demographics and the family back ground of the respondents

Out of 300 questionnaires that were filled properly, 64.7% consists of the female respondents and 35.3% consists of male respondents. Since most of the students are studying at the graduate level, most of them aged between 20 and 25. The response to the question that whether university or the institution is imparting education regarding entrepreneurship effectively, the proportion of students who completely agreed with the statement was 78%, whereas 17% were somewhat agreed and the remaining 05% were disagreed. The question was asked to the respondents that whether the course contents or the curriculum being taught in the university regarding entrepreneurship is creating interest in the entrepreneurship, 65% of them gave the response in yes whereas 20% were indecisive and the remaining 15% have said No. The question about the importance of role models for creating and developing interest in entrepreneurship 78% of them mentioned it highly important 12 % were indecisive and 10% said it less important.

The educational level of the parents was categorized as illiterate, primary level, secondary level and tertiary level (degree, diploma education or above).The study revealed that 18% of the student's father were illiterate, 26% of the student's father had only primary level of education where as 33% of the student's father had secondary level and the remaining 23% had tertiary level of education. The investigations of the study showed that 35% of the student's mothers were illiterate while 23% had

primary level of educational, 28% had secondary level of education and the remaining 14% had tertiary level of education.

Test of Association:

1. For testing the first hypothesis that is there any association between the role of the university and the interest developed in entrepreneurship among the students, chi-square was used as test of association. The study showed that the results were significant as our Pearson chi-square value is almost 0.034 which is less than the significance level 0.05. Chi-square table showing significant results is mentioned below.

Table 1: Chi-square between role of the university and the concerned institutions and interest developed in the entrepreneurship among the students

	Value	Degree of freedom	p-value
Pearson Chi-Square	6.752	2	.034
Likelihood Ratio	6.939	2	.031
Linear-by-Linear Association	6.223	1	.013
N of Valid Cases	300		

2. For testing our second hypothesis that whether there exists relationship between the course contents and the curriculum being taught and the interest developed in the entrepreneurship among the students, the value of chi-square was found .004, which is less than our significance level 0.05. So there exists strong relationship between course contents and the curriculum being taught in the universities and the interest developed in entrepreneurship among the students. The results can be presented in the form of following table.

Table2: Chi-Square Tests between the course contents and the curriculum being taught and the interest developed in entrepreneurship among the students

	Value	Degree of freedom	p-value
Pearson Chi-Square	18.099	9	.004
Likelihood Ratio	21.623	9	.010
Linear-by-Linear	9.771	1	.002

Association			
N of Valid Cases	300		

3. The third hypothesis can be tested with the help of chi-square. The value of chi-square was calculated as 0.000 which is less than our significance level 0.05. So we can conclude that there exists strong relationship between the importance of the role models and the interest developed in entrepreneurship among the students. The results can be summarized in the following table.

Table 3: Chi-square test between the importance of role models and the interest developed in entrepreneurship among the students.

	Value	Degree of freedom	p-value
Pearson Chi-Square	32.001	4	.000
Likelihood Ratio	27.191	4	.000
Linear-by-Linear Association	23.797	1	.000
N of Valid Cases	300		

Discussion:

The purpose of this study was to investigate the inclination of the students of MBA department of the Islamia University of Bahawalpur towards entrepreneurship. We constructed the hypothesis regarding the role of the institutions and the universities in creating and developing interest among the students in entrepreneurship. The result of our study practical supports for the role being played by the universities and the institutions in enhancing entrepreneurship (Edwards & Muir, 2005; Postigo, Iacobucc et al. 2006; Nurmi & Paasio, 2007).

It is significantly associated with the inclination towards entrepreneurship. Furthermore universities can be considered ideal place where while studying, we can shape the entrepreneurial cultures and inclinations among students (Mahlberg 1996). Therefore it is important for the universities and the concerned departments to create the entrepreneurship friendly environment for the encouragement and flourishing this concept.

For this purpose the university must design and develop such curriculum and introduce those courses that can fulfill the requirements of the students as well as the needs of the industry. Moreover if the courses related to entrepreneurship are exposed to the students well, it can influence the students towards the entrepreneurship. Charney and Libecap (2003) showed such results in his study.

As far as role models are concerned, we have found their significant impact on developing student's interest towards entrepreneurship. Role models are very vital because they provide individuals a guidance

Conclusions and Recommendations

In this study, the inclination of the university students towards entrepreneurship was examined. The conclusions of the study indicated that the role of university, the curriculum and the course contents and the importance of role of models were found significantly associated with the interested developed in the students towards entrepreneurship. The role played by the universities related to this issue is much needed today to develop the environment of the entrepreneurship. While on the other hand it is also desired from the students to convert their learning towards practical thinking and approaches which is required for creating the entrepreneurial environment. The conclusions of this study will certainly help the administration and the teaching staff of the university to think towards practical learning and aspects of the entrepreneurship in new global era.

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EFFECT OF FDI INFLOW ON ECONOMIC GROWTH OF INDIA: A TIME SERIES ANALYSIS

By Nikhil Kumar Singh³ and Urvashi Varma⁴

ABSTRACT

*Foreign direct investment (FDI) has boomed in post-reform India. Moreover, the composition and type of FDI has changed considerably since India has opened up to world markets depending on various determinants which exist in the environment. This has fuelled high expectations that FDI may serve as a catalyst to higher economic growth. The literature on foreign direct investment (FDI) and economic growth generally points to a positive FDI-growth relationship. However, very few studies offer direct tests of causality between the two variables. In theory, economic growth may induce FDI inflow, and FDI may also stimulate economic growth. This paper adds to the literature by analyzing the existence and nature of these causal relationships. This study deals with the trend analysis of Gross Domestic Product (GDP) and FDI from 1990-91 to 2010-11 and forecast the growth trend of both variable. It also analyzes the correlation between GDP and FDI. This study also tries to find out the impact of first and second generation FDI reform on GDP of India through regression method. By using time series data and coefficient of correlation analysis, we found that Foreign Direct Investment (FDI) is positively affecting the economic growth. The empirical analysis using the **time series** data from 1990-91 to 2010-11 shows that FDI plays unambiguous role in contributing to economic growth. While the regression analysis reveals that there is no impact of first and second generation reform on GDP of India.*

Keywords: *Gross Domestic Product, Foreign direct investment; economic growth*

1.0 INTRODUCTION

One of the most striking developments during the last two decades is the spectacular growth of FDI in the global economic landscape. This unprecedented growth of global FDI in 1990 around the world make FDI an important and vital component of development strategy in both developed and developing nations and policies are designed in order to stimulate inward flows. In fact, FDI provides a win – win situation to the host and the home countries. Both countries are directly interested in inviting FDI, because they benefit a lot from such type of investment. The ‘home’ countries want to take the advantage of the vast markets opened by industrial growth. On the other hand the ‘host’ countries want to acquire technological

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and managerial skills and supplement domestic savings and foreign exchange. Moreover, the paucity of all types of resources viz. financial, capital, entrepreneurship, technological know-how, skills and practices, access to markets- abroad- in their economic development, developing nations accepted FDI as a sole visible panacea for all their scarcities. Further, the integration of global financial markets paves ways to this explosive growth of FDI around the globe.

The relationship between foreign direct investment (FDI) and economic growth is a well-studied subject in the development economics literature, both theoretically and empirically. Recently, renewed interest in growth determinants and the considerable research on externality-led growth, with the advent of endogenous growth theories, made it more plausible to include FDI as one of the determinants of long run economic growth. The opening market in India and significant growth rate are attracting large FDIs in India. This changing composition certainly effects the composition of various sectors operating in India. These development and growing attractiveness of Indian market on global front gave rise to study the relation of FDI with economic growth of India. Before going to the deeper study there is a need to understand the basic concepts of FDI and Economic growth.

Foreign Direct Investment:

According to RBI, FDI is the process whereby residents of one country (the home country) acquire ownership of assets for the purpose of controlling the production, distribution and other activities of a firm in another country (the host country). While IMF defines FDI as a cross border investment made by a resident in one economy with the objective of establishing a 'lasting interest' in an enterprise that is resident in an economy other than that of a direct investor. According to Economic Times, Foreign Direct Investment is a type of investment that involves the injection of foreign funds into an enterprise that operates in a different country of origin from the investor. Investors are granted management and voting rights if the level of ownership is greater than or equal to 10% of ordinary shares. Shares' ownership amounting to less than the stated amount is termed portfolio investment and is not categorized as FDI.

Regulatory bodies in India: The proposals for foreign direct investment in India get their approval through two routes that are the Reserve Bank of India and The Foreign Investment Promotion Board

(FIPB) Department of Economic Affairs, Ministry of Finance. FIPB has been constituted by the Government of India with a view to promote and attract foreign investment in India. The FIPB is a high powered committee comprising the Principal Secretary to the Prime Minister (Chairman), Finance Secretary and Commerce Secretary, and is located at the Ministry of Industry. *Automatic* approval is given by the Reserve Bank of India to the proposals for foreign direct investment in India while FIPB processes cases of *non- automatic* approval.

The actual FDI inflows in India is welcomed under five broad heads: (i) Foreign Investment Promotion Board's (FIPB) discretionary approval route for larger projects, (ii) Reserve Bank of India's (RBI) automatic approval route, (iii) acquisition of shares route (since 1996), (iv) RBI's non – resident Indian (NRI's) scheme, and (v) external commercial borrowings (ADR/GDR) route.

Economic Growth:

In economics, economic growth is defined as the increasing capacity of the economy to satisfy the wants of the members of society. Economic growth is enabled by increases in productivity, which lowers the inputs (labor, capital, material, energy, etc.) for a given amount of output. Lowered costs increase demand for goods and services. Economic growth is also the result population growth and of the introduction of new products and services. Economic growth is measured as a percentage change in the Gross Domestic Product (GDP) or Gross National Product (GNP).

Gross domestic product: GDP refers to the market value of all final goods and services produced within a country in a given period. GDP per capita is often considered an indicator of a country's standard of living. GDP can be determined in three ways, all of which should, in principle, give the same result. They are the product (or output) approach, the income approach, and the expenditure approach. For example GDP can be calculated by *expenditure method* as: **GDP** = private consumption + gross investment + government spending + (exports – imports).

GDP at constant price: GDP at constant prices refers to the volume level of GDP. Constant price estimates of GDP are obtained by expressing values in terms of a base period. In theory, the price and quantity components of a value are identified and the price in the base period is substituted for that in the

current period. It basically removes the effect of price changes on GDP.

The economic liberalization in India refers to ongoing economic reforms in India that started on 24 July 1991. After Independence in 1947, India adhered to socialist policies. In the 1980s, Government of India initiated some reforms. In 1991, after India faced a balance of payments crisis, it had to pledge 67 tons of gold to Union Bank of Switzerland and Bank of England as part of a bailout deal with the International Monetary Fund (IMF). In addition, IMF required India to undertake a series of structural economic reforms. As a result of this requirement, the government started breakthrough reforms. The new neo-liberal policies included opening for international trade and investment, deregulation, initiation of privatization, tax reforms, and inflation-controlling measures. Starting from a baseline of less than USD 1 billion in 1990, a recent UNCTAD survey projected India as the second most important FDI destination (after China) for transnational corporations during 2010-2012. As per the data, the sectors which attracted higher inflows were services, telecommunication, construction activities and computer software and hardware. Mauritius, Singapore, the US and the UK were among the leading sources of FDI. These economic changes are the outcome of the liberalization policies adopted by India. This trend of foreign investment and drastic economic growth in India opened ways for many study to investigate the relation of investment inflow in the country and the growth.

2.0 LITERATURE REVIEW

Atrayee Ghosh Roy and Hendrik F. Van den Berg (2006), in his study “**Foreign Direct Investment and Economic Growth: A Time-Series Approach**” have focused on how foreign direct investment (FDI) transfers technology from developed economies to less developed economies. Most FDI occurs between developed economies. This paper examines whether such FDI inflows have stimulated growth of the economy. The research applies time-series data to a simultaneous-equation model (SEM) that explicitly captures the bi-directional relationship between FDI and economic growth. FDI is found to have a significant, positive, and economically important impact on growth. Also, the SEM estimates reveal that FDI growth is income inelastic. These results imply that: (1) even a technologically advanced country benefits from FDI, (2) The gains from FDI are very substantial in the long run. Overall, the results

suggest that policies should focus on keeping the country attractive to foreign direct investors.

Narayan Sethi and K. Uma Shankar Patnaik (2006), in his study **“Impact of International Capital Flows on India’s Economic Growth”** concluded that Countries with well developed financial markets gain significantly from Foreign Direct Investment (FDI). Given the huge volume of capital flows and their influence on the domestic financial markets, understanding the behavior of the flows becomes very important especially at time liberalizing the capital account. This study examines the impact of international capital flows on India’s financial markets and economic growth. It also examines trends and composition of capital inflows, changing pattern of financial markets in view of globalization, ascertain the impact of domestic financial policy variables on international capital flows and suggest policy implication thereof. By using monthly time series data, the study found that Foreign Direct Investment (FDI) is positively affecting the economic growth direct contribution, while Foreign Institutional Investment (FII) is negatively affecting the growth alb its, in a small way and make a preliminary attempt to test whether the international capital flows has positive impact on financial markets and economic growth. The empirical analysis using the time series data between April 1995 to December 2004 shows that FDI plays unambiguous role in contributing to economic growth.

Argiro Moudatsou and Dimitrios Kyrkilis (2009) in his study, **“FDI and Economic Growth: A Case of European Union and ASEAN Association of South East Asian Nations”** attempt to address the causal-order between inward FDI and economic growth using a panel data set for two different Economic Associations that is **EU** (European Union) and **ASEAN** (Association of South Eastern Asian Nations) over the period 1970-2003. Three possible cases are investigated in this paper 1) Growth-driven FDI, is the case when the growth of the host country attracts FDI 2) FDI-led growth , is the case when the FDI improves the rate of growth of the host country and 3) the two way causal link between them. Empirical results obtained from heterogeneous panel analysis indicate the following

Regarding the EU countries the results support the hypothesis of GDP -FDI causality (growth driven

FDI) in the panel. **Regarding the ASEAN** there is evidence that there is a two ways causality between GDP per capita and FDI in the cases of Indonesia and Thailand while in the cases of Singapore and the Philippines FDI is host country GDP growth motivated.

Andreas Johnson (2006), in his study “**The Effects of FDI Inflows on Host Country Economic Growth**” discusses and models the potential of FDI inflows to affect host country economic growth. The paper argues that FDI should have a positive effect on economic growth as a result of technology spillovers and physical capital inflows. Performing both cross-section and panel data analysis on a dataset covering 90 countries during the period 1980 to 2002, the empirical part of the paper finds indications that FDI inflows enhance economic growth in developing economies but not in developed economies. However, economic growth could itself cause an increase in FDI inflows. Economic growth increases the size of the host country market and strengthens the incentives for market seeking FDI. This could result in a situation where FDI and economic growth are mutually supporting. However, for the case of most of the developing economies, even sustained economic growth is unlikely to result in market-seeking FDI due to the low income levels. Therefore, causality is primarily expected to run from FDI inflows to economic growth for these economies.

*E. Borensztein, J. De Gregorio, J-W. Lee(1998)*in his study, “**How does foreign direct investment affect economic growth?**” test the effect of foreign direct investment (FDI) on economic growth in a cross-country regression framework, utilizing data on FDI flows from industrial countries to 69 developing countries over the last two decades. The results suggest that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. However, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital. Thus, FDI contributes to economic growth only when a sufficient absorptive capability of the advanced technologies is available in the host economy.

Maria Carkovic and Ross Levine, in their study “Does Foreign Direct Investment Accelerate Economic

Growth” studied that FDI has increased dramatically since the 1980s. Furthermore, many countries have offered special tax incentives and subsidies to attract foreign capital. An influential economic rationale for treating foreign capital favorably is that FDI and portfolio inflows encourage technology transfers that accelerate overall economic growth in recipient countries. While microeconomic studies generally, though not uniformly, shed pessimistic evidence on the growth effects of foreign capital, many macroeconomic studies find a positive link between FDI and growth. Previous macroeconomic studies, however, do not fully control for endogeneity, country-specific effects, and the inclusion of lagged dependent variables in the growth regression. After resolving many of the statistical problems plaguing past macroeconomic studies and confirming the results using two new databases on international capital flows, the study conclude that FDI inflows do not exert an independent influence on economic growth. Thus, while sound economic policies may spur both growth and FDI, the results are inconsistent with the view that FDI exerts a positive impact on growth that is independent of other growth determinants

3. RESERCH DESIGN

3.1 OBJECTIVE OF THE STUDY

- To analyzes and forecast the trend of FDI inflow and Economic growth in Indian.
- To find out the correlation between FDI inflow in India and economic growth prevailing in the country.
- To analyze the impact of first and second generation reform on GDP growth of India.

3.2 RESEARCH METHODOLOGY

3.3 DATA: Data has been taken for 20 years starting from 1990-91 to 2010-11(August –March). GDP is taken at Market prices , at constant price and base year for GDP from 1990-91 to 2004-05 is 1999-2000 and from 2005-06 to 2009-10 is 2004-05.

3.4 DEVELOPMENT OF HYPOTHESES

H₀₁ : There is no relationship between the FDI Inflow and Economic growth

H₀₂ : The Economic growth does not depend on time

H₀₃ : The Economic growth does not depend on FDI inflow

H₀₄ : The Economic growth does not depend on accelerated FDI inflow

H₀₅ : There is no difference in the impact of the first and second generation reforms on the economic growth.

3.5 TESTING TOOL

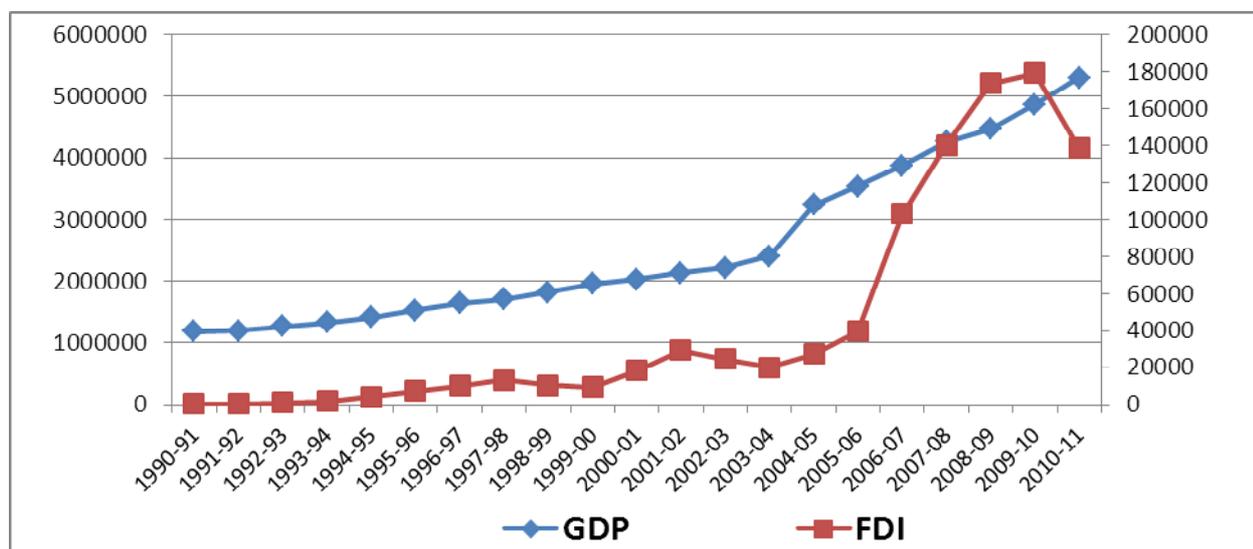
- Karl Pearson coefficient of correlation has been used to find out the relation ship between FDI and Economic growth.
- Time series analysis has been used for forecasting. Both linear and parabolic trend have been used.
- Regression analysis using dummy variables have been used to find out the impact of FDI inflow and accelerated FDI inflow on the economic growth of the contry. Dummy variable segregates the first and second generation reforms.

4.ANALYSIS & DISCUSSION

4.1 TREND ANALYSIS OF FDI INFLOW AND GDP

Trend of GDP and FDI Inflow in India from 1990-91 to 2010-11 can be observed in Figure 1

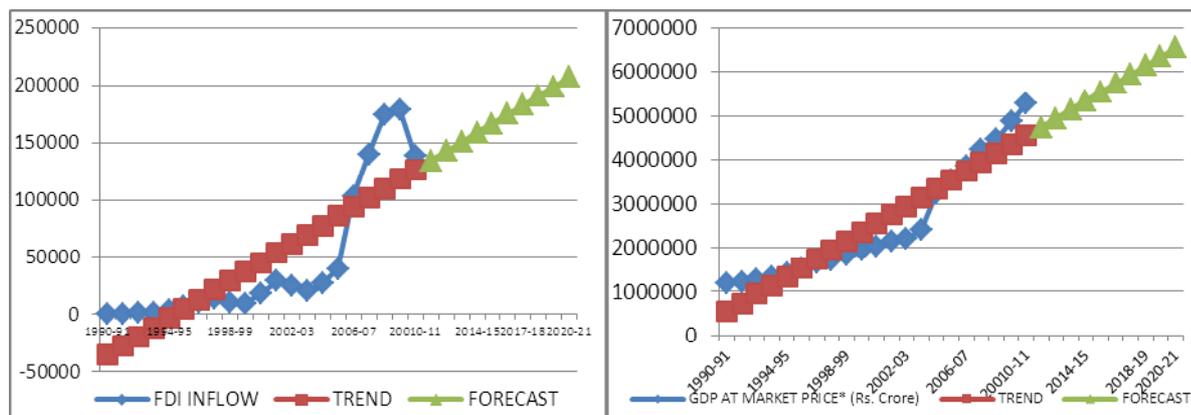
Figure 1 : Trend of GDP and FDI Inflow in India



SOURCE: Compiled using data from RBI handbook 2011 & Economic Survey of India 2011

Most data in macroeconomics and finance come in the form of time series—a set of repeated observations of the same variable, such as GDP, FDI etc. Time series analysis helps to analyze the trend of the data and forecast the value of the same for the future. Here in case of GDP and FDI linear trend by least square method is used to forecast the trend of FDI and GDP but the value of r^2 (Coefficient of Determination) for FDI is 0.685 while that of GDP is 0.888 as can be seen in Figure 2.

Figure 2 : Forecasting FDI Inflow and GDP using linear trend



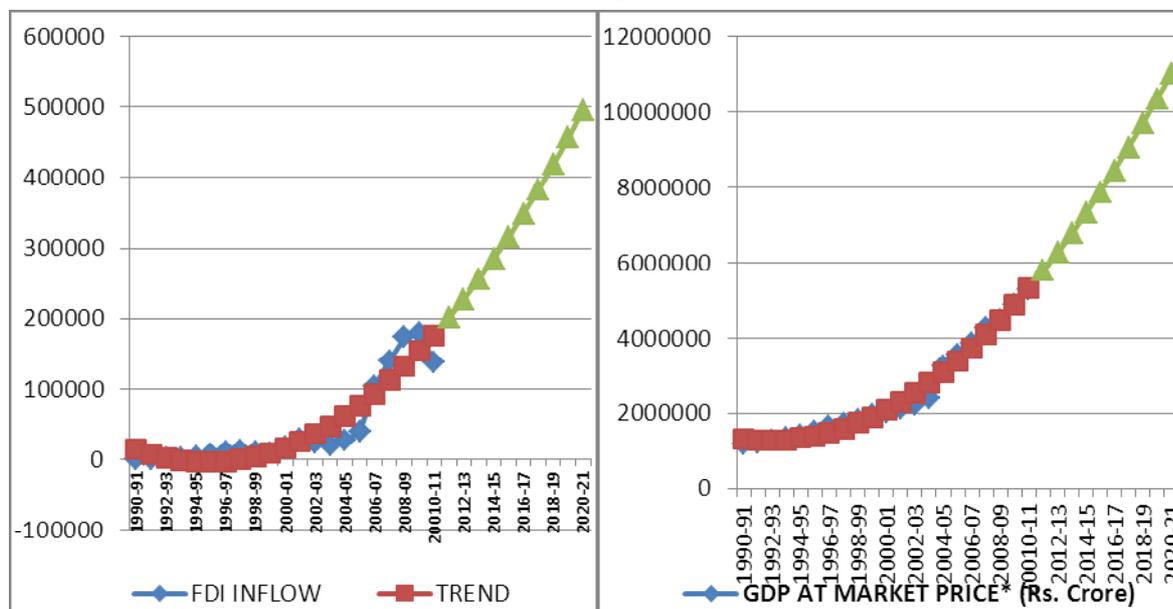
SOURCE: Compiled using data from RBI handbook 2011 & Economic Survey of India 2011

The value of r^2 signifies that the significance level of time series analysis by least square method is not explaining the problem correctly. So to get better result second degree trend or parabolic trend is used.

This method explains the problem more significantly as can be seen in Figure 3.

Post liberalization there is huge changes occurred in Indian financial system from the verge of crisis now India emerges as one of the strongest financial power in the world. Various studies predict that in future India will emerge as the financial super power in the word. But this all happened only in past 20 years after liberalization of Indian market. Here the major question arises that is it a long term or the result that we are observing is just a short term outcome of opening of Indian market and huge investment of the investor in Indian market. To analyze this fact there is a need to forecast the future trend of FDI inflow in India and its Economic growth (GDP

Figure 3 : Parabolic Trend for FDI Inflow and GDP at Market Prices



SOURCE: Compiled using data from RBI handbook 2011 & Economic Survey of India 2011

The above **Second degree trend or parabolic** time series approach support the view that in future India will grow at a huge pace and become one of the major financial power in the world.

FDI Inflow: Time Series Analysis of FDI has high coefficient of determination (r^2) .i.e. 0.876 with good significance level. This shows that the FDI inflow in India is positively flowing and the trend of FDI inflow in India shows a positive upward growth. This certainly boosts the economic condition of the country making it more attractive for investment. The future FDI inflow trend also shows a parabolic positive growing trend which indicate that the flow of FDI in India will remain positive making it one of the favorable investment destination for that global investors.

GDP Growth: Time Series Analysis of GDP at Market Price has coefficient of determination (r^2) 0.986 which shows that it is highly significant. The trend value calculated using the parabolic equation ($Y_c = a+bX+cX^2$) reflect that there is a positive growing trend of GDP in past 21 years from 1990 to 2011. This can be certainly seen from the past GDP growth of the country. But the result also forecasted the growing positive trend of GDP for next 10 years from 2012 to 2021.

Economic reforms taken by Indian government in 1991 makes the country as one of the prominent performer of global economies by placing the country as the 4th largest and the 2nd fastest growing economy in the world. India also ranks as the 11th largest economy in terms of industrial output and has

the 3rd largest pool of scientific and technical manpower. Continued economic liberalization since 1991 and its overall direction remained the same over the years irrespective of the ruling party moved the economy towards a market – based system from a closed economy characterized by extensive regulation, protectionism, public ownership which leads to pervasive corruption and slow growth from 1950s until 1990s. In fact, India's economy has been growing at a rate of more than 9% for three running years and has seen a decade of 7 plus per cent growth. The exports in 2008 were \$175.7 bn and imports were \$287.5 bn. India's export has been consistently rising, covering 81.3% of its imports in 2008, up from 66.2% in 1990-91.

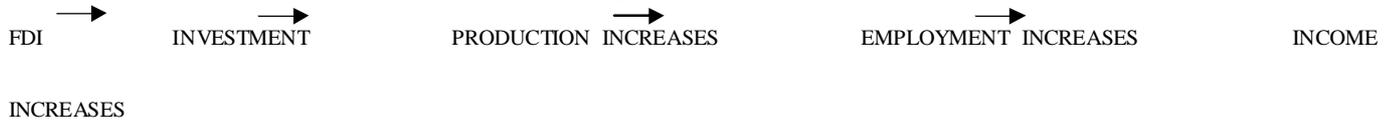
But there is a growing concern that weather this growth rate will sustain for long time or it's just a short term outcome of the liberalization of Indian market. This can be well studied by analyzing the past data of FDI and GDP in India post liberalization and then forecasting the future of the growth trend of both the factors. The time series analysis of FDI and GDP for past 21 year shows that in future the growth trend of FDI and GDP will be increasing giving huge boost to Indian economy. FDI moves parallel to the GDP growth giving a huge support to various industries in India and this will ultimately result into the economic growth of the country.

4.2 COEFFICIENT OF CORRELATION ANALYSIS: KARL PEARSON'S COEFFICIENT OF CORRELATION BETWEEN GDP AT MARKET PRICE AND FDI INFLOW (1990-91 TO 2010-11)

r^2 (Coefficient of Determination) = 0.861373847

PE (Probable Error) = 0.020404

Now the basic point that arises during the discussion was; is FDI effect GDP or Economic growth and if yes then what is the correlation between them, how much it effect the growth of a country. From basic economic principle we can say that FDI create investment which ultimately results in to economic growth as:



The above results obtained by Karl Pearson Model suggest that there is strong correlation between FDI inflow and GDP of India. The analysis of past 21 year data from 1990-91 to 2010-11 project the value of Coefficient of correlation (r) as 0.928 while coefficient of determination (r²) is 0.861 at very high significance of 0.00. The Probable Error method also validates the result as r is more then six times the PE so the value is considered to be significant.

This result strongly supports the hypothesis that FDI and economic growth are highly correlated and it certainly effects the economic development of the country. But at the same time there are various other factors are also operating in the same environment effecting both FDI inflow and GDP of the country.

4.3 IMPACT OF FIRST AND SECOND GENERATION REFORM ON GDP OF INDIA

Recognizing the importance of FDI in the accelerated economic growth of the country, Government of India initiated a number of economic reforms in 1991. As a result of the various policy initiatives taken, India has been rapidly changing from a restrictive regime to a liberal one, and FDI is encouraged in almost all the economic activities under the various inflow routes. But now the phase of economic reform is a history and there are lot of changes occurred after the reform in 1991. The changes and the reform from 1991 to till now is divided into two phase .i.e. First generation reform from 1991 to 2000 and Second generation reform from 2001 to till now. To analyze the gradual effect of FDI on economic growth (GDP) of India both the generation must be studied.

Model used

$$GDP = \alpha + \beta_1 t + \beta_2 FDI + \beta_3 FDI^2 + \beta_4 Dt$$

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate

0.980^a	0.961	0.951	291304.897
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Predictors: (Constant), Dt (Dummy variable), FDI², TIME, FDI

Coefficients			
Model	Un standardized		
	Coefficients	t	Significance
(Constant)	1894515.921	8.610	(0.000)
TIME	95314.399	3.009	(0.008)
FDI	20.484	2.159	(0.046)
FDI²	-4.998E-5	-1.098	(0.288)
Dt	-2093.290	-0.008	(0.994)

Dependent Variable: GDP

To analyze the gradual effect of FDI on economic growth (GDP) of India both the generation must be studied. The model above was not appropriate to bring out the difference in the first and second generation of reforms.

This result also shows that the FDI don't have very significant and dramatic effect on GDP in first and second generation reform it effect both the phase in same trend.

5.0 CONCLUSION

Nations' progress and prosperity is reflected by the pace of its sustained economic growth and development. Investment provides the base and pre-requisite for economic growth and development. But the question arises that what are the major factors that contribute to the economic growth of the country. From basic economics it can be concluded that investment play a major role in economic growth. Foreign Direct Investment (FDI) is considered to be the lifeblood of economic development especially for the developing and underdeveloped countries. Multinational companies (MNCs) capitalize on foreign business opportunities to grow in the market.

The above results show that, post liberalization the growth of FDI and GDP is significant in India and the trend will continue in future, strengthening the position of India in global financial market. The positive growth trend of FDI inflow and GDP also indicate that both the factors are dependent on each other. The study also shows that there is high correlation between FDI inflow and GDP growth rate in India. This indicates that FDI play very important role in economic development of the country. From the study it can be concluded that both FDI and GDP are interdependent. FDI fuels economic growth and in return economic growth attract more FDI inflow.

Further, the above analysis helps in identifying the major determinants of FDI in the country. FDI plays a significant role in enhancing the level of economic growth of the country. Thus, a nation can improve its Economic fortunes by adopting liberal policies vis-à-vis by creating conditions conducive to investment as these things positively influence the inputs and determinants of the investment process. This analysis also helps the future aspirants of research scholars to identify the main determinants of FDI at sectoral level because FDI is also a sector – specific activity of foreign firms’ vis-à-vis an aggregate activity at national level. Finally, the study observes that FDI is a significant factor influencing the level of economic growth in India. It provides a sound base for economic growth and development by enhancing the financial position of the country.

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Cognitive Approach of Corporate Governance

A Visualization Test of Mental models with Cognitive Mapping Technique

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ABSTRACT

The idea of this paper is to determine the mental models of actors in the firm with respect to the cognitive approach of corporate governance. The use of the cognitive map to view these diagrams to show the ways of thinking and conceptualization of the cognitive approach. The paper takes a corporate governance perspective, discusses mental models. It takes also a cognitive mapping technique.

Key words: corporate governance, stakeholder model, cognitive mapping

1. Introduction

As shown Charreaux (2002), approaches a break with the paradigm contract can be grouped under the term "cognitive theories of the firm." According Charreaux, these theories include such current behavior (Simon, 1947, Cyert and March, 1963), evolutionary theory (Nelson and Winter, 1982), and the theory based on the resources and expertise. After briefly characterized the cognitive approach, our goal is to raise the contribution of this approach. Our goal is to identify the key concepts of the cognitive approach.

2. Literature review

L'approche cognitive de la gouvernance

Langlois and Foss (1999) indicate that the majority of studies related to contractual theories of the organization, focusing exclusively on the notion of information asymmetry and conflicts of interest it generates, does not offer an analysis the process of value creation. Interested only in the distribution of value, this work therefore obscure the productive dimension of building value by the company and do not give their place to levers such as competence, knowledge, the innovation and learning that appear to play an important role in research more competitive source of value creation in a sustainable manner. Cognitive theories focus particularly on creating internal knowledge from organizational learning.

The performance was more of the leader's ability to imagine, innovate, to receive new investment opportunities and act on their environment to change in its ability to restructure existing processes.

The firm is seen as a repository of knowledge, not only as a nexus of contracts. Value creation depends primarily of the identity and distinctive competencies of the latter, as well as its ability to create knowledge (Teece, Rumelt, Dosi and Winter, 1994). The cognitive approach attaches more importance to the contribution of intellectual capital in creating value. Thus, in the context of the cognitive approach to governance, the cognitive cost optimization is the main lever for value creation. Contrary to common contractual governance in the current cognitive, the problem is not that of aligning the interests of managers and providers of resources but of qualitative coordination, alignment and patterns of cognitive models anticipation: cognitive adjustments between the various stakeholders. Charreaux (2002) then defines corporate governance as the set of mechanisms to increase the potential for value creation through learning and innovation. According Poincelot and Wegmann (2004), a cognitive perspective, governance

mechanisms must enable the management to inform on how to achieve the objectives assigned to it.

Control mechanisms leaders have therefore designed to ensure the sustainability of the organization. In this context, the board plays a cognitive role when considered as a place for exchanges and discussions in which qualified directors are able to influence the management skills of the manager and where the debate can lift some disagreement about the value of the strategy. Governance mechanisms must guide the leader and allow him to make decisions that create value through innovation and organizational learning. This aspect of governance introducing some aspects associated with the internal characteristics of the firm as "information processor", which involves cognitive patterns of interpretation. He said the role of governance is a system for monitoring possible schemes for organizing the functions of allocation of information between the various participants in the organization.

This vision includes proactive governance including the behavioral theory of the firm based on the work of Simon (1947) and Cyert and March (1963), evolutionary theory, theory of organizational learning and theories of resources and skills.

In cognitive vision of governance, the role of the board goes beyond the interests of shareholders; it is a mechanism to ensure the best possible cooperation between managers and shareholders (Charreaux, 2000).

It acts as a hierarchical body which, in addition to its role of arbiter in the rent sharing, should encourage teamwork. This representation allows the board to better understand the presence of directors as employees, bankers and suppliers. Thus, the inside directors can not only protect their specific investments, but also provide new information to enhance value creation. The role of the board is no longer limited to monitor managers to shareholders, it also acts to protect the set of relationships that create value, preserve and enhance the productive nature of the nexus of contracts, either by providing a shared fair and adequate incentive among different partners, by providing expertise (Charreaux, 2000). The company represents a system of stakeholders aiming to create value for stakeholders. The purpose of the governance mechanisms should be to maximize the global creation of wealth by the company.

The key concepts of the cognitive approach

The common cognitive theory is that value creation comes from knowledge. The source of value creation is linked to elements difficult to imitate and which provide a significant competitive advantage and sustainable. The determinants of value creation as it is spoken in the cognitive theories are some of sociological and other psychological.

The behavioral theory (behaviorist theory) gives more prominence to the psychological dimensions of value creation. Achieving the desired performance requires knowledge of the behavior of actors or groups of actors in an organization. Two assumptions underlie this theory: the rationality of individuals is limited (Simon, 1947) and the organization consists of a coalition of actors with specific objectives which is a source of differences and potential conflicts.

Accordingly, a principle of maximizing the satisfaction replaces the traditional principle of maximizing value for shareholders. The decision process is interactive and emerging and the possibility of organizational learning.

The controls in this context are intended to ensure the sustainability of the organization. For this, the officer must complete a mission animation and mediation to help the players to coordinate. These devices must also inform the levels of contributions of different actors and so on payments possible, thus allowing a reduction of "organizational slack". To achieve these ends, the controller must measure and transmit signals external and internal, stable behavior and encourage self. Non-financial indicators (absenteeism, productivity indicator ...) learning about the behavior of each can increase the cement of the coalition.

In theories of organizational learning, competence creating value comes from the knowledge of organizational routines and especially for evolutionary theory (Nelson and Winter, 1982), knowledge of their developments. Routines are patterns of behaviors and interactions that individuals are able to use to deal with different situations that arise. The construction of these routines is the organizational learning (collective). They are usually tacit (neither codified nor transferable).

Nonaka and Takeuchi (1998) explain the creation of organizational knowledge and organizational

learning to distinguish the dominant behavior (learning "how to" by observation, imitation, experience) and a predominantly cognitive ("the learning outcomes are a change in cognitive results in information processing and leads to increased knowledge or changes in patterns of interpretation. "

The learning process will involve then the "know how" and "why"). An organizational learning process involves a comprehensive behavioral and cognitive change. The plurality of non-financial indicators and their high frequency including those focused on training, the rate of turnover may be justified in theory in order to create organizational learning. The participation of other stakeholders in the knowledge of employees is also important (opinions of customers on products, services ...). Note also that the creation of organizational knowledge is initially transferring tacit knowledge within a group, sharing of information. The nature of the information to be communicated is not dictated by the hierarchy but emerges from the communication between the groups (tacit knowledge is inherently difficult to transfer, the transfer will be primarily through dialogue and less formal way through indicators).

In evolutionary theory, the evolution of an organization due to relevant operating skills called secondary. Evolutionary theory can also be used to understand that non-financial indicators (such as other management practices, such as the ABC method) can be introduced and maintained or otherwise rapidly rejected by studying the existing organizational routines (Burns and Scapens, 2000). The Movement for Resources and Skills stems from the work of Ricardo (Arrègle, 1996) during which the concepts have been developed for pension and quasi-rents. The Ricardian rent is in the possession and use of a common strategic asset whose supply is limited and cannot be easily imitated or created. The quasi-rent is the specificity of an asset that may be worth more than a company as a competitor. These assets are difficult to imitate, difficult to substitute and exchangeable in a market. The MRC is part of broader evolutionary theories which postulate that the structural dimension of business performance is not their competitive position, but managing the evolution of their technical processes and their organizational processes.

The MRC leads therefore to refocus strategic thinking in the heart of the company in attempting to identify its scarce resources and more specifically human and organizational skills, that is to say its

Intellectual Capital. The elements of Intellectual Capital are perceived as strategic resources chip, capable of giving companies a competitive advantage. MRC refers to a strategic interactionist mode of identifying the resources and skills, and to analyze the interaction between these resources and skills and environmental conditions.

Control modes of communication and exchange and training

In general, cognitive theories are based on emerging modes of control. These control modes are aiming to coordinate routines. It is also to promote the emergence of these secondary skills by providing detection devices and adequate analysis (concept of leading indicators) and facilitating organizational learning: promoting exchanges, communication and training. In addition to this overview, it is interesting to show that certain theories in organizational control, that is to say, theories of performance appraisal and pilot organizations, are part of the cognitive perspective. We present two approaches particularly significant. Uncertainty, the company must use other methods of control that the control of a disciplinary nature (checking that the results are up to the goals and behaviors are accordance with the requirements of managers). Modes of control refer to contractual paradigm, while the informal modes of control, through culture and self-refer to the cognitive paradigm.

Cognitive resources and growth opportunities

The emergence of a governance model extended to cognitive limitations of the model comes from the explanatory force (Rajan and Zingales 2000; Charreaux, 2002, 2002). This model seeks to explain the long-term success of firms and specifically why some firms are more profitable than others (Jensen and Meckling, 1976). In this traditional view of governance inherited from the seminal work of Berle and Means (1932), the value created is essentially the control over the executive. Indeed, shareholders owners delegate decision rights to their leader, they must ensure that it does not use them for its exclusive benefit or do not waste. It is therefore to limit the discretion of the officer via the internal (board of directors, audit committee, independent directors) and external mechanisms (financial market, labor market leaders, regulators). The value created from the effectiveness of the mechanisms in place. However, as noted Charreaux, (2002), it may happen that a leader who has achieved good financial results is still crowded.

Taking the founding texts of current theories contractual, Charreaux (2002) shows that the source of the performance comes not only from the elimination of opportunistic behavior. In addition to the disciplinary aspects is the ability of management to organize production and to acquire knowledge that enables firms to be more productive. Financial resources are supplemented by cognitive resources involved in the strategic choices (Charreaux, 2002).

Shareholders, but also other creditors, provide financial and cognitive (Charreaux, 2000). The introduction of the cognitive dimension of governance emphasizes the concepts of knowledge and learning and this in an evolutionary perspective in the sense of Nelson and Winter (1982). Knowledge is an interpretation of information by individuals. In this context, information is collected, processed and interpreted and there is a real organizational learning within the firm. This learning begins with the interactions between the board and the manager and can also develop inside the firm.

Organizational learning for; the acquisition of individual skills but also the development of collective skills, the subject of many schools of thought.

There are two main types of learning; The first concerns the exploitation of existing knowledge and skills (or internal resources), in the context of relatively stable systems, while the second develops the exploration of new opportunities (or resources) in a more complex and turbulent. In the first case, learning is oriented management experience and in the second case, it is experimenting with new internal processes or to challenge existing processes in a movement of regeneratio.

In this context, the board helps the leader to develop or modify its vision (Charreaux 2002, Wirtz, 2006). The board becomes (or becomes) a real forum for discussion and is not simply "rubber stamp" to which he is sometimes compared. In fact, the skills of directors (or shareholders), their social networks become predictors of the value created by firms. The board can also be seen as a mechanism to harmonize existing cognitive schemas in the firm and in this context, the composition of the board plays an important role. In fact, it's more diverse board is decisive rather than independence (Charreaux, 2002). In this scheme, the entrenchment of the manager is not necessarily bad for the firm, it is even necessary to promote the construction of a shared vision and create value between the leader and the rest of the

stakeholders. Cognitive conflicts must be able to speak is through them that new opportunities can be built, it is however desirable to alleviate the consequences, by consensus or by the game of corporate culture.

Governance and financial governance cognitive classic not opposed but complementary (Wirtz, 2006) and where appropriate, use existing skills or explore new opportunities, one or other of the dimensions that will be more relevant another. Under this analytical framework, it is no longer conflicts of interest must be reduced and "channeling" but the cognitive conflicts. The framework proposed moving away from a governance perspective to include strict discipline, in explaining firms' long-term, preservation and exploitation of internal resources but also the exploration of new resources.

Cognitive levers: innovation, capabilities and specific skills

Visions shareholder and partnership adopt a vision of legal and financial governance focuses on the levers disciplinary expected to provide the distribution that maximizes the value (that is to say that minimizes agency costs): the source of value creation created is purely disciplinary and linked to the minimization of conflict. If the disciplinary approach is still appropriate in the case of corporate managerial capital dispersed, recent studies highlight the restrictive nature particularly in the case of innovative firms (Charreaux, 2002; Wirtz, 2006). Value creation could not be reduced to a simple problem of discipline, but would also include a cognitive dimension, actually centered on the levers cognitive related to innovation and learning, which can create value. At the various strands of research in strategy, this approach highlights the central role of knowledge, skills and specific skills of the manager and his team (Kogut and Zander, 199). This knowledge is often tacit.

They contribute to both encourage innovation and strengthen competitive advantage and appear as real vectors of sustainable value creation (Wirtz, 2006). Cognitive theories are based on four common. The first is the current behavior (Simon, 1947) in which the firm is seen as a political coalition and a cognitive institution that adapts and learns (organizational learning).

The second is based on economic theory of evolution Neo-Schumpeterian (Nelson and Winter, 1982) which defines the firm as an entity comprised of activities in a coherent way, a repertoire of productive knowledge, a system of interpretation, which emphasizes the notion of competition based on

innovation.

The third is based on the theories of the strategy based on the resources and skills ("resource based theory") that show the company as both a set of resources and an entity accumulation of knowledge guided by the vision of leaders due to their experience. As such, sustainable growth must be supported by the ability to learn and specificity of the stock of accumulated knowledge. The fourth is the power of organizational learning (Argyris and Schön, 1978) which emphasizes cognitive learning organizations.

The cognitive approach is novel in that it allows indigenizing the question of the origin of investment opportunities. Indeed, in the traditional view, the firm is interested few, if any, the source of investment opportunities. These opportunities are being "° available to policymakers °" in the image of a varied menu in which the leader would only have to choose "all possible activities for a company and their characteristics in value creation are given exogenously. Although the information on this subject is distributed asymmetrically, it exists, is "objective" and can in principle be obtained, although it sometimes involves a significant cost "(Wirtz, 2006). To illustrate this idea, Wirtz cites the example given by Jensen (1993) on overcapacity in the tire industry: the assessment of overcapacity due to the introduction of new technology, the radial tire, is objectively verifiable; the opportunities for value creation in this industry are given (just to learn).

In this context, discipline is exerted on the head to force him to make the best choice possible through a reduction in information asymmetry. On the contrary, the theories "cognitive" introduce the notion of knowledge and not just information. If the information is seen as a closed set, objective (that is to say, potentially accessible to all individuals) data on the impacts of possible events, knowledge is an open set, subjective, resulting from the interpretation information by individuals, according to their cognitive models.

The construction of a unique investment opportunity, for example through technological innovation depends not only information (ie information that could have built the way), but also knowledge specific (and tacit) of its designers. Contrary to information in principle transferable to third parties, knowledge, built as a mental or cognitive structure, is a subjective concept and depends largely on the specific trajectory

of the holder (Fransman, 1994). Through the case of Air Liquide Group, Wirtz (2006) proposes an approach that integrates both the disciplinary and cognitive dimension by showing that the weight of these two levers depends on the stage of business development. It highlights the potential asymmetry of knowledge between an officer and shareholder in innovative companies. This is a source of conflict that are explained by the mutual incomprehension between the two parties, not just by a simple difference of interest. These conflicts lead costs, called cognitive costs (Charreaux, 2002, resulting from both dysfunctions caused by the mutual incomprehension of the various stakeholders and costs incurred to overcome the differences in the assessment of investment opportunities (in time and resources devoted to discussion, explanation, etc.). Wirtz (2006) appropriately distinguishes three kinds of cognitive costs: the costs of mentoring, generated for "standards to" the behavior of managers to the practices in the professional world of partners (such as a venture capitalist who helps a young shoot of high technology to comply with the purposes of financial reporting for capital ...), the costs of conviction, committed to understanding the intrinsic interest of a project and costs associated with residual cognitive misunderstanding on the part that remains.

Cognitive theory of governance: a different view of value creation

This theory rejects the assumption of calculative rationality in favor of a so-called procedural rationality. Rationality can be assessed more in terms of decisions, but the processes that govern them. In this theoretical approach to governance, value creation depends primarily identity and skills that are designed as a coherent whole (Teece et al, cited by Charreaux, 2002).

Similarly, the pattern of creation and ownership of the value that underlies it, is different from that underlying the disciplinary theories. In this approach, the organization is seen as a repository of knowledge able to perceive new opportunities, create value in a sustainable manner. The value comes from the emergence of all the opportunities. In addition, particular emphasis is given to the productive capacity both in terms of innovation for coordination.

In a cognitive perspective, Charreaux (2002) defines corporate governance as the set of mechanisms that have the potential to create value through learning and innovation.

Each of these theories suggests different modes of value creation. If the first two theories have a more static

value creation, the cognitive approach gives a dynamic view. These three theories give a different view of governance mechanisms and ultimately to implement.

3. Research Methodology

Methodological tools

I chose to approach the performances of the actors of the company by using a common technique in cognitive approaches, that of cognitive mapping. This is a graphical modeling technique of cognition used in numerous studies in management sciences.

The cognitive map is not the only tool for analyzing the managerial cognition, but it is the most popular for the presentation of cognitive structures.

Cognitive mapping is a technique now well established captures the minds of the players about a problem or situation. A cognitive map allows you to view certain ideas and beliefs of an individual on a complex area such as corporate governance. A cognitive map is usually defined as the graphical representation of a person's beliefs about a particular field.

A map is not a scientific model based on an objective reality, but a representation of a part of the world as seen by an individual.

Description of the empirical investigation

To meet the research objectives mentioned above, a survey was conducted among players in the company of Tunisia. I have chosen as exploratory approach using multiple case studies.

The multiple case studies seek a better understanding of the phenomenon. They are to study a phenomenon in its natural setting by working with a limited number of cases. They are particularly interesting in the case of exploration of little-known phenomena. The case studies thus allow multiple accounts the specificities and characteristics of corporate governance.

The data is from 10 firms. The decision to base my study on a sample of firms from various sectors is based on the assumption that a variety of issues will be addressed as well.

The output is a cognitive map for actors reflecting their perceptions vis-à-vis the stakeholder

approach of corporate governance. The method used to create cognitive maps is the questionnaire.

Presentation of the questionnaire

The questionnaire is divided into two parts: the first identifies the company and the second deals with corporate governance. For the second part, relating to corporate governance, we interview actors from the firm on stakeholder approach of corporate governance by providing a list of concepts for each approach with systematic exploration grids and matrices cross. Systematic exploration of the grid is a technique for collecting materials.

Each player is encouraged to explore their own ideas or cognitive representations in relation to its strategic vision. The subject is asked to identify important factors that he said will have an impact on the key concept related to an approach to corporate governance.

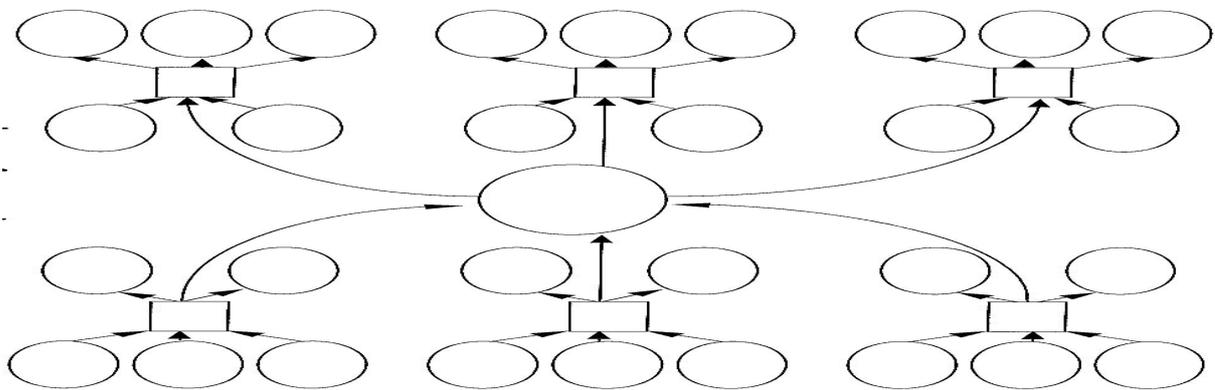


Figure1: Grid systematic exploration

Regarding the cross-matrix, it is also a technique of data collection and the basis for the construction of the cognitive map. The matrix is presented in the form of a table with n rows and n columns. Box of index (i, j) indicates the relationship between concept i and concept j.

The actors manipulate the key concepts and assign pairs of concepts depending on the nature and degree of proximity sensed between these concepts.

Table1:

Adjacency matrix

	Concept1	Concep2	Concept n
Concept1	1			
Concept2	L21	1		L2n
.....			1	
Concept n	Ln1	Ln2		1

Proposal for modeling cognitive maps

When it is difficult to identify the goals, an integrated approach of performance provides a holistic view in which the performance is analyzed by the processes that lead, through the performances of the actors. These representation processes are two problems of implementation: the sharing of representations of actors and the identification of dominant representations in the organization in order to act upon them.

The construction of this representation necessarily requires a model that allows understanding to act is "an action of intentional design and construction, for composition of symbols, patterns that would make a complex phenomenon intelligible perceived.

In this context, the use of cognitive maps seems relevant, because they can take into account the complexity and comprehensiveness of the system in which [the behavior] is embedded, while maintaining access to the analysis" (Komocar, 1994). The value of the tool is instrumental (Audet, 1994), it allows both improving their actions and making sense.

Cognitive mapping is used as a tool for representation of an idiosyncratic schema (Cossette, 1994), a pattern is "a cognitive structure that guides the cutting of reality, the interpretation of events, and action individuals ", pattern unique to each individual, causing it to have its own behavior.

The construction of cognitive maps

We will see at first step that allowed the construction of concepts, methodological approach that we discuss. Then we will examine how the cards were dealt.

Concepts

We addressed this issue by the representations constructed by players using the method of cognitive

maps, a method that can be applied to poorly structured situations. An analysis based on cognitive maps can understand this process of structuring, as this model is to build or rebuild the mental simultaneously modeling. This construction takes the form of a structure, carrier for clarification.

It helps to identify ways to implement to achieve a given goal, the same way it helps to identify the goals justifying the use of such means. Finally, it facilitates communication and negotiation.

There are two major trends in the construction method of the cards: the determination of the concepts can be *ex ante*, or subsequent interviews with respondents for whom the cards are built. Komocar (1994) links the question of determining nodes - or concepts - and links to two paradigms. In the phenomenological paradigm, the universe is largely unknown. The emphasis is on describing the world from the experiences of people who experience it.

Nodes and links are determined directly by the participants that advocate Cossette and Audet (1994), not to deprive the subject of representations: the questions should be invitations for the respondent verbalizes his thoughts on what he considers important subject of research (Cossette, 1994). In addition, the researcher cannot force the subject to consider every possible link because the links must be made spontaneously or in response to open questions, so that the subject constructs its reality (Cossette and Audet, 1994). In the normative paradigm, the universe is more or less determined. The focus is on operational definitions and research plans reproducible. Observers, different participants, may determine the relationship between variables and nodes that can be.

Komocar proposes to take account of these two paradigms by adopting the following position: the nodes are determined *a priori*, and the links between these nodes are determined by the participants (Bougon et al. 1977; Komocar, 1994; Markoczy, 2001).

We selected 19 concepts for the partnership approach to their ability to describe the field of governance. We were guided in this by a literature review and an exploratory study based on a questionnaire made up of grids of systematic exploration and cross-matrices. The concepts presented in the table below.

Table2:

Key concepts for stakeholder approach

1. Knowledge (KN)
2. Creation of value (C V)
3. Competence (COMP)
4. Organizational learning (LORG)
5. Control (CON)
6. Communication (COMM)
7. Training (TR)
8. Cognitive resource (RES COG)
9. Growth opportunity (GR OPP)
10. Innovation (INN)
11. Specific capacitance (SP C)
12. Rationality (RAT)
13. Patterns of creation and ownership of the annuity (PCOA)
14. Repertoire of knowledge (REP KN)

4. Materials and methods of structural analysis

Analysis of the results led initially by a preliminary investigation of perceptions that are players in the Tunisian company vis-à-vis the stakeholder approach of governance.

This investigation was limited to the analysis of a collective cognitive map for all company, prepared on the basis of systematic exploration grids completed by the actors of the company.

From cognitive maps, we could identify and qualify the designs are the actors of the field of corporate governance.

The development and analysis of cognitive maps were made using the Mic-Mac software.

Our initial investigation focused on two elements: the relative importance of concepts and analysis of the dynamics of influence / dependence concepts (or variables) in the cognitive universe of players in the

company. The relative importance of concepts was evaluated from the MIC. Mic-Mac program allowed us to rank the concepts in order to "balance" and "dependency." Thus arise the ideas that dominate in the cognitive universe of players.

Overview of structural analysis method

The main objective of structural analysis is to identify the most important variables in determining the evolution of the system. Inspired by graph theory, structural analysis is based on the description of a system using a matrix linking all its components. By weighting these relationships, the method highlights the key variables to changes in the system. As a tool, we opted for the software "Micmac" (cross-impact matrices, Multiplication Applied to Classification).

The first step of the method MICMAC is to identify all the variables characterizing the system under study (both external and internal variables). The second step involves the linking of variables in the construction of the matrix of direct influence and potential. Indeed, this approach is supported by the fact that in a systemic approach, a variable exists only through its network of relationships with other variables.

It is from this matrix what has identified the key variables. Indeed, we obtain the classification by the direct sum row and column. If the total connections line indicates the importance of the influence of a variable on the overall system (direct motor level), the total column shows the degree of dependence of one variable (level of direct dependence). The ranking against indirect detects hidden variables through a matrix multiplication program applied to indirect classification." This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence."

Matrices and processing MICMAC method

All structural analysis matrices above have been established only from direct relationships between variables. However, it is clear that a variable can also exert influence on other variables indirectly, or through another variable ("path" of order 2), or through several others exercising their influence cascaded through "paths" for longer and longer, and can also loop over themselves. The

classification of motor skills may be significantly altered, and understanding the mechanisms of the system similarly.

Establish direct relations matrices indirect paths of length two, then three ... then N would quickly become intractable.

A relatively simple mathematical processing (multiplication of a matrix by itself, and elevation of the power matrices N) solves this problem. Benefiting from the spread of computers and personal computer, the method MICMAC (cross-impact matrix-multiplication applied to classification) is a commercial version. As expected, the rankings of variables by motor / decreasing influence (or dependence) generally find it changed. But experience has shown that these rankings become almost stable after three or four students to the power, and they are clearly the importance of some new variables in terms of their indirect influences.

Map and analyzed at the collective level, the map is the collective model of mental representations of several people on a research topic identified. In some cases, the cards are developed by collective aggregation of individual cards and in other cases they are developed directly by building a group card. In the first case, the card is called collective and composite map is constructed by superimposing individual maps (M.G. Bougon & J.M. Komocar, 1994; M.G. Bougon, 1977; J.Ford & H. Hegarty, 1984). While in the second case, the cards are called strategic and more individuals come to gether to create a community card. It then seeks to map the shared perceptions of a group of individuals on a particular area.

PRESENTATION OF VARIABLES

LIST OF VARIABLES

Knowledge (KN)

Creation of value (C V)

Competence (COMP)

Organizational learning (LORG)

Control (CON)

Communication (COMM)

Training (TR)

Cognitive resource (RES COG)

Growth opportunity (GR OPP)

Innovation (INN)

Specific capacitance (SP C)

Rationality (RAT)

Patterns of creation and ownership of the annuity (PCOA)

Repertoire of knowledge (REP KN)

THE INPUT

This step was to compile a matrix of direct influence between these variables in a scoring session. Matrix of direct influence (MID) which describes the relationship of direct influence between the variables defining the system and the Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables. The scoring has developed the input matrix "matrix of direct influences (MID).

The influences are rated from 0 to 3, with the ability to report potential influences.

MATRIX OF DIRECT INFLUENCES (MID)

Matrix of direct influence (MID) describes the relationship of direct influences between the variables defining the system.

Table 3 :

Matrix of direct influences

	KN	CV	COMP	LORG	CON	COMM	TR	RESCOG	GROPP	INN	SPC	RAT	PCOA	REPKN
KN	0	0	0	0	0	0	0	0	0	2	0	3	0	1
CV	0	0	0	1	0	0	0	P	0	0	0	0	0	0
COMP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LORG	0	1	2	0	P	0	0	0	0	2	0	3	0	2
CON	0	1	0	0	0	3	0	0	0	2	0	0	0	0

COMM	0	0	0	0	P	0	0	2	0	0	0	1	0	3
TR	0	2	0	0	0	0	0	0	0	1	0	0	0	0
RES COG	0	0	2	0	0	0	P	0	0	0	3	0	0	0
GR OPP	0	1	0	0	1	0	0	0	0	0	0	0	0	1
INN	2	0	0	1	0	0	2	0	3	0	0	3	0	0
SPC	0	1	0	1	0	0	0	2	0	0	0	0	0	0
RAT	3	0	0	1	0	0	0	1	0	0	0	0	0	2
PCOA	0	0	1	0	1	0	3	0	0	2	0	1	0	0
REP KN	1	0	0	3	0	0	2	0	0	0	1	0	0	0

The influences are rated from 0 to 3, with the ability to report potential influences:

0: No influence 1: Low 2: Average 3: Strong P: Potential

MATRIX OF DIRECT POTENTIAL INFLUENCES (MIDP)

The Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables.

It complements the matrix MID also taking into account possible relationships in the future.

Table 4:

Matrix of potential direct influences

	KN	CV	COMP	LORG	CON	COMM	TR	RESCOG	GROPP	INN	SPC	RAT	PCOA	REPKN
KN	0	0	0	0	0	0	0	0	0	2	0	3	0	1
CV	0	0	0	1	0	0	0	3	0	0	0	0	0	0
COMP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LORG	0	1	2	0	3	0	0	0	0	2	0	3	0	2
CON	0	1	0	0	0	3	0	0	0	2	0	0	0	0
COMM	0	0	0	0	3	0	0	2	0	0	0	1	0	3
TR	0	2	0	0	0	0	0	0	0	1	0	0	0	0
RES COG	0	0	2	0	0	0	3	0	0	0	3	0	0	0
GR OPP	0	1	0	0	1	0	0	0	0	0	0	0	0	1
INN	2	0	0	1	0	0	2	0	3	0	0	3	0	0
SPC	0	1	0	1	0	0	0	2	0	0	0	0	0	0
RAT	3	0	0	1	0	0	0	1	0	0	0	0	0	2
PCOA	0	0	1	0	1	0	3	0	0	2	0	1	0	0
REP KN	1	0	0	3	0	0	2	0	0	0	1	0	0	0

The influences are scored from 0 to 3:

0: No influence

1: Low

2: Average

3: Strong

5. RESULTS OF THE STUDY

DIRECT INFLUENCES

Characteristic of MID

This table shows the number of 0, 1, 2, 3,4 of the matrix and displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 5 :

Characteristic of MID

Indicator	Size of matrix	Number of iterations	Number of zero	Number of one	Number of two	Number of three	Number of P	Total	Fill rate
Value	14	2	149	19	14	10	4	47	23,97959%

Stability from MID

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications.

In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, all the variables of the matrix MID.

Table 6 :

Stability from MID

ITERATION	INFLUENCE	DEPENDENCE
1	104%	105 %

ITERATION	INFLUENCE	DEPENDENCE
2	98 %	105 %

Sum of rows and columns of MID

This table is used to enter the sums in row and column of the matrix MID

Table 7:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Value creating	6	6
2	Opportunity	1	6
3	Contract node	0	5
4	Specific investment	10	7
5	Specific human capital	6	2
6	Responsibility multiple	6	3
7	Power	3	7
8	Legetimacy	5	5
9	Profit	3	3
10	Residual claim	11	9
11	Annuity	4	4
12	Distribution	7	11
13	Conflict	8	0
14	Asymetric information	7	9
	Totals	77	77

POTENTIAL DIRECT INFLUENCES

Characteristic of MIDP

This table shows the number of 0, 1, 2, 3,4 and MIDP matrix displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 8 :

Characteristic of MIDP

INDICATOR	VALUE
Size of matrix	14
Number of iterations	2
Number of zero	149

INDICATOR	VALUE
Number of one	19
Number of two	14
Number of three	14
Number of P	0
Total	47
Fill rate	23,97959%

Stability from MIDP

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications.

In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, the set of variables.

Table 9 :

Stability from MIDP

ITERATION	INFLUENCE	DEPENDENCE
1	102 %	117 %
2	91 %	93 %

Sum of rows and columns of MIDP

This table is used to enter the sums in row and column of the matrix MIDP.

Table 10:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Value creating	6	6
2	opportunity	4	6
3	Contract node	0	5
4	Specific investment	13	7
5	Specific human capital	6	8
6	responsibility multiple	9	3
7	power	3	10

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
8	legetimacy	8	8
9	profit	3	3
10	Residual claim	11	9
11	annuity	4	4
12	distribution	7	11
13	conflict	8	0
14	Asymetric information	7	9
	Totals	77	77

INDIRECT INFLUENCES

Matrix of indirect influences (MII)

The matrix of indirect influences (MII) is the matrix of direct influences (MID) high power, by successive iterations. From this matrix, a new classification of variables high lights the most important variables of the system. Indeed, it reveals the hidden variables through a matrix multiplication program applied to indirect classification.

This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence, taking into account the number of paths and loops of length 1, 2, ... n from each variable in order of length, taking into account the number of paths and loops of length 1, 2, ...n arriving on each variable. The ranking is stable in general from an increase in the order 3, 4 or 5.

Table 11 :

Matrix of indirect influences

	KN	CV	COMP	LORG	CON	COMM	TR	RESCOG	GROPP	INN	SPC	RAT	PCOA	REPKN
KN	24	27	22	25	6	0	12	8	0	50	15	66	0	48
CV	15	0	0	12	0	0	8	3	6	0	2	6	0	0
COMP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LORG	24	36	30	26	6	0	12	10	0	62	15	81	0	57
CON	36	17	18	36	6	0	18	9	0	18	27	21	0	34
COMM	2	31	22	15	0	0	4	18	0	38	5	48	0	26

TR	9	10	6	3	3	0	0	3	0	12	0	15	0	17
RES COG	0	3	18	3	0	0	0	0	0	6	18	9	0	6
GR OPP	4	9	8	4	0	0	4	8	6	12	0	24	0	18
INN	56	6	12	64	0	9	42	9	24	30	22	60	0	33
SPC	15	7	2	18	0	0	8	15	6	2	2	9	0	8
RAT	57	19	12	41	0	0	26	22	24	20	5	48	0	38
PCOA	30	17	8	24	6	0	14	12	15	24	5	48	0	40
REP KN	63	1	6	51	0	0	34	12	30	2	13	33	0	26

The values represent the rate of indirect influences

Sum of rows and columns of MII

This table is used to enter the sums in row and column of the matrix MII.

Table 12:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Value creating	303	335
2	opportunity	58	183
3	Contract node	0	164
4	Specific investment	359	322
5	Specific human capital	240	27
6	responsibility multiple	209	9
7	power	78	182
8	legitimacy	63	129
9	profit	97	111
10	Residual claim	367	276
11	annuity	92	129
12	dispersion	312	468
13	conflict	243	0
14	asymmetric information	271	357
	Totals	77	101

POTENTIAL INDIRECT INFLUENCES

Matrix of potential indirect influences (MIIP)

The Matrix of Potential Indirect Influences (MIIP) is the matrix of direct influences Potential (MIDP) high power, by successive iterations.

From this matrix, a new classification of variables highlights the potentially most important variables of the system.

Table 13:

Matrix of potential indirect influences

	KN	CV	COMP	LORG	CON	COMM	TR	RESCOG	GROPP	INN	SPC	RAT	PCOA	REPKN
KN	24	27	22	25	30	0	21	8	0	50	15	66	0	48
CV	15	30	0	21	0	9	8	24	6	15	2	6	0	6
COMP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LORG	36	36	36	35	69	0	42	37	18	62	24	108	0	84
CON	36	26	24	36	15	27	45	9	0	36	36	21	0	34
COMM	14	43	22	24	57	0	19	45	18	44	5	75	0	53
TR	9	10	18	3	12	0	18	3	0	12	18	15	0	17
RES COG	6	3	18	12	9	0	24	27	9	6	18	18	0	6
GR OPP	4	9	14	4	21	0	13	11	6	12	9	24	0	18
INN	56	9	12	64	9	18	51	33	24	36	22	60	0	33
SPC	15	22	8	18	3	9	17	18	6	14	11	9	0	8
RAT	57	28	12	41	18	9	26	25	24	29	5	48	0	38
PCOA	30	17	8	24	24	0	17	33	15	24	5	48	0	40
REP KN	63	1	6	51	0	0	34	12	30	2	13	33	0	26

The values represent the rate of indirect potential influences

Sum of rows and columns of MIIP

This table is used to enter are on the line and column of the matrix MIIP

Table 14:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Value creating	326	365
2	Opportunity	142	270
3	Contract node	0	200
4	Specific investment	587	358
5	Specific human capital	345	270
6	Responsibility multiple	419	99
7	Power	135	341
8	Legitimacy	156	309
9	Profit	145	156
10	Residual claim	427	360
11	Annuity	158	183
12	Distribution	360	531
13	Conflict	285	0
14	Asymmetric information	350	411
	Totals	77	77

6. Conclusion and implications of the research

Concepts (or variables) structuring the cognitive world of the actors can be projected in terms of influence / dependence. The distribution of the point cloud variables in this plan, particularly in relation to different quadrants is to distinguish four categories of variables.

The first quadrant includes the most prominent concepts in the dynamics of thought of the actors. For the actors of that organization, the concepts of "control", "communication" and "patterns of creation and ownership of the annuity" are the most dominant in their cognitions reflecting an intention based on a logic that differs from the cognitive discipline of logic. Returning to the systematic exploration of grids for each actor, there is a balance of concepts expressing their orientation. For example an actor, these concepts are expressed through statements such as "competence," "productive capacity", "learning process». Thus reflecting an orientation to a productive logic.

The pattern of creation and appropriation of value underlying cognitive theories differ greatly from those underlying the disciplinary theories, in which the productive dimension is either ignored or

reduced to aspects incentives (Langlois and Foss, 1999).

It leads in particular to a different cause of the existence of the firm that allows not only to distinguish the market but also of its competitors, that is to say of him define an identity. For example, to Foss (1996), firms exist because they can more efficiently coordinate collective learning process.

For Dosi (1994), firms are sets of key competencies and complementary assets associated with these skills and boundaries of the firm must be understood not only in terms of transaction costs but also in terms of learning, path dependencies, technological opportunities, selection and complementarity of assets.

The central element is the emphasis on the productive capacity both in terms of innovation for coordination. Thus, the problem of coordination can be effectively made in defining the firm as a simple information system; the coordination is done only on how incentive. It should be reformulated with respect to a growth target based on the use of information, not knowledge but, it does not reduce the collection of information but including processing and interpretation. This reformulation also implies a more complex view of the firm as an open system and the abandonment of the concept of balance in favor of that process.

The efficiency depends not only on technology but also the motivation and skills of the workforce, organizational and managerial supervision, the latter two being based on the institutional structures and routines and cultural norms inherited the past.

The perceptual dimension of the entrepreneurial function related to the ability of management to think, perceive, build new opportunities also plays a key role, much more than the restructuring and reconfiguration of the business portfolios of firms in response to changes in the environment. The goal, remember, is to ensure sustainable value creation particularly through the construction of growth opportunities.

In summary, the firm as a processor or repository of knowledge based on the following uses of the cognitive argument: (1) the orientation of the activity according to the vision of leaders, (2) the creation of knowledge as a basis for innovation and all investment opportunities, this knowledge with tacit and

social nature, which makes them difficult to imitate, (3) the protection of the knowledge base, (4) coordination of productive activity which involves the dimensions of the construction, operation and transfer of knowledge far beyond the mere transfer of information, (5) conflict resolution, which exceeds the only conflicts of interest to take a cognitive dimension.

This last point deserves special comment. A big difference from conflicts of interest and cognitive conflicts is that so it is interesting to minimize conflicts of interest, as this goal seems suboptimal for cognitive conflicts. Innovation, even simple adaptation, seems favored by the coexistence of conflicting cognitive schemas (Foss, 1996). In other words, the efficiency gains resulting from the reduction of cognitive conflicts can be more than offset by reducing the potential for innovation and adaptation. Here we find the traditional opposition between "exploitation" and "exploration" or between "static efficiency" and efficiency "dynamic" (Dosi, 1990).

The cognitive approach of the firm is to reconsider the role of governance. It must identify and implement cost-effective investments in a dynamic efficiency perspective. According to Demsetz (1969), to understand the influence of the institutional framework - so that the system of governance - on dynamic efficiency, we must remember three objectives: (1) the ability to encourage a wide variety of experiences (2) the ability to promote investment for potentially successful experiment and to reject non-bearing investments such prospects, (3) the ability to use extensively the new knowledge generated.

The criticism to the financial vision of governance joins this approach: we need to expand this vision in order to consider the quality of the relationship between managers and investors and potential to increase the efficiency of the firm to identify and build opportunities for growth. In a broader perspective, the cognitive approach led to study the governance systems in terms of their influence on the different dimensions of cognitive processes of value creation.

The cognitive approach also leads to a reconsideration of the traditional financial approach to governance, in which the relationship between the firms with financial investors is limited to the provision of capital and the only objective is to secure investment financial discipline better leaders. Or, as suggested by various authors, finance also includes a cognitive dimension.

Thus, Aoki (2001) believes that in the model of governance associated with venture capital, it is not the venture capitalists ability to provide funding which is the most important factor, but that, on the basis of his knowledge and experience, on the one hand, to select the most promising projects, on the other hand, to deny financing (or refinancing) projects the least interesting, as soon as possible. Similarly, Charreaux (2002, 2002) offers an interpretation of the funding policy based on cognitive arguments explicitly involves the provision of expertise on the part of shareholders, including the industrial shareholders. Such developments argue for a reconstruction of the financial governance vision extended to the cognitive

For the actor 2, this orientation is expressed in statements such as "information", "organization", "value creation", "schemas", "conflict", reflecting a logic-based cognitive understanding of ownership of the annuity. Visions cognitive focus primarily on the concepts of information and knowledge. From there, the organization is characterized by its ability to learn and generate knowledge: beyond the role of conflict resolution (contractual theories), the company produces knowledge that contributes to the process of value creation. The concepts of learning, building skills and innovation are central. The second quadrant contains the relay variables that are by definition both very influential and very dependent. By analyzing the level of influence / dependence, there are players for the concepts or ideas illustrating the concepts of "organizational learning", "innovation", "Knowledge Directory", "rationality" and "knowledge". The ideas of the players in the Tunisian firms tend to focus on three basic concepts namely "property", "investment" and "value creation".

In this sense, the performance results from the creation of wealth that comes from making an investment that creates value. This achievement depends on the ability of each individual involved in the investment process to derive a satisfactory gain.

This concept of extended value to the various stakeholders has the interest to show that the creation of value not only the result of capital contributions by shareholders but the combined efforts of all partners. Different approaches to the creation of stakeholder value are possible. Charreaux and Desbrières (1998) Conference to provide a method for measuring stakeholder value creation, based on an

overall measure of the rent created by the company in connection with the stakeholders and not just shareholders. According to these authors, the stakeholder value created is calculated as the difference between the sales price (or cost) opportunity and the sum of opportunity costs of the stakeholders. For our part, we proposed a model for creating full value of three modules: organizational value, economic value and social value. Organizational value is defined as the quality of management and operation of the company. It contributes to the creation of economic value and social value, which are interacting. This integral value is a possible approach to stakeholder value. The measurement method of creating organizational value that we have proposed is based on the socio-economic theory. The measurement of organizational value creation is the sustainable reduction of hidden costs (or gain value). Organizational value created can be used according to the strategy of company executives, creation of economic value and / or social value. The model of value creation and stakeholder value integral we have proposed is part of the problem of global and sustainable performance of the company.

The third quadrant contains the dependent variables or resulting. They are both influential and very little dependent, particularly sensitive. They are the results of which is explained by the variable motor and relay. Thus there are the strong dependence of a number of factors such as training variables, and value creation. The fourth quadrant contains the independent variables are simultaneously influential and little bit dependent. They are relatively excluded from the dynamics of thinking by the Tunisian company.

The plan review influences / dependencies shows the existence of a number of independent variables such as variables related to cognitive resources, opportunity for growth, specific capacity, etc..

Table 15:

Total of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Value creating	6	6
2	Opportunity	1	6
3	Contract node	0	5
4	Specific investment	10	7
5	Specific human capital	6	2

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
6	responsability multiple	6	3
7	Power	3	7
8	Legitimacy	5	5
9	profit	3	3
10	Residual claim	11	9
11	Annuity	4	4
12	Distribution	7	11
13	Conflict	8	0
14	Asymetric information	7	9
	Totaux	77	77

Let $W = W_l + W_c$ with W_l : total weight of the variable influence, W_c : total weight dependence.

Table 16 :

Relative importance of variables

Variables	Poids
Value creating	12
Opportunity	7
Contract node	5
Specific investment	17
Specific human capital	8
Responsability multiple	9
Low	10
Legitimacy	10
Profit	6
Residual claim	20
Annuity	8
Distribution	18
Conflict	8
Asymetric information	16

Based on the study of the relative importance of concepts in cognition of Tunisian players in the company vis-à-vis the different approaches of corporate governance, it is possible to advance the following conclusions: Actors perceive the partnership approach of corporate governance at the level of

concepts "organizational learning", "innovation" and "rationality." But the distribution of the point cloud variables, one can distinguish the first quadrant which includes the most prominent concepts in the dynamics of thought of the actors. For the actors of that organization, the concepts of "control", "communication" and "patterns of creation and ownership of the annuity" are the most dominant in their cognitions, reflecting a cognitive logic that differs from that of the disciplinary logic. The design they make the partnership approach is through different logics: one based on the valuation of a productive logic and one based on an understanding of the ownership of the annuity.

The central element is the emphasis on the productive capacity both in terms of innovation for coordination. Thus, the problem of coordination can be effectively made in defining the firm as a simple information system; the coordination is done only on how incentive. It should be reformulated with respect to a growth target based on the use of information, not knowledge but, it does not reduce the collection of information but including processing and interpretation. This reformulation also implies a more complex view of the firm as an open system and the abandonment of the concept of balance in favor of that process. the firm as a processor or repository of knowledge based on the following uses of the cognitive argument: (1) the orientation of the activity according to the vision of leaders, (2) the creation of knowledge as a basis for innovation and all investment opportunities, this knowledge with tacit and social nature, which makes them difficult to imitate, (3) the protection of the knowledge base, (4) coordination of productive activity that involves dimensions of the construction, operation and transfer of knowledge far beyond the mere transfer of information (5) conflict resolution, which exceeds the only conflicts of interest to take a cognitive dimension.

Visions cognitive focus primarily on the concepts of information and knowledge. From there, the organization is characterized by its ability to learn and generate knowledge: beyond the role of conflict resolution (contractual theories), the company produces knowledge that contributes to the process of value creation. The concepts of learning, building skills and innovation are central.

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Consumers' motivation: An impact study of influential salesperson behavior

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ABSTRACT

This research paper examines the effect on consumer mind set when it comes under the influence of sales person rational behavior or exchange oriented behavior (provide all suitable information to convert inquiry in to purchase of goods). The research paper also focus on the effect of emotions in consumer buying behavior, the paper further discuss emotions by dividing it into positive and negative emotions and study its effect on goal attainment. Our primary interest is to find out the effect of salesperson behavior and consumer emotions on consumer buying habits. Depending on the consumer mind –set and the behavioral orientation of the salesperson either a congruent or an incongruent situation will be perceived by the consumer. This research is conducted in Jammu region on mobile I- tab and covered most of its areas.

Keywords: Consumer assessment mind set, Consumer action mind set , Congruent outcome, Cognition, Emotion , Motivation, Out come behavior, Salesperson behavior.

INTRODUCTION

This research examines the effect on consumer mind set and emotions during an encounter with salesperson and also examines how consumer emotions effect on consumer goal attainment. Our primary

motive is the interaction between a consumer motivational mind set and a salesperson's behavior. The interaction is posited to lead to the following (1) goal attainment as a result of congruent salesperson attitude with situational consumer mind set; (2) effect of emotions on goal attainment/thwarting; (3) outcome behavior as a result of motivation and emotions. This propositions stem from a central part of the main theory in this research, which postulated that under a given motivational mind-set a consumer is more likely to view certain salesperson behaviors as either congruent or incongruent with the consumer's motivation for entering the encounter. The motivation and emotions are likely to reflect to the consumer goal attainment.

Conceptual overview

Motivation:

Consumer motivates by several factors when it enters interpersonal sales encounters; for example, to gather specific information about a product category pr a particular brand, to make a desired purchase, or simply to browse and find out what is new on the market. The concept of motivational mind- set used in this research is based primarily on research carried out by Gollwitzer (1990) and Hilton and Darley (1991) who differentiate between different types of motivational mind-sets. According to Gollwitzer and Moskowitz(1996) a specific mind-set emerges when a person addresses the distinct tasks associated with various action plans. Gollwitzer and colleagues (e.g., Gollwitzer and kinney 1989; Gollwitzer, Heckhausen, Steller 1990) discuss deliberative and implemental mind-set and associate each with a different phase of action. A deliberative mind-set associated with an individual's need to choose between goal options and an implemental mind-set associated with goal attainment. Similarly, Hilton and Darley (1991) apply the labels of assessment and action mind-set in order to differentiate between mind-set that stem from different motivations. The preceding provides an overview of the basic distinction between two motivational mind-set's utilized in this research. This research adopts the terminology used by Hilton and Darley (1991), thus, focuses on consumers in either an assessment or an action mind-set.

Salesperson behavior:

The personal selling literature emphasizes the importance placed on a salesperson's ability to adopt his or her behavior (Weitz, Sujan, Sujan 1986;Goff,Bellenger,Stojack 1994, Whittler 1996). The same literature streams also indicates that consumers at different phases of the decision making process are likely to view the role of the salesperson differently (Kernan and Reingen 1984). Thus, it follows that behaviors deemed appropriate in one situation may not be viewed as such in another. Based in part on theorizing by Cialdini (1984, 1999) and Caildini and trost (1998), the present research proposes that the influence strategies used by salespeople can be broadly classified as either relational-oriented behaviors or exchange oriented behaviors. Relational –oriented behaviors are those designed to help from relational ties based on liking, reciprocation, trust and expertise. Exchange oriented behaviors are those designed to reinforce decisions and initiate action based on social validation, scarcity and legitimate authority. (Lazarus 1991), predict that cognitive appraisal of the salesperson's theories of emotions that are specifically related to the congruency appraisal and the consumer's mind set.

Emotions:

Emotions affect or cause the negative thoughts. Lack of motivation prevents new'

learning. Emotions and learning occur in the brain. Learning means acquiring new knowledge and/or skills. Learning requires thinking. Our thoughts influence how we feel. How we feel influences how we think. These connections are bi-directional and complex. When we think about a happy incident, our mood improves and when we think about an angry incident, we are likely to feel angry. Because we cannot see emotions directly, we look to our behavior and to that of others to indicate how we feel. Emotions are a critical part of our learning (LeDoux 1993). The psychological states of the person also affect goal attainment or goal thwarting are based on Higgins's (1987) self-discrepancy theory. Higgins and colleagues (Higgins, Shah, and Friedman 1997; Forster, Higgins, and Idson 1998) link these psychological states (avoid the negative/prevention focus, achieve the positive/promotion focus) with specific emotional states, or emotional orientations. . The research draws on Richins' (1997) development of the Consumption Emotion Set, which contains individual emotions and specific clusters of emotions related to the consumption domain.

Wrosch, Scheier, Miller, Schulz, & Carver 2003:

Predicts that during periods of goal engagement, individuals focus on what is important and ignore irrelevant stimuli. They put key procedures in place, attune their attention and perception to stimuli that trigger or cue behavior, and shield themselves from potential distractions. During periods of goal disengagement, by contrast, goals are deactivated. This does not imply a gradual decrease in goal engagement; on the contrary, goal disengagement is an active process whereby the processes typical of goal engagement are counteracted. It involves degrading the original goal and enhancing the value and attainability of alternative goals, defending self-esteem against experiences of failure and, more generally, seeking to ensure that disengagement from a particular goal does not undermine motivational resources in the long term (J. Heckhausen, 1999). Goal engagement and goal disengagement can be seen as two motivational modes: go and stop. The thesis proposed in this research is that a consumer's motivation for entering a sales encounter has an impact on various aspects of the encounter.

Literature Review

Here we examine the key constructs of interest like motivation, emotions, cognition and out- come behavior.

Panksepp, 1998:

Predicts that the nature of separation distress was initiated in 1972 when the first neurotransmitter receptor, for brain uploads, was discovered. Social attachment and addictive dependencies share three key attributes: (1) an initial intense positive affect ("loving") phase, followed by (2) a tolerance phase with

diminished positive feelings, which sets up (3) a powerful separation distress phase of opiate withdrawal in drug addiction and physiologies of grief following social loss. Such hypotheses have been extended to other high-incentive rewards, including food treats (Colantuoni et al., 2002).

Berkowitz, 1994 and Rubin, 1986: assumed that there is an obvious link between anger and behavior. Moreover, individual differences may occur in this regard: Not everyone, if angry, will behave in a similar way (e.g., Bodeker & Stemmler, 2000).

Taylor and Brown (1988): proposed that a mentally healthy person is characterized not by accurate assessment of her or his qualities but typically by holding mildly self-aggrandizing perceptions of the self. They argued that instead of being maladaptive these positively distorted self-perceptions actually foster positive self-regard, the ability to care for and about other people, the capacity for creative and productive work, and the ability to effectively manage stress. Despite the obvious positive consequence of moderate self-enhancement, the disturbing question: How do people with inflated self-concepts effectively identify and make use of negative feedback they may encounter in the world?

(Hiemisch, Ehlers, and Westermann, 2002):

Predict that research on mind set such as addressed individual differences in the activation of deliberative and implemental mindsets and their effects on cognition and behavior. For instance, mindset effects have been found to be dependent on a person's achievement motivation (Pucca & Schmalt, 2001), social anxiety, and goal commitment (Gagné & Lydon, 2001). In this research we check whether the consumer achieve its goal, when it is assisted by the salesperson.

Adler, 1927; Cantor, 1994; Emmons, 1989; Grant & Dweck, 1999 and Mischel, 1973:

Proposed that person's goals facilitate understanding and predicting the person's behaviors. Accordingly, not only researchers of personality but also ordinary observers seek the goals underlying others' behaviors and rely on goal-related assumptions to predict others' future behaviors (e.g., Bassili, 1989; Read & Miller, 1993). The people expect others to pursue different goals in different situations, such as job interviews, fraternity parties, and first dates (Cantor, Mischel, & Schwartz, 1982). In this research we check the factors which effect goal actualization/ goal thwarting.

Hilton (1998)

Motivation is defined as the activation of internal desires, needs and concerns which energize behavior and send the organism in a particular direction aimed at satisfaction of the motivational issues that gave rise to the increased energy (Pittman, 1998). Similarly, according to Hilton (1998), social perception almost always involves an interaction between motivation and cognition. Further researchers like Fiske and Neuberg (1990) and Hilton and Darley (1991) also support the view that motivations shape cognitive processes and that one's future goals are profiled by the met expectations.

Ingrasci 1981; Goff,Bellenger,Stojack 1994; Whittler 1996:

Emphasizes his interested in personal selling and the importance of a salesperosn's ability to adopt his or her behaviors based on perceptions of the consumer (e.g., Ingrasci 1981; Goff,Bellenger,Stojack 1994; Whittler 1996). The concept of adaptive selling (Weitz, Sujan,Sujan 1986) has replaced previously held approaches to personal selling that involved canned presentations and high pressure tactics. According to Goff,Bellenger and Stojack (1994), selling should be part of the marketing practice and it should share the same customer oriented philosophy and methodology.

Saxe and Weitz 1982:

Emphasizes on selling effectiveness and customer-orientation scale (SOCO), having an idea that behavioral appropriateness on the part of the salesperson is a determinant of effectiveness. But, the scale was not intended to specify behaviors that are either sales or customer oriented, nor was it intended to address why certain behaviors would be viewed as such and under what conditions. The extant research typically focuses on only one half of the dyadic interaction - the salesperson (for an exception see Williams and Spiro 1985). The consumer and the motivations that she or he brings to the interaction are often ignored.

Cialdini (1984):

Focus on six basic principles of influence with specific types of behaviors used across a wide variety of influence attempts. Cialdini's principles of authority, social validation, scarcity, liking, reciprocation, and consistency provide a framework for classifying salesperson behaviors. Cialdini (1999) argues that influence principles work for [salespeople] precisely because they work for consumers. He states, "it is normatively adaptive to follow the suggestions of an authority, friend or similar other, or to repay benefits in a reciprocal fashion or to seize rare opportunities or to be consistent with one's attitudes, beliefs and actions.

Motivationally Driven Goals :

work done by Jones and Thibaut (1958) indicates that a perceier's goal for social interaction, motivation and situation more generally be used. Two primary assumptions underlie their theory of interpersonal perception, one being that the strategic focus in social perception will vary as a function of the type of social interaction it supports, the second being that the perceiver in any social situation will act in such a way as to reduce the need for information to sustain the interaction process. In contrast to broadly defined

motives, personal goals constitute individualized and cognitively elaborated representations of what a person wants to achieve (Brunstein 1993; Brunstein, Schulthesis and Grassman 1998).

Tomkins (1963) and Izard (1971, 1977):

Assert that emotions constitute the primary motivational system of human beings. Similarly, Young (1961) states that emotion regulates and directs behavior according to the principle of maximizing the positive and minimizing the negative. Also, Schwarz and Clore (1983) and Pham (1998) convey mood as a source of information in evaluative judgments. Further, Luce (1998) says that about consumers desire to cope with or minimize negative emotion in a given decision task. Thus, the present research aims to examine the arousal of-specific emotions associated with. specific motivational influences.

Westbrook, 1987 and Oliver,1991:

Predict that emotions are mental reaction consciously experienced as a subjective feeling state. Principally, consumption emotion refers to "the set of emotional response elicited specifically during product usage or consumption experiences. Emotions are distinguishable from the related affective state of mood based on their great psychological urgency, motivational potency, and situational specificity. According to Oiver (1997), emotions encompass both arousal and broader forms of affect including its cognitive domain. Yet, the concepts of emotions and affect are frequently used interchangeably in the literature.

Heckhausen, 1986; Heckhausen & Gollwitzer, 1987:

Note that the effects of deliberative thinking have not been examined in the context of ongoing self-regulation, and it is possible that prolonged deliberation may have costs as well as benefits. Shakespeare's Hamlet, after all, was only the Prince of Denmark, but he was the king of deliberation; yet, few would applaud him for his decision-making prowess or for his initiative. William James heaped further scorn on those for whom deliberation was an enduring state rather than a finite process stepped through en route to a goal: "There is no more miserable human being than one in whom nothing is habitual but indecision" (James, 1890). . According to the Rubicon model of action, there is a sharp distinction between this pre decisional, deliberative frame of mind and a post decisional frame of mind marked by thoughts about how a given decision might be implemented (yielding an "'implemental mindset"; Gollwitzer, 1990; Gollwitzer & Bayer, 1999).

Emotional creativity:

Actually, a good deal of evidence suggests that emotional creativity is not only possible, but ubiquitous; hence, one of the above propositions must be incorrect. I will argue that it is the second, namely, that emotions are biologically primitive responses. Failure to recognize the creativity of emotional experience stems from deeply held cultural prejudices, dating back at least to the ancient Greeks, in which emotions have often been contrasted unfavorably with rationality, the presumed hallmark of humankind (Averill, 1984; p174). Evidence for emotional creativity stems from three main sources is:

1. Cultural variation in emotional syndromes: emotions differ greatly from one culture to another. Although such differences are widely recognized, that often missed as mere patina on more basic emotions, a corrosion of the pure emotional ore. Argument against such a position have been presented elsewhere and need not be presented here(averill, 1980, 1984).
2. Individual differences in emotional creativity: Not all people are equally creative in the emotional any more than in the intellectual domain. Hence, another way to demonstrate emotional creative. The interested reader is reflected elsewhere for details (Averill, 1999b).
3. The micro genesis of emotional episodes: An emotion does not spring fully formed from the head of a person, like Minerva from the head of Zeus, no matter how creative a person might be. Emotional episodes develop overtime. Borrowing a term from cognitive psychology, we may call this process microgenesis (Arieti, 1962; Hanlon, 1991).

Damasio (2000) and Le Doux (1998):

Predict that emotions are a basic part of our being human, and appear to be unrelated to culture. While the basic emotions comprising the affect program are fundamental to all human, believe that secondary emotions (emotions like embarrassment or guilt) are to some extent acquired, and triggered by things people have come to associate with that emotion through experience.

Richins, 1997

Predicts that in consumer psychology, consumer behavior, and even in the marketing literature there are numerous batteries of scales for 'measuring' feelings (sometimes labeled emotions). We initially

considered simply using an established set of scales, but we were 'concerned that when people talk about their feelings for things like adverts or brands they may not mean exactly that same thing that one might infer from a particular scale.

Positive and negative emotions:

Many papers acknowledge that positive and negative affect are “ever present in the experience of emotions”(Diener, 1999,p.804; see also Berkowitz, 2000; Watson et al, 1999). We have content-analyzed 10 seminal studies in psychology on emotions and emotion words (Frijda et al, 1989; Haylena et al, 1989; Morgan and Heise, 1988; Plutchik, 1980; Roseman et al, 1996; Russell, 1980; Shaver et al, 1987; Storm and Storm, 1987; Watson and Tellegen 1985; Watson et al , 1988). The research streams supporting the different emotion structures (positive/negative vs. specific emotions) seem opposing, but can in fact be seen as complementing. Shaver et al . (1987) and Storm and Storm (1987)and richens (1997) have suggested that emotions can be grouped into clusters, yielding a hierarchical structure.

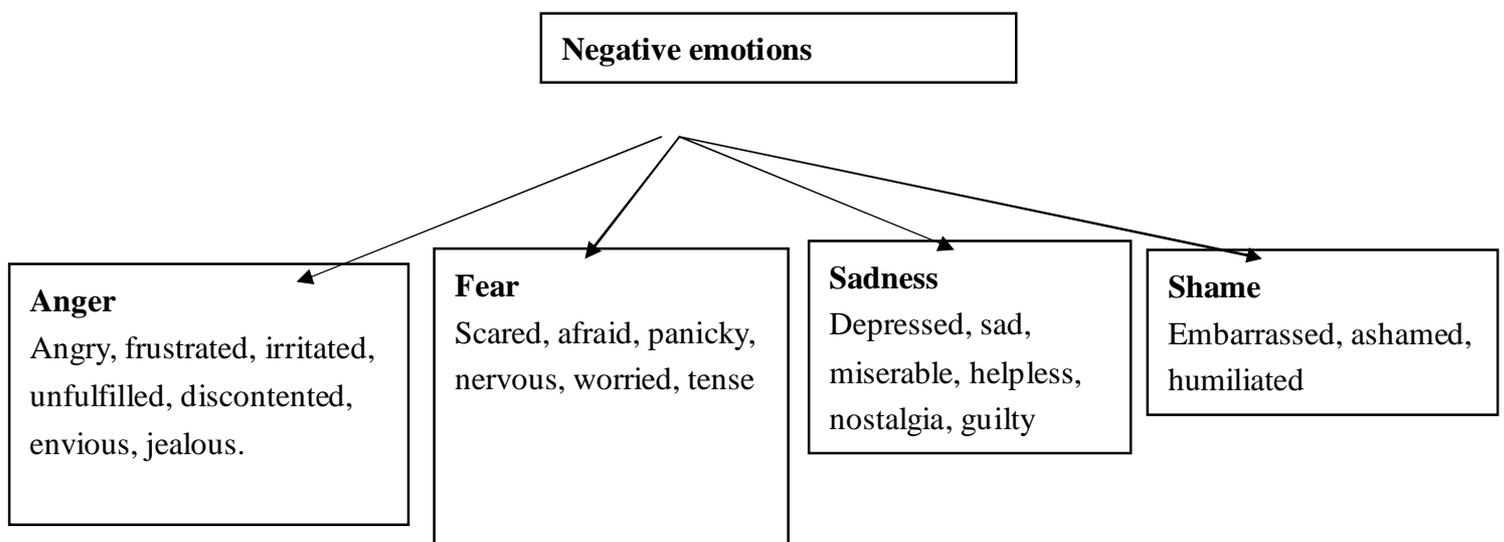


Fig1. Hierarchy of negative emotions

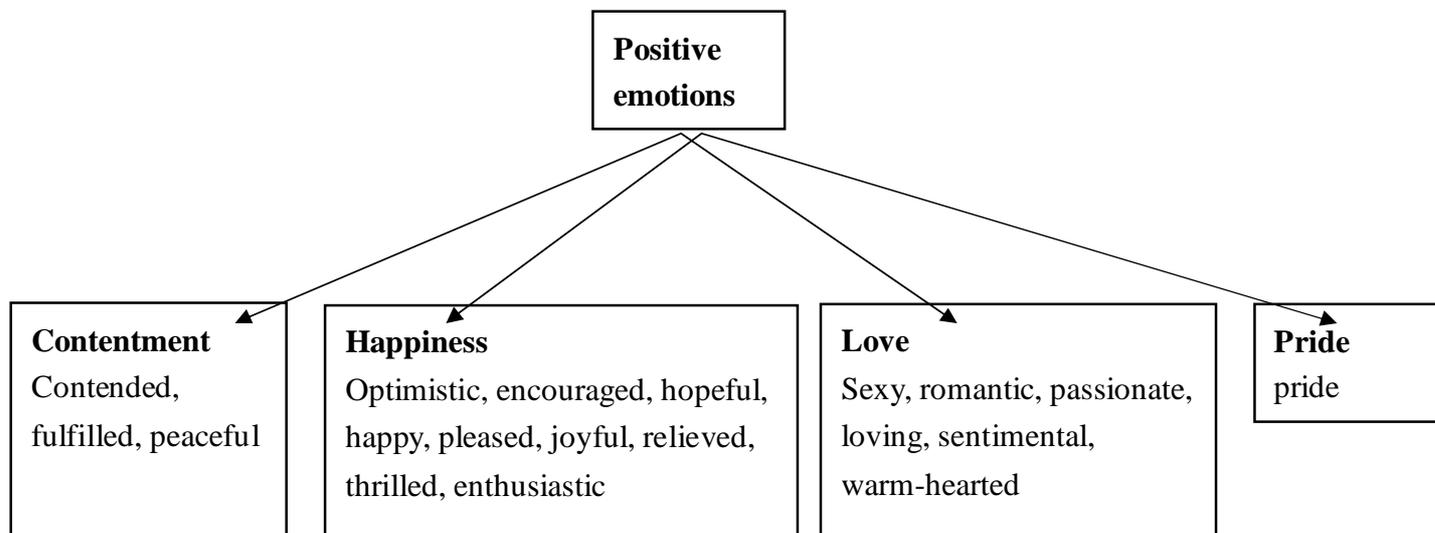


Fig2. Hierarchy of positive emotions

Behavioral outcomes:

According to Levine and Burgess (1997), negative emotions tend to signal a problem and may lead an individual to focus on specific aspects of the problematic situation. Also, as per Ellsworth and Smith (1988) and Oatley and Johnson-Laird (1987) negative emotional arousal should motivate an individual to change his or her current situation. Similarly, according to Smith and Lazarus (1993, p. 234), a particular type of emotional response prepares and mobilizes a person to cope with the particular appraised harm or benefit in an adaptive manner, that is, to avoid, minimize or alleviate the appraised harm or to seek, maximize or maintain the appraised benefit. Further, Stein and Levine (1989), Roseman (1991) and Levine and Burgess (1995, 1996) support the view that emotions are associated with different problem-solving strategies. Thus, review of relevant literature prompts the authors to use rationale to link emotion and cognition and motivation to outcome behaviors and further to examine the positive emotions and negative emotions aroused during a sales-encounter experience.

Objectives of the study:

1. Goal attainment as a result of congruent salesperson attitude with situational consumer mind set.
2. Effect of emotions on goal attainment/thwarting
3. Outcome behavior as a result of motivation and emotions.

Hypothesis Development

- H1:** perceived goal facilitation/thwarting are not significantly affected by consumer assessment mind when the salesperson uses relational behavior.
- H2:** Goal facilitation/thwarting will not be affected by consumer action mind set when the salesperson use exchange oriented behavior.
- H3:** Goal facilitation/thwarting are not evoked by positive/negative emotions.
- H4:** Internally/Externally oriented emotions don't cause a significant effect on consumer assessment/action mind set.
- H5a:** Internally positive emotions will not play dominant role when goal facilitation is high.
- H5b.** Internally negative emotions will not play important role when there is goal thwarting.
- H5c.** Externally positive emotions don't affect goal facilitation when it is high.
- H5d.** Externally negative emotions don't play significant role when there is goal thwarting.
- H6a:** When goal facilitation is high and a consumer is concerned with avoiding negative outcome advancement and approach strategy will not be adopted.
- H6b:** When goal facilitation is low and a consumer is concerned with avoiding a negative outcome an avoidance strategy will not be adopted.
- H6c:** When goal facilitation is high and a consumer is concerned with achieving a positive outcome an actualization strategy will not be adopted.

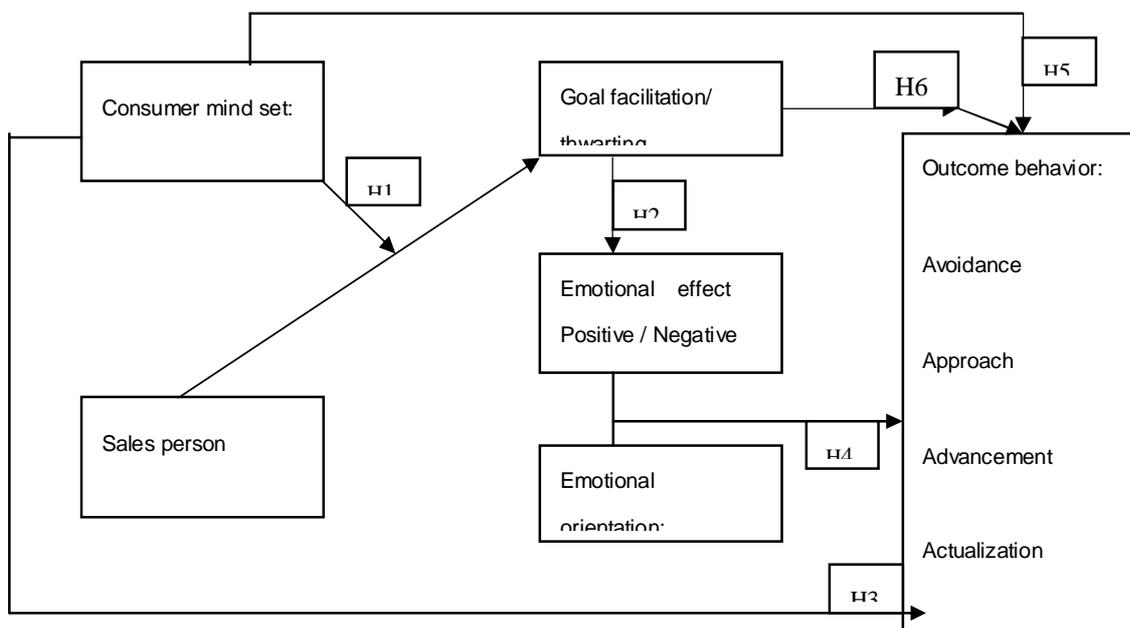


Fig no:3 A Conceptual Model of the Effects of Consumer Motivation During an Interpersonal Sales Encounter.

Reference: Lynnea Mallalieu 2000

Research design and Methodology

The main aim of research methodology is to find out the consumer motivational factors during conversation with salesperson study objectives as mentioned above. The methodology of research provides practical and systematic guidelines which helps in understanding the behavior of the consumer during purchase of the product. The methodology of research for the study is mentioned below as follows:

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Research design:

The research is descriptive in nature and it uses convenience sampling. The research is conducted through questionnaire and the subject used in pretest are under graduate students enrolled in engineering and the subjects used after pretest are under graduate engineering students and other under graduate science students in the age group of 17-24years. The scale used for this research is 7 point likert scale and the results are predicted using factor analysis and regression analysis. The variables define for salesperson behavior tested on 7 point likert scale with 1= extremely sale oriented and 7= extremely relational oriented, then cut off for mean is set at 5.0. The variables whose mean value is above 5.0 are considered under relation oriented. Whereas, variables whose mean value is below 2.5 are considered for sale oriented behavior. Further, mean value is taken for consumer assessment mind set and consumer action mind-set. Whereas, to differentiate pre defined variables for goal thwarting, goal facilitation, emotions and outcome behavior we used factor analysis. The sample size taken for the survey consisted of 300 respondents and the survey is conducted at universities, colleges, malls, educational institutions. The data analysis is carried out using statistical tool like spss16.0 and customer mapping using MS Excel 2007 in order to achieve the desired objectives. The data interpretation is done by using regression analysis.

Significance of the study:

The study shows that how sales person behavior, effect the consumer mind-set; and convert the consumer action in to the sales of the goods. It also discussed that how emotions of the customers plat an important role in taking decisions during interaction with sales person; and how sales person attitude motivate them to purchase goods or service. This study show the new dimensions of understanding consumer mind during interaction with the sales person, and how sales person behavior help in increasing sales of goods or services provided by the organization.

HYPOTHESIS RESULTS

H1: perceived goal facilitation/thwarting are not significantly affected by consumer assessment mind when the salesperson uses relational behavior.

In this hypothesis goal facilitation and goal thwarting are dependent variables and consumer assessment and salesperson behavior are independent variable. The hypothesis is examined using regression analysis. From regression analysis, it seems that consumer goal achievement depends on the conversation between salesperson and the consumer assessment of that information. Whereas, the results of the regression indicate a significant interaction of consumer assessment mind-set and behavior with both goal facilitation and goal thwarting, ($F= 8.66, p=.002$) for goal facilitation and ($F = 4.377, p=.003$) for goal thwarting with adjusted R square value of .863. From this result it is clear that null hypothesis is rejected.

H2: Goal facilitation/thwarting will not be affected by consumer action mind set when the salesperson use exchange oriented behavior.

Here, goal facilitation and goal thwarting are dependent variables and consumer action mind-set and salesperson behavior are considered as independent variable. The hypothesis is tested using regression analysis. From the test, it is conclude that goal facilitation/ thwarting are significantly affected by consumer action mind set and salesperson behavior, along with a significant value for goal facilitation($F=6.337, p= .0576$) goal thwarting ($F=9.673, p=.005$) . The R-square value for goal facilitation is .761 whereas, for goal thwarting is .689.

H3: Goal facilitation/thwarting are not evoked by positive/negative emotions.

The subjects were asked to identify the emotions which evoke during interaction with salesperson. After applying factor analysis on emotional variables, mean value is taken with a reasonable cut off value, and those emotions which are of least importance are dropped from the study. The emotions terms were classified from Richens(1997) and some of them are explained in hierarchy of emotions. Results of the regression indicate a significant interaction of positive and negative emotions with goal facilitation and goal thwarting. Positive emotions ($F= 7.673, p=.0256$) for goal thwarting, and negative emotions ($F = 4.377, p=.003$) for goal thwarting and positive emotions ($F= 8.66, p=.002$) for goal facilitation, and negative emotions ($F = 4.377, p=.003$) for goal facilitation.

H4: Internally/Externally oriented emotions don't cause a significant effect on consumer assessment/action mind set.

The internally oriented emotions are basically inner feelings of the customer generated by the current facing situation. Whereas, external oriented emotions are generated from the behavior or the provided information from the salesperson, then a mean value is calculated for internal and external emotions. Here, internal and external emotions are independent variables and consumer assessment and consumer action are dependent variables. The results of the regression indicate a significant interaction of internal and external emotions with consumer assessment mind set and consumer action mind set. Whereas, Internal

emotions ($F= 5.82, p=.005$) for consumer assessment, and external emotions ($F = 8.98, p=.003$) for consumer action mind set show more significant value than external emotions ($F = 4.4, p=.019$) for consumer assessment mind set and internal emotions ($F= 5.93, p=.032$) for consumer action mind set

H5a: Internally positive emotions will not play dominant role when goal facilitation is high.

Goal facilitation is considered as dependent variable and internally positive emotions are considered as independent variable. From the test, it is concluded that goal facilitation is significantly affected by internal positive emotions like relieved and pleased. The results of the regression indicate a significant interaction of internal positive emotions with goal facilitation; having ($F=5.64, p=.001$), with R square value of .707.

H5b. Internally negative emotions will not play important role when there is goal thwarting.

Goal thwarting is considered as dependent variable and internally negative emotions are considered as independent variable. From the test, it is concluded that internally negative emotions like sad, unfulfilled and painful cause significant affect goal achievement. The results of the regression indicate a significant interaction internal emotions with goal thwarting ($F= 7.98, p=0.028$), with R square value of .741

H5c. Externally positive emotions don't affect goal facilitation when it is high.

Goal facilitation is considered as dependent variable and externally positive emotions are considered as independent variable. From the regression analysis, it is considered that external positive emotions like enthusiastic, warmhearted, eager affect on goal facilitation. Whereas, the results of the regression indicate a significant interaction of external positive emotions with goal facilitation having ($F=9.93, P=.008$), with R square value of .695

H5d. Externally negative emotions don't play significant role when there is goal thwarting.

This hypothesis considered the analysis for the talk between subject and the salesperson. The results of the regression indicate a significant interaction of externally negative emotions with goal thwarting and the variables which significantly influenced this situation are astonished and anxious ($F=4.89, p=.007$)

H6a: When goal facilitation is high and a consumer is concerned with avoiding negative outcome advancement and approach strategy will not be adopted.

The advancement and approach strategy are considered as independent variable, where advancement means advancing in the decision process and approach means reasserting goals on the encounter, and goal facilitation is considered as dependent variable. The results of the regression indicate a significant interaction of goal facilitation with advancement and approach strategy with ($F=10.78, p=.039$).

H6b: When goal facilitation is low and a consumer is concerned with avoiding a negative outcome

an avoidance strategy will not be adopted.

When consumer feels that information which is provided by the salesperson is not helping it to attain its goal then it try to avoid further talk with the salesperson and the sale is dropped. The results of the regression indicate a significant interaction of goal thwarting with avoidance strategy ($F=6.34$, $p=.047$) and the variables which influence this situation from customer behavior are (a) customer leave the store without purchase (b) never make a purchase from that salesperson in future.

H6c: When goal facilitation is high and a consumer is concerned with achieving a positive outcome an actualization strategy will not be adopted.

In this case consumer is hoping for achieving the desired product and is actually thinking of doing a purchase. The results of the regression indicate a significant interaction of goal facilitation with actualization strategy having ($F=4.11$, $p=.038$) and the goal facilitation is considered as dependent variable and actualization strategy as independent variables, and the variables which cause an important effect on goal facilitation with the assistance of salesperson are (a) make a purchase from that salesperson in future (b) salesperson is helpful in understanding my needs.

Conclusion:

In today scenario market revolves around the customer needs, wants and expectations and every one try to lure customer by value additions and focus on enhancing the ability of boundary spanners. Thus, the foremost purpose of this paper is to study as to how and in what manner the interaction between consumers be motivational mind-set and a salesperson's behavior affects a consumer's cognitions, emotions, and outcome behaviors. Consumers have to interact with salespersons on most of the deals and most of the times it is seen that goal attainment/thwarting based on the interactive talks between salesperson and consumer. If, salesperson provide information as per the requirement of the customer than the chances of goal attainment is high otherwise every interaction with salesperson evoke negative perception in customer mind and leads to goal thwarting. Moreover, positive emotions whether internal or external play an important role on the interaction between salesperson and consumer and further leads to goal attainment. Whereas, negative emotions whether internal or external leads to goal thwarting. When goal facilitation is high consumer is moving toward goal achievement. Whereas, when goal facilitation is low, and when salesperson is not providing required information to the customer; in that situation interaction leads to goal thwarting. From the research it is concluded that there is a necessity for salespeople to understand what motivates consumers to enter a sale encounter. The research indicates that relational oriented behaviors are perceived as facilitating, thus, unlikely to drive a consumer away, however, it could be extremely difficult to recover from a situation in which exchanges behaviors are used on a consumer in an assessment min set.

Appendix I

Salesperson behavior

- Buy one get one free
- I can hold it for you for x no of days
- This product really suits you
- This item is very rare
- We can exchange the product for you
- This item is liked by everyone
- People mostly buy this quality of product only
- This item is in latest fashion
- This product works for years
- His product is very much in demand
- My expert opinion says you should buy this product
- In which range you would like to buy
- What you like fast colors or sober colors
- Would you like to try this product
- This is the last piece; which is left
- We have variety of color in this product category
- I like this product because of its price and quality
- This is easy to handle and wash
- It is a low maintenance product

- The performance of this product is very high
- There is a warranty on this product

Emotions as main variables

Reference	Emotions measured	used
resulting restructure		
Edell and Burke (1987)	Edell and Burke (1987)	upbeat, negative, and warm
Holbrook and Batra (1987)	Hilbrook and Batra(1987)	pleasure,arousal and domination
Westbrook(1987)	Izard (1977)	positive and negative effect
Olney et al.(1991)	Mehrabian and Russell(1974)	pleasure and arousal
Mano and Oliver(1993)	Watson et al(1988); Mano(1991)	upbeat, negative and warm
Steenkamp et al(1996)	Mehrabian and Russell(1974)	Arousal
Nyer (1997)		Richins (1997)
Anger,joy,satisfaction and sadness		
Richens(1997)	Richins(1997)	Anger,discontent,worry,sadness,fear, <u>shame,envy,lineliness,romantic,love,pain,contentment,optimism,joy,excitementand surprise.</u>

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Examining the influence of western culture among Indian women wine consumers

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Abstract

This paper examines the attitude of Indian women towards wine drinking and seeks to establish factors that motivate them to consume wine. It further seeks to establish the extent to which Indian women consume wine. Several studies have shown that there is an increase in the number of wine consumers in Indian market. The study adopted an ex post facto survey design while the study location was at the University of Kerala in India where proportionate random sampling technique was used to collect data through questionnaires which were analysed by use of both descriptive and inferential statistics. The study established that wine is the most preferred category of alcohol among women and those who consume it have no problem with women consumers. Those who did not consume wine cited religious doctrines, strict culture and health issues as main reasons. The changes in wine consumption among the women could be attributed to high level of tourists, Christianity, high literacy levels and huge number of emigrants abroad.

Key Words: Indian women consumer, western culture, wine

INTRODUCTION

According to Benegal et al. (2005) research on drinking patterns among women generally shows that women drink less than men (Wilsnack, 1996), across the developing (Assanangkornchai et al., 2003, Wei et al., 1999) and the developed world (Kraus et al., 2000). The prevalence of alcohol use among women in India (wherever data is available) has consistently been estimated at less than 5 percent (Mahal, 2000; Sundaram et al., 1984). There is also a widespread notion that alcohol use is confined to tribal women, women of lower socio-economic status, commercial sex workers and to a limited upper crust of the rich, and not favored by women from the middle or upper socioeconomic classes (Ray and Sharma, 1994). The dominant stereotype strongly associates alcohol use with the primitive and/or poor, the immoral and the privileged women (Rahman, 2002; Musgrave and Stern, 1988; Thimmaiah, 1979). Alcohol use, especially with reference to women's use, is still negatively associated with notions of virtue. In India, forbidding women against drinking exist from ancient times, being only one among a multitude of gender discriminatory practices which have continued almost unchanged till this day. An example of this is an injunction contained in the ancient Brahminical text, the Manusmriti (circa 200 AD), which warns that drinking (spirituous liquor), associating with wicked people, separation from the husband, rambling abroad, sleeping (at unseasonable hours), and dwelling in other men's houses, are the six causes of the ruin of women (Doniger, 1992).

Benegal et al. (2005) contend that economic independence, changing roles in society, entry of women into male dominated areas, economic and social emancipation, and greater acceptability of social drinking and easy availability of alcohol have strongly contributed to rising incidence of alcohol consumption in women. Over the last three or four years, alcohol abuse amongst women has increased, while the lower income women take to country liquor, it is the upwardly mobile women influenced by a western culture, by peer pressure, by the aggressive marketing on the television, where liquor advertisements show gorgeous women living life king-size, that finally gets to them. The young urban woman has taken to alcohol as a way of knocking down social barriers and gaining acceptance amongst her peers. Coming equipped with a strong academic, professional or family background is no longer

enough. Alcohol has become the unisex leveler, an equaliser that promises instant entry amongst favoured circles. This is true of girls and women who have come from smaller towns to make a name and fortune in bigger cities (Ray, 2002).

Kumar (1997) reported that in Bangalore city, a fifth of young people who frequented pubs on weekends were girls aged between 13-19 years. Interviews with women drinkers identified boredom and lack of work at home as factors for drinking among the high-income group; the low-income group identified fatigue and spousal violence as triggers for drinking. About 305 million Indians live in nearly 3700 towns and cities spread across the length and breadth of the country. This comprises 38 percent of its population, in sharp contrast to only 60 million (15 percent) who lived in urban areas in 1947 when the country became independent. At the same time, the labour force participation rate which is an indication of the number of people offering themselves to be employed, came down between 1999 to 2002, for rural women (470 per 1000 to 423 per 1000) and for urban women it rose in that period from 193 to 205 per 1000.

Neve et al. (1996) held that as women gradually acquire equal rights in work and social situations, this might also be reflected in a propensity to drink in equal amounts and in the same manner as men. While this may not explain changes in drinking patterns of non-working women, it does reflect a general change in societal attitudes to women's drinking. Benegal et al. (2003) found that in southern India the average consumption on typical drinking occasions in women were five standard drinks (12 gm. of ethanol per drink).

Prashad (2009) states that sales of alcohol in India have seen a growth rate of 8 percent in the past 3 years. Officially, Indians are still among the world's lowest consumers of alcohol, government statistics show only 21 percent of adult men and around 2 percent of women drink. The concern, say experts, is that there has been a rapid change in patterns and trends of alcohol use in India. India's per capita consumption of alcohol is recorded to be among the lowest in the world (WHO, 2005). It is ranked at 150th position among 184 countries in the world with per capita consumption at about 2.6 liters. However, recent statistics have shown a phenomenal growth in the widening of the alcohol market base and it is

now estimated that between 15 and 20 per cent of Indian people consume alcohol. The number of drinks in the past decade is estimated to have increased from one in 300 to one in 20 people. 65 per cent of the alcohol market is controlled by whisky manufacturers and the state of Kerala stands first in per capita consumption of alcohol at 8.3 liters, followed by Punjab at 7.9 liters. The main objective of this study was to examine the influence of western culture on the Indian women consumer with focus on wine consumption and to establish the extent to which Indian women consume wine.

LITERATURE REVIEW

Kim(2008) contends that despite characterisations of Indian culture as traditionally dry or abstinent, there is evidence not only of consistent alcohol production and consumption throughout India's history, but of relatively relaxed attitudes towards drink (Benegal, 2005) until the previous century. Brewing and distilling in India can be traced back to as early as 2000 B.C. in the Indus valley, where they were undertaken by the technologically advanced Indus civilisation. Drink also appears to have been consumed at the time of the Epics and during this era, circa 1200 to 1000 B.C.E., although drinking was frowned upon in the Hindu sacred text and consequently interdicted for Brahmins, the spiritual aristocracy, as well as for students; the warrior and trading classes were permitted to consume liquor brewed from honey, mahua flowers or jaggery (Isaac, 1998). Moreover, the Sutras instructed that strong liquor be served to guests upon entering a new house and to brides upon going into their husbands homes for the first time (NIMHANS and WHO, 2003).

During the early Christian era, south Indian nobles imported wine for their use while the local toddy, arrack and flavoured rice wine were also common (NIMHANS and WHO, 2003). In south India, drink was said to be absorbed by women, who drank in the company of their lovers or as they were gossiping with other women. Alcohol consumption, particularly in ritual contexts, appears to have been a social event taking place in pleasant surroundings, shared by lovers, married couples, families and friends (NIMHANS and WHO, 2003). Regarding alcohol as a means to cement and negotiate ties with others, factory officials of the East India Company frequently requested that the authorities in London send them

bottles of wine both for their own use and for gifts to the Mughal monarch, prince, nobles, and officials of the state (Chatterjee, 2005). Being in a position to offer such highly prized presents enabled the giver, for instance, to gain acceptance to court, to breach hierarchies, to obtain favours and to smoothen negotiations. Thus, Chatterjee(2005) notes that while at times, the English monarch's representative at Emperor Jahangir's court, presented caskets of wine purely as a gift to Prince Khurram or Emperor Jahangir, at other times it was utilised to attain privileges of trade or to secure the release of goods from the customs house at Surat (Chatterjee,2005).

In addition to strengthening and negotiating relationships, and constituting authority, drink was utilised to make class and wealth based distinctions. Court chronicles, representing elite sections of society, allude only to wine. The Mughal nobility commonly consumed the more expensive varieties of wine, such as Shiraz and Canary. Furthermore, the Dutch, French and English gave gifts of exclusive Spanish and French wines to gain, for example, trading privileges (Chatterjee, 2005).

Chatterjee (2003) notes that on the Indian tea plantations, drink was decried as an "evil" that harmed workers health and prevented them from executing their tasks efficiently, even while the indigenous beer was recognised as an important element of festivals and marriages. The greater commoditisation of alcohol in India was met by two types of reactions. Poor rural individuals, who were thought to use alcohol to obtain relief from the difficult conditions of their existence (Benegal, 2005), turned increasingly to illicitly manufactured alcohol (Hardiman, 1985; NIMHANS and WHO, 2003). In contrast, several movements agitating for abstinence and/or prohibition also took root in India. Contributing to the rise of these anti-alcohol movements were higher levels of drunkenness and crime associated with increased production and consumption of drink. This led Indians to link alcohol consumption with Western ways and to describe it as English vice (Benegal, 2005; Isaac, 1998).

With the emergence in the nineteenth century of an urban middle class and the accompanying possibility for social change, abstinence was embraced by some of the more prosperous members of the lower castes. They sought to distance themselves from their

communities (Hardiman, 1985) and to achieve upward social mobility through the adoption of upper-caste norms, such as vegetarianism and abstinence from alcohol, as a means to obtain higher social status (Benegal, 2005). In the latter half of the century, abstinence from drink was embraced by whole communities in some regions, such as South Gujarat. Additionally, rather than the attainment of social mobility, the aim was to save their members from further indebtedness to liquor dealers and from pauperisation (Hardiman, 1985).

Rod et al., (2010) states that wine serves as a significant marker of societal, and market change in societies which are not traditionally wine drinking. Thus, there is an opportunity to look at those individuals who serve to provide a 'bridge' between different cultures; both in terms of how they act as intermediaries from a traditional marketing/supply chain perspective through a better understanding of the relevant actor bonds, resource ties and activity links (Håkansson and Johanson, 1992), but also as cultural intermediaries from the perspective of how they influence 'taste' and the process of foreign culture assimilation/incorporation.

In India, wine drinking especially among the women is gradually being accepted and the change in women's drinking habits is not uniform. Today record numbers of women in India can afford to take wine at home or out of home. This is a great paradigm shift attributed to the influences of the Western culture. New drinking habits are growing alongside more traditional habits leading to two divergent patterns (WHO, 2005). The first is the traditional pattern seen mostly among less educated women in rural settings. The second batch comprise of affluent and educated urban women who are generally younger than other group. They drink moderately especially lower alcohol content beverages like wine and beer.

The Western culture is a body of knowledge which is believed to have developed from Greece. It is primarily based on democracy, freedom and equality as the framework of human rights. It is also based on individualism, liberalism and utilitarianism (Majie, 2002). The foundation of reason has made possible a vast accumulation of understanding related to reality or nature including human nature. This understanding is represented in several core ideals and values, which include individualism, happiness,

rights, capitalism, science and technology. It is otherwise referred to as advanced culture because its ideas and values promote the development of advanced civilization. The Indian and western cultures differ in many respects. One such is that whereas Indian culture is a bit conservative, the Western culture is liberal with a lot of individual freedom of choice. According to Indian Wine Industry Report (2008), increase in the disposable income, favorable government policies, amplified marketing activities and influence of Western culture as key factors that have driven increased consumption of wine in India.

Bourdieu (1986) argues that taste classifies the consumer and that consumer tastes are ultimately the result of interaction between their social origin, the direction of their social mobility and their education; with ever-increasing demand for expert knowledge to help consumers in their consumption, with the job of educating being one such responsibility of cultural intermediaries. Negus (2002) notes that cultural intermediaries occupy the space in between, and engage in creating points of connection between production and consumption while Featherstone (1991) argues that they are specialists in symbolic production and cultural entrepreneurs and intermediaries who have an interest in creating postmodern pedagogies to educate publics.

According Rod et al. (2010), wine marketers, wine journalists, wine stewards, hotel, restaurant, food and beverage managers are cultural intermediaries engaged in the trafficking of value and taste in ways that frame taste or the appropriateness of certain goods and brands. They are key actors in the commercial exchange of expertise and in having the expertise to translate values and taste between producers and consumers (Appadurai, 1986), in an environment where wine consumption is increasingly transcending cultural barriers. Finding the right distributor and developing the right relationships is crucial in any market and for any product, but nowhere is it more important than in the Japanese and Singaporean wine markets. In addition, the relationship one has with a friend, a wine shop owner, or any other cultural intermediary who is in a position of authority or influence, will ultimately determine not only what one drinks but even if one drinks (Wilkinson, 2009). Perhaps peculiar to Asia though, Beverland (2009) argues that in Confucian societies, although the use of networks and relationships is critical for market entry to the wine industry, in some instances, the number of firms, the role of large and

small firms, and timing of entry can limit the effectiveness of relationships versus more transactional marketing activities. This would seem to underscore the importance of gaining a better understanding not only of the role of cultural intermediaries since they act outside of the traditional channel regardless of its relational or transactional orientation, but also how they discursively construct their identities in performing these roles.

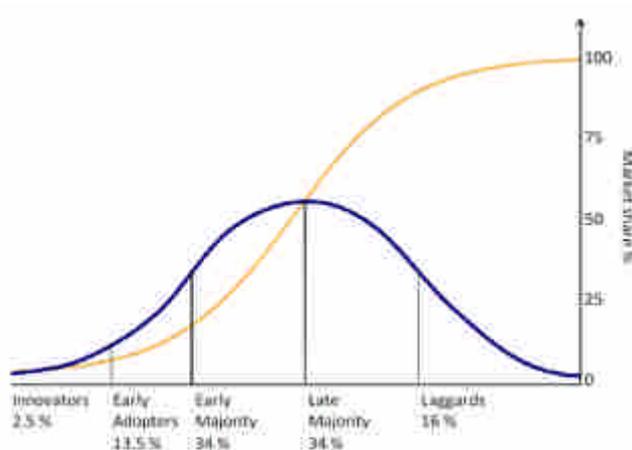
Rod et al. (2010) explored cross-cultural issues by taking a discursive perspective to studying representations of self, and of inter-organizational and inter-personal relationships (Lowe et al., 2008) in the global wine business, specifically through the analysis of a series of accounts of cultural intermediaries and key stakeholders involved in potentially influencing the extent to which New Zealand wines achieve a greater presence in the Japan and Singapore marketplaces.

Lee (2009) illustrates contentions that the trend towards exclusiveness is a key driver in wine consumption in emerging Asian countries and that these consumers attempt to follow the lifestyle of Western consumers in the belief that they will experience Western culture and lifestyle by drinking wine. Lee (2009) further notes that significant growth in wine consumption in Asia is somewhat surprising because most Asian consumers have not traditionally drunk wine given each Asian country's own traditional alcoholic beverages, such as "sake" in Japan and "sochu" in Korea and that the strong association between culture, eating habits, and food preferences makes it is very difficult for an individual to alter preferred food items and beverages, including alcoholic beverages. In looking at the demand for wine, Terrien and Steichen (2008) cite Bourdieu's (2000) assertion that tastes are determined in a systemic way and that they are a result of the combination of personal experiences and social interactions, both idiosyncratic behaviour derived from innate and acquired characteristics (experiences, habits), and a social behaviour taking into account the social status and the decisions of other actors. Rod et al., (2010) observes that with wine not being associated with Asian culture, it is therefore useful to look at how its increasing consumption in emerging Asian wine markets might be explained. They believed that the persistence of local and cultural factors in markets and their dialectic with globalisation continues to ensure an enduring and important role for cultural intermediaries.

THEORETICAL FRAMEWORK

This study was based on Diffusion Theory originally applied by Rogers (2003) to consumer behavior as having has four elements; innovation, communication channels, time and social system. According to Rodgers (2003), getting a new idea (wine consumption) adopted is difficult and many innovations require lengthy period of many years from the time when they become available to the time they are widely adopted. Therefore a common problem to individuals is how to speed up the rate of diffusion of an innovation. Diffusion is the process by which an innovation is communicated among members of a social system. The speed at which this spreads is known as the diffusion rate and the theory examines the process by which new products are adopted over time (Gregor and Jones, 1999). Wine is thus considered new in the women market within the context of the conservative Indian environment. Acceptability or diffusion will heavily rely on the innovation decisions of others (Orr, 2003). One will go through the following stages of the diffusion process before accepting the innovation; Knowledge- a person becomes aware of an innovation and has some idea of how it functions; Persuasion- the person forms a favorable or unfavorable attitude toward the innovation; Decision- a person engages in activities that lead to a choice to adopt or reject the innovation. Implementation- the person puts an innovation into use. Confirmation- a person evaluates the results of an innovation decision already made which will influence repeat of the same or not.

Product Diffusion Process



Source: Rodgers (2003)

Since not all people adopt new products at the same time, Rodgers (2003) suggested an adopter category on the basis of when they adopt the product. Innovators are the first to adopt an innovation and are willing to take risks. They are the youngest in age, have the highest social class, and are very social and financially stable. Early Adopters are the second fastest category to adopt an innovation and have the highest degree of opinion leadership among the other adopter categories. They are younger in age, have higher social status, financially stable, educated and more socially than late adopters. Late Majority are those who will adopt an innovation after the average member of the society. They approach an innovation with the highest degree of skepticism and after the majority of the society have adopted the innovation. Laggards comprise of those who are usually the last to adopt an innovation and have little to no opinion leadership. They are not change averse and tend to be advanced in age and traditional in approach.

METHODOLOGY

The study adopted a descriptive ex post facto survey research design which attempts to explore cause and affect relationships where causes already exist and cannot be manipulated. It uses what already exists and looks backward to explain why. The study location was at the University of Kerala, India where a structured questionnaire was used for data collection by interviewing a cross-sectional survey of 25 women. The respondents were selected by use of proportionate random sampling in clusters based on the geographical location of their residence in various parts of Kerala working in the University of Kerala from a population of 80 women non academic members of staff stationed within the main campus academic section. Data collected included the area of residence, whether urban or rural; the marital status; age bracket; literacy levels; whether relatives are emigrants abroad; interaction with tourists and exposure to Christianity. Data collected were analysed using both descriptive and inferential statistics and responses were converted into percentages. Pearson correlation was used to correlate between women attitudes and wine consumption.

RESEARCH FINDINGS AND DISCUSSIONS

The study found that 52 percent of women consume wine occasionally implying that wine consumption by women is slowly being adopted. Majority of the respondents indicated that they consumed wine for fun and enjoyment while others indicated that wine was healthy to the body. Those who do not take wine stated that it was dangerous to health while others cited culture and religion as reasons for their non consumption of wine. A descriptive analysis was carried out to determine the attitude of women towards other women taking wine and majority of the respondents had a positive attitude towards other women drinking wine.

To test the hypothesis that most women in Kerala state do not consume wine, there were mixed reactions regarding women drinking wine. 52 per cent of respondents indicated that they drink wine while 48 percent disagreed. The chi square statistics of $p = 0.841$ indicated that the value is not significant at $p = 0.001$, which confirms that a significant number of women consume wine, therefore rejecting the null hypothesis.

To test the hypothesis that women have negative attitudes towards wine consumption, respondent's scores on a seven point Lickert scale were divided into two (positive and negative attitudes) the scores for positive attitudes ranged from 1 – 3.4 while on those for negative attitudes ranged from 3.5 - 7. A frequency analysis was carried out and the findings illustrate that majority 64 percent had a positive attitude. The relationship between women attitudes and wine consumption was examined through the use of Pearson correlation and the findings show a strong positive correlation of $p=0.614$ at 0.01 confidence level. A cross tabulation analysis was carried out to determine, which alcoholic brands respondents consumed and attitude towards them (positive/negative). From the findings, majority of the respondents consumed and had positive attitude towards consumption of wine. It is evident that wine consumption among women consumers in Kerala is slowly being adopted and wine was found to be the most preferred alcohol at 52 percent among women who were considered as the early majority adopters. Kerala state is considered the most prosperous state in India with 100 percent literacy level and only 12.72 percent of its over 31 million population below the poverty line. It is also a tourist hub in India and this could influence the locals towards adopting the western culture. Kerala has a large number of emigrants (see Table 1

below) working abroad which could influence others on foreign culture.

Table 1: Estimates of Kerala Emigrants in 2008

Districts	Emigrants 2008
Thiruvananthapuram	308,481
Kollam	207,516
Pathanamthitta	120,990
Alappuzha	131,719
Kottayam	89,351
Idukki	5,792
Ernakulam	120,979
Thrissur	284,068
Palakkad	189,815
Malappuram	334,572
Kozhikode	199,163
Wayanad	13,996
Kannur	119,119
Kasaragode	67,851
Kerala	2,193,412

Source Zachariah K.C. and Rajan S. I. (2010)

Finally Kerala state has the highest number of Christian population in India (about 21 per cent) and Christianity has a great influence of the Western civilization as Indian Christians are more likely to accommodate western culture.

Benegal et al. (2005) noted that there appear to be two widely divergent patterns of drinking among women in India. There is what appears to be a traditional pattern which is confined to less educated women from rural settings and poorer sections of urban society. Their drinking is marked by drinking to intoxication, with a high proportion drinking five drinks or more per drinking occasion. This pattern is marked by predominant use of cheaper, high alcohol-containing beverages: spirits, illicit liquor and country liquor. Drinking is mostly conducted in under socialized drinking contexts. This group is more likely to drink at home, usually alone and they are also more likely to drink at off-license retail outlets, and licensed retail outlets like arrack shops. Though they drink less frequently, their pattern is

nearer the drinking pattern observed of the men. It also appears to be more likely to serve the function of tension relief rather than the enhancement of positive experiences. Drinking to enhance positive experiences appears to be less of a motivation for women as a whole compared to males. It is reasonable to assume that relief of negative emotional states rather than the pursuit of pleasure appears to be the dominant motive driving women's drinking, especially among women from lower socioeconomic groups. It clearly leaves a lot of guilt and shame in its wake and they also report more alcohol-related problems in the sphere of household chores, relations with family and children, physical health, family finances and friendships.

According to Benegal et al. (2005), the other pattern is seen in affluent, educated urban women who are presumably more emancipated. This group is comparatively younger, more educated, earn more, drink less on typical drinking occasions, less frequently and have a shorter duration of drinking. They are more likely to be unmarried and without children. Their drinking is under relatively more socialized circumstances; at restaurants, parties, with spouses, family members, workmates and friends. It is more normalized in that they are more likely to drink at home and with meals. Although spirit drinking is still most common, use of lower alcoholic beverages like wine is relatively higher. Women's drinking is perceived to be more socially acceptable in this group. Women in this group are motivated equally by expectancies of tension relief and the enhancement of positive experiences. These women obviously have a much higher spending capacity. They also have less physical, emotional and interpersonal problems as a result of their drinking. This group is characterized by women in their early drinking careers, and there are suggestions that the newer entrants are starting to drink at progressively younger ages. This is so different from the traditional pattern of women's drinking that some observers have suggested that a westernized pattern is supplanting older drinking norms. In marketing terms they represent two different markets. The rural and poorer urban consumers, who drink mostly non-premium spirits and country liquor, constitute a market which is comparatively stagnant. The young, affluent female urban drinker conversely represents an emerging market, which is rapidly growing thereby clearly recognized by local alcohol manufacturers and trans-national alcoholic beverage corporations. According to industry projection which

predicts a realistic market growth of 12-14 percent of beverage alcohol sales in India for the next ten years, increasing drinking among women is expected to fuel over a quarter of that movement. The wine market, again targeted at women, is growing at 25 percent per year (from 0.6 million bottles sold in 1997 to 2 million bottles in 2002).

Benegal et al. (2005) concluded that previous observations from India (Benegal et al., 2003; Saxena, 1999; Isaac, 1998), have reported a significantly lower prevalence of alcohol use among women compared to men. This is also similar to observations throughout the world, across different cultural contexts of drinking. Why do women drink less than the men? The obvious answer is that it is socio-culturally less acceptable; the prevailing sentiment, and one that appears to be traditionally held since ancient times, is that it is more acceptable for men to drink than for women. This is inextricably linked to the woman's position in society and is buttressed by strong associations with morality. There is expectedly a strong male gender bias against women drinking (even among men who themselves use alcohol). Rural women and the urban poor, continue to support the status quo, even the drinkers among them. Women from urban areas with professional, semi professional or skilled jobs and students are more permissive and tolerant of women's drinking, regardless of drinking status. This group predictably has a higher prevalence of drinking. Also, women, much more than men, believed that alcohol was more likely to cause physical and emotional problems in women than men. A larger proportion of abstaining than of drinking women endorsed this belief. Such a health belief model (Kauffman et al., 1997) is likely to shape drinking choices in women.

The real danger in India is that encouraged by increasingly permissive social attitudes to alcohol use, pushed by targeted hard-sell by the liquor industry and shaped by the explosive drinking norms, there is likely to be growing consumption in women, which is likely to increase the alarmingly high social cost of alcohol abuse in the country (Benegal et al., 2000).

Benegal et al. (2005) contends that a major gender related difference is the trend towards lower alcohol use (number of drinks on typical drinking occasions) with increasing age in women. Women appear to be at greater risk of increasing consumption with increasing duration of drinking. This raises the

likelihood that they too will in time have similarly explosive patterns of drinking, even though their current consumption is low. There is some evidence that this process is already happening and that women who have been drinking for 7 years or more are drinking multiple beverages, as well as drinking more frequently and larger quantities than those with shorter drinking careers.

It is interesting to contrast two different socio-political trends that appear to have influenced the way alcohol is viewed and used in India. First, as a result of social and economic mobility, people of lower socioeconomic class adopt the customs of the higher castes and classes (Srinivas, 1997). It has been speculated that, with increasing education and urbanization and the resulting social and economic mobility which saw the growth of the urban middle classes in India in the last 150 years or less, there has been rapid changes in diet (in favour of the upper caste Brahminical norms of vegetarianism and abstinence from alcohol) as lower castes/classes adopted the cultural mores of the higher castes/classes in order to better adapt to their changed positions in the social hierarchy. Historically, this has served to push temperance as the stated position on alcohol in the upper and growing middle classes. Alcohol use, in this view, was seen as an archaic trait of the primitive (tribals and the socially backward) or an abnormal/pretext of the upper classes. Emancipation as a result of education, economic independence and urbanization, along with the effects of globalization that affect women in urban India, appear to increase the chance of initiating alcohol consumption and rapidly increasing the consumer base.

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Implementations of ICT Innovations: A Comparative Analysis in terms of Challenges between Developed and Developing Countries

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ABSTRACT

The main aim of this paper is to achieve a depth of understanding of the various similarities and differences in terms of challenges between developed and developing countries and in regards to the implementation of ICT innovations. Indeed, advances in Information and Communication Technologies (ICTs) have brought many innovations to the field of Information Systems (IS). Despite agreements on their importance to the success of organizations, the implementation processes of such innovations are multifaceted and require proper addressing of a wide-spread issues and challenges. In this study, we address this matter by first; synthesizing a comprehensive body of recent and classified literature concerning five ICT initiatives, second; analyzing and classifying ICTs challenges for both developed and developing countries as well as justifying their similarities and differences following thematic analysis qualitative methods, and third; presenting the study conclusions and identifying future research areas drawn upon the conducted comparative analysis.

Keywords: Information and Communication Technologies, Innovations, Challenges, Implementation, Developed Countries, Developing Countries.

1. Introduction

Recent advances in Information and Communication Technologies (ICTs) have brought many innovations to the field of Information Systems (IS). The main goal of such innovations, for both

developed and developing countries, is the improvement of organizations' performance and the achievement of competitive advantages. Developing countries, in particular, are looking forward to achieve several social, economical and strategic gains by implementing various "western-originated" ICT initiatives. However, the overlapped implementation of these innovations spans over years, and is substantially associated with business logic strategic changes. Hence, they impose significant implications over organizations on the long run.

Many prescriptions to successfully employ these initiatives have been proposed in the literature. However, it seems that a great deal of customization effort is necessary to be done over these proposed prescriptions for the best fit within different organizations' internal/external environments. Variables such as 'organization size', 'sector', 'organizational and national cultures', 'politics', 'laws and regulations', and 'economic conditions' have been founded to be extremely influential on the implementation of these innovations.

Although implementation challenges are perceived to be to some extent universal, still there are unique features characterising each part of the world in regards to the implementation of ICT innovations and this is mainly due to the environmental differences. Indeed, ICT innovations not only deal with technologies and information content, but also their deliverables are shaped by the associated social/cultural context. This highlights the importance of identifying the implementation challenges of ICT innovations for developed and developing countries. Moreover, exploring the reasons behind the similarities and differences in terms of challenges between both types of nations is substantial to enhance our understanding of what constitute the most successful implementation of ICT innovations. To the best of our knowledge, this is the first paper tackling the differences in terms of challenges between developed and developing countries and in regards to different ICT innovations.

The rest of this study is organized as follows. Next, the methodology followed in this research for the purpose of achieving its goals and objectives is discussed. Thereafter, five ICT innovations are fully examined in section 3. For each initiative, normative and critical arguments and cases coming both developed and developing countries have been synthesized and neutrally examined. Similarities and differences in terms of challenges have been pinpointed and vindicated in section 4. Finally, drawn conclusions and further research avenues have been proposed in section 5.

2. Research Design and Method

For the purpose of finding the similarities and differences between developed and developing countries in regards to the implementation of ICT innovations, a qualitative methodology is followed in this study. The primary source for data collection purposes in this study is defined as the related literature. A comprehensive body of recent and classified literature regarding the implementation of five ICT innovations (i.e. Enterprise Resource Planning "ERP", Business Process Re-engineering "BPR",

Inter-organizational Systems and E-Business, Information Systems Sourcing, and Knowledge Management) is systematically reviewed and synthesized.

Relevant articles reflecting the implementation of the identified ICT innovations in both developed and developing countries were extracted from electronic libraries and databases (e.g. ScienceDirect, EBSCO, JSTOR, and Scopus, and GoogleScholar), by means of keywords. The lists of references within the selected articles were also useful. In the process of selecting the body of literature to be covered in this study, we find it also important to cover normative, interpretive, and critical schools of thought so as to incorporate various perspectives in this regard and in turn to end up with neutral bias-free findings and conclusions.

Our literature search identified a sufficient and rich pool of papers addressing the implementation of the identified ICT innovations in both developed and developing countries. Indeed, about 120 references are cited and listed at the end of this study. This was not a surprise given the large volume of publications about Enterprise Resource Planning “ERP”, Business Process Re-engineering “BPR”, Inter-organizational Systems and E-Business, Information Systems Sourcing, and Knowledge Management in the field of information systems. Having the pool of literature created, one author (MMD) reviewed the titles and abstracts of the extracted papers for relevance to the current study. Papers were included in this study in accordance with the following dimensions collectively:

- 1- *Time Horizon*; that is covering the period from 1990’s to 2010.
- 2- *Comprehensiveness*; that is covering normative, interpretive and critical schools of thought.
- 3- *Balance*; that is having fairly similar number of articles regarding each ICT initiative, and approximately similar number of articles in each ICT initiative addressing developed and developing countries.
- 4- *Quality of Articles*; in terms of content, number of citations, indexing, and publication source.
- 5- *Learning*; that is including articles that conducted comparisons in terms of implementation between developed and developing countries and in regards to the identified ICT innovations.

After selecting articles from literature to be included in this study, a thematic analysis of the content of these articles was started. Thematic analysis is a widely-used qualitative analytic method (see Roulston, 2001). Thematic analysis can be defined as a method for identifying, analysing, and reporting classified patterns (themes) within data (Braun and Clarke, 2006). Such an analysis organises and describes data sets in rich detail. However, it also can further interprets various aspects of the research topic (Boyatzis, 1998).

In this study, thematic analysis was applied separately on each ICT initiative. The authors of this study were both involved in this process and played the roles of thematic analyzers and evaluators. For example, if one author is the thematic analyzer for one ICT innovation, the other author is the evaluator and vice

versa. However, during thematic analysis, all data sharing similar embedded meanings that indicated the same themes were coded and grouped together in a separate cluster. Each cluster is actually represents a shared similarity or difference between developed and developing countries and in regards to one the five ICT innovations included in this study. We have also made sure that generated clusters are mutually exclusive and unique. Then, generated clusters were provided with meaningful labels and appropriately justified. Finally a comparative analysis was conducted between these clusters so as to find similarities and differences in terms of challenges and in regards to each of the covered ICT innovations.

3. The Implementation Challenges of ICT Innovations in Developed and Developing Countries

As a first step in achieving the study goals and objectives, this section discusses the included five ICT initiatives (See Figure 1). For each initiative, the underlying organizational benefits that can be obtained due to the implementation of such an initiative are highlighted. Further, suggested approaches for successfully implementing each of the ICT innovations are synthesized. Moreover, issues according to both normative and interpretive/critical schools of thought are presented and supported by case studies extracted from relevant literature. Indeed, for comparison purposes in terms of challenges, case studies concerning both developed and developing nations are also provided.

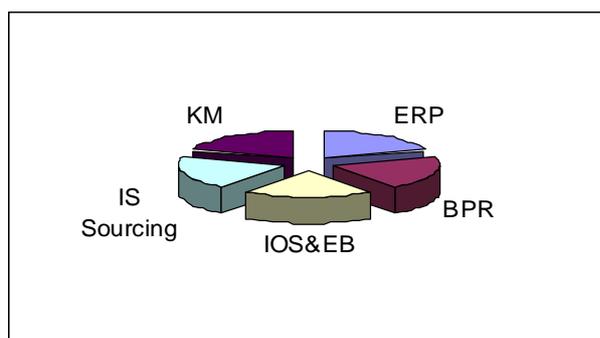


Figure 1. ICTs covered in the Study

3.1 Enterprise Resource Planning “ERP” Initiative

An ERP enterprise application is a standardized software package that integrates information across an organization. The implementation of an ERP software package in an organization represents organizational strategic continuum change (Bancroft, 1998), that transforms into a ‘radical’ one if Business Process Re-engineering (BPR) is considered. However, such an initiative fundamentally addresses operational integration within organizations. Through ERP implementations; organizations have sought to improve their competitiveness (Mabert et al., 2003), improve the quality of information and timeliness, reduce operating costs, replace legacy systems (Avison and Malaurent, 2007), enhance data

visibility (Parr and Shanks, 2000), and improve management control over complex business processes (Davenport, 1998).

In this regard, the normative school of thought is concerned with finding the 'right model' of success for implementing ERP software packages. Ngai et al. (2008) and based on reviewing literature tackling the critical success factors (CSFs) in the implementation of enterprise resource planning (ERP) across 10 different countries/regions found that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions. They also found that in these 18 CSFs, 'top management support' and 'training and education' were the most frequently cited as the critical factors to the successful implementation of ERP systems.

On the basis of the applied analysis in this study, we found that awareness of the following factors constitutes the recipe for ERP implementation success: 'Sufficient financial resources', 'data accuracy', 'ERP strategy alignment with the competitive strategy', 'proper project management', 'effective change management', 'appropriate risk management', 'top-management support', 'effective structure and composition of teams', 'end-user training and involvement', 'powerful technological infrastructure', 'the selection and support of external consultants and vendors', and finally 'concentration on the decision made between BPR or ERP customization' (See Markus et al., 2000; Sarker and Lee, 1999; Akkermans and Helden, 2002; Umble et al., 2003; Dezdar and Sulaiman, 2009; Metrejean, 2010).

However, it has been acknowledged in the related literature that organizations of different sizes approach ERP implementations differently (Markus et al., 2000; Luukkanen et al., 2007). For example, Buonanno et al. (2005) found that organizations from different markets face different issues and challenges when implementing ERP systems. In a similar manner, Parr and Shanks (2000) identified that requirements of ERP implementation success differ across ERP implementation approaches. Sheu et al. (2004) suggested that 'culture and language', 'management style', 'government/corporate policies', 'regulation/legal requirements', 'internal technical personnel resource/labor skills', and 'geography/time zone' represent national differences affecting ERP implementation practices across nations.

On the other hand, the interpretive/critical school of thought argues that ERP implementation is a complex process since the use of technology is shaped by its social context. Thus applying the global template or recipe for implementation in different organizations operating in different environments without taking each local environment into account is very risky and may lead to catastrophic results. Accordingly, this school of thought argues that the process of ERP implementation needs to consider the following in order to be successful: 'Dynamics of organizational control', 'politics and power', 'the effect of cultural issues',

‘different levels of experience and awareness’, and ‘the extent to which ICTs can support ERP implementation’. Based on a case study approach, Al-Mashari and Zairi (2000) identified the following factors for ERP implementation failure: ‘Underestimating the human resources element in change’, ‘lack of cultural preparation’, ‘insufficient resources’ (skills, manpower and finance), ‘ineffective management of consultants’, and ‘separating IT from business affairs’. Xue et al. (2005) identified the following eight factors as influential ones leading to ERP failures in China: ‘Language’, ‘report and table format’, ‘BPR’, ‘economic reform impact’, ‘cost-control system’, ‘human resource problem’, ‘price issues’, and ‘partnerships with ERP service organizations’.

As for the differences between developed and developing countries in regards to the implementation of ICT innovations, Huang and Palvia (2001) compared the implementation of ERP innovation amongst six developed and three developing countries. Interestingly, they found that when implementing ERP systems, developing countries face additional challenges related to *economical, political, cultural, and infrastructural* issues. More specifically, they indicated that low ‘IT maturity’, ‘small firm size’, ‘lack of BRP experience and process management’, ‘long-term strategy’, and ‘poor project management experiences’ were the main internal organizational challenges in developing countries. In another research and based on a comparison of ERP adoption among USA, UK and Greece, it has been found that Greek companies’ ‘internal culture’, ‘available resources’, ‘skills of employees’, and ‘management perception about ERP’ have played crucial roles in determining ERP success or failure (Koh et al., 2006). Similarly, Avison and Malaurent (2007) identified that ‘language and communication’, ‘governance concerning attitudes and values toward control and management’, and ‘laws and regulations’ are cultural factors influencing the possible success of ERP systems.

Furthermore and by comparing two ERP cases, one in Australia and another in China, Shanks et al. (2000) found out that most ERP implementation CSFs differs because of the greater power-distance and collectivist nature of the Chinese culture. Tarafdar and Roy (2003) also argued that issues experienced by organizations in developing countries when implementing ERP systems are significantly different from those faced by organizations in the developed ones; mainly due to differences in ‘the sophistication of IT use’, ‘culture’, and ‘social contexts’. Sheu et al. (2004) suggests that ‘culture & language’, ‘management style’, ‘government/corporate policies’, ‘regulation/legal requirements’, ‘internal technical personnel resource/labour skills’ and ‘geography/time zone’ represent national differences that affect ERP implementation practices across nations.

3.2 Business Process Re-Engineering (BPR) Initiative

BPR consists on a ‘fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in critical, contemporary measures of performance such as cost, quality, service and speed’ (Hammer and Champy, 1993). In fact, BPR has been introduced by Hammer (1990), and Davenport and Short (1990) as an approach to increase operational efficiency and produce radical improvements in performance through streamlined business processes. According to Hammer and

Champy (1993), 'customer diversity and power', 'sever competition', and 'rapid environmental changes' are the three reasons underlying the implementation of BPR. However, BPR initiative suggests that organizations need to elevate the importance of team-working and cross-functional processes to be appropriately integrated.

Many prescriptions have been proposed to manage this kind of radical changes at the organizational level. Hammer (1990) identified the following key principles to BPR: 'organize around outcomes, not tasks', 'have those who use the output of the process perform the process', 'subsume information-processing work into the real work that produces the information', 'treat geographically dispersed resources as though they were centralized', 'link parallel activities instead of integrating their results', 'put the decision point where the work is performed', 'build control into the process' and finally 'capture information once and at the source'. In the same vein, Davenport (1992) suggested that 'developing the business vision and process objectives', 'identifying the business processes to be redesigned', 'understanding and measuring the existing processes', 'identifying IT levers', and finally 'designing, building and prototyping the new processes' are the main factors constituting the right approach to manage BPR. For successful BPR implementations, Day (1994) identifies three principles to be practiced by senior management before carrying out a reengineering change as 'emphasizing external objectives', 'coordinating the activities & culture change' and 'making the information available to all team members'. Based on the experiences of consultants, Bashein et al. (1994) concluded the following CSFs of BPR: 'Senior management commitment and sponsorship', 'realistic expectations', 'empowered and collaborative workers', 'strategic context of growth and expansion', 'shared vision', 'sound management practice', 'appropriate full-time participants', and 'sufficient budget'.

Interestingly, Zairi and Sinclair (1995) listed the following factors according to their importance to BPR success in a descending order (from the most important to the least): 'leadership', 'team make-up', 'available IT expertise', 'project targets', 'customer focus', 'existing IT systems', 'project's time-frame', 'process knowledge', 'change management', 'communication', 'management systems', 'performance measurement', 'training', 'organization structure', 'organization culture' and 'investment'. Hall et al. (1993) proposed the following as three critical determinants of BPR success: 'breadth' (concerning the number of business units involved), 'depth' (the change to six organizational elements; organizational structure, roles & responsibilities, measurement & incentives, IT, shared values and skills), and 'leadership' (concerns the extent of top-management support). Maull et al. (2003) identified that 'taking a strategic approach', 'integrating performance measurement', 'creating business process architecture', 'involving human & organizational factors' and finally 'identifying the role of IT' constitute a smooth road to BPR success.

Critically, Davenport and Stoddard (1994) identified seven myths of BPR as follows: 'the myth of reengineering novelty', 'the myth of clean state', 'the myth of IS leadership', 'the myth of reengineering vs. quality', 'the myth of top-down design', 'the myth of reengineering vs. transformation', and 'the myth of reengineering's permanence'. Reviewed literature reveals that BPR has been widely misunderstood as it has been equated to downsizing and/or client-server computing (Malhotra, 1998). Mumford (1996) warned from personal risks since BPR is associated with downsizing. Moreover, Knights and McGabe

(1998) identified that BPR may bring stress to employee nature of work, thus increase their resistance and lead to disruption of organizational goals and objectives.

Betroni et al. (2009) argued that BPR projects very often fail to meet the inherently high expectations of re-engineering. Indeed, surveys and studies estimate the percentage of BPR failures to be as high as 70% (Hammer and Champy, 1993). Malhotra (1998) indicated that 'lack of sustained management commitment and leadership', 'unrealistic scope and expectations', and 'resistance to change' are the principal obstacles that business process engineering initiatives face. On the other hand, Sarker and Lee (1999) identified 'lack of detailed knowledge about functional areas', 'hidden agendas of top-management', 'lack of knowledge of (and over-reliance on) computer-based BPR tools', 'poor choice of metaphors in organizational language', and 'lack of communication' as the main reasons behind BPR failure at US TELECO. Based on three case studies, Willcocks and Smith (1995) suggest that BPR is too often method-driven, and argued that it needs further holistic attention where human, social, and political issues are considered as BPR main inhibitors.

As for developing countries, Ranganathan and Dhaliwal (2001) identified that 'lack of human and financial resources', 'lack of internal IT expertise and capabilities', and 'lack of champion for BPR initiatives' as the main problems faced by the Singapore organizations. Salman (2004) identifies the following impediments faced by organizations in developing countries when carrying out BRP initiatives: 'Lack of holistic view', 'lack of sponsorship', 'unsound financial condition', 'sense of complacency', 'failure to distinguish between BPR and other improvement programs', 'burying the BPR project among corporate agenda', 'resistance to change', 'communication gap', 'generic low usage of technology and sceptical attitude towards technology', and 'lack of experience in handling BPR projects'. Furthermore, Abdolvand et al. (2008) and based on reporting survey results indicating BPR readiness in two Iranian companies found that 'resistance to change' is one of the main factors leading to failures in regards to the implementation of BPR initiative. On the other hand, Abdolvand et al. (2008) study found that egalitarian leadership, collaborative working environment, top management commitment, supportive management, and use of information technology are factors leading to successful implementations of BPR initiatives in Iran. In a similar vein, Nasierowski (2000) indicated that BPR necessitate to be repackaged to fit the particulars of the Mexican cultural, social, and financial settings. Nasierowski also pointed out that success heavily depends on the strong support of the highest political levels and business commitment. Saxena (1996), Based on providing a number of reengineering examples carried out in Indian public sector, claimed that for a successful BPR in developing countries, a holistic treatment and attention should be set to strategy, organizational structure, IT, and culture.

3.3 Inter-organizational Systems and E-Business Initiative

The fundamental message of IOS&EB innovation is that through its implementation an organization would improve its profit, achieve strategic sustainability (Chircu et al, 2000), cut costs, run business smoothly and effectively (Lu, 2003), build customer base quickly (Kauffman and Walden, 2001), reshape

customer and supplier relationships, and streamline its business processes (Daniel and Grimshaw, 2002). Turning into dotcoms, organizations have been promised to be able to create value to their customers characterized by low-cost and ease-of-use (see Timmers, 1999; Amit and Zott, 2001). Further, Porter (2001) argued that a flood of new entrants has come into many industries since the Internet has reduced barriers to entry. For example, based on interviewing Michael Dell, Magretta (1998) described how Dell Company benefits from its virtual integration through exploiting ICT to blur the traditional boundaries in the value chain (disintermediation). Moreover, Kraemer and Dedrick (2002) depicted how Cisco Company established its IOS to implement its strategic focus and to leverage its virtual organization, leading to higher growth and profit rates.

Similarly, Ghosh (1998) argued that “Companies that do not want to participate in Internet commerce may be forced to do so by competitors or customers”. This seems to be true and planning approaches to implement this kind of ICT innovations have been proposed by many scholars. For example, Leitch and Warren (2003) suggested the following stages for successful dot.com implementations: 'strategic & business evaluation', 'system analysis & design', 'systems e-commerce design', 'implementation' and finally 'post-implementation'. Choucri et al. (2003) developed a model that represents the CSFs for dotcoms based on 'Access' (infrastructure and services), 'Capacity' (social factors, economic factors, and policy factors), and 'Opportunity Penetration'. Jackson and Sloane (2007) argued that for organizations to operate successfully, 'integration among organizational processes', 'human resources', 'organizational culture', and 'sound management' is required.

Furthermore, Cullen and Taylor (2009) study yielded five composite factors that are perceived by users to influence successful e-commerce use. The proposed critical success factors for e-business initiative, according to their study are: “System quality,” “information quality,” “management and use,” “world Wide Web – assurance and empathy,” and “trust”. Of these and according to the study of Cullen and Taylor (2009), all respondents ranked information quality, system quality, and trust as being of most importance, but differences in the rankings between purchasing and selling respondents are evident. Another study by Sharkey et al. (2010), and on the basis of Delone and Mclean Model, found significant relationships between Information Quality and System Quality and three success dimensions of e-commerce initiatives: intention to use, user satisfaction and intention to transact. The study also found the following information and system quality constructs to be most important in predicting e-commerce success: ease of understanding, personalisation and reliability. In particular, they found that reliability is more important than usability where transactions are concerned and security is important to transactional zones of e-commerce systems. On the other hand, it has been also found that factors such as 'internet access and its infrastructure', 'user confidence', 'trust', 'security', and 'privacy' are claimed to downsize e-business growth (Connolly, 1998).

Interestingly, it has been proven that organizations from different size and/or operating in different industry sectors may adopt different e-commerce strategies as they usually face different issues and challenges in regards to the implementation process (*See* Doherty et al., 2001; Daniel et al., 2003). It has

been also proven the value proposition characteristics do matter (Brynjolfsson et al., 2000) as implementation challenges do vary to some extent according to the nature of offerings of different organizations. It is also worthwhile mentioning that the electronic market witnessed a number of high-profile dot.com collapses (Howcroft, 2001). Indeed, Shapiro (2000), for example, warned from liberty erosion as one of the negative e-commerce implications. Shapiro raises issues concerning control and privacy and their social implications. Moreover, Howcroft (2001) discussed the following myths concerning the dot.com market: 'the myth of the new economy', 'the myth of success', 'the myth of the entrepreneurial geek', 'the myth of the level playing field', 'the myth of innovation', 'the myth of the virtual', and 'the myth of the online shopping experience'.

Using the case of Egypt, Ghoneim et al. (2001) concluded that an institutional role is needed to regulate e-commerce. Markus et al. (2001) concluded that organizational use of Internet in some parts of Asia differs from that in the USA in the following aspects: 'financial infrastructure', 'legal and regulatory infrastructure', 'national policies, telecommunication infrastructure', 'language and education', and finally 'organizations size, structure and their control systems'. A case based research conducted by Kshetri (2007) classified barriers to e-commerce in developing countries, into 'economic', 'socio-political', and 'cognitive' at both consumer and business levels. Based on a survey in Sri Lanka, Kapurubandara and Lawson (2007) identified that implementations of e-commerce technologies is inhibited by both 'internal factors' (owner/manager characteristics, firm characteristics, and cost and return on investment) and 'external ones' (infrastructure, social and cultural, political, legal and regulatory). Based on examining i-metal Chinese case study, Hempel and Kwong (2001) indicated that EB implementations in developing countries presents unique challenges that are not presented in developed ones. Not only have they identified infrastructure challenges in terms of financial, legal, and physical deficiencies, but also they have identified different business philosophies and culture to be the most significant challenge that influences company-marketplace relationship.

Empirically through surveying 95 Jordanian companies from different sectors, Al-Debei and Shannak (2005) found out that the main reasons underlying the very small number of e-commerce applications by Jordanian companies are: 'national-cultural' (lack of awareness about e-commerce and its requirement), 'security & privacy issues', and 'lack of regularity & legislative bodies'. In a similar vein, Salman (2004) indicated that 'lack of basic automation in place', 'poor management skills', 'lack of e-commerce integration', 'economical situations', 'politics', 'inadequate infrastructure', 'pressing digital divide', 'feeble human capital', 'culture' and 'society' represent inhibitors to implement e-commerce technologies in developing countries. In Thailand, the results of Sehora et al. (2009) study confirmed that the achievement orientation and locus of control of founders and business emphasis on reliability and ease of use functions of e-service quality are positively related to the success of e-commerce entrepreneurial ventures in Thailand.

3.4 IS-Sourcing Initiative

The handing-over of tasks within the IS functions to a third-party is known as IS Sourcing. This kind of innovation is intended to offer organizations tremendous performance enhancements such as significant cost reductions (Nicholson and Sahay, 2001), effective use of human resources and exploitation of external advanced technologies, ability to focus on core competencies, reduction in capital investments, and challenging the rational planning view. However, Loh and Venkatraman (1992) noted that organizations' tendency to copy successful practices of others without taking into consideration their own attributes are one of the major reasons behind IS-sourcing besides the incapability to manage internal IS resources which represents another key reason for failure.

In fact, IS sourcing can be classified differently based on the dimension taken into account. In fact, IS-sourcing could be handled either internally; known as insourcing, or externally known as outsourcing (See DiRomualdo and Gurbaxani, 1998). Moreover, it could be classified as total vs. selective (See Heinzl, 1993), single vendor vs. multiple vendors (See Currie, 1998), joint venture vs. strategic partnership (See Fitzgerald and Willcocks, 1994), and on-shoring vs. off-shoring (See Shao and David, 2007). Interestingly, these types are not mutually exclusive as there are overlapping aspects amongst them. Another classification of IS-Sourcing was provided by Millar (1994) who classified IS-Sourcing in four categories as follows: general, transitional, business process, and business benefit contracting.

Catalogues of key factors influencing IS sourcing successful implantations have been advocated. Heeks et al. (2001), for example, revealed the following challenges concerning IS-Sourcing: 'distance', 'essential tacit knowledge & informal information transfer', and finally 'different cultural values'. On the other hand, Aron et al. (2005) suggested a taxonomy for IS-sourcing risks as 'strategic risks' (behaviour of both parties), 'operational risks' (i.e. communication), 'intrinsic risks of atrophy' (losing core people and expertise), and 'intrinsic risks of location' (i.e. geopolitical, socio-political, and cultural). Further, Issues such as transfer of assets and information security have been discussed by Lee (1996) as inhibitors of IS-Sourcing. As for developed countries in particular, Shao and David (2007) argued that IT workers in developed countries are negatively influenced by the IS-sourcing trend. They predicted that those able to interlink their IT skills with business needs are those having the best chance to survive. Mclaughlin (2003) assured the same point; Mclaughlin indicated that IS-sourcing not only has changed the US landscape for software professionals, but also has reshaped companies' project planning and the criteria based on which they select their employees. Moreover and based on a German telecommunication Company's experience that setting up a satellite operation in India, Kobitzsch et al. (2001) identified that 'legal', 'knowledge transfer', 'development and project management', 'quality management', 'language', 'time', and 'infrastructure' as critical factors in the arena of IS-Sourcing.

Outsourcing in particular seems to be very challenging and risky undertaking, despite its promising benefits. Willcocks et al. (1995), for example, suggested a formula to mitigate risks associated with outsourcing consisting of the following principles: 'market logic not management despair', 'rationalization not rationing', 'commodities not differentiators', and finally 'targeted not total'. Using Rational Exchange Theory, Goles and Chin (2005) identified 'commitment', 'consensus', 'cultural

compatibility', 'flexibility', 'interdependence', and 'trust' as attributes of outsourcing success. Further, they identified processes of success in this regard as 'communication', 'conflict resolution', 'coordination', 'cooperation' and 'integration'. In a study that addresses e-commerce and ASP outsourcing, Lee et al. (2003) recommended the following guidelines for achieving an informal effective partnership when outsourcing is considered: 'understand each other business', 'prioritize short-term and long-term goals', 'define realistic expectations', 'share benefits and risks', 'develop performance standards', 'expect changes and revisions', 'prepare for the unexpected', and 'nurture the relationship'. However, the applied analysis in this study reveals that challenges of IS-sourcing not only differ across its type and scope, but they also differ across various organizational strategies, sizes, and sectors (See Sobol and Apte, 1995; Gallagher and Stoller, 2004). On the other hand, Qu et al. (2010) interestingly found that IT insourcing is more effective for developing IT-enabled business processes (IEBP), which subsequently lead to superior firm performance.

Based on a study that included comprehensive literature review as well as conducting interviews with Offshore Software Development (OSD) experts, a list of CSFs was developed from the perspective of German-speaking companies by Remus and Wiener (2009). They have actually identified the following seven CSFs as generally being the most relevant for the successful implementation of an OSD project: 'definition of clear project goals'; 'continuous controlling of project results'; 'ensuring of a continuous communication flow'; 'high quality of offshore employees'; 'good language abilities of the offshore employees in German and English'; 'composition of an appropriate project team'; and 'preparation of a detailed project specification'. From an on-going longitudinal study of British organizations offshore to India, Nicholson and Sahay (2001) concluded that 'culture asymmetries', 'organizational politics' (resources of power), and 'time/space dispersion' represent substantial challenges to British organizations' management. Using transaction theory, Qu and Brocklehurst (2003) found that Chinese legal system forms a main difficulty in reaching a competitive situation in offshore outsourcing. On the other hand, Khan et al. (2002) indicated that the role of Indian government plays major roles in enhancing its infrastructure and that the role of virtual around the clock approaches is substantial to outsourcing initiative success.

On the basis of delineating the success of one Vietnamese company as an outsourcing partner, Gallagher and Stoller (2004) indicated that Vietnamese potential growth is limited by the subsequent issues: 'government policies', 'technology infrastructure', and 'comparative limitations in terms of population and size'. Using the quantitative-qualitative approach, Khalfan and Alshawaf (2003) concluded that both 'environmental' (educational status, national IT strategy, economic status, political system, technological status, and legal status) and 'cultural' challenges (language/communication, religion, and behavioural norms and attitudes) face Kuwaiti public sector when outsourcing is addressed. Coward (2003) identified that 'culture', 'language', and 'time zone differences' are critical issues faced by American SMEs when tackling outsourcing. Coward also explained that political stability of the provider's country represents an important factor to American SMEs in their outsourcing decision.

3.5 Knowledge Management Initiative

Providing the means for managing knowledge as one of organizations main possessions in order to leverage its intellectual capital is the primary significance underlying KM initiatives. By leveraging KM, organizations have hunted to improve their competitiveness over time (Nonaka and Takeuchi, 1995) as KM intends to signify a structure that facilitates problem-solving, decision-making, and strategic planning. In fact, knowledge management encompasses identifying, capturing, selecting, organizing, disseminating, and transferring knowledge across boundaries. However, making knowledge visible, manageable and transferable is a multifarious process due to its tacit nature (See Nonaka, 1994), its stickiness (See Von Hippel and Tyre, 1996), and its nature of being distributed (See Tsoukas, 1996). Accordingly, Carlile (2002) argued that knowledge is both a source of and a barrier to innovation since it is localized, embedded, and invested in practice.

Through surveying more than 300 senior executives, Gold et al. (2001) found that organizations would achieve effective KM not only by focusing on knowledge process architecture (acquisition, conversion, application, and protection), but also through focusing on the knowledge infrastructure (technology, structure, and culture). Moreover, Ajmal et al. (2010), based on their study that examined the critical success factors for KM initiatives in project-based organisations, identified six CSFs in this context: 'familiarity with KM'; 'coordination among employees and departments'; 'incentive for knowledge efforts'; 'authority to perform knowledge activities'; 'system for handling knowledge'; and 'cultural support'. Empirically, Alvai (1999) indicated that even though 'technology' represents one of the key concerns regarding KM; 'cultural', 'managerial', and 'informational issues' represent the substantial ones. Critically and based on examining two case studies; Ebank and Brightco, Swan et al. (1999) compared cognitive network model; where technology is perceived as the CSF, with community networking model; where trust and collaboration is perceived as the CSF. Accordingly, they warned from the potential impact of the former one on KM within organizations. In a similar manner, Walsham (2001) indicated that ICTs are beneficial only if carefully used to support the development and communication of human meaning. In a similar vein, Reid and Slazinski (2003) indicated that 'cultural heterogeneity' of participants in a service learning program at Purdue University represents issues to their KM initiative. Moreover and through a series of semi-structured interviews, Desouza and Evaristo (2003) indicated that 'change management' and 'culture' are relevant issues pertaining to KM across borders.

As for developing countries, in particular, Nguyen and Johanson (2008), through field work interviews, found out that the main reason hampers Vietnamese from accepting elements of a knowledge nation is their society long-standing features (economic, social, cultural, and political). Using a case of Indian pharmaceutical organizations, Kale and Little (2005) indicated that building-up new competencies in developing countries is complex undertaking due to political and economic convolutions. Using the case of Sudan, Ghobrial (2006) indicated the following problems confronting Sudanese society when KM partnership: 'reduced access to knowledge', 'lack of regional-global integration and cooperation', 'lack of ICT cultural-ethics', 'lack of human-resources', 'lack of education', 'lack of ICT development structure

program', 'lack of financial resources', 'society poverty and illiteracy', 'legislation gaps', 'lack of ICT policy guidelines', and 'insecurity and bureaucracy aligned with ICT'. Based on examining the development of a knowledge portal at the Housing and Development Board (HBD) in Singapore, Teo (2005) identified the HBD encountered challenges related to 'people' and 'culture', 'process', 'content management', and 'technology'. Generally speaking, Malhan and Gulati (2003) indicated that developing countries confront 'technological', 'socio-economical', 'attitudinal', 'geographical', and 'linguistics' challenges in having access to knowledge. They also indicate that despite the presence of sparkling ideas and facts in India, lack of interests in knowledge activities expressed by top-management wastes these innovative ideas away.

4. Discussion: Comparative Analysis

The results of the applied analysis in this study shows that the implementation of ICT innovations is a complex course of action; mainly because of the essentially needed consistent interactions amongst people, technology, and business processes. In fact, this unique mixture makes the success of implementation of various ICT innovations way far from being straightforward and somehow unpredictable. The applied analysis also reveals that organizations, in general, face many substantial challenges throughout the implementation of such innovations, and that challenges along with their extent vary across different organizations and in accordance with their macro and micro features and characteristics. Hence, we argue that there is no one recipe of success in regards to the implementation of ICT innovations that fits all organizations operating in various environments.

Indeed, as the relevancy of ICT innovations to developing countries has been assured (Walsham et al., 2007), the debate regarding the challenges of ICT innovations has become much more substantial. From the previous section, it has become clear that there is an increasing research interest in delineating the differences between developed and developing countries in terms of implementation challenges of ICT innovations. Our analysis in this study assures that both developed and developing countries share common issues and challenges in the micro-organizational level in regards to the implementation of ICT innovations, as summarized in Table 1.

Issues and Challenges
Lack of clear boundaries among different ICTs.
The soft nature of ICT projects and its consequences.
The rationality of ICT (s) implementation decision and other related decisions.
Aligning the ICT innovation strategy with the competitive strategy of an organization.
Lack of concern of the human-resource element (needed skills, involvement and retention).
Lack of top-management commitment and support.

Ineffective management of consultants.
Resistance to change.
The dynamics of power (organizational politics).

Table 1. Common ICT Implementation Challenges for both Developed and Developing Countries

Our analysis reveals that ICT innovations are not mutually exclusive as significant overlapping areas are available, in addition to the high level of interdependence amongst most of them (See Figure 2). In fact, each ICT initiative undergoes from the disappearance of clear perimeters and its overlapping aspects during implementation with other ICT innovations. To give just a general overview, BPR is highly considered as a pre-requisite for ERP which is in turn considered a backbone for IOS&EB innovations. KM is considered significant in managing organizational knowledge, while other initiatives and their related issues constitute a significant portion of that knowledge. On the other hand, IS-sourcing is considered a choice for organizations confronting a decision regarding the implementation of all other ICT innovations. Hence, we believe that ICT innovations generally complement each other rather than acting as substitutes, despite the fact that they all nearly hold the same message towards organizations entitled as “enhancing the performance and providing a competitive advantage”.

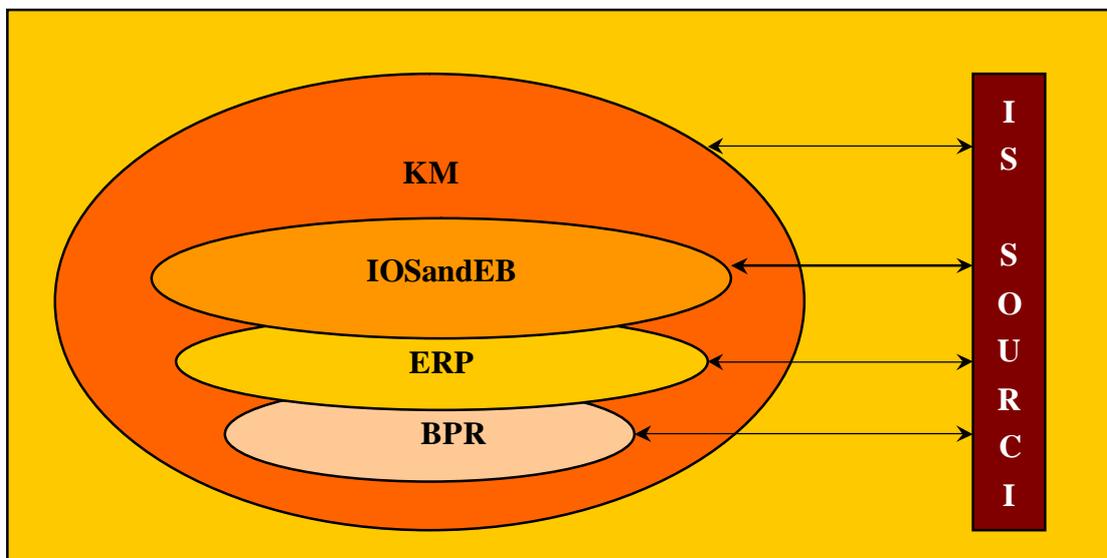


Figure 2. Interdependences amongst ICT Innovations

Another common challenge is actually related to the nature of ICT projects given that such projects are normally less tangible than others and thus their implementations are significantly more challenging than other projects in terms of requirement specifications, control, monitoring, and evaluation. Making decisions in regards to the implementation represents another common challenge (See Table 2 and Table 3). Indeed, there is a need to choose innovations helpful in achieving organizational goals and objectives so as to be implemented. Consequently, organizations are required to decide whether these innovations are to be implemented internally or should be outsourced. Moreover, decisions regarding the approach to

be followed for implementation purposes and functional areas to be covered should be made. In addition to these general decisions, there are specific decisions to be made and in accordance with the chosen innovation for implementation (See Table 3). For example, if ERP innovation is to be implemented, an organization is required to make decisions in regards to whether Big-Bang, Middle-Road, or Vanilla approach should be followed. On the other hand, if KM innovation is to be implemented, there is a need to decide whether personalization or codification is the appropriate strategy to be followed in a specific organization.

Decisions	Issues and challenges
When and which ICT innovation(s) to implement?	A. The significance of the ICT innovation(s).
	B. Aligning the ICT innovation strategy with the organization competitive strategy.
Should we implement the selected ICT innovation(s) in-house or should we source it?	The decision whether to consider IS-sourcing or not.
Which vendor(s) and/or consultant(s) should we select?	The selection of the vendor(s)/consultant(s) needed for the implementation of the selected ICT innovation(s) in order to acquire human and technology recourses.
Which implementation approach or strategy should we adopt and follow?	The selection of the implementation approach in regards to the selected ICT innovation(s).
What is the scope of the selected ICT innovation(s)?	The selection of the functional areas or business units to be covered and supported by the selected ICT innovation(s).

Table 2. Common Decisional Challenges for both Developed and Developing Countries

In fact, many critical decisions in this regard are normally made based on informal communications managers do with their social network. In some other times, managers make decisions based on their tendency to copy successful firms in terms of ICTs implementations and without studying the feasibility and need of such innovations to their organizations. Such practices would lead organizations to make irrational decisions that in turn may lead to catastrophic results; given that organizations, in this case,

neglect the appropriateness of the chosen innovation(s) to their settings. Hence, we believe that ICT innovations should be implemented at the right time and should fit an organization’s strategy, structure, management-style, and most importantly the culture, if that innovation is to be implemented successfully.

Table 3 below lists other decisional issues and challenges related to each ICT innovation covered in this study. These challenges are shared between developed and developing countries.

ICT Innovations	Issues and Challenges
BPR	The number of functional areas or business units involved.
ERP	The selection amongst Big-Bang Middle-Road, or Vanilla as an implementation approach.
	The selection between BPR or ERP software customization for the purpose of ERP fit with the business processes of an organization.
IOS&EB	The degree of separation/integration
IS-sourcing	The selection between insourcing vs. outsourcing.
	The selection between total vs. selective sourcing.
	The selection between single vendor vs. multiple vendors.
	The selection among IS-sourcing joint venture, and strategic partnership.
	The selection between on-shoring vs. off-shoring.
KM	The selection between personalization or codification strategy for knowledge transfer.

Table 3. ICT-Specific Challenges for both Developed and Developing Countries

For both developed and developing countries, there are also other important challenges for the implementation of ICT innovations. Both nations also suffer from lack of concern of human resource element. Often in such a context, organizations neglect or underestimate the role of human resources along with their skills and capabilities as organizations normally perceive such projects as purely ICT ones. Believing that acquiring the best technology assures its deployment success is one of the immense pitfalls. The implementations of such ICT innovations are usually considered as strategic changes that affect organizations’ on the long run since they stroke every single aspect of the entire organization. Hence, underestimating the human-resource elements during strategic changes associated with the

implementations of ICT innovations plays a significant role in hindering their implementations success. For successful implementations, we argue that organizations should assure having all needed resources for such initiatives. This includes financial, human-resources, technological, technical, business skills and other relevant resources. Factors such as users’ involvement, training, retentions, and powerful team formation as well as strong leadership facilitate successful implementations of ICT innovations. Lack of top-management support decreases the perceived value of ICT innovations; thus decreasing the level of commitment of various users, team members, and other stakeholders.

As clarified earlier, the implementation of ICT innovations is complex undertaking. Hence, organizations often acquire the needed skills and expertise to successfully implement such innovations by incorporating consultants in this process. However, the cost associated with consultants is usually high, and the value they can add to the process of the implementation is hardly assured. This is because, most often, the organization and the acquired consultants share different interests and goals. Consultants sometimes tend to complete the project as fast as possible and move on to the next one, whilst quality and effective completion of the project is main concern for organizations. Indeed, the applied analysis in this study reveals that ineffective management of consultants is one of the main challenges organizations confront when implementing ICT innovations. This challenge is actually owed to poor communication and knowledge transfer problems between consultants and relevant members from organizations, in addition to the tendency of consultants to maintain their power, influence, and organization-dependency.

Categories	Issues and Challenges
Infrastructural (Physical, Legal, HR, Technological, and others)	Lack of appropriate technological infrastructure
	Lack of local vendors & consultants for ICT innovations
	Lack of internet accessibility
	Expensive internet and other technological services
	Lack of R&D resources and facilities
Economical	Unfavorable economic status and Recession
	Low economic growth
	Low income level
	Scarcity of opportunities
Political	Unfavorable laws, regulations and policies
	Lack of governance
	Lack of intellectual property laws
	Unstable environment
Cultural	Poor education system in some countries
	Lack of national awareness & perception concerning

	ICTs.
	Low IT maturity
	High resistance to change
	Low English proficiency
	Low IT diffusion
	Low level of innovation
Geographical	Geographical distance
	Different time zones

Table 4. Macro-Environmental (National) Challenges of ICT Implementations in Developing Countries

Another critical challenge facing both developed and developing organization in regards to the implementation of ICT innovation is 'resistance to change'. This normally happens when, for example, some members of the organizations become reluctant to acquire new skills and techniques associated with the new innovation. It some other times, resistance to change happens when some influential members of the organization stand offensively against the implementation of the new ICT innovation. In fact, the underlying reasons behind resistance to change are numerous. For example, some employees would resist the change associated with the implementation of the new ICT innovation because of the fear of the unknown; accordingly they prefer to keep the status qua which they have a fair control over and got used to. Others would resist the change associated with the new ICT innovation because they believe this would lead them to lose their power, accumulated experience, control over processes, or jobs in the organization. In some other cases, members of an organization would show resistance because they believe that the new innovation would strengthen the overseeing and monitoring capabilities of their managers and profoundly change the dynamics of power within the organization.

In addition to the common challenges discussed above, there are extra unique ones facing only organizations operating in developing countries. This can be traced back to the fact that ICT innovations were firstly established for developed countries as they were originated in the western part of the world. Therefore, the degree of compatibility of these ICT innovations with variables related to macro and micro environments of an organization operating in developed countries is substantially higher than those operating in developing countries. Indeed, there are substantial differences mainly in political, economical, social/cultural, and infrastructural (i.e. technological, physical, legal, human resources) aspects between developed and developing nations (See Table 4). Nonetheless, listing these factors exclusively for developing nations does not indicate their ultimate absence in the developed ones, but we sort them exclusively in this study because these challenges are more generalizable and evident within developing countries.

Categories	Issues and Challenges
Infrastructural	Inadequate technological infrastructure at the

(Physical, Legal, HR, Technological, and others)	organizational level
	Lack of financial recourses and capabilities
	Lack of needed skills and expertise within organizations
Economical	Hierarchal management style
	Power-distance
	Strict line-of-orders
	Lack of R&D resources and facilities within organizations
	Relatively small-size of organizations
Political	The dynamics of power
	Arbitrary and social-driven Decision-making
	Hidden management agendas
	The fear of losing jobs
Cultural	Inappropriate technological culture
	low IT maturity
	Lack of IT skills and experience
	Unfavorable attitudes and values toward control and change
	Inadequate English proficiency
	Interlinked social and organizational relationships

Table 5. Micro-Environmental (Organizational) Challenges of ICT Implementations in Developing Countries

Organizations within developing countries not only experience challenges at the macro-national level, but they also face issues and challenges related to the micro-organizational environment (See Table 5). Indeed, some issues have been inherited from the macro-national level such as low IT maturity and diffusion, inadequate technological infrastructure which is the backbone for such ICT innovations, weak financial situations due to the recession, lack of R&D resources and facilities, lack of relevant expertise, lack of awareness about the added-value associated with ICT innovations along with their significance, poor English proficiency that is needed for effective communications with consultants and vendors, and geographical location issues. Such additional challenges definitely obstruct successful implementations of various ICT innovations in developing countries.

Other challenges within developing countries could be traced back to (a) the hierarchal style that exhibits a strong "command and control" management style; thus hinders innovation, (b) interlinks between organizational and social relationships (For instance, in developing countries, the social status of an

individual usually affects his/her status in the organization. Moreover, people normally mix between their social and professional relations), and (c) lack of proper planning and modelling of the business.

Organizational politics represents also a critical challenge facing developing countries in regards to the implementation of ICT innovations. Indeed, ICT innovations usually change the way business are conducted, which consequently affects the dynamics of power within organizational settings and lead to a higher level of resistance. To give just one example, employees who have expertise in using an existing legacy system will be threatened of losing their knowledge power if the organization decides to replace the legacy system with a new ICT innovation.

In addition to all challenges discussed earlier, there are also other related challenges in this context which are mainly associated with the nature of ICT innovations. In fact, the ICT innovations which are covered and examined in this study are regarded as enterprise "large-scale" Innovations. Being classified as enterprise innovations indicates their high total cost of ownership and the kind of expertise they require. Hence and given the size and the financial conditions of most organizations operating in developing countries in addition to the modest availability of essential skills and expertise, the ability to successfully implement such demanding ICT innovations significantly declines.

5. CONCLUSIONS

The underlying reason behind the implementation of ICT innovations is gaining competitive advantages; primarily through enhancing the performance, effectiveness, and efficiency of organizations. Nonetheless, the implementation of ICT innovations is complex undertaking and usually requires a powerful alignment amongst technology, business, and human-related factors. The applied analysis in this study reveals that both developed and developing countries undergo several challenges in regards to the implementation of ICT innovations. Lack of concern about the human-resources, lack of top-management support, ineffective management of consultants, resistance to change, and the dynamics of power within an organization are just few examples of those challenges. Interestingly, the analysis also reveals that developing countries face extra unique challenges in this context and in both macro and micro levels such as infrastructure inadequacy, economics and politics instability, culture unsuitability, time/location dispersion, and management style inappropriateness.

Moreover, the analysis shows that the relevancy and successful implementation methods of ICT innovations significantly vary across nations and organizations. Retrospectively, we advocate that 'one size fits all' is not an applicable approach in the arena of ICT innovations and that there is no one universal recipe for success that can be applied everywhere, but a rationale scientific approach is recommended to be followed by managers when confronting decisions regarding the implementation of ICT innovations given their significant influences on the on-going value of organizations.

Broadly speaking, the analysis also found that there is no direct proportional relationship between the implementation of ICT innovations and organizational outcomes. This is because such a relationship is

mediated by the social context factor which is mainly derived from the cultural settings. Thus, we believe that successful implementations of ICT innovations are those creating a balance between conflicting requirements and are performed in an adaptive and customized manner with various micro-organizational and macro-national variables.

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Corporate Governance Behavioral Approach and Cognitive Mapping Technique

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ABSTRACT

The idea of this paper is to determine the mental models of actors in the Tunisian firms with respect to the behavioral approach of corporate governance. We use the cognitive map to view these diagrams and to visualize the ways of thinking conceptualization of the behavioral approach. The objective of this study was to understand the concept of "mental models" from the presentation and analysis of cognitive maps of Tunisian firms actors. The paper takes a corporate governance perspective, discusses mental models. Returning to the systematic exploration grids for each actor, there is a balance of concepts expressing their cognitive orientation.

Key words: corporate governance, behavioral approach, cognitive mapping, mental models, structural analysis

1. Introduction

The psychological biases of behavioral finance is a new paradigm that complements the traditional finance theory while introducing aspects "behaviorist" in the decision making process. Behavioral finance looks at how thinking among investors and help them understand and predict the psychology of decision. Moreover, it is based on the application of psychological principles to improve financial decision. There are quite a number of literatures interested in market anomalies that are not explained by traditional theory, these abnormalities are cited among the abnormal movements of the course following the first public offering or through a merger or to fragmentation of the capital.

During the 80 and 90, statistical anomalies persist, suggesting that the existing of traditional models is incomplete. Investors seem not to follow a logic in their reactions to new information but rather confident and change their choices after the emergence of new information.

In recent years, the media give more importance to the valuation of securities. Therefore, there are biases in the decision and therefore deviant behavior of individuals. These anomalies suggest that the

principles of rational behavior are not always true, hence the need for a model that treats human behavior, such as those studied in other social sciences.

2. Literature review

Behavioral approach of corporate governance

According to Thaler (1996), the current behavior differs from traditional economic power by seeking to account for three deviations from the standard representation of behavior: bounded rationality (bounded rationality); will limited (bounded willpower) and selfishness limited (bounded self interest). To these differences are associated a number of biases that induce decision errors.

Biases associated with bounded rationality

For Jolls (2009), bounded rationality includes both errors of judgment and the differences in decisions relative to those of the standard maximization of expected utility. Errors in judgment may be caused, for example, in the subconscious bias for or against many prejudices against members of a group (on the basis of race, class, nation, sex, beauty ...).

Biases associated with the will and limited selfishness

Beyond the means of rationality that led to many developments in the field of law, the current behavior also highlights two other imperfections of human behavior, the limited willingness and limited egoism. The concept of limited willingness reflects the limits of the will of individuals.

The key concepts of the cognitive approach

The overconfidence

One of the foundations for the development of behavioral finance is overconfidence, which is, nowadays, one of the most studied phenomena. Among these works are cited Article pioneer Debondt and Thaler (1985). These studies define overconfidence as overestimation of the ability of the investor (Ritter (2003)). Generally, there is the presence of such an attitude especially for agents 'experts' that the less experienced actors. Overconfidence can have two effects; one is direct while the other is indirect. Daniel, Hirshleifer and Subrahmanyam (1998) (DHS) show the direct effect of overconfidence. They show that investors place more emphasis on the private information which they use in their choices.

Similarly, DHS show that overconfidence can not be the sole determinant of the sub-course evaluation and the momentum effect in the short term (between 3 and 12 months). The indirect effect is summarized in the fact that investors process information and conduct first choices biased after all. This strategy is to attribution theory or conservatism. Barberis, Shleifer and Vishny (1998) (BSV) show that the investor surpèse adequate information with their beliefs and neglects those they do not like. Several disputes have arisen following the spread of behavioral theory. These criticisms were developed by the proponents of the theory of efficiency and in particular. This suggests that there is no theory as strong as that of efficiency. The empirical psychological studies have shown that individuals tend to overestimate their abilities and precision of their knowledge. For example, in the famous study by Svenson (1981),

93% in-tomobilistes their driving skills are above average, known as the effect of better-than-average-effect.

Overconfidence has been observed in many professional fields: doctors, bankers, lawyers, (Yates, 1990), investors in venture capital (Zacharakis and Shepherd, 2001). It differs from the optimism that reflects a preference for the positive outlook. Optimism is an unrealistic overestimation of future events, not related to personal skills, while overconfidence resulted in an overestimation of the latter.

Formally, in the modeling of these two biases, optimism is seen as a mean error (overestimation) and overconfidence as an underestimate of the variance, but the two terms are often used interchangeably (Fairchild, 2005). Weinstein (1980) emphasizes that the natural tendency of individuals to overestimate the result of a decision is reinforced when the decision maker thinks he can control that outcome. Overconfidence is reflected on a static, both by overweighting given to private information (as opposed to public information) and an overestimation in the ability to interpret this information, and, on a dynamics, resulting in an erroneous inference of bias self-attribution. This way, the effects on the mispricing were modeled by Daniel and al. (1998), leads individuals to attribute the good results to their own actions and poor performance to external circumstances. This bias has important effects in both the inference arising from over-confidence and persistence of overconfidence. The self-attribution bias leads to overconfidence increase during periods marked by positive developments, for example, growth of financial markets or activities of a company. Through over-confidence grows stronger in situations marked by uncertainty (private information is naturally overweight and also puts the subject of extensive research that resulted in an overstatement of the importance of information and an overestimation of its accuracy), in the context of difficult tasks involving experts (more confident in their abilities than individuals inexperienced), and when the returns decision or interpretation of information are slow or unclear (Griffin and Tversky, 1992).

Kahneman and Tversky (1979) show that when uncertainty is high, individuals tend to construct scenarios overly confident about their probability of success (or planning fallacy). The jurisdiction would also tend to exacerbate overconfidence (Heath and Tversky, 1991). All these factors, for example, been observed in the case of decision making in venture capital: Zacharakis and Shepherd (2001) show that 96% of their sample of venture capitalists are affected by overconfidence. The connection of this bias with the uncertainty is particularly complex, since it is an uncertainty perceived by the decider, inducing a problem of causality and paradoxical reversal: the uncertainty promotes overconfident but this bias decreases the perceived uncertainty. Furthermore, this link is dependent on information held by the decision maker: when it has private information, overconfidence leads to overweight this information even more strongly than the uncertainty is high. This increases the confidence of the decision maker in its ability to assess a situation in the presence of information held exclusively. In experiments where participants have the same information (and know), the link disappears or is reversed. The results of Dittrich and al. (2005) can be interpreted within this framework. This experiment is studying an investment decision and place the subjects (MBA students and economics) face the possibility of later change their choice. Overconfidence is defined as the persistent overvaluation of the initial choice. Changing choice is made by use of excess cash available after the initial investment (willingness to pay - WTP) or by reselling it (willingness to accept - WTA).

The optimism

Several models have been devoted to explaining the phenomena of bubble; and all emphasized the importance of investor optimism during the swelling phase of these bubbles. In this regard, Scheinkman and Xiong (2003) have built a model in which investors are willing to buy a security at a price above its fundamental value because they anticipate the possibility of resale to investors even more optimistic than them. Note that this model is based on a strong assumption: absence of short sales, already present in a model developed by Miller (1977), where the latter shows that only optimistic investors take long positions in sales since the ban found to prevent pessimistic investors to work heavily on the markets. The greater the difference of opinion between optimistic and pessimistic investors is strong, and prices will be high on the markets.

The prices mainly reflect the views of optimistic investors and then reach a level above the fundamental. These studies have so easily been taken to try to explain the development of the Internet bubble where it was impossible to sell short the majority of smaller listed companies.

The cognitive dissonance

Cognitive dissonance proposed by Festinger in 1957 which defines it as "a feeling of psychological discomfort, caused by two conflicting cognitions, and plunging the individual in a state that motivates him to reduce this uncomfortable feeling" (Festinger, 1957). The theory is related to cognitive processes, emotional and motivational.

However, a thorough research reveals parents' concepts of cognitive dissonance, the congruence / incongruence, assimilation / contrast (Sherif and Hovland, 1961) and confirmation / disconfirmation expectations (Anderson, 1973; Oliver, 1980). The theory of cognitive dissonance is born in the mid 50 when Festinger postulates that the individual is looking for a cognitive balance which, when broken, produces a state of tension. This situation motivates the subject to restore consistency under the principle of "balance" or "cognitive consistency" that man seeks to maintain consistency between the elements of her personal world (views, actions) (Abelson and Rosenberg, 1958). It is however not a theory of consistency, but a theory of avoidance of inconsistency, since it has a motivational process of return to cognitive balance.

Thus, the state of dissonance motivates the individual to its reduction, in the same way that hunger drives the subject to eat to soothe (Festinger, 1957; Brehm, Back and Bogdonoff, 1964). Resistance to change cognitions determines which mode of reduction, less resistant cognitions are more modifiable than those more rooted (Harmon-Jones, 2000).

The basic unit of the theory of cognitive dissonance is cognition. It is defined as anything that can become an object of knowledge in the individual to construct his reality: knowledge, opinions, values, attitudes, beliefs, feelings, about yourself and your behavior, another person or a group, or even elements of the environment (Festinger, 1957). The relationship between the elements of cognition of an individual in a state of dissonance is the contradiction, inconsistency and incoherence (Festinger, 1957).

If the literature on dissonance is often limited to considering only the relation of inconsistency between cognitions, more recent research point out that Festinger's theory also underlies a relevance relation (Harmon-Jones and Harmon-Jones, 2007).

The mimicry

Mimicry is the ability to identify basic human its congeners and imitate them. Many authors can be invoked here: Freud and the concept of identifying, Piaget's genetic psychology and the importance he gave to the concept of imitation, sociologists and "anthropologists" as Tarde or for which Girard social life finds its ultimate explanation in the imitation, cultural psychologists, as Tomasello showed precocity and importance of imitative gestures and the role they take in learning.

This mimicry fundamental causes the following implications: The relationship begins in undifferentiated, lack of differentiation that recurs in certain circumstances (including the show); Mimicry is the basis of human desire as desire-fusion-unity, cohesion fusional movements-these are inseparable from reverse movements of opposition, exclusion (of cons-imitation seems Tarde, imitation seems negative Girard), by which identities are formed groupal or individual; Identity formation is a self-centeredness (egocentrism) or group (ethnic or sociocentrism) often represented by a leader himself very self-centered; Overcoming the opposition and called centrism's a decentering process.

We are indebted to Piaget have revealed the importance of decentering process, both in terms of moral development than on cognitive development. There decentration when social, individual or group, becomes capable, beyond the differences and oppositions, to resume from within the perspective of others. This implies a kind of transition to a "meta" level, from where you can put into perspective, and eventually integrate them, differences in perspective. Individually, the decentration is responsible for internal discussion, based, according to Piaget, logical reasoning. At the interpersonal, it is necessary to any form of debate and social cooperation.

Mimicry is an imitation behavior that can be found in different areas of the living world. In animals, it is a very common instinctual behavior assuming no conscious activity.

Indeed, Henry Bates was the first to use the term mimicry in 1861 to describe the behavior of butterflies in the Amazon. He said the mimicry means "The ability of some animals to make an appearance consistent with the objects around them." In human neurobiology, humans are born imitators: many studies on experiments with infants have shown that a newborn is capable of reproducing the gestures of an adult. Thus, for Meltzoff (2005), regarding behavior that requires a conscious effort, the mimicry is an innate mechanism, one of the bases of mental development of children, construction of self and understanding others. Behaviorally, this is a fundamental mechanism of learning.

Anthropologically, it is to René Girard, in particular, the fundamental mechanism of human behavior and development factor of society. The difference between the two concepts is up to intentionality. Mimicry is an adaptive reflex while the imitation would operate under a voluntary behavior (Pupion and Leroux, 2006). We note nonetheless that the work on the description of phenomena related to imitation in organizational sociology and economics are using them confused. According to Gomez (1996), a convention is a system of rules in which the players are when they have to make a choice. This is a set of criteria, benchmarks which individuals, faced with uncertain situations relate to decide how to behave.

The dependence

Organized collective activity always creates a situation of interdependence between cognitive

players who engage in it. Since the early work of economics is considered that the collective achievement of a common goal requires coordinate the activities of each by dividing the work and then ensuring synchronization and consistency between the products of the activity, they are realized by objects or they are "intangible" intellectual productions. This cognitive interdependence itself rests on a structural interdependence that we define as follows: When two actors are contractually bound to achieve a given we will assume that they are structurally interdependent. This structural interdependence may be created by an informal agreement to work together, an employment contract that associates of individuals within a given institution, or as part of market relations between individuals or corporations.

The structural interdependence that generates the most often cognitive dependence or interdependence which we define as follows: An actor is cognitively dependent on another when it can reduce the uncertainty surrounding the conduct of its business without resorting to third.

When the dependence is mutual, which is the case in most situations of collective action, the actors are cognitively interdependent. In the context of a given work organization, two actors are cognitively interdependent when they can not do their job without a commitment to their partner or without it does provide them with important information. The source of this interdependence, there may be the inability "material" of an actor to perform only one goal, one move a large object or acquire information on an extended field of operation. The physical inability to achieve one goal on time justified the establishment of a structural interdependence and work organization that meets in principle "resources" necessary but at the same time generate an interdependence Cognitive between the actors involved in this organization that require them to deploy significant coordination. To reduce or remove, there are two main strategies for organizing today endangered which have their counterparts in major socio-political systems.

The first, which corresponds to organizational contexts of strict hierarchy, is to remove the cognitive interdependence by making certain players strictly dependent on others. The second, which corresponds to the strict planning contexts, aims to remove any dependence between the cognitive actors in advance by scheduling the tasks. In a strict hierarchy of organizational context, we suppress the cognitive interdependence between stakeholders by creating a dependency of some radical cognitive actors vis-à-vis others (hierarchical).Activities are entirely dependent on the actor defined by the hierarchy in a way that can be completely erratic. For the hierarchical, the actor is dependent on a resource available to it at will. Organizational contexts of strict hierarchy "pure" almost never meet more in modern organizations and assume a hierarchical omniscient unlikely. In the vast majority of situations, the exercise of hierarchical authority is in a hierarchical or his subordinate and is in fact largely cognitively interdependent. Another strategy to remove cognitive interdependence is the strict planning.

Cognitive impairment can be defined as a change in psychopathology pathological cognitive activities of an organization (Kempler, 2005). Combining these two concepts leads to define the concept of cognitive dependency as follows: the status of an elderly person who needs the help of a third party to perform the necessary cognitive activities of daily living. Three dimensions emerge from this definition: 1) elderly, 2) using a third party, 3) need to perform cognitive activities necessary for daily living (ACNVQ). An elderly person is a dimension that refers to gerontology, that is to say that old age is

generally defined by exceeding a threshold age of 60 or 65. The need to perform cognitive activities necessary for daily living (ACNVQ) is a dimension that entails a necessity of nature or of social life that are asked to perform cognitive activities that are necessary for everyday life and thus the existence of the elderly. Using a third dimension means that the elderly person can not accomplish on its own ACNVQ and that aid must be human.

3. Research Methodology

Methodological tools

I chose to approach the performances of the actors of the company by using a common technique in cognitive approaches, that of cognitive mapping. This is a graphical modeling technique of cognition used in numerous studies in management sciences. The cognitive map is not the only tool for analyzing the managerial cognition, but it is the most popular for the presentation of cognitive structures.

Cognitive mapping is a technique now well established captures the minds of the players about a problem or situation. A cognitive map allows you to view certain ideas and beliefs of an individual on a complex area such as corporate governance. A cognitive map is usually defined as the graphical representation of a person's beliefs about a particular field. A map is not a scientific model based on an objective reality, but a representation of a part of the world as seen by an individual.

Description of the empirical investigation

To meet the research objectives mentioned above, a survey was conducted among players in the company of Tunisia. I have chosen as exploratory approach using multiple case studies. The multiple case studies seek a better understanding of the phenomenon. They are to study a phenomenon in its natural setting by working with a limited number of cases. They are particularly interesting in the case of exploration of little-known phenomena. The case studies thus allow multiple accounts the specificities and characteristics of corporate governance.

The data is from 10 firms. The decision to base my study on a sample of firms from various sectors is based on the assumption that a variety of issues will be addressed as well. The output is a cognitive map for actors reflecting their perceptions of behavioral approach of corporate governance. The method used to create cognitive maps is the questionnaire.

Presentation of the questionnaire

The questionnaire is divided into two parts: the first identifies the company and the second deals with corporate governance. For the second part, relating to corporate governance, we interview actors from the firm on behavioral approach of corporate governance by providing a list of concepts for each approach with systematic exploration grids and matrices cross. Systematic exploration of the grid is a technique for collecting materials.

Each player is encouraged to explore their own ideas or cognitive representations in relation to its strategic vision. The subject is asked to identify important factors that he said will have an impact on the key concept related to an approach to corporate governance.

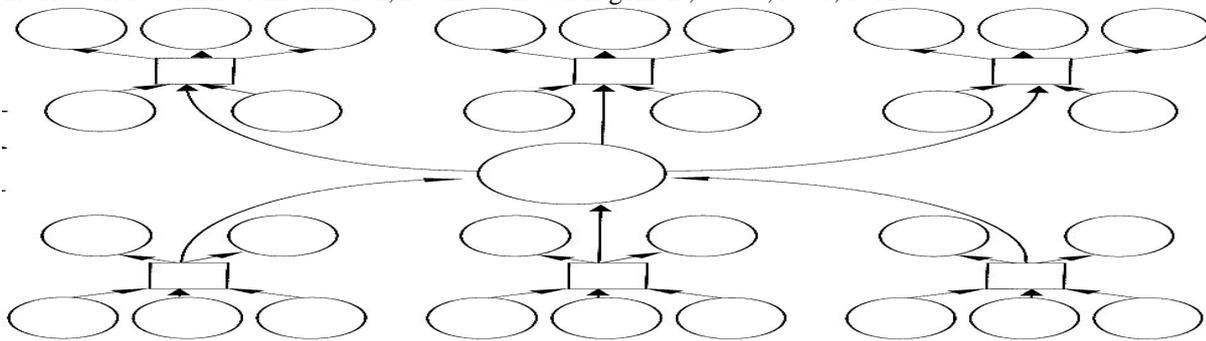


Figure1: Grid systematic exploration

Regarding the cross-matrix, it is also a technique of data collection and the basis for the construction of the cognitive map. The matrix is presented in the form of a table with n rows and n columns. Box of index (i, j) indicates the relationship between concept i and concept j.

The actors manipulate the key concepts and assign pairs of concepts depending on the nature and degree of proximity sensed between these concepts.

Table1:

Adjacency matrix

	Concept1	Concep2	Concept n
Concept1	1			
Concept2	L21	1		L2n
.....			1	
Concept n	Ln1	Ln2		1

Proposal for modeling cognitive maps

When it is difficult to identify the goals, an integrated approach of performance provides a holistic view in which the performance is analyzed by the processes that lead, through the performances of the actors. These representation processes are two problems of implementation: the sharing of representations of actors and the identification of dominant representations in the organization in order to act upon them. The construction of this representation necessarily requires a model that allows understanding to act is "an action of intentional design and construction, for composition of symbols, patterns that would make a complex phenomenon intelligible perceived.

In this context, the use of cognitive maps seems relevant, because they can take into account the complexity and comprehensiveness of the system in which [the behavior] is embedded, while maintaining access to the analysis" (Komocar, 1994). The value of the tool is instrumental (Audet, 1994), it allows both improving their actions and making sense.

Cognitive mapping is used as a tool for representation of an idiosyncratic schema (Cossette, 1994), a pattern is "a cognitive structure that guides the cutting of reality, the interpretation of events, and action individuals ", pattern unique to each individual, causing it to have its own behavior.

The construction of cognitive maps

We will see at first step that allowed the construction of concepts, methodological approach that

we discuss. Then we will examine how the cards were dealt.

Concepts

We addressed this issue by the representations constructed by players using the method of cognitive maps, a method that can be applied to poorly structured situations. An analysis based on cognitive maps can understand this process of structuring, as this model is to build or rebuild the mental simultaneously modeling. This construction takes the form of a structure, carrier for clarification.

It helps to identify ways to implement to achieve a given goal, the same way it helps to identify the goals justifying the use of such means. Finally, it facilitates communication and negotiation.

There are two major trends in the construction method of the cards: the determination of the concepts can be ex ante, or subsequent interviews with respondents for whom the cards are built. Komocar (1994) links the question of determining nodes - or concepts - and links to two paradigms. In the phenomenological paradigm, the universe is largely unknown. The emphasis is on describing the world from the experiences of people who experience it.

Nodes and links are determined directly by the participants that advocate Cossette and Audet (1994), not to deprive the subject of representations: the questions should be invitations for the respondent verbalizes his thoughts on what he considers important subject of research (Cossette, 1994). In addition, the researcher cannot force the subject to consider every possible link because the links must be made spontaneously or in response to open questions, so that the subject constructs its reality (Cossette and Audet, 1994). In the normative paradigm, the universe is more or less determined. The focus is on operational definitions and research plans reproducible. Observers, different participants, may determine the relationship between variables and nodes that can be.

We selected 5 concepts for the behavioral approach to their ability to describe the field of governance. We were guided in this by a literature review and an exploratory study based on a questionnaire made up of grids of systematic exploration and cross-matrices. The concepts presented in the table below.

Table2:

Key concepts for behavioral approach

- | |
|--|
| <ol style="list-style-type: none">1.Cognitive dissonance (Dis cogn)2.Dependence (Dep)3.Optimism (Op)4.overconfidence (Over c)5. Mimicry (Mim) |
|--|

4. Materials and methods of structural analysis

Analysis of the results led initially by a preliminary investigation of perceptions that are players in the Tunisian company vis-à-vis the stakeholder approach of governance.

This investigation was limited to the analysis of a collective cognitive map for all company, prepared on the basis of systematic exploration grids completed by the actors of the company.

From cognitive maps, we could identify and qualify the designs are the actors of the field of corporate governance. The development and analysis of cognitive maps were made using the Mic-Mac software. Our initial investigation focused on two elements: the relative importance of concepts and analysis of the dynamics of influence / dependence concepts (or variables) in the cognitive universe of players in the company. The relative importance of concepts was evaluated from the MIC. Mic-Mac program allowed us to rank the concepts in order to "balance" and "dependency." Thus arise the ideas that dominate in the cognitive universe of players.

Overview of structural analysis method

The main objective of structural analysis is to identify the most important variables in determining the evolution of the system. Inspired by graph theory, structural analysis is based on the description of a system using a matrix linking all its components. By weighting these relationships, the method highlights the key variables to changes in the system. As a tool, we opted for the software "Micmac" (cross-impact matrices, Multiplication Applied to Classification).

The first step of the method MICMAC is to identify all the variables characterizing the system under study (both external and internal variables). The second step involves the linking of variables in the construction of the matrix of direct influence and potential. Indeed, this approach is supported by the fact that in a systemic approach, a variable exists only through its network of relationships with other variables.

It is from this matrix what has identified the key variables. Indeed, we obtain the classification by the direct sum row and column. If the total connections line indicates the importance of the influence of a variable on the overall system (direct motor level), the total column shows the degree of dependence of one variable (level of direct dependence). The ranking against indirect detects hidden variables through a matrix multiplication program applied to indirect classification." This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence."

Matrix and processing MICMAC method

All structural analysis matrices above have been established only from direct relationships between variables. However, it is clear that a variable can also exert influence on other variables indirectly, or through another variable ("path" of order 2), or through several others exercising their influence cascaded through "paths" for longer and longer, and can also loop over themselves. The classification of motor skills may be significantly altered, and understanding the mechanisms of the system similarly.

Establish direct relations matrices indirect paths of length two, then three ... then N would quickly become intractable.

A relatively simple mathematical processing (multiplication of a matrix by itself, and elevation of the power matrices N) solves this problem. Benefiting from the spread of computers and personal computer, the method MICMAC (cross-impact matrix-multiplication applied to classification) is a commercial version. As expected, the rankings of variables by motor / decreasing influence (or dependence) generally find it changed. But experience has shown that these rankings become almost

stable after three or four students to the power, and they are clearly the importance of some new variables in terms of their indirect influences.

Map and analyzed at the collective level, the map is the collective model of mental representations of several people on a research topic identified. In some cases, the cards are developed by collective aggregation of individual cards and in other cases they are developed directly by building a group card. In the first case, the card is called collective and composite map is constructed by superimposing individual maps (M.G. Bougon & J.M. Komocar, 1994; J.Ford& H. Hegarty, 1984). While in the second case, the cards are called strategic and more individuals come to gether to create a community card. It then seeks to map the shared perceptions of a group of individuals on a particular area.

PRESENTATION OF VARIABLES

LIST OF VARIABLES

Cognitive dissonance (Dis cogn)

Dependence (Dep)

Optimism (Op)

Overconfidence (Over c)

Mimicry (Mim)

THE INPUT

This step was to compile a matrix of direct influence between these variables in a scoring session. Matrix of direct influence (MID) which describes the relationship of direct influence between the variables defining the system and the Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables. The scoring has developed the input matrix "matrix of direct influences (MID). The influences are rated from 0 to 3, with the ability to report potential influences.

MATRIX OF DIRECT INFLUENCES (MID)

Matrix of direct influence (MID) describes the relationship of direct influences between the variables defining the system.

Table 3 :

Matrix of direct influences

	Dis cogn	Dep	Op	Over c	Mim
Dis cogn	0	0	0	0	0
Dep	0	0	0	1	0
Op	0	0	0	0	0
Over c	0	1	2	0	P
Mim	0	0	1	0	1

The influences are rated from 0 to 3, with the ability to report potential influences:

0: No influence 1: Low 2: Average 3: Strong P: Potential

MATRIX OF DIRECT POTENTIAL INFLUENCES (MIDP)

The Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables.

It complements the matrix MID also taking into account possible relationships in the future.

Table 4:

Matrix of potential direct influences

	Dis cogn	Dep	Op	Over c	Mim
Dis cogn	0	0	0	0	0
Dep	0	0	0	1	0
Op	0	0	0	0	0
Over c	0	1	2	0	P
Mim	0	0	1	0	1

The influences are scored from 0 to 3:

0: No influence

1: Low

2: Average

3: Strong

5. RESULTS OF THE STUDY

DIRECT INFLUENCES

Characteristic of MID

This table shows the number of 0, 1, 2, 3,4 of the matrix and displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 5 :

Characteristic of MID

Indicator	Size of matrix	Number of iterations	Number of zero	Number of one	Number of two	Number of three	Number of P	Total	Fill rate
Value	14	2	149	19	14	10	4	47	23,97959%

Stability from MID

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications. In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, all the variables of the matrix MID.

Table 6 :

Stability from MID

ITERATION	INFLUENCE	DEPENDENCE
1	104%	105 %
2	98 %	105 %

Sum of rows and columns of MID

This table is used to enter the sums in row and column of the matrix MID

Table 7:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Cognitive dissonance	6	6
2	Dependance	1	6
3	Optimisme	0	5
4	Overconfidence	10	7
5	Mimicry	6	2
	Totals	77	77

POTENTIAL DIRECT INFLUENCES

Characteristic of MIDP

This table shows the number of 0, 1, 2, 3.4 and MIDP matrix displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 8 :

Characteristic of MIDP

INDICATOR	VALUE
Size of matrix	14
Number of iterations	2
Number of zero	149
Number of one	19
Number of two	14
Number of three	14
Number of P	0
Total	47
Fill rate	23,97959%

Stability from MIDP

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications.

In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, the set of variables.

Table 9 :

Stability from MIDP

ITERATION	INFLUENCE	DEPENDENCE
1	102 %	117 %
2	91 %	93 %

Sum of rows and columns of MIDP

This table is used to enter the sums in row and column of the matrix MIDP.

Table 10:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Cognitive dissonance	6	6
2	Dependance	4	6
3	optimisme	0	5
4	Overconfidence	13	7
5	Mimicry	6	8
	Totals	77	77

INDIRECT INFLUENCES

Matrix of indirect influences (MII)

The matrix of indirect influences (MII) is the matrix of direct influences (MID) high power, by successive iterations. From this matrix, a new classification of variables high lights the most important variables of the system. Indeed, it reveals the hidden variables through a matrix multiplication program applied to indirect classification.

This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence, taking into account the number of paths and loops of length 1, 2, ... n from each variable in order of length, taking into account the number of paths and loops of length 1, 2, ...n arriving on each variable. The ranking is stable in general from an increase in the order 3, 4 or 5.

Table 11 :

Matrix of indirect influences

	Dis c	Dep	Op	Over c	Mim
Dis c	24	27	22	25	6
Dep	15	0	0	12	0
Op	0	0	0	0	0
Over c	24	36	30	26	6
Mim	36	17	18	36	6

The values represent the rate of indirect influences

Sum of rows and columns of MII

This table is used to enter the sums in row and column of the matrix MII.

Table 12:

Sum of rows and columns

N°	VARIABLE	TOTAL OF ROWS	TOTAL OF COLUMNS
1	Cognitive dissonance	303	335
2	Dependance	58	183
3	Optimisme	0	164
4	Overconfidence	359	322
5	Mimicry	240	27
	Totals	77	101

6. Conclusion and implications of the research

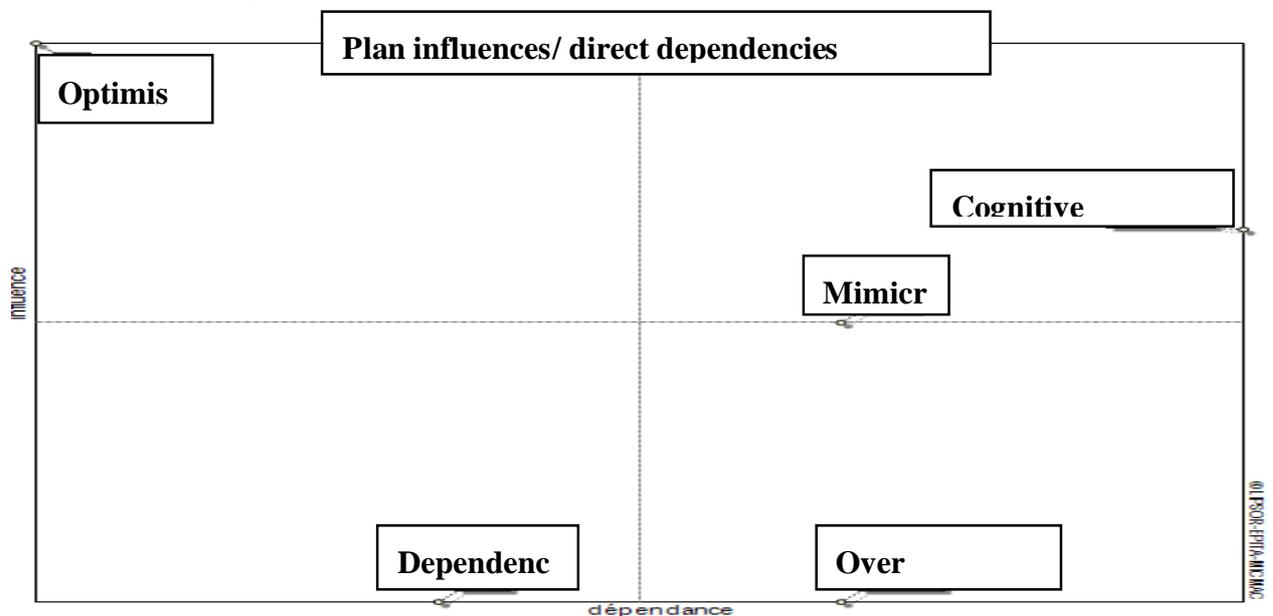


Figure2: Cognitive mapping through the plan influences dependencies

This plan visualizes the concepts (variables) structuring the cognitive universe of actors can be projected in terms of influences / dependencies. By the distribution of the scatter plot variables in this plan, particularly in relation to different quadrants, we can distinguish four major categories of variables.

The first quadrant includes the most prominent concepts in the dynamics of thought of the actors. For the actors of organization, the notion of "optimism" is the most dominant in their cognitions reflecting an intention based on a behavioral logic. Returning to the systematic exploration of grids for each actor, there is a balance of concepts expressing their orientation. For example, the actor1, this concept is expressed through statements such as "under evaluation", "investment", "net present value." that reflects the logic level of investment. Optimistic actors, that the market undervalues their firms, reject positive VAN investments to be financed by external resources. This prediction formula so the same

conclusion that theories based on asymmetric information, that is to say under-investment firms when cash at their disposal and their borrowing capacity is insufficient.

for the actor², this orientation is expressed through statements such as "investment project", "project cost", "negative net present value", "on valuation," reflecting a different approach based on return on investment. Actors optimistic overstate their investment projects and can invest in projects they believe profitable but whose NPV is negative. Therefore, optimism leads to the same result as that highlighted by the theories based on the agency relationship between managers and shareholders: managers tend to use free cash flow and debt capacity to overinvest.

The second quadrant contains the relay variables that are by definition both very influential and very dependent. In analyzing the plan influences / dependencies, there are players for the concepts or ideas illustrating the concepts of "cognitive dissonance", and "mimicry."

The third quadrant contains the dependent variables or resulting. They are both influential and very little dependent, therefore particularly sensitive. They are the results of which is explained by the variables and motor relay. Thus there are only one variable namely on trust. The fourth quadrant contains the variables that are simultaneously autonomous and influential little bit dependent. They are relatively excluded from the dynamics of thinking by the Tunisian company. The plan review influences / dependencies show the existence of a single variable that is addiction.

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CEO Emotional bias and Capital Structure Choice Bayesian network

Method

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ABSTRACT

This research examines the determinants of firms' capital structure introducing a behavioral perspective that has received little attention in corporate finance literature. The following central hypothesis emerges from a set of recently developed theories: firms managed by loss aversion, optimistic and/or overconfident people will choose more levered financing structures than others, ceteris paribus. The article explains that the main cause of capital structure choice is CEO emotional bias (optimism, loss aversion and overconfidence). I will use Bayesian network method to examine this relation. Emotional bias has been measured by means of a questionnaire comprising several items. As for the selected sample, it has been composed of some 100 Tunisian executives. Our results have revealed that the behavioral analysis of financing options implies the presence of peking order choice (Peking Order Theory, POT). CEO (optimistic, loss aversion, and overconfidence) prefer to finance their projects primarily through internal capital, by debt in the second hand and finally by equity.

Keywords: emotional bias; corporate finance; optimism; overconfidence; loss aversion; capital structure choice; Bayesian network.

JEL CLASSIFICATION : D2, G3, L2, L5, M1

1.INTRODUCTION

Studies focusing the determinants of firms' financing decisions address the problem from a wide range of perspectives. In many cases, the distinct theoretical approaches are complementary. For instance, the tax benefits of debt and the potential effects of greater financial leverage in mitigating conflicts of interest among outside shareholders and managers in a given firm could be simultaneously weighted in a decision concerning its ideal capital structure. Nonetheless, some of the determinants suggested in this literature are likely to be more relevant than others for explaining observed financing patterns. This empirical question has motivated an increasing number of studies about the actual drivers of firms' capital structure.

Static Trade-off Theory (STT) and Pecking Order Theory (POT) is the body of theory of reference that addressed the issue of the financial structure of the firm. The first (STT) is based on a trade-off between costs (bankruptcy costs explicit or implicit, agency costs of debt related to conflicts of interest between bondholders and shareholders...) and earnings (shields deriving from the deductibility of interest payments) associated with the debt to obtain an optimal financial structure to maximize the value of the firm (Ross,1977 ; Jalilvand and Harris, 1984 ; Myers, 1984; Titman and Wessels, 1998; Stulz ,1990 ; Graham ,2000 ; Booth and al , 2001;...). As against the second ignores the concept of optimal financial structure and argues that the choice of financing is through a hierarchical order. This approach sustains that companies will tend to follow a hierarchy of preference for alternative financing sources motivated by the informational asymmetries between their managers and outside investors. Specifically, because firms will tend to seek financing sources that are less subject to the costs of informational asymmetries, they will prefer to fund their business with internally generated resources. They will only turn to external sources when necessary, preferably contracting bank loans or issuing debt securities (Myers, 1984 ; Myers and Majluf, 1984; Graham and Hervey, 2001; Fama and French, 2002; Frank and Goyal, 2007; Bushman and al, 2004; Antoniou and al, 2007; Huang and Ritter, 2009;..)

All of the above mentioned approaches hold in common one important point, namely, the implicit assumption that financial market participants as well as company managers always act rationally. However, an extensive and growing literature on human psychology and behavior shows that most people, including investors and managers, are subject to important limits in their cognitive processes and tend to develop behavioral biases that can significantly influence their decisions. Indeed, individual reasons are cognitive shortcuts that influence the position, making irrational and non-optimal in terms of traditional financial theories. These biases have been identified and classified and grouped as follows: The means of representation, reasoning analog bias of conservatism and confirmation, but also emotions such as loss aversion, optimism and the overconfidence.

This study examines the possible influence of three closely related emotional biases that are extensively documented in behavioral research, loss aversion, optimism and overconfidence, on a firm's capital structure decisions. Recent theoretical Behavioral Corporate Finance literature suggests that these biases can substantially influence the investment and financing decisions made by business managers. In fact, one strong prediction emerges from this body of theories: optimistic and/or overconfident (or, for short, "biased") managers will choose higher leverage ratios for their firms than they would if they were

“rational” (or not biased). Therefore, these biases could rank among the determinants of capital structure. This study offers one of the first empirical tests of this hypothesis and, at the same time, presents new evidence about the factors that better explain observed leverage levels, using a sample of Tunisian companies.

The article is structured as follows: Section 2 presents the related literature and the theories which motivate the empirical work and Section 3 discusses the empirical strategies that were adopted. Section 4 discusses the main results and Section 5 presents the concluding remarks.

2. HYPOTHESIS DEVELOPMENT

In this paper, we examine an alternative explanation based on differences in managerial beliefs to shed light on some of the unexplained variation in capital structure decision. We examine the role of CEO behavioral characteristics in the design of capital structure choice. The behavioral finance literature that examines the consequences of behavioral biases of managers has primarily focused on managerial loss aversion, optimism and overconfidence; traits that have been shown to be prevalent in managers (see Malmendier and Tate (2005, 2008) and Ben-David and al, 2007). Heaton’s (2002) theory suggests that managers overestimate future performance of their firms that can account for pecking order theory for capital structure and high relation between investment and cash flow. Landier and Thesmar (2009) explored the impacts of optimistic entrepreneur on financial contracting and corporate performance and found that optimistic entrepreneur tend to make decisions under-reacting the negative information. Malmendier and Tate (2008) suggested that overconfident CEOs tend to engage in acquisitions that destroy firm value. Malmendier and al. (2007) indicated that overconfident managers view their firms value be undervalued and do not prefer raising funds through external sources, which echoes pecking order of financing and debt conservatism.

We investigate the influence of managerial bias (loss aversion, optimism and overconfidence) about corporate financial structure choice.

2.1. optimism and capital structure choice

Heaton (2002) focuses on optimism in a corporate setting. In particular, he discusses lucidly why the arbitrage and the learning objection are weaker in corporate settings. Biased managers in his two-date model perceive risky corporate securities to be undervalued by the market, may reject positive net present value project if (seemingly costly) external funds are needed to finance them, and may invest in negative net present value projects because of biased cash flow forecasts. Optimistic managers believe that the projects available to their firms are better (in terms of expected return) than they actually are. Therefore, they think that the securities issued by the firm, whether bonds or stocks, are systematically undervalued by outside investors (the model assumes efficient capital markets). By nature, stocks are the securities most subject to the perceived undervaluation. Consequently, the firm will prefer to fund its investment

projects with internally generated resources and, secondly, by issuing debt securities, choosing to issue new stocks only as a last resort.

Lin and al (2007), confirm the results obtained by Heaton(2002). With the help of an empirical study, these authors found that Pecking Order Theorey (POT) predection can be explained by optimuistic manager. Thus, a leader optimistic that this company is considered undervalued by the market to avoid the most financed by the debet and/or program of action unless it is forced. It promotes self first and last debet and equity issuance.

Malmendier and al (2005), find that the optimistic manager will use a priority on self-financing, then debt and ultimately to the issue of shares. They show the positive relationship between the means of internal financing and managerial optimism.

Gervais and Odean (2001), Bais and al (2005), Chuang and al (2009), show the existence of a positive relationship between overconfidence (and / or optimism) and uncertainty. This uncertainty regarding the adequacy of available information affects decision making. Anderson (1983), emphasizes that uncertainty implies risk aversion (risk of loss of pay or job stability and a brand on the market leaders) pulsing the individual " leader "to take a conservative stance and therefore refuses any decision that could change their current status including the entry of new shareholders. This reflects the negative relationship between managerial optimism and external equity financing.

Dufour and Molay (2010), postulate that the level of corporate debt reduces the risk of hostile takeover. A leader optimistic with the growth opportunities of his business has an interest to limit the risk of hostile takeover. It seeks a debt threshold limiting the risk of failure, the risk of hostile takeover and indicating the health of the business.

It can be seen from these studies that the introduction of the behavioral dimension in the analysis of funding decision confirms the pecking order theory (POT) . or there is a need to propose the following hypothesis:

H1: *Optimistic leader accepts level of casch flow greater than debet (and/or capital increase).*

2.2. Loss aversion and capital structure choice

A nascent literature recognises that the bias of loss aversion is a significant determinant of manager financing decisions. Psychological studies document that loss aversion causes people to overestimate risk, be more uncertain about forecasts and opt for making it safer to limit the likelihood of his removal.

Helliar and al. (2005), argue that loss aversion leaders seek to avoid the worst-case scenarios. They not only use the tools of risk management to reduce the variance of cash flows but rather to avoid the worst scenarios that influence the risk of bankruptcy or preventing the company to take advantage of profitable investment. They refuse to debt financing (avoided the risk of bankruptcy) and prefer self-financing.

Kisgen (2006), shows that the level of debt affects the credit rating in a negative way. Thus, a downpour in the loss leader that seeks the minimization of the probability of loss for him and are firm to promote his

business interests in the financial market. It avoids as soon as possible its use of debt financing to improve the rating and the performance of its business.

Chang and al (2009), assume that the volatility of the securities is an important determinant of ownership structure. Thus, officer loss aversion and aware of the variation in stock returns of the business (or their value on the market) reduces its financing by issuing shares to avoid a loss under evaluation. He opts for the issuance of shares if the market overestimates the business.

Bertrand and Mullainathan (2003), argue that leaders can be encouraged not to invest so as not to be challenged in their "quiet life". This kind of conservatism is a way to counteract the risk of loss of control (Barberis and Thaler, 2002). Thus, the loss aversion of the manager due to a hostile takeover bid (hostile takeover) forces him to not invest in projects with positive returns if financed by issuing shares.

Albouy and Schatt (2010), assume that the dividend distribution is to reduce the equity of the company and, therefore, reduce shareholder value. So an officer-shareholder whose compensation is linked to the change in value of the shares of his company. Aversion loss of a capital gain related to changes in impuleduring such officer to avoid payment of dividends negatively correlated with self-interest.

Nosic and Weber (2008), analyze the risk-taking determinants and note that perceptions of risk and expected returns, affect the behavior of risk-taking. They show that uncertainty regarding the expected returns of the company affects the individuel risk-taking. Indeed an uncertain leader of productive capacity of his company engages in conduct designed to respect the interests of the firm. It seeks to make themselves heard and be respected by the mainshareholders. CEO loss averse that seeks the maximization of shareholder wealth has an interest to fund growth opportunities through internal funding.

It can be seen from these studies that the introduction of the behavioral dimension in the analysis of funding decision confirms the pecking order theory (POT) . or there is a need to propose the following hypothesis:

H2: *loss aversion leader accepts level of casch flow greater than debet (and/or capital increase).*

2.3. Overconfidence and capital structure choice

The psychology literature suggests that executives are particularly prone to exhibit overconfidence. Schoar (2007) shows that CEOs who start their career in a recession make more conservative capital-structure choices, e.g., choose lower leverage and internal over external growth.

Gervais and al (2003) provide various reasons for why especially managers are likely to be optimistic and overconfident and study these traits within the capital budgeting process of an all-equity financed firm.

Malmendier and Tate (2008) suggested that overconfident CEOs tend to engage in acquisitions that destroy firm value. Malmendier and al. (2007) indicated that overconfident managers view their firms value be undervalued and do not prefer raising funds through external sources, which echoes pecking

order of financing and debt conservatism.

Schrand and Zechman (2010) emphasize that overconfidence is positively associated with the overestimation of the probability of success and the presence of biased financial decisions. The leader overconfidence that overestimates his personal skills tends to choose financial decisions inconsistent with the firm characteristics. It underestimates the risk of bankruptcy of his company and believes the control. These beliefs led him to increase the debt level of the business.

David and al (2006), show that confident managers underestimate the probability of financial distress, and therefore take on higher levels of debt than optimal. This may lead to higher probability of bankruptcy and higher costs of capital. Therefore, in support of this confidence bias we expect a positive relation between manager confidence and leverage. Or in the presence of low funding capacity CEO overconfident prefer debt that equity financing decision.

Ho and Chang (2009) postulate the presence of a positive relationship between the company financial distress and CEO overconfidence level. Thus, overconfidence leads the manager to underestimate the company bankruptcy probability and, therefore, a higher debt.

It can be seen from these studies that the introduction of the behavioral dimension in the analysis of funding decision confirms the pecking order theory (POT) . or there is a need to propose the following hypothesis:

H3: *overconfident leader accepts level of cash flow greater than debt (and/or capital increase).*

3. RESEARCH METHOD

3.1. DATA

Our empirical study is based on quantitative research. we use a questionnaire as a method of data collection. Our questionnaire consists of four main parts, based on treated areas in theory:

- ♣ The first part aims to identify the company (size, industry, ownership structure, debt levels, level of dividend distribution, ...).
- ♣ The second part focuses on presenting the level of loss aversion leaders.
- ♣ Party three deals with the level of optimism of the leader.
- ♣ Finally, party four seeks to show the level of overconfidence of managers.

The questionnaire is addressed to CEO of Tunisian companies. The selected sample consists of 100 managers of industrial and commercial companies listed on the tunisian stock exchange in 2010 (28 companies) and other non-listed companies (82 companies).

Our choice of listed companies is justified by the fact that they are supposed to be the most efficient and

meet several conditions necessary for the reliability of our study were limited companies which are usually diffuse shareholders, increasing the importance of role of the board and ownership structure and consequently increase the validity of the assumptions.

We decided to exclude financial firms: banks, insurance companies and investment companies for development and portfolio management ... in fact these companies have different characteristics of non-financial businesses and to avoid correlation effects specific to a specific sector.

To get a representative sample of our Tunisian market we have added other unlisted companies.

Table 1

Visited Companies

Initial BVMT sample for 2007	50
Financial firms	(22)
Other non financial firms	120
Insufficient data to emotional intelligence	(40)
Insufficient data to board of directors compositions	(8)
Final sample	100

3.2. Variables' measurement

The objective of this section is to determine the variables' measurement.

3.2.1. Capital structure choice

The purpose of this article is to show the impact of emotions on the capital structure choice (internally generated resources, debt level, and choosing to issue new stocks). The appropriate measures in the literature to evaluate three methods of financing are:

3.2.1.1. Internally generated resources (The Cash Flow)

Research within the framework of financial theory of investment, have resorted to many measures of internal resources. Cash flow represents the flow generated by the activity of any business, is one of the most appropriate (Lehen and Poulsen, 1989; Molay, 2006; Naoui et al, 2008; ...).

$$CF = \text{Net income} + \text{Depreciation} - \text{Dividend}$$

$$\text{Cash Flow rate (RCF)} = CF / \text{Total Assets}$$

To show that the leader chosen or not internally generated resources, we can use the change in flow

rate. A negative change indicates the use of internal resources.

$$\text{Cash flow rate variation} = \text{RCF}_N - \text{RCF}_{N-1} / \text{RCF}_{N-1}$$

3.2.1.2. Debt level

We observe a variety of variables that measure the level of debt in the company. Measures such as total debt service ratio has been selected by several authors (Hovakimian et al, 2004). Others have used the debt ratio in the medium and long term (Myers, 2001). The debt ratio in the short term was also used by Titman (1984).

As part of our analysis we propose to use the debt ratio as a measure of this variable. It should be noted that this ratio is calculated by:

$$\text{Leverage ratios (LEV)} = (\text{total debt} / \text{total assets})$$

This measure is also used by Koh (2003), Demaria and Dufour (2007), Jarboui and Olivero (2008), Ben Kraiem (2008) and Sahut and Gharbi (2008).

To show that the manager uses debt or not, we can use the change in debt ratio. A positive change indicates the use of debt.

$$\text{Leverage ratios variation} = \text{LEV}_N - \text{LEV}_{N-1} / \text{LEV}_{N-1}$$

3.2.1.3. Equity level

This variable is measured by the value of equity in the balance sheet of the company. To show that the leader chosen or not the capital increase, we can use the variation in the percentage of investment. A positive change indicates an increase of capital.

$$\text{Level of Capital Invested (LCI)} = \text{equity} / \text{total assets}$$

$$\text{Level of Capital Invested Variation} = \text{LCI}_N - \text{LCI}_{N-1} / \text{LCI}_{N-1}$$

The financial decision takes 7 follows:

- 1 if the manager chooses the internally generated resources: positive variation in the cash flow rate.
- 2 if the manager chooses debt: positive variation in the leverage ratio.

- 3 if the manager chooses the capital increase: positive variation in the level of invested capital.
- 4 if the manager chooses internally generated resources + debt : positive variation in the cash flow rate and debt ratios.
- 5 if the manager chooses internally generated resources + capital increase: positive variation in the cash flow rate and level of capita invested.
- 6 if the manager chooses debt + capital increase: positive variation in the leverage ratio and level of invested capital.
- 7 if the manager chooses internally generated resources + debt+ capital increase: positive variation in the cash flow rate, leverage ratio and level of invested capital.

3.2.2. Emotional bias

The questionnaire focuses on evaluating and scoring of the three emotional biases (risk aversion, optimism and overconfidence). The questions have been inspired from the questionnaires formulated by the Fern Hill and Industrial Alliance companies.

The emotional bias takes 2 follows:

- 1 if the individual has a high level for each bias
- 0 if not

3.2.3. Control variables

Static trade-off theory (STT) and pecking order theory (POT) is the body of theory of reference that addressed the issue of the financial structure of the firm. The factors that explain the financial structure are mainly at the cost, size, level of risk, growth opportunities, the structure of assets and business (Rajin and Zingales, 1995;Booth and al, 2001; Molay and Dufour, 2010).

We include in our model three control variables that explain the effectiveness of choice of financial structure of the company. These variables are proxies for profitability, firm size and growth opportunities.

We include in our study three control variables that explain company capital structure choice . These variables are proxies for profitability, firm size and growth opportunities.

3.2.3.1. Profitability

More profitable firms have, *ceteris paribus*, more internally generated resources to fund new investments. If their managers follow a pecking order, they will be less likely to seek external financing

(Fama and French, 2002). Thus, on average, these firms' leverage ratios will be lower. In trade-off models, on the other hand, this relationship is inverted. More profitable firms are less subject to bankruptcy risks, *ceteris paribus*. Hence, their expected bankruptcy costs are reduced and they can make more use of the tax shields provided by debt, thus choosing a position of greater leverage.

We will keep the ratio of return on assets ROA to measure this variable:

ROA= Earnings before interest, tax, depreciation divided by total assets, lagged one year period

3.2.3.2. Firm size

Studies suggest that the probability of bankruptcy is lower in larger firms and that, therefore, their debt capacity is higher than that of smaller ones, all else equal. On the other hand, fixed transaction costs can make new stock issues unattractive to small corporations, stimulating them to issue debt (Rajin and Zingales, 1995 ; Hovakimian and al, 2004; Dufour and Molay, 2010).

Indeed, most studies have applied total assets or turnover as a measure for firm size (Bujadi and Richardson, 1997). In this paper, it is measured through the log of the firm’s total assets (LNSIZE).

3.2.3.3. Future investment opportunities

It is argued that future profitable investment opportunities can influence corporate financing decisions in different ways. In the context of the pecking order theory, firms that have many investment opportunities and believe that their stocks (and risky bonds) are undervalued by the market, may choose a capital structure with less debt. If they maintained high debt ratios, they would be forced to distribute precious cash flows generated by their business and could face the need to issue undervalued securities to fund new projects. This could, in turn, induce underinvestment. A more static version of the pecking order model, on the other hand, predicts that firms with more future opportunities will be more levered, ceteris paribus, because they need more external financing and issuing debt is preferable to issuing new stock.(Rajin and Zingales, 1995 ; Graham, 2000 ; Booth and al, 2001 ; Dufour and Molay, 2010 ; Naoui and al, 2008).

We will keep the Tobin’s Q to measure this variable. The Tobin’s Q Estimated with the approximation formula proposed by Chung and Pruitt (1994):

$$Q_{it} \cong \frac{MVS_{it} + D_{it}}{A_{it}}$$

MVS – market value of common and preferred shares; D – book value of debt, defined as current liabilities plus long-term debt plus inventories minus current assets; A – total assets.

For simplification purposes, the summary of each variable extent range in the model, its name as well

as its expected impact on the capital structure choice are depicted in the following table (table 2):

Table 2

Operational definitions of variables

Class :	Phenomena :	Mesure :	Variables :	Predictions :		
Endogens variables :						
Capital structure choice	Internally generated resources (The Cash Flow)	CF = Net income + Depreciation – Dividend Cash Flow rate (RCF) = CF / Total Assets Cash flow rate variation = $RCF_{N-} - RCF_{N-1} / RCF_{N-1}$		CF		
	Debt level	Leverage ratios (LEV)= (total debt / total assets) Leverage ratios variation = $LEV_{N-} - LEV_{N-1} / LEV_{N-1}$		LEV		
	Equity level	Level of Capital Invested (LCI) = equity / total assets Level of Capital Invested Variation = $LCI_{N-} - LCI_{N-1} / LCI_{N-1}$		EQ		
Exogenous variables :						
				CF	LEV	EQ
Optimism	Directors overestimate capacity of their firms	The questionnaire obtained score	OP	+	+	-
Lost aversion	Loss rumination and reputation	The questionnaire obtained score	LA	+	-	+
overconfidence	Directors overestimate their personal competences	The questionnaire obtained score	OVER	+	+	+
Controls variables:						
Profitability	Reports on the company's ability to meet its commitments	ROA= Earnings before interest, tax, depreciation divided by total assets, lagged one year period	PF	+	+	-
Firm size	Firms signaled performance	Ln (total assets)	LNSIZE	+	+	+

Future investment opportunities	Indicates the productive capacity of the company	$Q_{it} \cong \frac{MVS_{it} + D_{it}}{A_{it}}$	FIO	-	+	+
<p>MVS – market value of common and preferred shares;</p> <p>D – book value of debt, defined as current liabilities plus long-term debt plus inventories minus current assets; A – total assets.</p>						

3.3. Bayesian Network Method

The definition of a Bayesian network can be found in many versions, but the basic form (Pearl, 1986) is stated as follows: a Bayesian network is a directed probability graph, connecting the relative variables with arcs, and this kind of connection expresses the conditional dependence between the variables. The formal definition follows.

A Bayesian network is defined as the set of {D, S,P}, where.

(1) D is a set of variables (or nodes): in our case it consists of capital structure choice, optimism, loss aversion, overconfidence, profitability, firm size and future investment opportunities.

(2) S is a set of conditional probability distributions (CPD). $S = \{p(D / \text{Parents}(D) / D \in D)\}$, $\text{Parents}(D) \in D$ stands : for all the parent nodes for D, $p(D/\text{Parents}(D))$ is the conditional distribution of variable D.

(3) P is a set of marginal probability distributions. $P = \{p(D) / D \in D\}$ stands for the probability distribution of variable D.

In the Bayesian network, variables are used to express the events or objects. The problem could be modeled with the behavior of these variables. In general, we first calculate (or determine from expert experience) the probability distribution of each variable and the conditional probability distribution between them. Then from these distributions we can obtain the joint distributions of these variables. Finally, some deductions can be developed for some variables of interest using some other known variables.

In our study we try to show the evolution of CEO financing choices according to the evolution of his emotions and his company characteristics. Thus, theoretically, have to show that the company capital structure choice (Internally generated resources, debt and Equity) depends on: CEO emotional biases (CEO optimism level, loss aversion and overconfidence), firm profitability, firm size and firm future investment opportunities.

3.3.1. Define the network variables and their values

The first step in building a Bayesian network expert is to list the variables recursively, starting from the target variable to the causes. In this order we present the variables in the table below (table 3) :

Table 3

The network variables and their values

Variables	Type
Capital structure choise	Discret [1 ; 2 ;3 ;4 ;5 ;6 ;7]
Optimism	Discret : YES/NO
Loss aversion	Discret : YES/NO
overconfidence	Discret : YES/NO
Profitability	Discret : YES/NO
Firm size	Discret [1 ; 2 ; 3]
Future investment opportunities	Discret : YES/NO

3.3.2. Graphical model

The second step of Bayesian network the construction is to express the relationships between variables. The BayesiaLab learning of Bayesian network by taking the database as a discrete entry process without sampling data. The Bayesian network constructed is the result for the total database. According to the data that we have received through the questionnaire, we have established relationships following graph (Figure 1):

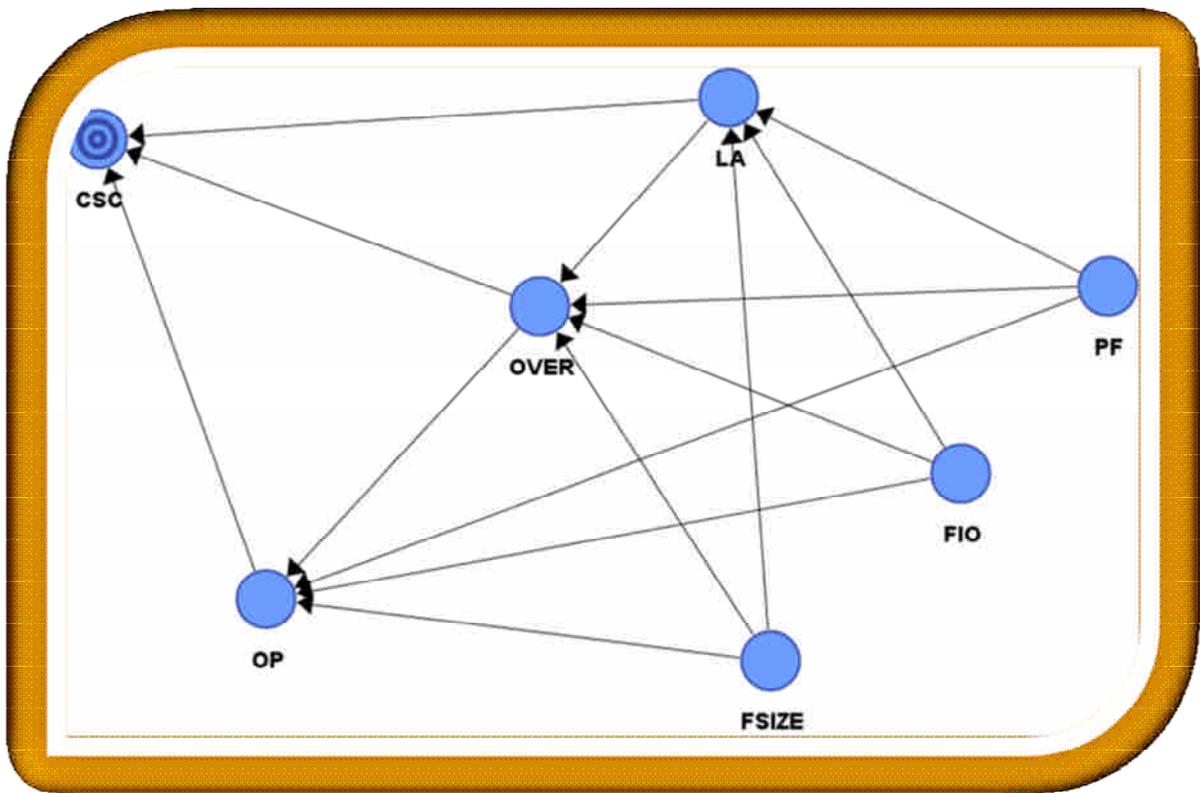


FIGURE 1. CAPITAL STRUCTURE CHOICE: BAYESIAN NETWORK

The graphical model if it (Figure 1) explains the capital structure choice of Tunisian firms. This decision is affected by the CEO emotional biase (optimism, loss aversion, and overconfidence). These emotional biases originate the fierms financial position (size, growth opportunity and profitability).

In what follows, we describe in detail the various correlations between these variablesand their effect on the target variable (capital structure choice: CSC).

4. EMPIRICAL RESULTS

4.1. The relationships discovered analysis

The relationships between the variables in the database are directed at the parent node child node. Each relationship is composed of three different measures: the Kullback-Leibler, the relative weight and the Pearson correlation (direction of relation). Indeed, the Kullback-Leibler and the relative weight are two measures indicating the strength of relationships and the level correlation between variables, in that while the correlation measure of personal meaning and relationship significance.

The relative weight scale of 0 to 1. Thus, the table (Table 3) below shows the relationships analysis results between variables across the network Pearson correlation.

Table 4

The relationships analysis

Parents nodes	Childs nodes	Kullback-Leibler divergence	relative weight	Pearson correlation
OP	CSC	0,629522	1,0000	-0,1060*
LA	CSC	0,320901	0,5098	-0,1237*
OVER	CSC	0,227493	0,3614	0,3136
FSIZE	LA	0,187266	0,2975	-0,3369
FSIZE	OP	0,180655	0,2870	0,1986*
FSIZE	OVER	0,110202	0,1751	0,0556**
FIO	LA	0,047198	0,0750	-0,0331**
FIO	OP	0,094701	0,1504	-0,0650*
FIO	OVER	0,138862	0,2206	0,0293**
PF	LA	0,079766	0,1267	-0,1702*
PF	OP	0,095710	0,1520	0,1768*
PF	OVER	0,132294	0,2101	0,1153*
LA	OVER	0,057432	0,0912	-0,1629*
OVER	OP	0,041499	0,0659	-0,0103***

Note.

a.Kullback-Leibler close to 1: important correlation between the variables

b.Relative weight close to 1: important correlation between the variables.

c.Pearson correlation:*, **,***, respectively at 10%,5%,1%.

Table 4 examines the relationship (independence and correlation) between networks variables.

The results show the presence of a important and negative relationship (Kullback-Leibler = 0.62 / weight ratio = 1 / β = -0106) between the CEO optimism of and the firms capital structure choice. These results affirm the correlation between optimism and capital structure choice (H1).

Relationships analysis present moderately and negative relationship(Kullback-Leibler = 0.32 / weight ratio = 0.5/ β = -01 237) between CEO loss aversion and the capital structure choice. This empirical finding confirms our hypothesis (H2).

CEO overconfidence is positively (β = 0.3136) and medium (Kullback-Leibler = 0.22 / weight ratio = 0.36) correlated with the firms capital structure choice. This result confirms the presence of a

correlation between capital structure choice and overconfidence (H3).

Relationship analysis test says that firm size influence the CEO emotional state. Thus, firms size negatively correlated with CEO loss aversion ($\beta = -0.3369$), positively with the CEO optimism ($\beta = 0.1986$) and CEO overconfidence ($\beta = 0.0556$).

Future investment opportunities are positively correlated with the CEO overconfidence ($\beta = 0.0293$) and negatively with the CEO loss aversion ($\beta = -0.0331$) and optimism ($\beta = -0.0650$).

The profitability is negatively correlated with the CEO loss aversion ($\beta = -0.1702$), negatively correlated with his optimism ($\beta = 0.1768$) and his overconfidence ($\beta = 0.1153$).

The relations analysis shows the presence of a negative correlation between the CEO loss aversion level and his overconfidence level ($\beta = -0.1629$).

Finally, the results also show the negative correlation between CEO overconfidence and his optimism level ($\beta = -0.0103$).

4.2. Target variable analysis : Capital structure choices (CSC)

To analyze the capital structure choice, we must choose the variable capital structure choice (CSC) as a target variable in the Bayesian network. Then we can use the function that generates the analysis report of the target capital structure choice. In this report, the relationship between capital structure choice and the other variables are measured by binary mutual information and the binary relative importance. The mutual information of two random variables is a score measuring the statistical dependence of these variables. It is measured in bits.

Table 5

Traget variable analysis

CSC= EQ (22,55%)					
Nodes	Binary mutual information	Binary relative importance	Modal value		
OP	0,2883	1,0000	NO	95,24%	
LA	0,0520	0,1803	YES	84,68%	
FSIZE	0,0377	0,1306	BIG	48,46%	
PF	0,0175	0,0606	NO	70,65%	
OVER	0,0038	0,0131	YES	52,41%	
FIO	0,0020	0,0068	YES	60,33%	
CSC=CF+LEV(18 ,25%)					
Nodes	Binary mutual information	Binary relative importance	Modal value		
OP	0,1565	1,0000	YES	100,00%	

LA	0,0246	0,1572	NO	57,56%
FSIZE	0,0173	0,1104	BIG	70,61%
PF	0,0086	0,0549	YES	54,94%
OVER	0,0068	0,0434	YES	68,99%
FIO	0,0004	0,0023	YES	53,19%
CSC = CF+LEV+EQ (17,53%)				
Nodes	Binary mutual information	Binary relative importance	Modal value	
OVER	0,0578	1,0000	YES	87,36%
LA	0,0060	0,1046	YES	51,94%
FSIZE	0,0025	0,0427	BIG	63,70%
FIO	0,0022	0,0374	YES	61,43%
OP	0,0004	0,0061	YES	57,10%
PF	0,0000	0,0000	NO	56,39%
CSC = CF (12,01%)				
Nodes	Binary mutual information	Binary relative importance	Modal value	
OP	0,0438	1,0000	YES	89,68%
LA	0,0386	0,8800	YES	89,68%
OVER	0,0384	0,8762	NO	71,79%
FSIZE	0,0088	0,2013	BIG	52,67%
FIO	0,0072	0,1647	NO	57,94%
PF	0,0001	0,0028	NO	54,81%
CSC = LEV+EQ (11,15%)				
Nodes	Binary mutual information	Binary relative importance	Modal value	
LA	0,0008	1,0000	YES	57,12%
OP	0,0006	0,7818	YES	55,39%
OVER	0,0003	0,4191	YES	56,04%
FSIZE	0,0002	0,2103	BIG	62,66%
FIO	0,0002	0,2032	YES	57,65%
PF	0,0000	0,0207	NO	57,23%
CSC = LEV (9,56%)				
Nodes	Binary mutual information	Binary relative importance	Modal value	
OP	0,0766	1,0000	YES	100,00%
LA	0,0613	0,8008	NO	81,95%
FSIZE	0,0155	0,2021	BIG	77,67%
OVER	0,0075	0,0985	NO	56,59%
PF	0,0051	0,0662	YES	56,28%
FIO	0,0000	0,0005	YES	54,44%
CSC = CF+EQ (8,95%)				

Nodes	Binary mutual information	Binary relative importance	Modal value	
OP	0,0103	1,0000	NO	59,45%
LA	0,0074	0,7170	YES	76,88%
FSIZE	0,0025	0,2415	BIG	54,63%
PF	0,0004	0,0359	NO	60,13%
OVER	0,0002	0,0202	YES	61,69%
FIO	0,0001	0,0111	YES	53,56%

Note .

a.Mutual information: This is the amount of information given by a variable on the target value.

b.Relative importance: The importance of this variable with respect to the target value.

c.Modal value: The average value of the explanatory variable for each the target value.

The target variables analysis shows that 22.55% Tunisian companies are opting to capital increase, 18.25% choose cash flow and debt, 17.53% use three capital structure option (cash flow + debt + equity), 12.01% operating of internal financing (cash flow), 11.15% prefer debt and capital increase, 9.56% fund investments by debt and 8.95% prefer cash flow and equity.

The results show CEO pessimism at 95.24%, CEO loss aversion at 84.86%, a level CEO overconfidence at 52.41%, 60.33% of future investment level, a great size to 48.46% and low profitability to 70.65% implies use of the capital increase to 22.55%.

CEO 100% optimistic, 57.56% no loss aversion and overconfidence 68.99% prefer cash flow and debt to finance their investment projects.

Bayesian networks analysis shows that if the CEO; 87.36% to overconfidence, 51.94% to loss aversion, 57.10% have a optimism high level, belongs to a large company with a probability of 63.70%, 61.43% to work in a high growth opportunities firms, and 56.39% to low profitability firms, it uses all financing capabilities (internal cash flow +debt + capital increase) of its business with a probability of 17.53%.

CEO optimistic to 89.68%, loss aversion to 89.68%, and 71.79% in non overconfidence prefer the internally generated resources to 12.01%. Thus, these CEO belongs from a large companies to 52.67%, to low profitability firms at 54.81% and with low growth opportunities firms in 57.94% prefer internally generated resources to reduce their companies risk.

Network analysis shows that 57.12% of CEO loss aversion, optimistic to 55.39%, 56.04% to overconfidence is positively correlated with 11.15% of the torque debt and equity. These, CEO give up the choice of internally generated resources because of their firm's low profitability (low profitability to 57.23%). They prefer then debt and then use the capital increase to finance these growth opportunities (with a significant probability of 57.65%). This implies that firm characteristics affect CEO psychological state at the time of decision making (including capital structure choice). These, characteristics are the creators of the CEO emotional biases. These, biases affect emotional preferences when CEO choosing.

The results add that the CEO of large companies (77.67%), of firms profitability high level (56.28%), and of firms growth opportunities (54.44%) are optimistic to 100%, no loss aversion to 81.95%, and not overconfident to 56.59%. These, CEO use the debt with a probability of 9.56%.

Finally, 59.45% CEO pessimism, 76.88% CEO loss aversion and 61.69% CEO overconfidence are positively correlated with 8.95% of the torque internally generated resource and equity. These leaders (pessimistic, loss aversion, and overconfidence) working in large firms (54.63%), non-profitable (60.13%) and have a high growth opportunities (53.56%) prefer the torque internally generated resources and equity.

4.3. Average target maximizing analysis

After presenting all the explanatory variables for each category of the target variable, it is necessary to introduce the variables maximizing each modality of the target variable. Thus, the target dynamic profile capability software (Bayesialab) to query about an a posteriori maximization of the target average. This test shows the case

to maximize the target variable value. Table 5 presents the dynamic profile of the capital structure choice (CSC).

Table 6

The Target dynamic profile analysis

CSC = CF			
Nodes	Optimal modality	Probability	Joint probability
A priori		12,01%	100,00%
OVER	NO	21,05%	40,97%
OP	YESI	35,03%	24,61%
FSIZE	SMALL	50,00%	0,85%
CSC = LEV			
Nodes	Optimal modality	Probability	Joint probability
A priori		9,56%	100,00%
LA	NO	20,45%	38,31%
OP	YES	32,69%	23,96%
OVER	NO	50,00%	7,37%
CSC = EQ			
Nodes	Optimal modality	Probability	Joint probability
A priori		22,55%	100,00%
FSIZE	SMALL	53,16%	10,10%
OP	NO	63,27%	8,41%

OVER	NO	71,43%	3,25%
CSC = CF+LEV			
Nodes	Optimal modality	Probability	Joint probability
A priori		18,25%	100,00%
OP	YES	30,69%	59,47%
LA	NO	43,85%	23,96%
OVER	YES	50,00%	16,59%
CSC = CF+EQ			
Nodes	Optimal modality	Probability	Joint probability
A priori		8,95%	100,00%
FSIZE	SMALL	14,10%	10,10%
PF	YES	15,45%	4,39%
FIO	NO	16,67%	1,95%
CSC = LEV+EQ			
Nodes	Optimal modality	Probability	Joint probability
A priori		11,15%	100,00%
LA	NO	12,48%	38,31%
FSIZE	SMALL	25,00%	0,81%
CSC = CF+LEV+EQ			
Nodes	Optimal modality	Probability	Joint probability
A priori		17,53%	100,00%
OVER	YES	25,94%	59,03%
FSIZE	MEDIUM	29,13%	15,36%
OP	YES	35,30%	10,16%
FIO	NO	41,18%	2,45%

Note .

a.Optimal modality: modality is maximizing the target value .

b.Probability: the prior probability of each variable.

c.Joint probability: the probability that the target variable takes the value n given that the explanatory variable takes the value p. for example, the probability of choosing CF by an executive overconfidence is 40.97%.

Dynamic profile analysis (Table 6) of the capital structure choice presents the following findings:

The decrease in the CEO overconfidence level of 21.05%, increasing its optimism level of 35.03% and reduced the company size of 50% are positively correlated with the increase of the internally generated resource level of 12.01%. This result confirms the positive correlation

between cash flow and optimism (H1), contradicts the positive correlation between overconfidence and internally generated resource (H3), shows the firm size role on access to external financing method and rejects the positive effect of loss aversion aversion of self-financing (H2 is not checked). This result shows the effect of the CEO emotional biases through their capital structure choices. Thus, optimistic CEO and less overconfidence overestimates firms growth opportunities and underestimate their personal abilities (to keep its place at the head of the company). He has an interest should be choosing internally generated resources.

The increased CEO optimism level of the head of 20.45%, the decrease in the CEO loss aversion level of 32.69% and decreased his overconfidence level of 50% are positively correlated with the increase in leverage ratios of 9.56%. This finding indicates the positive correlation between optimism and debt level (H1), a negative correlation between debt and loss aversion (H2) and contradicts the positive effect of overconfidence on debt (H3). This is explained by the fact that the CEO optimism causes them to make forecasts in absolute terms and seek to confirm them at the expense of building its businesses. It makes use of external capital structure choice including debt. However, if loss aversion bias inherent in a choice capital structure choice. It avoids the choice of methods of financing risk (including debt: the risk of bankruptcy).

Firms size increasing of 53.16%, decreased CEO overconfidence level of 63.27%, and CEO optimism at the head of 71.43% are positively correlated with the capital increase of 22.55%. This result confirms the presence of a negative correlation between optimism and capital increase (H1), contradicts the positive correlation between overconfidence and capital increase (H3), shows the firm size positive impact on the capital increase and rejects existence of a negative correlation between loss aversion and equity (H2). This is explained by the fact that a CEO optimistic (and / or overconfidence) who believes that his company is undervalued by the market avoids the issue of new shares and debt to finance its projects in order to enhance his firm.

CEO optimism level increased of 30.69% (H1, H2), the decrease in his loss aversion level of 43.85% (H5) and increasing her over-confidence of 50% (H7, H8) are positively correlated with the increase in torque internally generated resources and debt of 18.25%. This finding indicates a significant correlation between capital structure choice and CEO motional biases. Thus, CEO overly optimistic and confident chose the internally generated resources to reduce the risk patterns of external financing (risk of bankruptcy and takeover). This risk aversion CEO uses debt in a second order to fund growth opportunities remains of his firm. This result confirms the peking order theory (POT) predictions. However, preference criterie between financing methodes is the CEO loss aversion (not agency costs, transaction and / or the premium risk paid).

Size decrease of 14.10%, increasing the profitability of 15.45% and growth opportunities decrease of 16.67% are positively correlated with the increase in torque internally generated resources and capital increase of 8.95%.

CEO loss aversion level decreased of 12.48% (H5, H6) and decreased size of the company 25% are positively correlated with the increase in torque debt and equity of 11.15%. This is explained by the fact that loss aversion leader always seeks the minimization of the probability of losses through its strategic

choices that the financing decision. It therefore had chosen least expensive methods (agency costs, transaction costs, bankruptcy costs ...) and that signals good management. He therefore preferred the internally generated resources and limits its use of debt and capital increase

Finally, increased CEO overconfidence level in the head of 25.94%, an average size of 29.13%, increased CEO optimism level at the head of 35.30% and decrease in growth opportunities of 41.18% are positively correlated with the increase in choice of three means of capital structure choice 17.53%. This result is explained by the fact that any CEO optimistic seeks to show its good management through its financing choices. It issues shares when prices are high, and go into debt or redeem shares when prices are low to benefit from a favorable market.

CONCLUSION

This research examines the determinants of firms' capital structure introducing a behavioral perspective.

Theoretical analysis presented CEO emotional biases highlights role (optimism, loss aversion, overconfidence) to explaining his capital structure choice. Thus, quantitative studies devoted to corporate finance practices have therefore seen their object move. This is less interested in the trade-off between equity and debt to analyze the CEO behavior impact on the capital structure choice. Theorists integrate behavioral dimension in capital structure choice analysis. They explain capital structure choice based on CEO psychological and emotional capacities. Psychological dimension introduced in the capital structure analysis has enriched the Pecking Order Theory (POT) and the Static Trade Off Theory (STT) (Graham and Harvey, 2001; Lin et al, 2007; Heaton, 2002). First, qualifying asymmetric information role, theorists argue that CEO (optimistic, loss aversion and confident ...) are reluctant to ask the market to avoid under evaluation risk. They prefer to fund projects primarily through internal generated resource, in the second order by debt and finally by equity. Next, authors emphasize cognitive costs role in explaining CEO capital structure choices. They argue that the optimal capital structure is one that minimizes cognitive costs.

Empirical analysis presenting a survey CEO large private companies in Tunisia. Data analyses revealed CEO emotional biases importance in explaining his capital structure choice. Indeed, empirical relationship analysis between optimism and capital structure choice shows behavioral dimension role in the explanation. CEO optimism level is positively correlated with a preference for internally generated resources and debt but negatively associated with capital increase. CEO optimistic is reluctant to ask the market to avoid the being evaluated risk. They prefer to fund projects primarily through internal capital debt and then finally external equity.

We also note that CEO loss aversion level is negatively correlated with firms' leverage ratios and capital increase. CEO recognizes firms' operational risk level and loss aversion seeks to reduce its firms total risk by using low of external funding including debt. CEO of high operational firms

risk try to control the total risk by limiting the financial risk introduced by debt and the issuance of new shares. He prefers to finance its investment projects through internal funds.

CEO overconfidence negatively affects internally generated choice, debt and equity but it is positively correlated with the choice of debt and cash flow couple, and with the cash flow and debt and equity combination choice. Overconfidence implies CEO alignment their choice with the shareholders interests. Thus, CEO overconfidence overestimates his skills to reduce risk. This led him to choose high projects risk which is in the interest of shareholders and increases firms value (Gervais et al., 2007). To finance its investment choices, this overconfidence leader considers his company undervalued by the market limit its emissions securities risky. He prefers first internally generated resource (cash flow) and uses capital structure combinations to minimize its firms risk (including internally generated resource and debt combination).

Finally, CEO capital structure choice analysis by integrating the behavioral dimension is consistent with the Pecking Order Theory, CEO funding priority preferred is internally generated resource. CEO (optimistic, loss aversion, and overconfidence) prefer to finance their projects primarily through internal capital, by debt in the second hand and finally by equity.

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Information matrix Corporate Actions and Market Returns: A Statistical Explanation

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ABSTRACT

The efficiency with which the capital formation is carried out depends on the efficiency of the capital markets and financial institutions. A capital market is said to be efficient with respect to corporate event announcement (stock split, buyback, right issue, bonus announcement, merger and acquisition etc) contained information and its disseminations. The study investigates the impact of corporate announcements on the stock price movement of the selected firms constituting the BSE-500 using daily log returns. The objective is to assess the significance of the economic event on the market value of the firm using an event study methodology to empirically examine stock market reaction to acquisition announcements. The results indicate that Indian stock market is informational efficient in which corporate announcements contained information are impounded instantaneously and rightly in the stock prices of concerned. Corporate event does not contain information about the future performance of the stock and the market is not using the stock split announcement information for valuation of companies' stocks. This implies that customers cannot significantly gain abnormal returns from announcement events (except for 2.3 days surrounding the 0 day).

Keywords: Event study, Bonus issue, Stock Returns, Market Efficiency, corporate announcements, Mergers

1. Introduction

Stock market, being a vital institution, facilitates economic development. It is true that so many investors are interested in knowing the efficiency of the stock market. The small and medium investors can be motivated to save and invest in the stock market only if their securities in the market are appropriately priced. The information content of events and its dissemination determine the efficiency of the stock market. That is how quickly and correctly security prices reflect these information show the efficiency of the stock market. In the developed countries, many research studies have been conducted to test the efficiency of the stock market with respect to information content of events. Whereas in India, very few studies have been conducted to test the efficiency of the stock market with respect to corporate announcements, even after, these studies have been conducted with different industries with different period.

1.1 Stock Split

Stock split announcements have always been very common phenomena among firms and continue to be one of the least understood topics in finance. Stock splits are corporate actions by which a company lowers the face value of its stocks, thereby increasing the number of shares owned by each shareholder. Such action increases the number of outstanding shares without providing any additional cash inflows to the company but there is no change in the shareholders claims on the assets of the firm. A stock split announcement increases the number of shares of a company while decreasing the price per share. The two for one split is most common, for example a company with 100 shares at `10 per share will issue 100 additional shares bringing the total to 200 shares theoretically dropping the stock price to 5 per share. A stock split usually takes place after an increase in the price of the stock, and it carries a positive stock price reaction. The price is adjusted such that the before and after market capitalization of the company remains the same and dilution does not occur In the U.K., a stock split is referred to as a "scrip issue", "bonus issue", "capitalization issue" or "free issue", e.g., in 2-for-1 split, each stockholder receives an additional share for each share he/she holds.

This phenomenon has not yet been fully understood, regardless the numerous studies in the field. Stock splits occur frequently; less often firms consolidate their outstanding common shares in a reverse stock split. It is widely believed that stock splits are purely cosmetic events because the corporation's cash flows are unaffected, each shareholder retains his proportionate ownership and the claims of other classes of security holders are unaltered. If stock splits were purely cosmetic it would be surprising to find them associated with real effects. Yet, real effects are associated both with the announcement of the split and with its occurrence – splits are associated with statistically significant stock price revaluations and unusual volumes of trade and return variances around the announcement dates and, even more surprisingly, around the execution dates. These effects have been reported in a number of international studies. These results imply that if managers could increase share prices by splitting their firm's stock, both undervalued and overvalued firms would choose to split their shares, thus eliminating the informational (favourable) content of the decision. Although stock splits seem to be a purely cosmetic event, there exists ample empirical evidence from India, that stock splits are associated with abnormal returns on both the announcement and the execution day, brings change in the shareholders holding value. This paper investigates the market reaction to stock splits using a set of Indian firms. There are several theories that have been advanced to explain why companies split their stock. In previous studies, it is evident that stock returns are significantly affected negatively or positively around split announcement dates. Informed investors market wealth is affected to a greater extent around this event, Stock splits are a puzzling corporate phenomenon. However, as the persisting positive market reaction to stock splits indicates, splits must credibly signal such positive company specific information. Since the publication of the classic paper (Fama *et al.*, 1969), the signalling hypothesis and the trading range hypothesis have emerged in the finance literature as the leading explanations of stock splits. Hence there is a need for a more comprehensive study of to understand the issues of stock split and its impact on stock returns in a more comprehensive manner in Indian Stock market and the present study is a modest attempt to do the same.

1.2 Mergers and Acquisitions

Mergers and acquisitions represent a prevalent strategy in expanding distribution channels, or entering new markets across most industries. A popular belief is that mergers and acquisitions strengthen businesses by making their operations more synergetic. In today's global, competitive environment, mergers are sometimes the only means for long-term survival. In some cases, mergers are a strategic component for generating long-term growth. Additionally, many entrepreneurs no longer build companies for the long-term; they build companies for the short-term, hoping to sell the company for huge profits. An entrepreneur may grow its business either by internal expansion or by external expansion. In the case of internal expansion, a firm grows gradually over time in the normal course of the business, through acquisition of new assets, replacement of the technologically obsolete equipments and the establishment of new lines of products. But in external expansion, a firm acquires a running business and grows overnight through corporate combinations. These combinations are in the form of mergers, acquisitions, amalgamations and takeovers and have now become important features of corporate restructuring. They have been playing an important role in the external growth of a number of leading companies the world over. They have become popular because of the enhanced competition, breaking of trade barriers, free flow of capital across countries and globalization of businesses. In the wake of economic reforms, Indian industries have also started restructuring their operations around their core business activities through acquisition and takeovers because of their increasing exposure to competition both domestically and internationally. Mergers and acquisitions are strategic decisions taken for maximization of a company's growth by enhancing its production and marketing operations. They are being used in a wide array of fields such as information technology, telecommunications, and business process outsourcing as well as in traditional businesses in order to gain strength, expand the customer base, cut competition or enter into a new market or product segment.

Announcements of mergers and acquisitions immediately impact a target company's stock price, as induced reaction in the stock market cause investors to revise expectations about the company's future profitability (Pawaskar, 2001). According to the Efficient Markets Hypothesis, "prices reflect all publicly available information on an underlying asset". Event studies are frequently used to test market efficiency

(Brown & Warner, 1985). An event study is a statistical method used to gauge the impact of a corporate event, as stock splits, earnings announcements and acquisition announcements. This paper utilizes an event study methodology to empirically test the Synergy Trap Hypothesis using daily stock returns; its objective is to establish relationships between abnormal returns. Abnormal returns are defined as the difference between actual and predicted returns surrounding a corporate event. Cumulative abnormal returns are the sum of abnormal returns in a given time period. Abnormal returns are defined as the difference between actual and predicted returns surrounding a corporate event. Cumulative abnormal returns are the sum of abnormal returns in a given time period. Researchers (Brown & Warner, 1985; Das, 2000 & Mitchell & Stafford, 2000) utilize a similar event study approach to examine stock market reactions to acquisition announcements. The literature is not exhaustive so there is an imperative need to extend the literature for logical explanations of the issue. The research paper is divided into the following sections, section 1 i.e. the present section deals with explanation of stock splits, mergers and acquisitions and other corporate announcements. Section 2 presents a series of literature concerning plausible explanations for observed stock market reactions to acquisition announcements. Section 3 defines the research objectives and describes the sample selection and Section 4 methodology and analysis of results. Section 5 provides the major findings revealed by our data set and also compares acquisitions with different specifications. Section 6 gives conclusion of the study, Section 7 throws light on relevance of study, Section 8 gives the few recommendations derived from the study and the last section gives brief description of the references used in the study.

2. Review of Literature

The question of why stock splits are issued, given that they are purely cosmetic accounting changes, has been raised by various researchers across several countries. In the international scenario, there has been vast quantum of empirical studies on earnings announcements. A study identified that about 10%-15% of the information contained in announced earnings had been anticipated by the month of preliminary announcement (Ball & Brown, 1968). Fama, et al., (1969) studied the process by which common stock prices adjust to the information that was implicit in a stock split and

found that stock split had informational value for investors. Research studies found abnormal stock returns after the announcement of quarterly earnings (Kumar & Rajas, 1990; Hughes, 1993 and Korwar, 1999). Certain studies further identified some firm specific factors viz., market capitalization, functioning of concerned stock market, etc., which elucidates the dynamics of stock returns around the earning announcement release in a systematic manner. For example, Augustine (1995) found that the amount of unexpected information conveyed to the market by actual earnings report is inversely related to the firm capitalization. While debate continues as to why managers split their stock, the question of interest here is whether the initial market reaction to whatever news might be associated with splits is unbiased and complete. The earliest empirical study in this regard, Fama et al. (1969), suggested that the answer to this question might be yes.

Studies in the mid-1990s, relying on more recent empirical methods suggest that the initial market reaction may not be so unbiased. Some researchers have expressed reservations about evaluating long-horizon returns, reflecting concern over this area of research (Mitchell & Stafford, 2000). Some found that the stock price reaction to semi-annual earnings announcement and found abnormal returns both during the pre-announcement and post-announcement dates and the Indian stock market was slow in incorporating quarterly earning information. Similarly, the information content of buyback announcement made in the year ending of companies constituting CNX Nifty Index, and found significant abnormal returns around announcement. Das et al. studied the effect of stock split announcements made by companies constituting Sensex for a quarter (Das, 2000). Contrary to most of the research studies on earning releases, the authors found that the quarterly earnings announcement releases by the large companies did not have substantial impact on stock returns.

The present study make an effort to overcome this limitation and investigates the information content of quarterly earnings announcements considering multiple event period covering 118 Announcements. These recent changes in the India's regulatory environment offer a unique opportunity to gain further insight into the stock splits with reference to their effects on variables like stock prices, return, volatility, and trading volume. With the increased integration of international markets in general and a wave of

liberalization and globalization, the importance of understanding these stock events has increased dramatically. In attempt to explain share buyback announcement has an impact on earnings, many authors debated the theoretical concepts of share buyback. Share buyback program announcements have been shown to generate abnormal returns in the USA and Canada (Kar, 2003). Some studies document a significant increase in earnings per share (EPS) in the years following announcement of share buyback (Shleifer & Vishny, 1994 and Beena, 1998) and share buyback do attribute to an improvement in earnings but using small samples. However, using a much larger sample, there is an effect on earnings reflecting unfavorable results (Hitt et al., 2001). It is difficult, however, to interpret any changes in earnings during the announcement year because they might occur during the fiscal quarters before the announcement or the fiscal quarters afterward. Beside that, abnormal return at the announcement is positively related to announce repurchase percentage target (Sundaramurthy, 1996 and Sherman, 1998). Share buyback are now a familiar feature of the corporate finance landscape.

Hence, the two most common methods firms used to buy back their own share include (i) single-price tender offer repurchases and (ii) open market repurchase programs. Research indicates tender offer repurchases, execute using a fixed price tender offer. Furthermore on open market repurchase plans are generally announced, and the announcement usually states the amount and duration of the planned repurchases. From 1995 to 1999, more than 5,900 U.S. firms announced plans to buyback roughly \$780 billion worth of shares (Grullon & Ikeberry, 2000). More than 20 years witnessed an increase in the use of open market repurchases, and by 1998 the total value of share buyback (led by open market repurchases) exceeded that of dividends (Khandwall, 2001).

Several studied have examined the effects of share buyback announcements on the share price of the announcing firms⁵ which have documented positive market reaction to share repurchase announcements by the announcing firms (Bhagwati, 1996 and Kar, 2006). The financial literature on share buyback is enriched by many researches positing a variety of motivation hypothesis and evidences supporting share buyback. Studies have also documented the motivations and positive reactions from North American,

⁵ European Journal of Social Sciences – Volume 11, Number 3 (2009)

European, Japan, Taiwan and Singapore, India, Hong Kong and even Egyptian capital market. Not many empirical studies done in Malaysia even though the share buyback was introduced since 1997 therefore the literature very much depend on the empirical studies from United States (U.S) as this country has implemented share buyback more than 20 years since 1985. Based on European Journal of Social Sciences, this fact, this study attempts to explore by investigating the phenomena whether firms that announced buybacks of their own common stocks had an observable difference in earnings of all companies involved in the share buyback program. As Bruner points out, from the four research approaches that are employed to measure M & A profitability (event studies, accounting studies, surveys, and clinical studies) event studies clearly dominate in the literature (Bowman & Singh, 1993).

In terms of methodology and event windows this paper relates closely to this strand of the literature. Most event studies define abnormal returns as the raw return minus some required return based on a model such as the Capital Asset Pricing Model (CAPM) or the simpler Market Model (MM) and then examine Average Cumulative Abnormal Returns (ACARs) around the announcement day, and to capture the announcement effect use a window of some days. This window varies from study to study, such as, a window (in days) of [-4, 1], a window of [-1, 1], a window of [-5, 5], a window of [-20, 10], a window of [-5, 5] and [-1, 0], a window of [-7, 7], a window of [-63, 126], a window of [-2,2], a window of [0, 36 months], etc. Most studies agree that returns to target firms are, on average, positive and statistically significant following M & A announcements despite differences in the types of mergers sample countries, industry, and empirical methodology. This pattern seems to persist though time, for instance, early studies of US takeover activity report target firm returns in the range of 20% to 30%.

Later studies for the US market come to similar conclusions that mergers in the US banking industry and find abnormal returns between 15% and 24%; abnormal returns of around 40%; 32 (Mueller, 1980); returns may be of about 20%; some find abnormal returns of 15 to 30%, approximately (Rao & Rao, 1987 and Humphrey et al., 1998)). The results are similar for other markets as well as large acquisitions in 18 European countries and report cumulative abnormal returns between 9% and 21% depending on the window length examined. According to Pablo, 1994, the gains to targets stem from many sources such as

reduction in agency costs, the enhancement of the competitive position, or synergies (Mehta & Samanta, 1997). Note that the magnitude of the stock return to target firms may depend on different factors: Gaughan (1994) relate it to volatility and institutional ownership, while Shiva (1998) shows that if the target firm has been subject to a takeover threat during the previous year the abnormal returns are not significant.

The evidence on the stock return of acquirer firms is mixed, that is, many studies find negative abnormal returns following announcements, other studies find small positive returns, and other studies find zero returns. Bruner argues that, on average, shareholders of acquirer firms earn zero market-adjusted returns and points out that buyer firms are typically larger than target firms (Bruner, 2002). For example, Houston et al. find stock returns that range from -2.5% to -4.5% approximately; Rau & Vermaelen, (1998) report negative returns of about -0.30%. Bidder shareholder returns seems to vary depending on the characteristics of the firms involved and the timing of the merger. As regards to the long term stock performance of acquirer firms, an analysis show that acquirers in mergers under-perform while acquirers in tender offers over-perform (Rau & Vermaelen, 1998), while another find negative long-term returns for firms involved in stock mergers and positive long-term returns for firms involved in cash tender offers (Hughes, 1993). The stockholders of bidder firms suffer a loss of about 10% for the 5-year period after a merger, while some report a negative return of about 7%-9.5% (Brown & Warner, 1985; Pablo, 1994 and Hitt et al., 2001).

3. Data and Methodology

3.1 Objectives of the study

- To determine if a corporate event contains information about the future performance of a stock.
- To determine that if an announcement of a corporate action drives the stock prices in a significant manner differing from the pre event scenario and effect customer perception.

- To suggest investors about market efficiency following the events and the trading strategies to be followed.

3.2 Sample Selection

The study covers *10 events* each of the stock splits, buybacks and mergers and acquisitions for companies listed in Bombay Stock Exchange (BSE) for a time period of *5 years i.e.2005-2010*. Announcement date has been taken to be the date when the company finally announces the decision of going ahead with the event to the public and its shareholders. The basis of selection for Stock splits is *random*. *At least 1 event from each year* has been taken in order to depict an exhaustive representation (see table 1).

Table 1: Stock Split & Announcement Date

Stock Split	Announcement Date
ITC	17-06-2005
Hindalco	12-07-2005
Crompton Greaves	23-05-2006
Suzlon Energy	23-10-2007
Jindal Steel	21-11-2007
Provogue India	13-08-2008
Sesa Goa	28-04-2008
GMR Infra	30-07-2009
Bharti Airtel	29-04-2009
Kotak Mahindra Bank	11-05-2010

Random selection method has been used to select 10 events of buybacks by the companies during 2005 – 2010.

Table 2: Buy Back and Announcement Date

Buy Back	Announcement Date
Glaxo Smithkline Consumer Healthcare Ltd.	31-01-2005
Godrej Consumer	11-05-2005
SRF Ltd.	23-06-2006
Patni Computers	03-04-2008
Gujarat Ambuja	16-01-2007
HUL	29-07-2007
Eicher Motors	03-02-2009
Zensar Technologies Ltd.	13-10-2009

Binani Cement	16-05-2010
Piramal Healthcare	09-12-2010

For Mergers and Acquisitions, *Events with highest deal values* have been selected. Exceptions are just to include the data from all the years (Vodafone – Hutchinson Essar acquisition has been left out due to non clarity and insufficiency of data).

Table 3: Dates of Mergers and Acquisitions

Merger and Acquisition	Date
Suzlon Energy acquired Hansen Transmissions	17-03-2006
Tata Steel acquired Corus	05-10-2006
Hindalco acquired Novelis	11-02-2007
HDFC Bank acquired CBoP	23-02-2008
Daiichi Sankyo Acquired Ranbaxy	16-06-2008
ONGC acquired Imperial Energy	26-08-2008
NTT Docomo acquired stake in Tata Teleservices	14-11-2008
Reliance Industries and RPL Merger	02-03-2009
Bharti Airtel acquired Zain	15-02-2010
Abbott acquires Piramal	21-05-2010

3.3 Event Study

An *Event study* is a statistical method to assess the impact of an event on the value of a firm. For example, the announcement of a merger between two business entities can be analyzed to see whether investors believe the merger will create or destroy value. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return that stems from the price fluctuation of the market as a whole. Following steps were taken:

3.3.1 Calculation of Actual Returns – Actual returns was calculated by using the data gathered from the BSE website. The logarithmic returns are taken into consideration for a period of *90 days* (60 days before the announcement day and 30 days after the announcement).
$$\text{Ret} = \ln ((\text{SP } t) / \text{SP } t-1)$$

Where, Ret = return on a security for a particular day, SP t = Stock Price of that particular day, SP t-1 = Stock price of previous day

3.3.2 Determination of Regression Co-efficients – Regression analysis was applied in which the *BSE returns formed the independent series* and the *actual returns calculated* in first step formed the dependent

series. The value of the coefficients (a) and (b) of the regression equation is found out.

Return on Stock = a + b (Return on BSE) (i)

3.3.3 Calculation of Expected Returns – Expected returns were calculated by using the equation (i) putting the known values of *a* and *b* in above equation.

3.3.4 Calculation of Abnormal Returns – The difference between *the actual and the expected returns* gave the abnormal returns for the time period.

3.3.5 Cumulative Abnormal Return (CAR) – The abnormal return for 11 days before and after the day of announcement (Day 0) were added to obtain the cumulative abnormal return for a period of 23 days in total for each announcement event.

3.3.6 Cumulative Average Abnormal Returns (CAAR) – CAAR is calculated for a test window of (-7 to 7) and another test window of (-11 to 11) days by averaging out the CAR value obtained for all the 10 events. Also, *paired t-test* is performed on ACTUAL and EXPECTED RETURNS for all the events to test the hypothesis of no variance in the mean returns (for both windows).

Table 4: Stock Split

Company Name	Actual Ret	Expected Ret	Abnormal Ret	CAR	T Test	P Value
Bharti Airtel	0.00815922	0.0041546	0.00400465	0.092107	0.87693425	0.389998
Crompton Greaves	-0.0097169	-0.0066364	-0.0030805	-0.070852	-0.5045137	0.618916
GMR Infra	-0.0052184	0.0004884	-0.0057068	-0.131257	-0.4713624	0.642023
Hindalco	0.00281499	0.0015924	0.00122261	0.0281201	0.54420921	0.591771
ITC	0.00329527	0.003009	0.0002863	0.0065848	0.1258544	0.90099
Jindal Steel	0.00736151	0.0140491	-0.0066876	-0.153814	-0.5615043	0.580129
Kotak	-0.000284	-0.0062987	0.00601464	0.1383366	1.9608775	0.062675
Provogue	-0.0070032	-0.0079597	0.00095647	0.0219989	0.27147513	0.788557
Sesa Goa	0.01602996	0.00805	0.00798	0.18354	1.13207122	0.269793
Suzlon Energy	0.00597387	0.0025983	0.00337555	0.0776376	0.61364626	0.545742

CAAR = 0.0192402

Table 5:

Company Name	Actual Ret	Expected Ret	Abnormal Ret	Car	T Test	P Value
Bharti Airtel	0.007435	0.00340115	0.0040338	0.060507	0.766785	0.456
Crompton Greaves	-0.008792	-0.0081131	-0.0006785	-0.01018	-0.0842	0.934088
GMR Infra	-0.006618	-0.0070038	0.0003855	0.005783	0.025804	0.979778
Hindalco	0.003028	0.00127189	0.0017561	0.026341	0.659376	0.520354
ITC	0.0017745	0.00171891	5.56E-05	0.000834	0.020066	0.984274
Jindal Steel	0.017006	0.01468997	0.002316	0.034741	0.144329	0.887298
Kotak	0.0018056	-0.0067921	0.0085977	0.128966	2.262205	0.040119
Provogue	-0.013242	-0.0082181	-0.0050234	-0.07535	-1.20693	0.247456
Sesa Goa	0.0187345	0.00848855	0.010246	0.15369	1.068966	0.30317
Suzlon Energy	0.0065901	0.00228882	0.0043013	0.06452	0.561926	0.583051

CAAR = 0.038985

4. Analysis of Results

4.1 Test Window (-11 To +11)

The result depicts the CAR value for the companies which had stock splits in the time frame selected and which were under the purview of the study. The Cumulative abnormal return for 11 day test window of the following 3 companies – GMR Infra, Kotak Mahindra Bank and Sesa Goa is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in absorbing the news of stock split for these stocks. The CAAR value for 11 day test window, which signifies the efficiency levels of the market, has turned out to be 0.0192402 which is very close to zero implying that the market was efficient with respect to stock split announcement for the period.

4.2 Test Window (-7 To +7)

The Cumulative abnormal return for 7 day test window of the following 2 companies – Kotak Mahindra Bank and Sesa Goa is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in absorbing the news of stock split for these stocks. The CAAR value for 7 day test window, which signifies the efficiency levels of the market, has turned out to be 0.038985 which is close to zero implying that the market was more or less efficient with respect to stock split announcement for the period.

4.3 Paired Sample T -Test

The Paired sample T-test was performed between the actual returns of the stocks and the expected returns for a period of 23 days (i.e. -11 to +11 test window) and period of 15 days (i.e. -7 to +7 test window).

H0: There is no significant difference between the two series

H1: There is significant difference between the two series

The null hypothesis being that there is no significance difference between the two series at a confidence level of 95%. The table indicates the p value of the t test which is not less than 0.05 in the cases of events stated above. Hence we fail to reject the null hypothesis and therefore it implies that there is no significant difference between the actual returns and the expected returns. Since the null hypothesis was accepted hence we can say that the market is efficient with respect to stock split and the investors can not gain abnormally from the events of stock splits.

Table 6: Buy Back

Company Name	Actual Ret	Expected Ret	Abnormal Ret	CAR	T Test	P Value
Binani	0.00010897	0.0036876	-0.00357863	-0.08231	-0.68374	0.501276
Eicher Motors	-0.0038539	0.00056217	-0.00441604	-0.10157	-0.92613	0.364427
Smithkline	0.00730143	0.00140837	0.005893053	0.13554	0.795374	0.434894
Godrej	0.00715323	0.00458568	0.002567548	0.059054	0.319156	0.752619
Gujarat Ambuja	0.00715323	0.00458568	0.002567548	0.059054	0.453627	0.65347
HUL	-0.0020077	-0.0029337	0.000926041	0.021299	0.200906	0.842618
Patni Computers	0.01125202	-0.0021842	0.013436206	0.309033	1.602418	0.123325
Piramal	0.0005886	-0.0024466	0.003035178	0.069809	0.807519	0.428013
SRF	0.00524295	0.0008674	0.004375549	0.100638	0.532394	0.599789
Zensar	-0.0001451	0.00109285	-0.00123799	-0.02847	-0.18024	0.858694

CAAR = 0.05420744

Table 7:

Company Name	Actual Ret	Expect Ret	Abnormal Ret	CAR	T Test	P Value
Binani	0.0001897	0.0038876	-0.00377863	-0.05623	-0.488	0.633
Eicher Motors	-0.0018539	0.00236217	-0.004141604	-0.06157	-0.615	0.549
Smithkline	0.012730143	0.00250837	0.001603053	0.13554	0.974	0.346
Godrej	0.031071533	0.00458568	0.002367548	0.159054	0.746	0.468
Gujarat Ambuja	0.031071533	0.00458568	0.001956755	0.059054	0.746	0.468
HUL	-0.00191077	-0.00431337	0.00886041	0.121299	0.371	0.716

Patni Computers	0.01725202	-0.0019842	0.013436206	0.109033	1.966	0.069
Piramal	0.0035886	-0.00188466	0.006635178	0.034091	1.209	0.247
SRF	0.02524295	0.00162574	0.007475549	0.296376	0.605	0.555
Zensar	-0.0088451	0.00169285	-0.00103799	-0.08847	-1.319	0.208

CAAR = 0.06716047

4.4 Test Window (-11 To +11)

The table above depicts the CAR value for the companies which had buybacks in the time frame selected and which were under the purview of the study. The Cumulative abnormal return for 11 day test window of the following companies Glaxo Smithkline and Patni Computers is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in absorbing the news of buybacks for these stocks. The CAAR value for 11 –day test window, which signifies the efficiency levels of the market, has turned out to be 0.05420744 which is very close to zero implying that the market was efficient with respect to buyback announcements for the period.

4.5 Test Window (-7 To +7)

The Cumulative abnormal return for 7 day test window of the following 3 companies – Glaxo Smithkline, Patni Computers and SRF is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in absorbing the news of buyback for these stocks. The CAAR value for 7 day test window, which signifies the efficiency levels of the market, has turned out to be 0.06716047 which is close to zero implying that the market was more or less efficient with respect to buyback announcements for the period.

4.6 Paired Sample T - Test

The Paired sample T-test was performed between the actual returns of the stocks and the expected returns for a period of 23 days (i.e. -11 to +11 test window) and period of 15 days (i.e. -7 to +7 test window).

H0: There is no significant difference between the two series

H1: There is significant difference between the two series

The null hypothesis being that there is no significance difference between the two series at a confidence level of 95%. The column in the table indicates the *p value of the t test* which is not less than 0.05 in the cases of events stated above. Hence we fail to reject the null hypothesis and therefore it implies that there

is no significant difference between the actual returns and the expected returns for the events. Since the null hypothesis was accepted hence we can say that the market is efficient with respect to buybacks.

Table 8: Mergers and Acquisition

Name of Company	Actual Ret	Expect Ret	Abnormal Ret	CAR	T Test	P Value
Abbott	0.00649684	0.00361638	0.0028805	0.076412	0.373	0.713
Bharti Airtel	-0.0031875	0.00122736	-0.0044148	-0.09887	-0.824	0.419
HDFC	-0.0053054	-0.00194957	-0.0033559	-0.11076	-0.607	0.55
Hindalco	-0.0064062	-0.00343605	-0.0029701	-0.13837	-0.426	0.674
ONGC	0.00051957	0.00154927	-0.0010297	-0.03123	-0.279	0.783
Ranbaxy	0.00018057	0.00168047	-0.0014999	0.006292	-0.206	0.838
Reliance	-0.0012557	0.00073186	-0.0019875	0.003899	-0.952	0.351
Suzlon energy	0.00831764	0.01448883	-0.0061712	-0.01642	-1.051	0.305
Tata Steel	0.00083847	-5.35E-05	0.0008919	0.003914	0.343	0.735
Tata Tele	0.01724146	0.00309482	0.0141466	0.456515	1.382	0.181

CAAR = -0.0080733

Table 9:

Name of Company	Actual Ret	Expect Ret	Abnormal Ret	CAR	T Test	P Value
Abbott	0.00809557	0.00300146	0.005094113	0.456515	0.246	0.809
Bharti Airtel	-0.00744556	-0.0008544	-0.00659116	0.003914	-0.784	0.446
HDFC	-0.00576948	0.00161458	-0.00738406	-0.01642	-1.363	0.194
Hindalco	-0.01101575	-0.00179114	-0.00922461	0.003899	-1.142	0.273
ONGC	-0.00087216	0.00120954	-0.0020817	0.006292	-0.354	0.729
Ranbaxy	0.003320552	0.00290106	0.000419487	-0.03123	-0.16	0.875
Reliance	0.000771266	0.00051134	0.000259924	-0.13837	-0.709	0.49
Suzlon energy	0.005917091	0.0070119	-0.00109481	-0.11076	-0.316	0.757
Tata Steel	0.001937871	0.00167696	0.000260915	-0.09887	-0.212	0.835
Teleservices	0.021707903	-0.00872641	0.030434317	0.076412	2.032	0.062

CAAR = 0.0151386

4.7 Test Window (-11 To +11)

The table above depicts the CAR value for the companies which had undergone mergers/ acquisitions in the time frame selected and which were under the purview of the study. The Cumulative abnormal return for 11 day test window of the following 2 companies – *Hindalco and Tata Teleservices* is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in

absorbing the news of merger/acquisition for these stocks. *The CAAR value for 11 day test window*, which signifies the efficiency levels of the market, has turned out to be -0.0080733 which is very close to zero implying that the market was efficient with respect to mergers and acquisition announcements for the period.

4.8 Test Window (-7 To +7)

The Cumulative abnormal return *for 7 day test window* of *Abbott* is higher in comparison to the rest of the companies which shows that the market was not perfectly efficient in absorbing the news of acquisition for this stock. *The CAAR value for 7 day test window*, which signifies the efficiency levels of the market, has turned out to be 0.0151386 which is close to zero implying that the market was more or less efficient with respect to merger and acquisition announcements for the period.

4.9 Paired Sample T -Test

The Paired sample T-test was performed between the actual returns of the stocks and the expected returns for a period of 23 days (i.e. -11 to +11 test window) and period of 15 days (i.e. -7 to +7) test window.

H₀: There is no significant difference between the two series

H₁: There is significant difference between the two series

The null hypothesis being that there is no significance difference between the two series at a confidence level of 95%. The column in the table indicates the *p value of the t test* which is not less than 0.05 in the cases of events stated above. Hence we fail to reject the null hypothesis and therefore it implies that there is no significant difference between the actual and expected returns for both of the test windows. It implies that investors cannot make abnormal gains. Since the null hypothesis was accepted hence we can say that the market is efficient with respect to mergers and acquisitions.

5. Conclusions

- The Indian stock market is informationally efficient (Information Matrix) where the corporate announcements contained informations are impounded instantaneously and rightly in the stock prices of concerned companies. Therefore, a corporate event does not contain information about the future

performance of the stock. The chance of earning more than the market is a matter of luck rather than skill and strategy.

- The market did not receive the stock split announcement information for revising the security prices of sample companies in a significant manner during pre and post announcement period because the average value of *CAAR* was below one throughout the study period. This implies that customers cannot significantly gain abnormal returns from announcement events (except for 2-3 days surrounding the 0 day).
- Information of corporate announcements can be used by the investors for making abnormal returns around announcement period momentarily, through the strategy of short selling.

This study has empirically examined the informational efficiency of Indian stock market with regards to stock split, buybacks and mergers and acquisition announcement released by the information technology companies. The result of the study showed the fact that the security prices reacted to the announcement of stock splits. The reaction took place for a very few days surrounding day 0 (i.e. the day of public announcement of the event). The results show that, though the Indian stock market was able to analyze the stock split announcement information, and use it for revision of security price, there was delay in their reaction. It is concluded from the above analysis that the Indian stock market uses the stock split announcements contained information for valuation of securities and the market was efficient in impounding the events announcements information. The result reveals the fact that the market is not using the stock split announcement information for valuation of companies stocks. It is clear from the above analysis that market did not receive the stock split announcement information for revising the security prices of sample companies during pre and post announcement period because the average value of *CAAR* was below one throughout the study period.

Recommendations

- In an efficient market an optimal investment strategy will be to concentrate on risk and return characteristics of the asset and/or portfolio rather than trying to outperform the market.

- The investors can invest and can earn small amounts around 0 day or the announcement date i.e. for around 2/3 days after the announcement.
- Merger or acquisition announcements are perceived as not a very healthy action by the investors in the market (as CAR for a reasonable number of events in our study have come out to be negative implying that the actual return on the security for the particular period is less than the expected). So Investors should avoid trading in such securities around public announcement day; and wait for some positive signals. Also, CAAR of 11 day test window is negative.
- Buybacks are being perceived as positive news among investors. Fund managers and analysts can help investors in extracting some returns out of these events. But again, effect is only visible till 2nd or 3rd day after the announcement takes place.

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Export Barriers of Indian Manufacturers: Issues at Company, National and International levels

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Abstract

The Indian exports showing increasing trends but still facing lot of difficulties and problems to compete in international market. The various such problems have been identified in this paper through primary research on 164 manufacturing units operating the Northern Indian states comprising Punjab, Haryana, Himachal Pardesh, Jammu & Kashmir and Chandigarh. A number of statements indicating the problems at company, national and international level have been developed and the respondents were asked to express their level of agreement/disagreement with these statements on five-point Likert scale. Kruskal-Wallis test has been applied to know the significant differences among the respondents relating to different industries. The test has been applied at assumed p -value =0.05. The statements with less than 0.05 p -value are considered significant and those with p -value more than the assumed value are considered to be insignificant. The findings reveals that exporters are facing lot of problems such as product designing, pricing, research, export procedural and documentation, financing at competition problems at the different levels.

Key words: Indian Exporters, company level problems, Product designing, Marketing research and pricing.

India is emerging one of the fastest growing economies of the world. Indian economic growth is estimated at 8.0 per cent by the quick estimates released on 31st January, 2011. The industrial growth of the country was buoyant during the first two quarters of current financial year. The manufacturing sector in particular showed a remarkable robustness growing at rates of 12.6 per cent and 9.7 per cent respectively during these two quarters (Economic Survey, 2011).

Liberalization has been a key ingredient of recent economic policies in India and elsewhere based upon the notion that removing restrictions on domestic economic activity as well as on the trade relations with

other countries (Maurya and Vaishampayan, 2011) . The liberalization regime in India which started in 1991 is now attracting all the countries and companies of the world India's foreign trade have experienced a number of ups and downs since independence in 1947. During 1960s, the United States was a leading trading partner for India, but now China is emerging major trading partner of India and has already surpassed USA in imports. The political scenario in neighborhood countries like Pakistan, Nepal, Sri Lanka and Bangladesh is not encouraging due to internal social- political disturbances in these countries. The SAARC and ACU unions are not as successful as the rest of the economic or trade unions of rest of the world. In these circumstances the economic, political relations of India has increased with other countries, especially EEC countries, UK, USA, and other Middle East, African and Latin- American countries.

After India started the process of liberalization, various changes at manufacturing sector, service sector and other sectors have taken place. The service sector has shown tremendous growth after opening up the banking, insurance, telecom etc for the private and foreign companies. With respect to world trade volume, India's export fell rapidly following the deepening of the global financial crisis but these rose in second half of 2009-10 which continued through 2010-11 until June 2010. Thereafter growth decelerated till October, 2010 and picked up subsequently to reach 36.4 per cent in December,2010 which is highest growth in past two years. Cumulative export growth in April-December 2010-1 was at 29.5 per cent with cumulative export reaching USD 200 billion but surpass it in 2010-1. India's merchant import also affected by global recession fell to USD 288.4 billion with negative growth (-5.0 per cent) in 2009-2010. But foreign exchange reserves increased from USD 252 billion at the end of March 2009 to USD 279.1 billion at the end of March 2010 showing a rise of USD 27.1 billion (USD 13.6 billion was on account of valuation gain due to decline of USD in international market (Economic Survey, 2011)

Research Methodology

The study relating to Problems of exporters have been carried out between April, 2011 to November, 2011 in North India comprising states of Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Delhi and Union Territory of Chandigarh. The research is based on primary data which has

been collected by a structured questionnaire from 200 export organizations. Total 164 units have been considered for data analysis purpose after verification. Likert scale has been used to know the perception of the exporters. Kruskal-Wallis test has been applied to know the significant differences among the exporters perceptions relating to company, national and international level problems. The test has been applied at assumed p-value =0.05. The statements with less than 0.05 p-value are considered significant and those with p-value more than the assumed value are considered to be insignificant.

Objective of the Study

The objectives of the study are:

- i) to know the foreign trade scenario in India
- ii) to examine the problems faced by the exporter at different level such as company, national and international levels.

Comparative Country analysis of doing business in India

The table 1 shows the cross country analysis of ease of doing business in India.

Table 1- Doing Business: Cross Country Experience

S.No	Country	Ease of doing Business (Rank)	How many days to start business Days)	Days to enforce a contract (Days)	Time to close Business (Years)	Days to Export
1	Brazil	129	120	616	4.0	12
2	Chile	49	27	480	4.5	21
3	China	89	37	406	1.7	21
4	India	133	30	1420	7.0	17
5	Indonesia	122	60	570	5.5	21
6	Japan	15	23	360	0.6	10
7	Malaysia	23	11	585	2.3	18

8	Mexico	51	13	415	1.8	14
9	Pakistan	85	20	976	2.8	22
10	Russia	120	30	281	3.8	36
11	Singapore	1	3	150	0.8	5
12	Srilanka	105	38	1318	1.7	21
13	Thailand	12	32	479	2.7	14
14	U.S.A	4	6	300	1.5	6

Source: World Bank, Doing Business 2010.

Table 1 reveals that doing business in India is not easy as country holds 133rd rank in the world and is the last among above mentioned countries. Singapore with 1st leads the tally table in doing business followed by U.S.A with 4th rank. It is also clear from the table that doing business in Asian countries like Pakistan and Srilanka is easier in comparison to India. Table further reveals that India also takes highest number of days and years to enforce the contract and to close the business respectively.

It has been observed that India scores high in terms of days taken to start business and to export the product.

Indian Export Business at a Glance

The following tables 2,3 and 4 highlights the region- wise, top country-wise and top-commodity wise status of the Indian exports.

Table.2 Region-wise exports (Values in US\$ Millions)

Region	Jun 2009	Jun 2010	%Growth	%Share
1) Europe	8,279.05	9,643.02	16.48	18.28
EU Countries (27)	7,695.63	8,867.17	15.22	16.81
Other WE Countries	556.70	745.10	33.84	1.41
East Europe	26.71	30.75	15.11	0.06
2) Africa	2,214.80	3,765.40	70.01	7.14
Southern Africa	599.71	1,797.41	199.72	3.41
West Africa	694.05	905.26	30.43	1.72
Central Africa	76.19	101.11	32.71	0.19

East Africa	844.86	961.62	13.82	1.82
3) America	5,622.75	8,609.35	53.12	16.32
North America	4,436.99	6,335.91	42.80	12.01
Latin America	1,185.76	2,273.44	91.73	4.31
4) Asia & ASEAN	20,798.90	28,536.83	37.20	54.10
East Asia	314.09	372.43	18.57	0.71
ASEAN	4,705.10	6,280.67	33.49	11.91
WANA	8,807.24	11,504.93	30.63	21.81
NE Asia	5,177.57	7,992.99	54.38	15.15
South Asia	1,794.90	2,385.81	32.92	4.52
5) CIS & Baltics	331.61	545.90	64.62	1.03
CARs Countries	66.11	65.26	-1.28	0.12
Other CIS Countries	265.50	480.65	81.03	0.91
6) Unspecified Region	1,151.33	1,652.23	43.51	3.13
Total	38,398.45	52,752.75	37.38	100.00

Data Source: DGCIS, Kolkata,2010

The above table indicates that Indian exports have registered highest growth in the African region (70.01%) followed by CIS and Baltics region (64.62%) in the year 2010. Table also indicates that India holds highest export trade percentage in the Asia and Asian region 54.10 per cent followed by European region 18.28 per cent.

Table 3-Top 5 Countries of Export (Values in US\$ Millions)

Rank	Country	Jun 2009	Jun 2010	%Growth	%Share
1	United Arab Emnts	5,124.59	7,411.64	44.63	14.05
2	U S A	4,169.39	6,066.47	45.50	11.50
3	China	2,093.67	3,027.47	44.60	5.74
4	Singapore	2,189.86	2,813.04	28.46	5.33
5	Hong Kong	1,430.92	2,296.03	60.46	4.35
	Total	38,398.45	52,752.75	37.38	100.00

Data Source: DGCIS, Kolkata ,2010

Table reveals that India is the largest exporter to United Arab Emirates with the highest share of 14.05% in comparison to other countries. Indian exports have registered highest growth rate of 45.50% to U.S.A. It can be observed that China has emerged as India' s third largest export partner.

Table 4-Top 5 Commodities of Export (Values in US\$ Millions)

Rank	Commodity	Jun 2009	Jun 2010	%Growth	%Share
1	Petroleum (Crude & Products)	4,434.51	8,727.26	96.80	16.54
2	Gems & Jewellery	6,169.74	7,551.41	22.39	14.31
3	Transport Equipments	3,568.58	5,692.59	59.52	10.79
4	Other Commodities	2,119.84	3,755.04	77.14	7.12
5	Drugs, Pharmcutes & Fine Chemicals	1,984.79	2,457.17	23.80	4.66
	Total	38,398.45	52,752.75	37.38	100.00

Data Source: DGCIS, Kolkata, 2010

It has been observed that India is the largest exporter of petroleum (Crude and Products) and this has shown highest growth rate of 96.80 per cent in the year 2010 over 2009. The export of other commodities have also increased by 77.14 per cent in the year 2010. Table also indicates that export of Gems and Jewellery has shown the lowest growth rate of 22.39 per cent in comparison to other commodities in the year 2010.

Problems of the Indian Exporters

The responses of the exporters with regard to various problems being faced by them at the company level, national level and international level has been analyzed considering their responses to the statements.

Table 5-Company Level Problems

Problems	Europe Region	African Region	American Region	Asia & Asian Region	CIS & Baltic Region	K-W Results	P-value
a) knowledge of market	3.83	3.05	3.84	2.96	3.15	403	.102
b) Difficulty in product selection	4.37	3.87	4.25	2.84	3.11	2.352	.003*
c) Procurement of export order	4.41	3.20	4.54	3.01	3.10	2.105	.002*
d) Product positioning	4.52	2.95	4.62	3.14	3.20	4.521	.001*
e) Product changes and new designing	4.84	3.54	4.89	3.21	3.52	5.213	.004*
f) Fixing the prices	4.78	3.87	4.85	2.98	2.95	3.245	.214
g) Technical and	4.56	3.89	4.86	3.68	3.12	2.954	.324

professional staff factors							
h) Quality related issues	4.82	3.87	4.87	3.86	3.23	15.231	.002
i) Financial constraints	3.88	3.24	3.74	2.89	3.24	4.351	.097
j) Technological limitations	4.67	3.89	4.92	3.65	3.36	25.325	.003

Great extent-4, Moderate extent-3, some extent-2, less extent-1, not at all-less than 1.

Note : * denotes significant results having *p*-value less than 0.05.

Table shows that most of the exporters from different industries face company level problems such as ‘technological limitations’, ‘product changes and new design’, ‘quality related issues’, ‘technical and professional staff factors’, ‘fixing the price’, ‘product positioning’, ‘procurement of export order’, and ‘difficulty in product selection’, (mean score being more than 4) to a great extent in the American followed by European markets. However, Indian exporters are facing problems to less extent in the Asian and Baltic region in comparison to American and European Markets.

The findings of the study reveal that most of the exporters are facing company level problems in the American and European region markets to great extent. As far as African, Asian and Baltic regions are concerned the Indian exporters are facing these problems to moderate extent.

K-W statistics reveals that there are significant differences among the exporters with respect company level problems being faced in the different markets such as ‘product positioning.’, ‘procurement of export order’, and ‘difficulty in product selection’.

Table 6- National Level Problems

Problems	Europe Region	African Region	American Region	Asia& Asian Region	CIS & Baltic Region	K-W Results	P-Value
a) Policy and procedural problems	4.24	3.54	4.51	2.86	2.98	13.542	.002*
b) Procurement of raw material	4.72	3.15	4.82	3.12	2.96	9.542	.004*
c) Coordination with Government agencies	4.93	4.75	4.81	4.73	4.82	3.547	.156

d) Claiming the incentives/assistance	4.54	4.79	4.69	4.78	4.83	6.874	.061
e) Banks and exchange related issues	3.87	3.64	3.42	3.43	3.13	8.654	.007
f) Marine Insurance matters	3.14	3.26	3.41	3.64	3.46	8.216	.058
g) Shipping and customs clearance matters	2.54	2.23	2.84	2.29	2..29	4.654	.074
h) Infrastructural problems	2.12	2.36	2.73	2.51	2.64	6.879	.248
i)Regional disturbance and disparities	3.14	3.98	3.76	3.68	3.12	2.674	.541
j) Documentation and other legal formalities	4.82	4.86	4.63	4.74	4.62	1.856	.862

Great extent-4, Moderate extent-3, some extent-2, less extent-1, not at all-less than 1.

The analysis of the table shows that majority of the Indian exporters are facing problems at the national level such as ‘coordination with government agencies,’ ‘claiming the incentives/assistance and ‘documentation and other legal formalities’ (mean score being more than 4) to great extent in all the regions. However, the other problems such as ‘policy and procedural problems’, and ‘procurement of raw material’, are also being faced by them to great extent (mean score being more than 4) to execute their export orders in the American and European regions. The study further indicates that other problems such as ‘banks and exchange related issues,’ ‘marine insurance matters’, and ‘regional disturbance and disparities,’ (mean score being more than 3) are being faced by these exporters to moderate extent.

Findings of the study reveal that Indian exporters are facing problems to less extent in the Asian, Baltic and African region in comparison to American and European regions.

K-W statistics shows that there are significant differences among the exporters with respect to national level problems such as ‘policy and procedural problems’, and ‘procurement of raw material’ being faced by them in the different regions.

Table 7- International Level Problems

Problems	Europe Region	African Region	American Region	Asia& Asian Region	CIS & Baltic Region	K-W Results	P-value
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a) Market entry problems	4.76	3.16	4.91	3.83	3.54	41.653	.000
b) Distribution channel issues	3.12	3.06	3.53	3.01	2.97	8.612	.743
c) Competition problems	4.86	4.80	4.73	4.89	4.62	1.652	.527
d) Product promotional policy	4.92	4.87	4.79	4.84	4.78	.986	.701
e) International market research	4.95	4.88	4.92	4.68	4.79	1.126	.602
f) Foreign exchange management issues	4.87	4.66	4.58	4.67	4.81	2.015	.716
g) Meeting international quality standards	4.21	4.39	4.80	3.97	3.87	28.354	.002
h) Order commitment	3.21	2.87	2.67	3.12	3.41	6.328	.016
i) Payment problems	2.03	2.78	2.02	2.52	2.32	1.365	.872
j) Arbitration and legal problems	1.26	1.35	1.81	1.65	1.38	3.278	.192

Great extent- score more than 4, Moderate extent-more than 3, some extent-more than 2, less extent- more than 1, not at all-less than 1.

The table shows that most of the Indian exporters are experiencing major problems such as, competition problems, product promotional policies, and international market research and foreign exchange management issues in all the markets (mean score being more than 4) to the great extent. However, the other problems such as market entry problems and meeting international quality standards are being faced by them in American and European markets (mean score being highest) to the great extent in comparison to rest of the markets. The other issues like order commitment, payment problems are faced up to some extent and arbitration and legal problems to the less extent.

Findings of the study reveal that the exporters are experiencing problems mostly in the American and European markets in comparison to the other Asian, African and CIS& Baltic regions.

K-W statistics shows that there are significant differences among the exporters with respect to international level problems such as market entry and meeting international quality standards.

Conclusion

In the present scenario most of the exporters from different industries face more problems at company level relating to product and product designing, technology, meeting international quality standards, fixing the competitive pricing and procurement of export order. Further, exporters are also facing more problems in the American market followed by European markets. However, Indian exporters are facing problems to less extent in the Asian and Baltic region in comparison to American and European Markets. The exporters are also finding difficulties in dealing with government agencies in the areas of claiming the incentives/assistance under various schemes and lengthy and time consuming documentation and other legal formalities. The other issues such as ‘banks and exchange related issues,’ ‘marine insurance matters’, and ‘regional disturbance and disparities are also creating problems for the exporters. In the present highly competitive era, meeting the competition challenges as per international standards is also a major task for the exporters.

Hence the exporters need to understand the changes taking place at national and international level in the various business issues. The exporters further have to analyze the business environment at micro and macro level to strengthen their competitive skill. Adoption of latest technology is the need of the hour and companies have to adopt the technological changes in all aspects of business. Proper marketing strategies, marketing research, advertisement and acquiring the latest quality certification would also help these companies to become more competitive and expansion of their market operations. Both the governments at state and national level also need to provide timely and speedy assistance to exporters which will enable them to compete in the international market more effectively.

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Bullwhip effect and online auction in the automotive industry

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Abstract: Covisint is a joint venture of the leading manufacturers in the automotive industry. In this paper, we link the business practice and game theory. The background of Covisint is briefly reviewed. Based on business practice, the key factors that affect the results of auctions in Covisint platform are evaluated. Using these key factors, the model of Covisint auction has been developed. Finally, the influence of Covisint to the automotive industry has been analyzed in detail.

Keywords: Covisint, Reputation regarding auction, On-line auction, Automotive industry

1. Introduction

Covisint is an integrated, e-structured, global B2B trading and information exchange that provides world-wide procurement, supply chain management, and product development functionality. It integrates the supply chain in automotive industry as a whole. It is one of the most important integration and cooperation tools in the automotive industry.

In February 25, 2000, the three leading American automotive manufacturers, General Motors, Ford, and DaimlerChrysler announced their joint venture to create an on-line dealing platform called “Covisint” [10]. In April the same year, another automobile giant, Renault-Nissan, also announced to join this project [12].

There are many debates about the dominance of Covisint in the present supply chain in automotive industry. People consider Covisint as a new trust in the supply chain. In a reputable automotive magazine, Covisint was described as “...a complex, ambitious plan that may not achieve its original stated goal – being the dominant online exchange for the global auto industry” [5]. Covisint has received its Federal Trade Commission approval by September 2000. Since then, dealings on Covisint platform increases every day. Undoubtedly, Covisint is playing an important role in the supply chain of automotive industry.

Auction has a very long history. However, the practical research in auction theories is relative modern. The most influential papers were published by Vickrey in 1961 and 1962, which undoubtedly played a major factor for his winning of 1996 Nobel prize in economics [14,15]. The full blossom of auction theories came at the end of 1970s with critical contributions from Milgrom, Weber, Riley, Maskin, Samuelson, Myerson and Wilson. Their contributions rapidly moved the field of auction theories close to its current cutting edge [11].

There are four typical auction models: ascending bid auction, descending bid auction, first price sealed bid auction and second price sealed bid auction. Ascending bid is also called English auction. Like many auction platforms, Covisint uses the English auction model. In English auction, the price is successively raised until only one bidder remains, and the bidder wins the object at the final price. This auction can be run by having the seller announce prices, or having the bidders call out prices themselves, or by having bids submitted electronically with the best current bid posted. If the buyer is the auctioneer and the supplier is the bidder, it is also called a procurement auction [2].

On-line auction is a specific topic of e-commerce. On-line auction can be divided into three different types namely: B2B, B2C and C2C. Covisint auction is a typical B2B on-line auction. Examples of other B2B on-line auctions include CheMatch and Chem Connect (chemical industry), MetalSpectrum (aluminum, stainless steel, copper, iron, and other metals) etc.. Because B2B on-line auction is a relative new concept in economy, academic researches in B2B on-line auction is rare. This report represents the first paper describing the research of B2B on-line auction in the automotive industry.

In this paper, we focus on the practical aspect of Covisint and its influence on the automotive industry. Issues discussed are based on the business practice of daily operation. We first review all the key factors that affect the auction results in Covisint. Then, we connect the B2B on-line auction and auction theories to develop the mathematical model for the reputation regarding on-line auction in Covisint. Finally, the influence, value chain and efficiency, of Covisint auction to automotive industry is evaluated.

2. Factors that Affect the Results of Covisint Auction

Supplier Reputation

In Covisint, supplier reputation is the major factor that affects the results of bidding. There are four critical elements constitute the long-term image of suppliers. These include quality, delivery, long-term relationship and technical capability.

Quality is the most important factor in this highly competitive environment. Every carmaker has the consensus that quality is their life. Without quality, it is difficult to attract customer to buy their products again. Quality affects the brand image in the long run. "One customer unsatisfied with your products, he will tell another 20 persons". It is a true story in marketing. In automobile industry, the essential certificate of supplier's quality is QS9000 system. In the terms and conditions statement in Covisint, the QS9000 has been mentioned for several times. Others like Ford Q1, ISO14001 and many other quality certifications will also be a plus to supplier's quality image. In the paper entitled "Design competition through Multidimensional Auction", Che revealed that it is optimal for the auctioneer to pre-commit to scoring rule that under-rewards quality relative to his real preferences [3].

Delivery is also an important concern for buyers to choose suppliers. Delivery means delivering products to the right place at the right time. The time needs to deliver supplier's products to the assembly plant is also an important concern. If it is long, it means more inventory need to be stocked for a possible delay. On the other hand, it would be a weak point for supplier who is far away from the assembly plant, especially, if it is an supplier abroad.

Technical capability is another major concern for supplier to produce critical parts like: engine, piston, piston cylinder and airbag sensor etc... If suppliers do not have enough skills to accept orders, they can ask for help from other suppliers with such capability. Supplier can sign a technical agreement or ally with another supplier as partner.

Long-term relationship is the cooperative experience in the past. It is also an important factor that will affect the forming of long-term supplier image. For a supplier with cooperative experience, this means that the supplier has the basic understanding of the production system with each other. In my personal experience, it is really difficult to coordinate two factories with different production system. Although the generic concepts of different production systems are almost the same, the cooperation is still very difficult in practice. Obstacles to cooperation include corporate culture, information system linkage and etc.

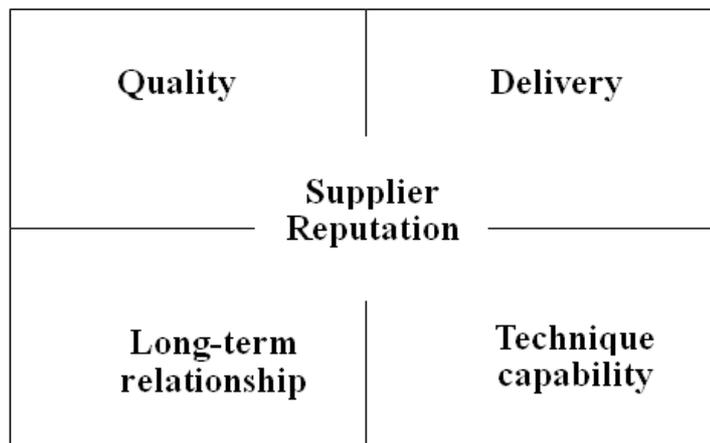


Figure 1. Factors influence result of Covisint’s auction

3. Covisint’s impact on Automotive Industry

Impact on Value Chain

To understand Covisint's impact on the automotive industry, it is important to know how Covisint shifts or changes the values of the automotive industry. Generally speaking, Covisint affects the value chain of automotive industry in three aspects., i.e., procurement, supply chain management, and collaborative design [13]

Covisint offers a less-expensive way for automakers and suppliers to do e-procurement in the internet. This improvement makes company of Tier 2 and Tier 3 suppliers, who cannot afford the cost to establish their own e-commerce platform, to have a chance to participate this game. Covisint offers standardized online services, which connect the global suppliers all together. This may also increase the competition between suppliers and force the price of commodities down. Covisint provides opportunities for smaller suppliers to attend the global market.

Covisint offers supply chain management and planning, including real-time inventory management and just-in-time delivery. In the longer-run, supply chain functions could help to support build-to-order production environments. These environments would increase the efficiency of the industry as a whole. This improvement can happen in three areas: automated procurement, collaboration and efficient market.

Covisint can provide an environment for automakers and suppliers to work together to design their new models to fulfill the needs of the market. Collaborative design could enhance the platform sharing, modular manufacturing and reduce the time to market.

Impact on Efficiency

Covisint has brought a significant improvement in the supply chain integration of the automotive industry. By adopting the facility of e-commerce, companies can dramatically increase return through efficiency improvements, better asset utilization, faster time to market, reduction in total order fulfillment times, enhanced customer service and responsiveness, penetrating new markets, higher return on assets, and ultimately, higher shareholder value [9]. All of these are achieved through improving efficiency. As mentioned previously, this improvement happens in the areas of automated procurement, collaboration and efficient market.

The first contribution of automated procurement is time saving. Automated procurement can reduce the time spending on the routine paper works. The time saved can be used on the strategic aspects of purchasing. The second benefit of automated procurement is lowering procurement costs. According to GS equity research, Covisint platform is assumed to save up to \$3,643 per vehicle, 14% of the total supply chain cost. These savings are derived from Back-End B2B, On-Line Direct Sales and Make to Order as shown in figure 2 [8].



Figure 2. Savings Potential Of Covisint

The third benefit of automated procurement is lowering inventories. Covisint will offer real-time inventory management and just-in-time delivery. These services can decrease the lead-time to prepare for

production and reduce the uncertainty of the whole processes. These services would allow manufacturers the ability to reduce inventory stockpiles ahead of production. Inventory is the buffer for production uncertainty. With less uncertainty, the inventory can be reduced and cost will be lowered.

Covisint offers a good channel for its users to contact with automotive suppliers around the world. It can be the media to connect every link in the supply chain of the automotive industry. Companies registering in Covisint will increase their visibility to other companies in the world. This can further increase the opportunity to collaborate with others. This can also links every member in the chain together. Collaboration can increase the efficiency of limited resource and reduce the risk of new venture.

In a supply chain, one of the biggest causes of inefficiencies is the information distortion -- the well-known "Bullwhip Effect" [7]. Information distortion often arises when companies make use of local information to make demand forecasts and pass them to the upstream partners. Companies' gaming behaviors exaggerate orders when there are perceived uncertainties in supply conditions. These distortions are amplified from one level to another in a supply chain and is illustrated in the graph shown below (figure 3). Covisint can decrease the time for information dissemination. This can shorten the distance between suppliers and customer and decrease the "Bullwhip Effect".

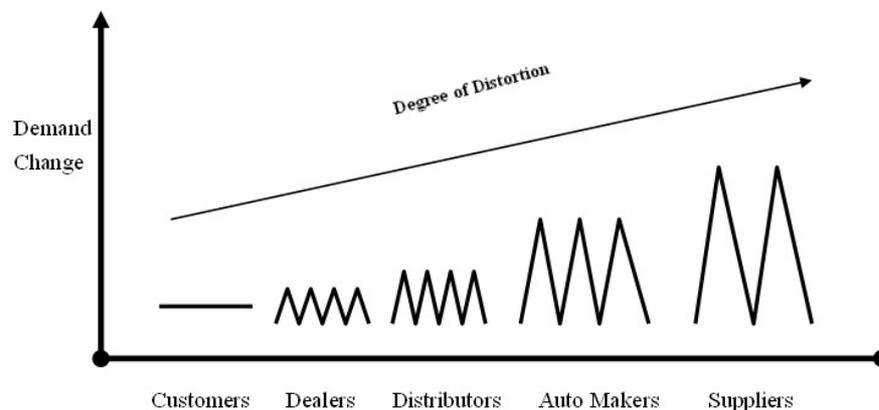


Figure 3. Bullwhip effect in the Supply Chain of Automotive Industry

Covisint declares that every auction in its platform could achieve a saving between 5-30% [4]. This saving comes from the nature of auction. In auction, uncertain information will force suppliers to reveal the real price in their mind. Competition will force suppliers to drive down their cost and reflect to the price of their products. Competitive situation makes it easier for buyers to get better prices. Lower price decreases the variation of cost for car manufacturer. This economic lure attracts more and more automakers to participate in this game. Automotive makers further attract suppliers to follow.

4. Conclusion

Covisint has brought a dramatic change in the automotive industry. The influence of Covisint is

tremendous. For car makers, auction in Covisint reduces their costs in procurement and let them contact with different suppliers around the world. For accessories suppliers, attending Covisint represents a chance to contact the global market. Although, Covisint will further depress their profit margin through the competitive auction, participation in Covisint is still a good deal. In the automotive industry, Covisint will strengthen the efficiency of the entire operation process. These include shorten the distance between customers and suppliers and eliminate the information distortion. In the future, the best strategy for automakers and suppliers to face the changes created by Covisint is to join it. Being a member of Covisint means companies can enjoy the convenience of e-commerce and participate in the global network of Covisint's members.

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DEVELOPMENT OF A NATIONAL TOURISM WEB PORTAL WITH ENRICHED RECOMMENDER: EMPIRICAL EVIDENCE

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ABSTRACT

The paper argues the importance of creating personalized recommender, particularly in small and tourism developing countries as Macedonia. Due to the fact that tourism emerged as one of the major industries in the world economy by benefiting various sectors, each country is interested in its development. Having in mind that increasing the number of tourists is significant source of income and economic growth, meeting their preferences is inevitable. In this respect, the paper makes an attempt to justify the necessity of designing national tourism portal in order to help the tourists to identify their holiday through a recommender. So, this empirical evidence reports on practical experience gained from a successful implementation of a collaborative filtering tourism recommendation system. Moreover, software module is developed which is capable of generating a personalized list of interesting items for all visitors of a national tourism web portal.

Key words: tourism, web portal, recommender, preferences.

1. INTRODUCTION

Tourism has emerged as one of the major industries in the world economy, by benefiting transportation, accommodation, catering and many other sectors. Thus, each country insists in developing it and making a profit from its variety of impacts. Moreover, everyone is interested in increasing the number of incoming visitors since it serves as a source of economic growth. In 2011, the tourism contributed almost

US\$ 6 trillion to the world global economy, or 9% of global gross domestic product (GDP), 100 million direct jobs and US\$ 650 billion investments in tourism (WTTC, 2011a: 2).

Macedonia identified tourism as a mean for generating various micro and macro-economic. In this line, a National Strategy on Tourism Development 2009-2013 was prepared with a main vision: Macedonia to become famous travel and tourism destination in Europe based on cultural and natural heritage (Government of Macedonia, 2009: 3). Up-to-date, tourism in Macedonia has accomplished an average growth of 4.64% per year, which is higher than the average growth of the entire economy (3.12%). In this respect, the participation of tourism in the creation of the gross domestic product (GDP) has probably modest average of 1.7 % per year, but the impression is completely opposite when compared to the average for Central and Eastern Europe (CEE) of 1.6% (WTTC, 2009: 6). With regards to the participation of tourism employees in the total workforce in Macedonia, the national average is 3.1%, which is more than twice bigger than the average of the CEE being 1.4% in 2009 (WTTC, 2009: 6). The importance of tourism to national economy can be evaluated by the tourism inflows which in 2009 represented 26% of total inflows of services and 8% of exports of goods in Macedonia. In the same line, the tourism inflows were 20% higher than the foreign direct investments. Additionally, in the frames of services, tourism inflows were the second biggest item (just a little bit lower compared to the inflows of transport services), which is 1.3 times higher than the inflows of business services and 2.4 times larger than communication services inflows. Accordingly, the net tourism inflows in Macedonia have an average of 1% of GDP (Petrevska, 2010: 105-107). Such condition indicates high potential to increase the tourism effects in economic activity in Macedonia.

The forecasts regarding tourism development in Macedonia are very optimistic. Namely, according to the estimations by 2021 it is expected tourism contribution to the national GDP to reach 4.9% thus bringing revenue of US\$200 million; the total contribution to employment including jobs indirectly supported by tourism industry is forecast to rise to 35 000 jobs (5.4%) and the investment in tourism is projected to reach the level of US\$ 95 million representing 2.8% of total investment (WTTC, 2011b: 3). Consequently, Macedonia identified tourism as an industry which might contribute to: enhancing

foreign export demand for domestic goods and services, generating foreign currency earnings, new employment opportunities within the country, repaying the foreign debt, increasing the national income etc.

However, attracting a bigger number of tourists is not a trouble-free process, particularly in times of ever-changing travel preferences. Despite the variety of options regarding tourist destination or attraction, tourists frequently are not capable to cope with such a huge volume of choice. Moreover, they need advice about where to go and what to see. In a tourism domain, recommendations may indicate cities to go to, places to visit, attractions to see, events to participate in, travel plans, road maps, options for hotels, air companies, etc. Such scope of work very often is not a trivial task. In this respect, recommenders assist tourists by facilitating personal selection and prevent them from being overwhelmed by a stream of superfluous data that are unrelated to their interest, location, and knowledge of a place. So, it is much easier for tourists to access the information they need thus resulting in shorter lead-time for bookings, making last-minute decisions and generally, tailoring their own packages from a suite of options.

Solution is seen in personalization of the information delivery to each traveler, together with the travel history. Yet, the advanced tourist information systems must offer more than just relatively static information about sights and places. Over the past two decades Internet had an enormous impact on the tourism industry, specifically to the way how tourists search for information. A noteworthy transformation was made from just passive searching and surfing to creating content, collaborating and connecting. In this respect, the Web became the leading source of information particularly important in times of increased number of competitors in tourism market. The way out is detected in application of recommender as a promising way to differentiate a site from the competitors. So, user-generated content will gain in significance thus enabling developing more accurate recommender.

Generally, the contribution of this paper lies in the fact that it represents a pioneer research in Macedonia thus contributing to the successful implementation of the recommender, based on novel algorithms and methodology, in the national tourism industry.

2. LITERATURE REVIEW

One may argue the inevitable relationship between tourists and information. Moreover, it is a widely-recognized fact that information and decision-making have become the foundation for the world economy (Wang, 2008). Due to the importance of tourism, recommenders applied in tourism have been a field of study since the very beginnings of artificial intelligence.

2.1 Tourists' preferences and related work

It is more than obvious that whether a potential tourist will be interested in a certain item depends on the preferences. Although may sound fragile, but the vast majority of today's tourists know exactly what they are looking for. Yet, they are very demanding and have complex, multi-layered desires and needs. Today's so called "postmodern tourists" have specific interests and individual motives which results in tailored made tourist products according to their particular preferences. They are often high experienced in travelling and demand perfect tourism products rather than standardized ones. Consequently, they take much more active role in producing diversified tourism products with shorter life cycles enabled by increased usage of the information technology.

Many researchers were interested in identifying tourists' needs, expectations and behavior. In this respect, numerous papers discuss tourist roles in order to define their considerable variations. In mostly, the behavior is related to specific demographic and background characteristics emphasizing the life course as the leading component for investigating tourist role preferences. Yet, attention should be paid to a variety of social structures and processes, including psychological needs and lifecourse stage.

Cohen (1972) was one of the first sociologists who proposed a typology to conceptually clarify the term "tourist" by developing a four-fold typology. Based on that, Pearce (1982) identified specific behaviors thus enabling tying the evolutionary nature of tourist role preference and the psychological needs. Moreover he developed 15 different tourist types which allowed creation of several measurement scales. In this respect, the Tourist Roles Preference Scale (Yiannakis and Gibson, 1992) presents a comprehensive classification of leisure tourists. Additional work resulted in adding two more tourist types

to the tourist categorization (Gibson and Yiannakis, 2002). Moreover, researchers focused on exploring the experience of tourists as well as the importance of the tourist experience for tourists (Yfantidou *et al.*, 2008).

2.2 Recommenders and related work

There is a large body of literature regarding the importance and effectiveness of applying the recommenders in tourism, travelling and hospitality. It is a matter of identifying a class of intelligent applications that offer recommendations to travelers, generally as a response to their queries. They mostly leverage in-built logical reasoning capability or algorithmic computational schemes to deliver their recommendation functionality. Consequently, the recommenders are an attempt to mathematically model and technically reproduce the process of recommendations in the real world.

Numerous researchers made efforts in their introducing. In this respect the need for developing intelligent recommenders which can provide a list of items that fulfill as many requirements as possible is elaborated (Mirzadeh *et al.*, 2004; McSherry, 2005; Jannach, 2006). Also, a recommender system dealing with a case-based reasoning is introduced in order to help the tourist in defining a travel plan (Ricci and Werthner, 2002; Wallace, 2003). However, as the most promising recommenders in the tourism domain are the knowledge-based and conversational approaches (Ricci *et al.*, 2002; Thomson *et al.*, 2004). Yet, some other variants of the content-based filtering and collaborative filtering are engaged for recommendation, like knowledge-filtering, constraint-based and casebased approaches (Kazienko and Kolodziejski, 2006; Ricci and Missier, 2004; Zanker *et al.*, 2008). In the same line, the recommenders based on a text mining techniques between a travel agent and a customer through a private Web chat may easily find an application (Loh *et al.*, 2004).

Due to the rapid expansion of tourism industry, the recommenders for tourism have attracted a lot of interest in academia. Additionally, we refer to some late research that brought more sophisticated outcomes, like: introducing a personalized tourist information provider as a combination of an event-based system and a location-based service applied to a mobile environment (Hinze *et al.*, 2009); investigation on sources and

formats of online travel reviews and recommendations as a third-party opinions in assisting travelers in their decision making during the trip planning (Zhang *et al.*, 2009); findings regarding development of a web site in order to enable Internet users to locate their own preferred travel destinations according to their landscape preferences (Goossen *et al.*, 2009) and similar. Furthermore, the usage of the orienteering problem and its extensions to model the tourist trip planning problem was elaborated as efficient solution for number of practical planning problems (Vansteenwegen and Wouter, 2011). It is evidently that the research area is extending resulting in improving the dependability of recommendations by certain semantic representation of social attributes of destinations (Daramola *et al.*, 2010). Moreover, most recommenders focus on selecting the destination from a few exceptions (Niaraki and Kim, 2009; Charou *et al.*, 2010).

3. METHODOLOGY

The main objective of the developed national tourism web portal which relies on an efficient and accurate personalized recommender is to support tourists visiting Macedonia by helping them to identify relevant tourist objects matching their personal interests.

To accomplish this objective, a several step methodology was developed. The first step foresees tourist and tourist objects profiling. The system uses tourist types taken from the scientific tourism literature to model the tourist personal profile. The tourist profile indicates the degree to which tourists identify themselves with the given types. Typically, individual tourist cannot be characterized by only one of these archetypes but has unique combination of these personalities, although to varying degrees. Thus, tourist types model the tourists' generic interests in an abstract form. Vectors are suited to model such tourist profile, whereby each dimension corresponds to a certain tourist type while the value indicates how much the tourist identifies him- or herself with the corresponding type.

Tourist profiling is a two-step process which involves creating the profile and then reviewing the profile to make any necessary adjustments. The initial tourist profile for each system user is created by the user himself during the process of registration, by determining the degree of membership to each of

the tourist types. Considering the fact that the human preferences change over time due to various factors, the tourists might change their behavior too. To make the system capable to cope with these changes, we have enabled tourist profile adjustment. It is based on the ratings the tourist give for each tourist object that he visits after his journey and according to Eq. 1.

$$U_{ij_{t+1}} = \frac{1}{2}(U_{ij_t} + R_{ik_{t+1}} * w * Ok_j) \quad (1)$$

where U_i represents the i -th user and $U_i \in U$, U - is the set of users registered to the system, U_{ij_t} is the degree of membership in the moment t of the i -th user to the tourist type T_j and $T_j \in T$, T – is the set of tourist types according to literature (Gibson and Yiannakis, 2002). $Ok \in O$ represents the k -th object in the set of all objects O registered in the system, w -is the weighting factor and R_{ik} is the rating of the k -th tourist object given by i -th user.

Similarly, we may generate profiles for attractions and in the same way as the tourist profile is represented in form of a vector, every tourist object is modeled through a vector as well. Thereby, this vector describes in a quantitative way how much the object is related to the given types. For example, the famous monastery Saint Panteleimon in the city of Ohrid known as a birthplace for Cyrillic alphabet and used by Saint Clement for teaching the Cyrillic alphabet, might be highly relevant for sightseeing tourists but not for such kind of tourists that would like to do some risky activities.

In the developed system a manual process to link the given tourist types to appropriate tourist objects is proposed. Therefore, for each of the tourist objects, the degree of relationship to each of the tourist types is specified by domain experts. In order to prevent information overload of the tourist and provide only relevant information, the system should recommend a subset of tourist objects according to the personal experiences individual tourist desire and those he/she prefer to avoid. This in turn might lead to an increase of the tourist's satisfaction of experiencing a relaxed sightseeing trip.

According to this, the next step of the proposed methodology aims to match tourist profiles against the set of tourist objects on the basis of tourist types, thus producing a ranked list of objects for each given

tourist and reducing the set of objects. If a tourist profile matches the characteristics of an object, this object should be recommended to the respective tourist. Therefore, the matchmaking algorithm has to examine whether they share similar structures. The more similarities they have in common, the more contributes the tourist object to the tourist's satisfaction and therefore should be ranked higher.

To estimate the similarity degree between tourist profiles and tourist objects, the system contains a special module based on a vector-based matchmaking function, whereby a given profile and each tourist object constitute vectors and are compared in a vector space model. A common method to obtain the similarity is to measure the cosine angle between two vectors. If the vector space is non-orthogonal, kernel based algorithms can be applied to measure the similarity in such a space. The dimensions of the vector space model correspond to selected tourists types found in scientific tourism literature (Gibson and Yiannakis, 2002), such that each distinct tourist type (e.g., adventure or cultural type) represents one dimension in that space. The implemented matchmaking function has the following form (Eq. 2):

$$SIM_{\cos}(U_i, O_j) = \frac{\sum_{k=1}^N U_{i_k} \cdot O_{j_k}}{\sqrt{\sum_{k=1}^N U_{i_k}^2} \sqrt{\sum_{k=1}^N O_{j_k}^2}} \quad (2)$$

where U_{i_k} is the degree of membership of the i -th user to the tourist type T_k , O_{j_k} is the degree of membership of the j -th tourist object to the tourist type T_k , and N is the number of tourist types. According to the previous equation, the degree of similarity between tourist profiles and tourist objects will be calculated. Tourist objects will be ordered by the value of the matchmaking function for a given user, and only those objects that have positive value for this function will be considered for recommendation:

$$O_{i_{rec}} = \{O_j, \text{where } SIM_{\cos}(U_i, O_j) > 0\} \quad (3)$$

Considering the five point Likert scale for rating the objects, to each object in the constructed set,

a recommendation mark will be assigned (Eq. 3).

$$Ri_{rec} = \{R(Oj) = 5 * SIM_{\cos}(Ui, Oj), \forall Oj \in Oi_{rec}\} \quad (4)$$

In our methodology, we have considered another very important fact related with the behavior of the people planning a vacation or trip. In everyday life, while planning a vacation or trip, people also rely on recommendations from reference letters, news reports, general surveys, travel guides, and so forth. In addition, they desire personal advice from other people with similar preferences or people they trust. In fact, over 80% of travelers participating in a TripAdvisor.com survey agree that “reading other travelers’ online reviews increases confidence in decisions, makes it easier to imagine what a place would be like, helps reduce risk/uncertainty, makes it easier to reach decisions, and helps with planning pleasure trips more efficiently” (Gretzel, 2007).

Experimental findings show that there exists a significant correlation between the trust expressed by the users and their similarity based on the recommendations they made in the system; the more similar two people are, the greater the trust between them (Ziegler and Golbeck, 2006). Similarity can be interpreted in several ways such as similarity in interests or ratings or opinions. Different methodologies can be used to calculate the similarity between the users in the system.

As one of the most prevailing and efficient techniques to build a recommender, collaborative filtering (CF) implements the idea for automating the process of “word-of-mouth” by which people recommend items to one another. It uses the known preferences of a group of users who have shown similar behavior in the past to make recommendations of the unknown preferences for other users. CF is facing many challenges, among which the ability to deal with highly sparse data and to scale with the increasing numbers of users and items, are the most important in order to make satisfactory recommendations in a short time period. Sparsity of ratings data is the major reason causing poor recommendation quality. The sparsity problem occurs when available ratings data is rare and insufficient for identifying the similar neighbors. This problem is often very significant when the system is in its early

stages. On the other hand, when numbers of existing users and items grow tremendously, traditional CF algorithms will suffer serious scalability problems, with computational resources grown nonlinearly and going beyond practical or acceptable levels.

To reduce the dimensionality of data and avoid the strict matching of attributes in similarity computation the cloud-model CF approach has been adopted. It is constructing the user's global preference based on his perceptions, opinions and tastes, which are subjective, imprecise, and vague (Palanivel and Siavkumar, 2010), and it seems to be an appropriate paradigm to handle the uncertainty and fuzziness on user preference.

The main goal of the cloud model CF is to construct the global preference for each user by calculating a triple of three digital characteristics $\vec{V} = (Ex, En, He)$. The expected value Ex represents the typical value of user ratings, that is, the average of user ratings. The entropy En represents the uncertainty distribution of user preference, which is measured by the deviation degree from the average rating. The hyper-entropy He is a measure of the uncertainty of the entropy En , which is measured by the deviation degree from the normal distribution. Given a set of ratings data for a user u_i , $r_{u_i} = r_u = (r_{u,1}, r_{u,2}, \dots, r_{u,n})$, the three characteristics can be defined as (Zhang *et al.*, 2009):

$$\begin{aligned}
 Ex &= \frac{1}{n} \sum_{i=1}^n r_{u,i} \\
 En &= \sqrt{\frac{\pi}{2}} \times \frac{1}{n} \sum_{i=1}^n |r_{u,i} - Ex| \\
 He &= \sqrt{S^2 - \frac{1}{3}En^2}, \text{ where } S = \frac{1}{n-1} \sum_{i=1}^n (r_{u,i} - Ex)^2
 \end{aligned}
 \tag{5}$$

The k similar (neighbor) users, for an active user are selected based on the cloud model similarities between the active user and the users that already rated the object $O_j \in O_{i_{rec}}$. A likeness similarity method based on cloud model using the cosine measure was proposed in Zhang *et al.*, 2009. Given two cloud models in terms of the characteristic vectors $\vec{V}_u = (Ex_u, En_u, He_u)$ and $\vec{V}_v = (Ex_v, En_v, He_v)$, the similarity between them are defined as

$$sim(u, v) = \cos(\vec{V}_u, \vec{V}_v) = \frac{Ex_u Ex_v + En_u En_v + He_u He_v}{\sqrt{Ex_u^2 + En_u^2 + He_u^2} \sqrt{Ex_v^2 + En_v^2 + He_v^2}} \quad (6)$$

The recommendation function based on the cloud model is defined as:

$$R_{u,j} = \bar{r}_u + \frac{\sum_{v \in N(u)} (r_{v,j} - \bar{r}_v) \times sim(u, v)}{\sum_{v \in N(u)} sim(u, v)} \quad (7)$$

where $N(u)$ is the k most similar users to active user u and r_u and r_v are the average rating of user u and v , respectively. The value of rating $r_{v,j}$ is weighted by the similarity of user v to user u ; the more similar the two users are, the more weight $r_{v,j}$ will have in the computation of the recommendation function .

The total recommendation function for a given tourist object (O_j), is calculated using a weighted average of the functions (Eq. 2 and Eq. 7).

$$Frec_{i,j} = \frac{w_1 * SIM_{\cos}(u_i, O_j) + w_2 * R_{u_i,j}}{w_1 + w_2} \quad (8)$$

According to the value of the total recommendation functions the objects will be ordered and further classified into five categories (Eq. 9).

$$Cat_{i,j} = \left\{ \begin{array}{l} k = 1, \forall O_j \in Oi_{rec} \wedge 0 \leq Frec_{i,j} \leq 0.2 \\ k = 2, \forall O_j \in Oi_{rec} \wedge 0.2 < Frec_{i,j} \leq 0.4 \\ k = 3, \forall O_j \in Oi_{rec} \wedge 0.4 < Frec_{i,j} \leq 0.6 \\ k = 4, \forall O_j \in Oi_{rec} \wedge 0.6 < Frec_{i,j} \leq 0.8 \\ k = 5, \forall O_j \in Oi_{rec} \wedge 0.8 < Frec_{i,j} \leq 1 \end{array} \right\} \quad (9)$$

4. WEB PORTAL DESIGN

The developed national tourism web portal is structured in the form of a social network. Our portal is a significant improvement on existing travel websites and provides tourists with a customized, unique, and enriching travel experience. It incorporates some standard plugins typical for social networks like Facebook. But, it advances the concept by including custom plugins, like the recommended objects plugin which is the core of the portal. It is using the Google Map of Macedonia to visualize static tourist objects (object that are not temporary, like churches, museums, archeology localities, etc.) and dynamic objects (object that have limited time duration, like events, expositions, etc.). They are displayed on the map according to their geographical location. Moreover, they are geographically grouped into municipalities.

Municipalities are recommended to the user in the form of circles as displayed on the map (Figure 1). The size of the circle indicates the user's affinity for the municipality; therefore, a large circle indicates a municipality with many tourist objects with high recommendation marks i.e. that match the user profile. By displaying the user's affinity through the size dimension of the circle, users can easily observe which municipalities would be of most interest to them.

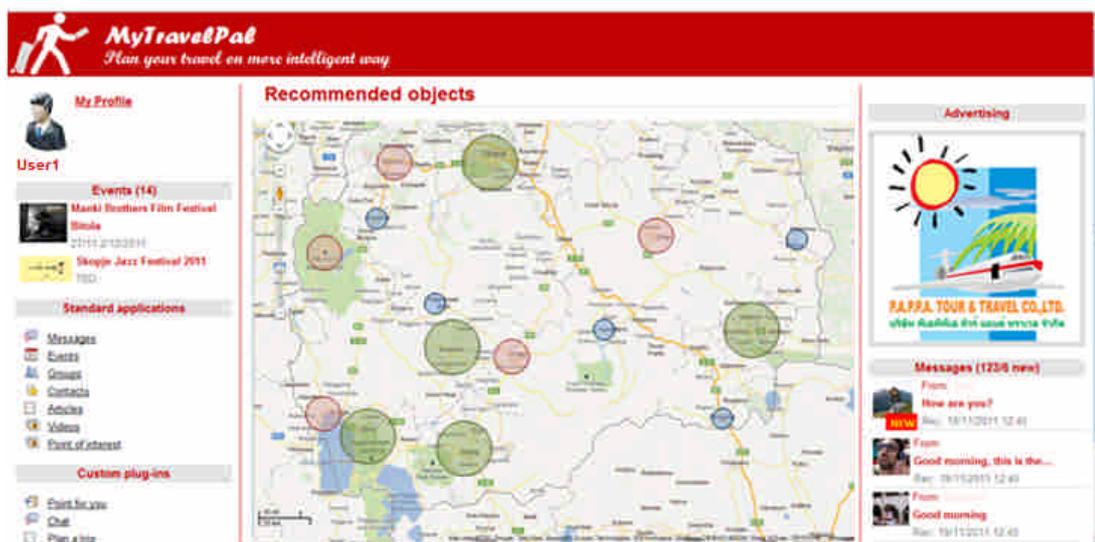


Figure 1. Recommended municipalities

The tourist objects are displayed as icons in the location of the correspondent object as shown in Figure 2.

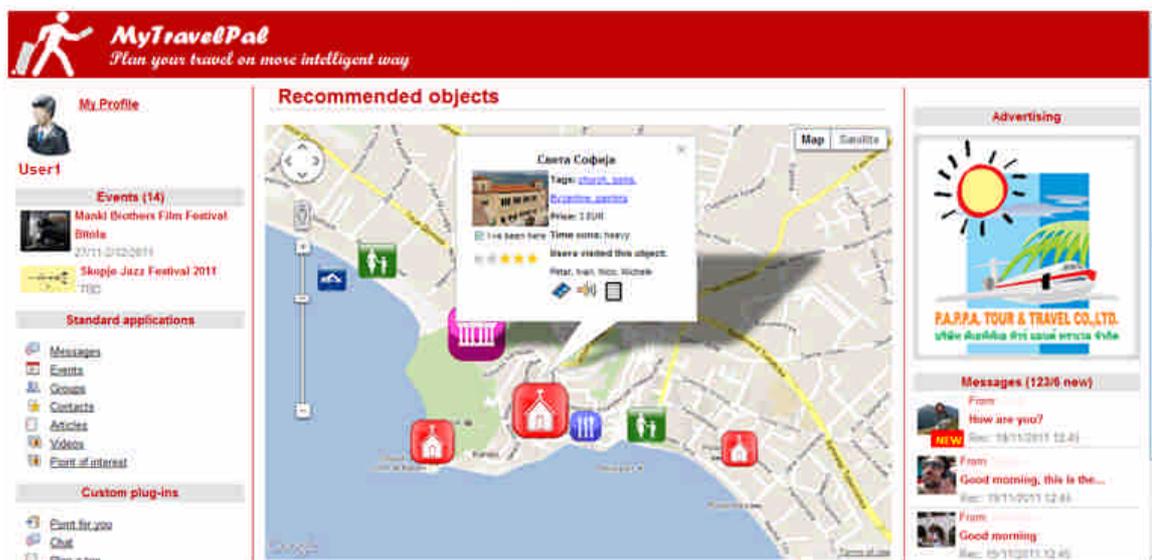


Figure 2. Recommended tourist objects

The image of the icon indicates the type of tourist objects such as a museum, church, or restaurant. The size indicates how closely the object meets the user's interests. Each attraction also has an information window as displayed in Figure 2. The information window usually includes the name and picture of the attraction, an icon of an umbrella indicating that the attraction is accessible in the rain, and tags. Additionally, it displays a general idea of the time consumption of the attraction, friends who have visited the attraction, and an option to view narratives in either video, audio, or text format. Through this window, the user can also rate the object. This operation is recommended to be done after visiting the object and according to the personal experience and satisfaction. The goal of this operation is two-fold: to help updating the user profile, and to make the process of recommendation more accurate.

5. SYSTEM EVALUATION

We use dataset from proprietary database collected by the mixed research group composed of researchers from the Faculties of Computer Science and Tourism at the "Goce Delcev" University. It contains 56320 ratings from 483 users for 818 tourist objects. Each user has rated at least 30 objects, and each object has been rated at least once.

In order to measure recommendation accuracy more precisely we used information-retrieval

classification metrics, which evaluate the capacity of the recommender system in suggesting a list of appropriate objects to the user. With such metrics it is possible to measure the probability that the recommender system takes a correct or incorrect decision about the user interest for an item. When using classification metrics, we can distinguish among four different kinds of recommendations (Table 1).

Table 1. Classification of the possible result of a recommendation of an object to a user

	Recommended	Non recommended
Interesting	True-positive (TP)	False-negative (FN)
Uninteresting	False-positive (FP)	True-negative (TN)

If the system suggests an interesting tourist object to the user we have a true positive (TP), otherwise the object is uninteresting and we have a false positive (FP). If the system does not suggest an interesting tourist object we have a false negative (FN). If the system does not suggest an object uninteresting for the user, we have a true negative (TN). The most popular classification accuracy metrics are the recall and the precision. These metrics can be calculated by counting the number of test object that fall into each cell in the Table 1 and according to the Eq. 10 and Eq. 11.

$$\text{Precision} = \frac{TP}{TP + FP} \quad (10)$$

$$\text{Recall(} \textit{True Positive Rate}) = \frac{TP}{TP + FN} \quad (11)$$

Recall measures the percentage of interesting objects suggested to the users, with respect to the total number of interesting objects, while precision measures the percentage of interesting objects suggested to the users, with respect to the total number of suggested objects. In order to understand the global quality of a recommender system, we may combine recall and precision by means of the F-measure

$$F - measure = \frac{2 \cdot recall \cdot precision}{recall + precision} \quad (12)$$

In evaluating the quality of the recommendation, we use these metrics. To evaluate the system a methodology which uses the k-fold and the leave-one-out together with classification metrics recall and precision was used. According to the k-fold, users in the dataset are partitioned into k parts: k-1 parts represent the and are used to construct the model, the remaining part represents the testing set. The model created with the k-1 partitions is tested on the remaining partition by means of the following algorithm:

Step 1: One user in the testing set is selected (the active user).

Step 2: One rated tourist object (the test object) is removed from the profile of the active user.

Step 3: An order list of recommended tourist objects is generated.

Step 4: If the test item is in the top-3 categories (according to the Eq. 9) of recommended objects, either the true positive or false positive counter is incremented, depending whether the user liked or disliked the test item.

We considered two distinct user groups. The group A contained all users who have rated 30-60 objects (the few raters user group), while group B contained all users who have rated 61-100 objects (the moderate raters user group). Step 1 of the proposed algorithm was repeated for all the users in both groups. Steps 2-4 are repeated for all the objects rated by the active user. In order to understand if a user likes or dislikes a rated tourist object, we suppose that an object is interesting for the user if it satisfies two conditions (Eq. 13).

$$Rate_{i,j} \geq 3 \wedge Rate_{i,j} \geq \overline{Rate_i} \quad (13)$$

where $Rate_{i,j}$ is the rate given by the user i for the tourist object j and $\overline{Rate_i}$ is the mean of ratings for user i . The first constraint reflects the absolute meaning of the rating scale, while the second the user bias. If a rating does not satisfy conditions given by Eq.13 we assume the item is not interesting for the user. Once

computed recall and precision, we synthesize them with the f-measure, as defined in (Eq. 12).

Upon the conducted evaluation the results for system precision, recall and f-measure were averaged for each of the groups, and they are given in Table 2.

Table 2. Average values for recommendation system precision, recall and f-measure

Group	Precision (%)	Recall (%)	F-measure (%)
Group A	75.14	79.18	77,11
Group B	81.74	85.32	83.49

According to the obtained results, the developed national tourism web portal with its collaborative recommender system seems to be robust as it achieves good results in both scenarios (users with few and moderate ratings). It also accomplishes a good trade-off between precision and recall, a basic requirement for all recommendation systems. The experimental results show that the proposed approach can provide satisfactory performance even in a sparse dataset.

6. CONCLUSION

The designed national tourism portal in its initial phase resulted in accurate recommendations and guidelines for tourists and travelers in the line of identifying an ideal trip and holiday. In this respect, it must be noted that tourism is defined as one of the most economically-oriented industries in the world due to the fact that enhances and strengthens national economies. Moreover, the development of such software module contributes generally to increasing the awareness of tourist destination that is capable of fulfilling travelers' preferences, and respectfully in raising net tourism income.

The outcomes of this study complement the forecasts for tourism demand in Macedonia in terms of foreign tourists. Namely, according to the double-exponential smoothing model it is expected by 2014 to have an increase of nearly 40% of foreign tourists (Petrevska, 2011). This optimistic view is supplemented additionally with the fact that the number of user ratings is permanently increasing by 15%

monthly growth rate. Supportive and not surprising is another fact that we have observed. Specifically, we noted an upward trend of web portal users. Accordingly, all these points lead us to a positive general conclusion referring tourism income in Macedonia. The average tourism consumption of \$ 62 per day (WTTC, 2010) will note an increase of only half a dollar, which may be misinterpreted as insignificantly to the national economy. However, on long-term horizon based on these projections the tourism contribution to the gross domestic product may note an increase of more than 1%.

Additionally, it is worth noticing that the travel and tourism economy in the country incorporates broad spectrum of tourism-oriented activities and results with multiplicative impacts. With regards to the multiplier effects of tourism in Macedonia, it is calculated to 4, meaning that every dollar generated as direct tourism income results in four dollars of the global income including the direct and indirect income as well (WTTC, 2010).

The successful implementation of the national web portal (named “MyTravelPal”) is in the line of supporting the national economy through improvement of tourism supply in more qualitative manner. Due to the fact that this portal indicates the motives, preferences and reasons for traveling to Macedonia, it may be of high importance to all key-tourism actors in the process of identifying measures and implementing activities necessary for creating comprehensive tourism policy.

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