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## CONTENTS


1 **PUBLISHER, EDITOR IN CHIEF, MANAGING EDITOR AND EDITORIAL BOARD**

2 **FACTORS AFFECTING LAYOFF IN HIGH-TECH INDUSTRY: EVIDENCE FROM USA**
MD. NAYEM HOSSEN, MD. ALAMGIR MOLLAH, NUSRAT SHARMIN LIPY, GAZI MD. SHAKHAWAT HOSSAIN, MD. SHAHINUR RAHMAN

3 **A COMPARATIVE STUDY OF STRESS VARIABLES AMONG EMPLOYEES OF ITES AND RETAIL SECTOR IN KOLKATA, INDIA**
J. K. DAS, SABARI MONDAL, ARKADIPTA ROY

4 **A COMPARATIVE STUDY BETWEEN PUBLIC AND PRIVATE SECTOR IN THE ASPECT OF SERVICE QUALITY: SPECIAL REFERENCE TO BANKING INDUSTRY IN SRI LANKA**
ASANKA D. DHARMAWANSA, RAM MADHUWANTHI

5 **ASSESSING THE IMPLICATIONS OF JOB SATISFACTION TOWARDS EMPLOYEE PERFORMANCE: INSIGHTS FROM PUBLIC SERVANT PROFESSIONALS (PSPS)**
MARUF HASAN, MD. MIRAJ HOSSEN, TANJANA SAIYED LIKHON, GAZI MD. SHAKHAWAT HOSSAIN

6 **UNEMPLOYMENT: A PROBLEM PROVING TO BE DISADVANTAGEOUS TO THE TRIBAL INDIVIDUALS**
RADHIKA KAPUR

7 **POVERTY AND BACKWARDNESS: UNFAVOURABLE IN LEADING TO UP-GRADATION OF THE LIVING CONDITIONS OF TRIBAL INDIVIDUALS**
RADHIKA KAPUR

8 **IMPACT OF INVENTORY MANAGEMENT ON FIRM PERFORMANCE A CASE STUDY OF LISTED MANUFACTURING FIRMS ON HOSE**
KHIEM DIEU TRUONG

9 **PROMOTING TEAMWORK: INDISPENSABLE IN LEADING TO SUCCESS OF THE INDIVIDUALS AND ORGANIZATIONS**
RADHIKA KAPUR

10 **RELATION BETWEEN INFLATION AND UNEMPLOYMENT: A SCENARIO OF BANGLADESH**
NASRIN KHATUN

11 **IMPLEMENTATION OF EVALUATION METHODS IS VITAL IN IDENTIFYING THE PERFORMANCE OF INDIVIDUALS**
RADHIKA KAPUR




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# FACTORS AFFECTING LAYOFF IN HIGH-TECH INDUSTRY: EVIDENCE FROM USA

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## Abstract

The prime purpose of this study is to find out the factors affecting layoffs and its relationships in high-tech industries in the USA. Layoff is a planned elimination of positions or jobs frequently happened in high-tech industries where employees losses their employment during a 30-days period. For the research, n=125 (1000*12.5%) data collected through online questionnaire from layoff survivors in high-tech firms in the USA. Corellation and regression analysis conducted to expresses the relation and linear combination of underlying factors associated with layoff in high-tech industry. Results show that high-tech industry in USA downsizes its employees due to five factors like business demand, organizational change, financial issues, production specification and layoff announcement reason. Among them Financial Issues and Organizational changes are highly responsible for Layoff. It is suggested that management should notify employees before reasonable time duration so that they can search for new jobs. Further research can be done to find out the effect of layoff on organizational performance in high-tech industry in USA.

**Keywords:** Financial Issues, High-tech Industry, Layoff, Management, Organizational Changes.

## 1. INTRODUCTION

The layoff is a trending part of today's fast-growing high-tech business especially in USA. It is "the planned exclusion of positions or jobs (Cascio, 1993)". High-tech industries are an important part of the USA economy, employing nearly 17 million workers in 2014. While it's counted about 12 percent of total employment, the high-tech sector contributed almost 23 percent of output but today's major issue is Layoff that increases day by day and this study focusing on factors affecting layoff in the high-tech industry in the



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USA. Different types of layoff happening like one time or partial layoff for startup, venture capital business, and mass layoff recurring frequently in the high-tech industry. It is defined as a reduction in workforce that is not the result of a plant closing but leads to an employment loss at the employment site of 500 or more employees during a 30-day period or a loss of 50-499 employees if they make up at least 33% of the employers. Layoff has negative impacts on workers employment position and sometimes losses wages. On the other hand, it has also negative outcomes that persist over time in the organization.

According to an economic news release in U.S. September 01, 2017, high-tech industries announce more layoff due to some reason like business demand, organizational change, financial issue, production specification, government regulations, labor dispute, material or supply shortage, layoff announcement, and seasonal reason. A large and growing literature traces the causes and impacts of mass layoffs for both workers and their employers. It is less clear, which factors are associated with layoff in high-tech industries in USA. Layoff action may signal organizations' decline or may be part of an overall restructuring effort of management for future productivity and profitability improvements. Past research indicates that the overall market reaction to layoff announcements is slightly negative and the returns are statistically significant. Additionally, firms' long-term performance can be tested to verify, whether buy-and-hold returns are consistent with short-term performance results. The negative returns are consistent with other research results. Another study (Scott, Ueng, Ramaswamy, & Chang, 2011) found negative returns to downsizing announcements, but the returns were not statistically different from zero. Goins & Gruca (2008) studied the impact of layoff on key stakeholders and their results suggest that reputation effects of layoff announcements spillover beyond the announcing firms' layoff and extend to other firms in the industry.

The main purpose of the study is to find out the factors associated and its relationships of layoffs in high-tech industries in the USA. The specific objectives are as follows:

- To investigate the factors associated with layoffs in the high-tech industry in USA;
- To examine which factors are highly responsible for layoff in the high-tech industry;
- To find out the relationships among the factors of layoff in the tech industry in USA.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A Layoff is a temporary or permanent suspension of employment by the decision makers or an employer (Gibbons & Katz, 1991). In another word, it is a suspension or termination of employment (with or without notice) by the employer or management. Layoffs are not caused by any liability of the employees but by reasons such as lack of work, cash, or material. The permanent layoff is called redundancy (Fryer, et al., 2009).

Personnel reductions or layoffs have bottomless effects on the psychological contract between organizations and employees (Bauer, Morrison, & Callister, 1998; Robinson, 1996; Robinson & Rousseau, 1994). Conventionally, this contract has been relational in nature, as job security resulted from the employee's thoroughness and commitment. In recent years, the employer and employee relationship have become more



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transactional, eroding guarantees of job security (Moraitis, 2009). Organizational breaches of the psychological contract with employees are quite common (Robinson & Rousseau, 1994). At the occurrence of a breach, the employee revises the contract, trust declines, and expectations are adjusted (Robinson, 1996).

A layoff disrupts employees' reputations and opportunities of future employment, and their reactions are likely to be negative and potentially destructive to the organization (Brockner, DeWitt, Grover, & Reed, 1990; Robinson & Rousseau, 1994). Survivors of the layoff may respond by disaffection themselves and appealing in behaviors that are dysfunctional, such as retaliation (J. Brockner, Grover, & Reed, 1987; Folger & Skarlicki, 1998; Fowke, 1998; Konovsky & Folger, 1991).

Layoffs also have the potential to produce a number of generally undesirable psychological states for survivors. Job stress and job uncertainty are likely to increase following a layoff, and these negative affective states have the potential to influence important work attitudes and behaviors, including commitment, satisfaction, performance, and turnover (Joel Brockner, 1992; Joel Brockner, Siegel, Daly, Tyler, & Martin, 1997; Joel Brockner et al., 2004; Greenhalgh & Rosenblatt, 1984; Kim, 2003). Management conducts the layoff serves to inform survivors about the treatment that they can guess in the future from the organization, and previous research has indicated that survivor responses are partially dependent upon how fairly they perceive the layoff (Chadwick, Hunter, & Walston, 2004); Folger & Skarlicki, 1998; Robinson & Rousseau, 1994; Rosen, Case, & Staubus, 2005).

Layoffs and Downsizing are an important mechanism for U.S. firms to cope with their strategic and economic environment which trigger negative returns (Lee, 1997) especially in high-tech industries (US Bureau of Labor Statistics, 2013). Previous researchers examined that there have several reasons for layoff or mass layoffs like business demand, organizational change, financial issue, production specification, material or supply shortage, layoff announcement and seasonal reason (Handwerker & Mason, 2011).
US Bureau of Labor Statistics (2013) observed that the fraction of layoffs due to Business Demand reasons and financial reasons was unusually high in both recessions covered by the Mass Layoff Statistics (MLS), while the fraction of layoffs due to reorganizational reason was highest from the 1990s expansion through the 2000s expansion. Handwerker & Mason (2011) also said that the fraction of layoffs in the manufacturing industry was particularly high from the 1990s expansion to the 2001 recession and the fraction of layoffs in high-tech industry has been particularly high during the current expansion. Cavalcanti (2004) investigates the effects of layoff costs on the labor market and study result shows that when layoff costs are increasing, stricter job security might increase and job destruction and unambiguously affects the unemployment rate.

In addition, Recent studies (e.g., Bertola & Rogerson, 1997; Blanchard & Portugal, 2001; Ljungquist, 2002) shows that layoff costs not only increase job tenure, but they also have a negative impact on workers demand. When firms decide to hire an employee, they consider the probable cost of hiring, and dismissal costs are clearly part of it. Therefore, to avoid layoff costs, firms hire workers less often. Although the rates of job creation and job destruction decrease with layoff costs, the equilibrium unemployment rate is ambiguously



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affected by job security. Layoffs announcement involve a very negative decision to individual ‘‘sufferers.’’ The nature of this decision can impact not only the reactions of layoff victims but also the attitudes and behaviors of those who survive the layoff (Konovsky & Brockner, 1993). Negative reactions of victims include physical, psychological, social, and economic problems. Similarly, Brockner et al. (1994) mention that advanced notice and explanations regarding the layoff announcement were positively related to trust in the organization.

Furthermore, they found a strong relationship between the justice of a layoff, which included offering advanced notice and carefully explaining the reason for the layoff, and the survivors' organizational commitment following the layoff. US Bureau of Labor Statistics (2013) observed that the high-tech industries announce more layoff due to some reason such as business demand, organizational change, financial issue, production specification, government regulations, labor dispute, material or supply shortage, layoff announcement, and seasonal reason. On September 01, 2017 US Bureau again release their economic news and observed that tech industries announce more layoff due to some main reason like business demand, organizational change, financial issue, production specification, and layoff announcement.

In addition, another researcher Handwerker & Mason, (2011) found that companies announce layoff due to organizational change, business demand, financial issue, and product specification. Finally, on the basis of the above literature, this study conducted with five variables listed in the study framework. Based on these studies, the current study posits the following hypothesis:

**$H_1$:** Business Demand has a significant impact on Layoff.
**$H_2$:** Organizational Changes has a significant impact on Layoff.
**$H_3$:** Financial Issues has a significant impact on Layoff.
**$H_4$:** Product Specifications has a significant impact on Layoff.
**$H_5$:** Layoff Announcement has a significant impact on Layoff.

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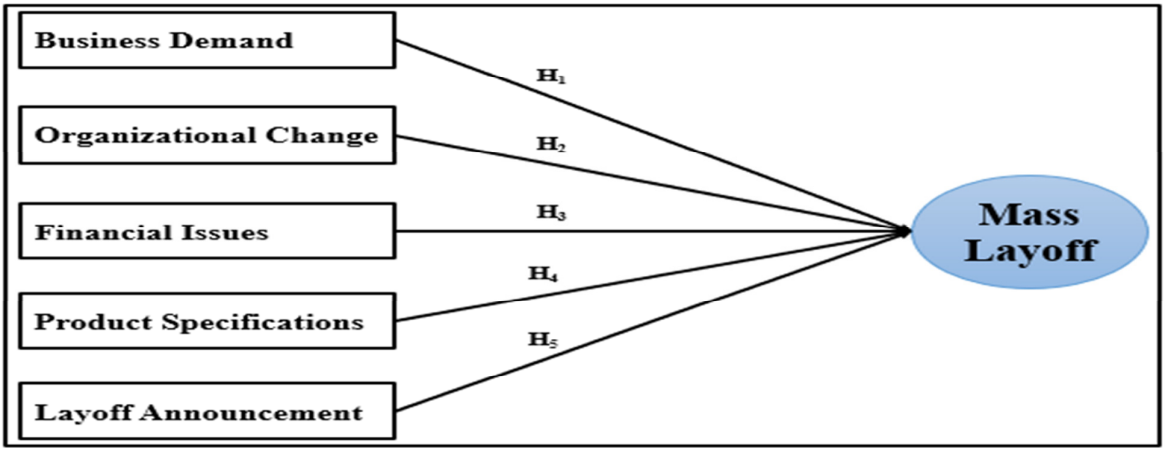


**Fig. 1:** Theoretical Framework of Layoff

## 3. METHODOLOGY OF THE STUDY

An exploratory study was conducted to achieve the study objectives. Data collected through online questionnaire on a five-point Likert scale from 1 equal to "Very Important" and 5 equal to "Not Important". To conduct the study total 15 items and five variables considered for analysis based on literature review. The study was conducted based on primary responses and in total 1000 questionnaire were send through email, instant messaging tools as well as LinkedIn message to 700 employees who are still working in high-tech industry and 300 layoff candidates as part of a larger study on layoff in high-tech industry in USA. The response rate was only 12.5 percent and among the 128 responses 3 responses were not used due to incomplete response; thereby reducing the final sample to 125 for final study. Secondary data used in this research from different web portals, journals, online newspapers, and magazines etc. Descriptive Statistic was used for better understanding of the background of the respondents of the research. Cronbach's Alpha was used to test questionnaire's reliability, accuracy, and internal consistency. To conduct analysis SPSS 20 was used for study purposes. Finally, correlation and regression analysis were conducted among the variables to find out the strength of the relationships of the variables.

## 4. FINDINGS AND ANALYSIS

### 4.1 Demographic Profile of Respondents

Table-1 is used to illustrate the gender distribution of the respondents. A total of 95 (76%) of the respondents are male while only 30 (24%) is female respondents. The table shows a greater percentage of male respondents as compared to female counterparts. The table also shows that the total of 38 (30.4%) of the respondents are between 18-25 years, and a big total of 77 (61.6%) of the respondents are between the ages of 26-34 years, 6 (4.8%) of the respondents are between the ages of 35-45 years, while only 4 (3.2%) of the respondents are over 45 years. Table-1 is used to illustrate the current position of the respondents. A total respondent is 125, among them, 108 (86.4%) of the respondents are privet employee while the 17 (13.6%)



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respondents doing business. The table shows a greater percentage of respondents are working as privet employees as compared to doing business.

**Table 1:** Demographic Characteristics of Sample

| Variable | Description (Coding) | Frequency | Percentage (%) |
|---|---|---|---|
| **Gender** | Male | 95 | 76.00 |
| | Female | 30 | 24.00 |
| **Age** | 18-25 Years | 38 | 30.40 |
| | 26-34 Years | 77 | 61.60 |
| | 35-45 Years | 6 | 4.80 |
| | Above 45 Years | 4 | 3.20 |
| **Positions** | Business | 17 | 13.60 |
| | Private Employees | 108 | 86.40 |

### 4.2 Reliability of the Study

Reliability is a measure of the internal constancy of the construct indicators (Streiner, 2003). According to Hair, et al. (2014) it refers to the extent to which a set of indicators measure a cumulative construct consistently, the alpha value of .60 is sufficient (Sekaran & Bougie, 2013). Normally, a high coefficient alpha does not mean a high level of internal consistency (Emirates, 2018). This is on the grounds that alpha is equally influenced by the length of the test. On the probability that the test length is too short, the estimation of alpha is moderated by (Tavakol & Dennick, 2011). The validity of the questionnaire was evaluated from five factors of the study model. While, the Cronbach Alpha was calculated to test the questions reliability, in which the study applies to the study on a sample of 125 respondents. Where the overall Cronbach's Alpha indicators showed the value (0.953) with 15 items and the following results of Cronbach's Alpha are separately tested on SPSS program for each factor.

**Table 2:** Reliability Analysis of the Study

| Variables | **Business Demand (BD)** | **Organizational Change (OC)** | **Financial Issue (FI)** | **Production Specification (PS)** | **Layoff Announcement (LA)** |
|---|---|---|---|---|---|
| Cronbach's Alpha | .778 | .838 | .744 | .768 | .795 |

### 4.3 Result of the Correlation

Correlation analysis has conducted to see the degree of correlation among the study variables as well as to establish. Normally, the correlation analysis is used to define the strength and direction of the linear relationship between two variables (Pallant, 2001). There are a number of different statistics available; it



*ISSN 2076-9202*

depends on the level of measurement. In this study, the procedure for obtaining and interpreting a Pearson's correlation coefficient was used.

**Table 3:** Pearson's Correlation Analysis

| Variables | BD | OC | FI | PS | LA |
|---|---|---|---|---|---|
| **Business Demand (BD)** | 1 | | | | |
| **Organizational Changes (OC)** | .692** | 1 | | | |
| **Financial Issues (FI)** | .740** | .638** | 1 | | |
| **Product Specifications (PS)** | .763** | .815** | .592** | 1 | |
| **Layoff Announcement (LA)** | .798** | .584** | .934** | .647** | 1 |

Table-3 indicated a correlation matrix for all variables were the value of the correlation coefficient "r" is bigger than (r > 0.5). Hence, the correlation between the variable and itself is generally 1. Consequently, it illustrated a very high relationship between all the factors, where changes in one factor are bigger associated with changes in another factor. Therefore, the highest correlation matrix value for Layoff Announcement with the Financial Issues is .934** (Sig. = .000) and Product Specifications with the Organizational Changes is .815** (Sig. = .000). In addition, Business Demand also has a high relationship with the Layoff Announcement and the value of correlation matrix is .798** (Sig. = .000), thus, it indicated a strong relationship between variables; furthermore, all variables were highly correlated.

### 4.4 Regression Analysis

#### 4.4.1 Model Summary

Table-4 illustrated the summary of multiple regression analysis. It is found that R=**0.995** which is proved as a high degree of correlation among variables. R square is indication of how much our dependent variable is affected or how much variation in the dependent variable is because of the independent variable. According to the study results, it is found that about **99.0%** changes in the dependent variable because of the independent variables.

**Table 4:** Model Summary

| **Model** | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| **1** | .995[a] | .990 | .990 | .03122 | .990 | 2407.840 | 5 | 119 | .000 |

**a.** Predictors: (Constant), Business Demand, Organizational Change, Product Specification, Financial Issue, Layoff Announcement.

**b.** Dependent Variable: Mass Layoffs



*ISSN 2076-9202*

### 4.4.2 ANOVA Result

The ANOVA table of this study presents whether there is any relationship between the independent and dependent variable. The significance value of ANOVA table is P=0.000. This indicates that there exists a relationship between the independent and dependent variables which is statically significant.

**Table 5:** Analysis of variance (ANOVA)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 11.738 | 5 | 2.348 | 2407.840 | **.000[b]** |
| | Residual | .116 | 119 | .001 | | |
| | Total | 11.854 | 124 | | | |

**a.** Dependent Variable: Mass Layoffs

**b.** Predictors: (Constant), Business Demand, Organizational Change, Product Specification, Financial Issue, Layoff Announcement

### 4.4.3 Result of the Structural Model

Following the confirmation of the validity and reliability of constructs, the next phase involves the examination of the inner model via testing the hypothesis through the methods of the algorithm.

**Table 6:** Structural Model

| Hypothesis | Hypothesis Path | Path Coefficient | Standard Error | T-Value | P-Value | Decision |
|---|---|---|---|---|---|---|
| $H_1$ | **BD → Layoff** | **.206** | **.044** | **4.659** | **.000** | **Accepted** |
| $H_2$ | **OC → Layoff** | **.244** | **.025** | **8.457** | **.000** | **Accepted** |
| $H_3$ | **FI → Layoff** | **.195** | **.019** | **9.929** | **.000** | **Accepted** |
| $H_4$ | **PS → Layoff** | **.210** | **.022** | **8.749** | **.000** | **Accepted** |
| $H_5$ | **LA → Layoff** | **.214** | **.037** | **5.901** | **.000** | **Accepted** |

From the results in Figure 2 and Table 6, it is evident that Business Demand was found to have a positive and significant effect on Layoff at the significance level of 0.01 (β=0.902, t=23.205, sig= 000), indicating support for $H_1$. Again, the Organizational Change have a positive and significant effect on Layoff at the significance level of 0.1 (β=0.863, t=18.908, sig= .000), indicating support for $H_2$. Furthermore, the study result shows that the Financial Issue has a positive and significant effect on Layoff at the significance level of 0.01 (β=0.874, t=19.984, sig= .000), indicating support for $H_3$. The results also revealed a positive and significant effect or Product Specification on Layoff (β=0.878, t=20.378, sig= 000), indicating support for



ISSN 2076-9202

$H_4$. Finally, the effect of Layoff Announcement on Layoff also found a positive and significant at the level of 0.01 (β=0.885, t=21.094, sig= .000), indicating support for $H_5$.

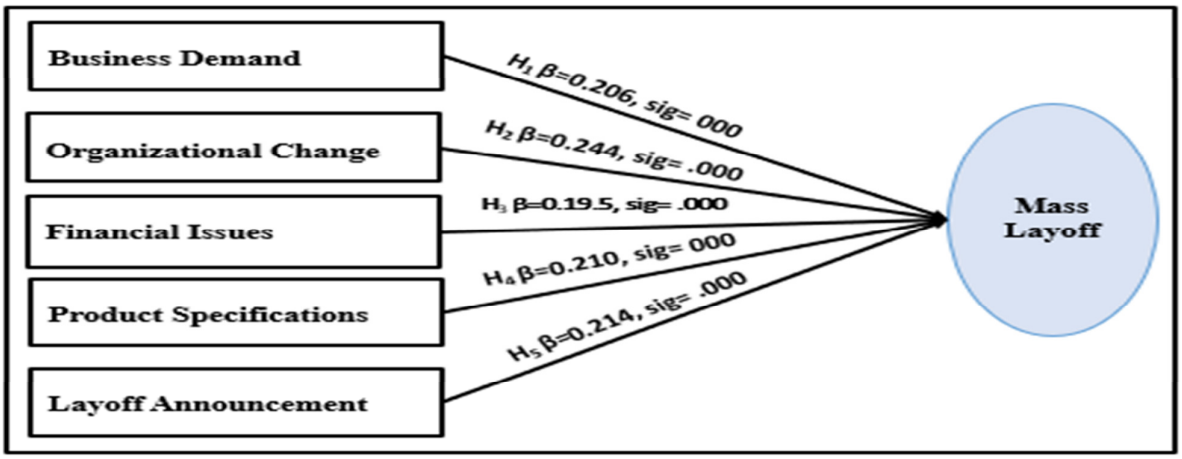


**Fig. 2:** Inner Structural Model

## 5. DISCUSSIONS

### 5.1 Business Demands for Layoff

The coefficient table indicates the strong change in the dependent variable which is 20.6%, associated with a 1-unit change in the dependent variable, statistically controlling for the other independent variables. The significance level or the P-value (Probability) of the variable business demand and Mass Layoff is according to the response received is (Sig. =.000) which means that null hypothesis rejected and the alternate hypothesis is accept. Here, Business Demands are responsible for Layoff, hence, as per the above results which indicated the sufficient evidence to accepted $H_1$.

### 5.2 Organizational Changes for Layoff

Stepwise the above table demonstrated the summary of regression analysis. That indicates the big change in the dependent variable which is 24.4 %, associated with a 1-unit change in the dependent variable, statistically controlling for the other independent variables. The significance level or the P-value (Probability) of the variable organizational changes and layoff is according to the response received is (Sig. =.000) which means that null hypothesis rejected and accept the alternate hypothesis i.e. Organizational Changes are responsible for Layoff. As per the above results which indicated the sufficient evidence to accepted $H_2$.

### 5.3 Financial Issues for Layoff

Again, the table shows the beta value that indicates the moderate change in the dependent variable which is 19.5 %, associated with a 1-unit change in the dependent variable, statistically controlling for the other independent variables. The significance level or the P-value (Probability) of the variable financial issues and layoff is according to the response received is (Sig. =.000) which means that null hypothesis rejected and accept the alternate hypothesis i.e. Financial Issues are responsible for Layoff. As per above results, which



ISSN 2076-9202

indicated the sufficient evidence to accepted $H_3$.

### 5.4 Product Specifications for Layoff

Stepwise the coefficient table indicates the high change in the dependent variable which is 21.0 %, associated with a 1-unit change in the dependent variable, statistically controlling for the other independent variables. The significance level or the P-value (Probability) of the variable product specifications and layoff is according to the response received is (Sig. =.000) which means that null hypothesis rejected and accept the alternate hypothesis i.e. Product Specifications are responsible for Layoff. As per above results, which indicated the sufficient evidence to accepted $H_4$.

### 5.5 Layoff Announcement for Layoff

Finally, the coefficient table indicates the high change in the dependent variable which is 21.4 %, associated with a 1-unit change in the dependent variable, statistically controlling for the other independent variables. The significance level or the P-value (Probability) of the variable layoff announcement and layoff is according to the response received is (Sig. =.000) which means that null hypothesis rejected and accept the alternate hypothesis i.e. Layoff Announcement are responsible for Layoff. As per above results, which indicated the sufficient evidence to accepted $H_5$.

## 6. IMPLICATIONS

This study contributes to our knowledge by examining the factors of layoff. Study findings regarding specific model links and confirmed our entire hypothesis. First, study findings are consistent with previous research which has suggested that the high-tech industry downsize its employee due to business demand, organizational change, financial issue, production specification, layoff announcement and seasonal reason (Handwerker & Mason, 2011). In the current study, state that the Financial Issues and Organizational change reason are more responsible for layoff or mass layoff. When an organization hires its employee to achieve a specific goal then they make an agreement for a specific duration. Sometimes the goal may achieve before that duration and company cancel its contract without any notice. On the other hand, Tech Company changes their top positions at any time due to organizational change. This change can be three reasons; the first one is ownership change- when an organization handed over its ownership to someone then the new owner layoff its existing employee without any reason. The second one is a restructuring of the company, sometimes tech industry layoff their employee due to corporate management term for the act of restructuring the legal, ownership, operational, or other structures of a company for the purpose of making it more profitable.

The third is branch shut down; it's become more challenging for existing employees when their current organization shut down their branches. In addition, financial reasons are also responsible for layoff. High-tech industry always focuses on the high number profit rather than other industries. Sometimes it becomes difficult for decision-makers to achieve that goal. In this case, they downsize some employment position and try to overcome the goal without paying the laid-off employee. Furthermore, lower product demand made layoffs in the tech industry because of its product specification or technological advancement.



ISSN 2076-9202

Although the study intention was that the technological change to see as a factor that would increase an employers' ability to pay, respondents may have considered the technological changes as necessary to keep up. If the new technologies were available to the entire industry, then the company may have had to adopt them just to stay in business. Therefore, the technology shock may reduce employment demand without increasing ability to pay, leading to these results. Further research may want to distinguish labor-saving technological shocks that give a company a competitive advantage and, thus, raise ability to pay vs. those technological changes that do not increase the ability to pay.

## 7. CONCLUSIONS

This paper gives (according to our knowledge) the first estimates of the relationships between layoffs and business demand, such as contract cancellation, contract completion, domestic competition. It also shows how these relationships differ for employers with different industries or ages, for layoffs occurring in different portions of the business cycle, and by the reason for the layoff. Second estimates of the relationships between layoffs and organizational change, such as business ownership change, restructuring, and branch shut down. All estimates are relative to observations of a comparison group of employers similar in age, industry, and size, but without contemporaneous mass layoffs. The study shows that employers with layoffs were growing more quickly. The impact of layoffs on long-term employment patterns varies by the reason of layoff. Layoffs for seasonal reasons have much less impact on long-term employment levels than layoffs for other reasons. Layoffs for business demand reasons and organizational change reason follow periods of sharp employment growth. Young employers with layoffs had particularly strong employment growth before the layoffs, relative to comparison employers. Finally, it is suggested that management should be careful about layoff and they must announce among the affected employees be a reasonable time period so that they can search for new jobs.

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# A COMPARATIVE STUDY OF STRESS VARIABLES AMONG EMPLOYEES OF ITeS AND RETAIL SECTOR IN KOLKATA, INDIA

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**ABSTRACT**:

In this day and age, where an increasing number of people can be witnessed to opt for job opportunities in Information Technology enabled Services (ITeS) and Retail sectors, the health and well-being of such people appears to have important implications over organizational efficacy. This study thus explores the context of employee stress prevailing in ITeS and Retail sector with regard to their progress in different services, the impediments and daily hassles they have to tackle while climbing the career ladder and also in balancing their work-life issues. Descriptive statistical analysis and sector specific comparison of identified stressors (using Semantic Differential Graph) are performed to investigate the data collected from respondents through a primary field survey. The comparison brings into light how the very nature of the job makes a difference on the perception and intensity of the stress variables and coping strategies that employees adapt at each of these two sectors.

**KEYWORDS:** Descriptive statistical analysis, Information Technology enabled Services (ITeS), Likert scale, Retail sector, Semantic Differential Graph, Stress Management, Stress Variable.

## 1. MOTIVATION OF THE STUDY

Modern day activities, though having made our life a lot easier, have also amplified the stress experienced by any modern man. Today, work spaces are full of hassles, tormenting deadlines, frustrations and demands. Thus, to keep at par with the fast pace and complexities of their work environment, one has to undergo too



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many multifarious situations that inadvertently results in a lot of stress. The word *Stress* can have wide connotations; as per the Health and Safety Executive (HSE-UK) (*Palmer et al.*, 2004) stress is the adverse reaction people have to excessive pressure or other types of demand placed on them. Back in 1936, iHans Selye first coined the word – *Stress.* He defined stress as the non-specific response of the body to any demand for change. *Selye* (1936) viewed stress as the non-specifically induced changes within a biological system. His concept of General Adaptation Syndrome (GAS) provides an automatic defense mechanism to help people cope up with the external environmental demands. *Beehr and Newman* (1978) defined job-stress as a condition arising from the interaction of people and their jobs and can be characterized by change within people that forces them to deviate from their normal functioning. Health and Safety Executive's formal definition of work-related stress is; the adverse reaction people have to excessive pressures or other types of demand placed on them at work. However, stress is not always bad. With controlled application, stress can help employees to put up their A-game and rise up to meet challenges. Small doses of stress help people meet deadlines, are prepared for presentations or are productive and arrive on time for important events. However, long-term stress can become harmful (*www.camh.ca*). If employees are constantly running in an emergency mode, the mind and body pay the ultimate price. When stress becomes overwhelming and prolonged, the risks for mental health problems and medical problems increase (*www.camh.ca*). *Appley and Trumbull* (1986) opined that the psychological health of employees is of utmost importance and that stress influences the adaptational outcomes such as well-being, social functioning, and somatic health of employees. Work related stress is in general sense a negative and unpleasant condition which maybe experienced when a person perceives that they are unable to meet the demands and pressures that are placed upon them and which may be associated with a range of ill health effects, both physiological and psychological (*Cox*,1993). People are daily border-crossers between the domains of work and family (*Clark*, 2000). In modern life we cannot escape from hassles, deadlines, frustrations, and demands. Rising stress levels, lower job security, ever-tighter deadlines and targets are now-a-days a business reality. *Struebing and Laura* (1996) in their research expressed that according to the American Society for Training and Development (ASTD), majority employees have stress related health problems and hence they suggested to educate people on how to negotiate alternatives, setting realistic deadlines, fair compensation for overtime working hours, encouraging regular exercise, offering nutritious snacks during breaks and so on. *Das and Datta* (2008, 2011a, 2011b, 2011c and 2015) empirically studied occupational stress in six service sectors such as banking, insurance, transport, communication, health and education of Kolkata and different ways to handle such stress. As per the ASSOCHAM Survey on "Government vs. Private employee health scenario" (2013), the increasingly demanding schedules and high stress levels are leading to sleep disorders in private sector. Loss of sleep has wide ranging effects including daytime fatigue, physical discomfort, psychological stress, performance deterioration, low pain threshold and increased absenteeism. The survey further points out that nearly 45 per cent of the corporate employees in private sector sleep less than 6 hours on a daily basis due to work related pressure. Around 58 per cent of corporate employees in private sector are deeply concerned about their future health, 38 per cent are most of the time fearful regarding their future health conditions however the rest 4 per cent are indifferent about their future health *(www.assocham.org).*Many research works have been conducted in the area of stress management over many decades. However, after



ISSN 2076-9202

extensive literature review it could be concluded that very few commendable research works could be found encompassing both ITeS and Retail sectors. Information Technology enabled Services (ITeS) is a form of outsourced service which has emerged due to vast involvement of ITeS in various fields such as banking and finance, telecommunication, insurance, etc. Some of the examples of ITeS are medical transcription, back-office accounting, insurance claim, credit card processing and many more. Firms usually from developed countries outsource such services to countries like India, China and Philippines in order to gain from large talent pool and low labor cost. In recent years, ITeS industry has become one of the fastest growing industries in India. On the other hand, Retail is the sale of goods to the public in relatively small quantities for use or consumption purposes rather than for resale. Retail Industry has presently emerged as one of the most dynamic and fast paced industries as several giants have started to enter the market. India ranked No. 2 in Global Retail Development Index (GRDI) in 2019. Retail sector has contributed 800 Bn to India's GDP in FY20 and has employed 8% of its workforce (35+ Mn). Indian retail market is projected to reach $1.75 Tn by 2026 and is expected to create 25 Mn new jobs by 2030 (*www.investindia.gov.in*).As per *Chella* (2002) with growing consumerism, unprecedented awareness, and a youth-hefty customer base, India is perceived as 'Most Promising Land' for the Global and domestic retailers. As per the report of *McKinsey Global Institute* (2007), India is well on its way to become the world's fifth-largest consumer market by 2025. The Indian retail market is professed as potential goldmine and is attracting a large number of giant international and domestic players in anticipation of explosive growth. *Ghosh* (2016a, 2016b) studied stress among IT Sector employees citing real life case studies from IT Sector and also studied stress of Retail Sector employees showing instances of how employees in retail sector are suffering mainly due to unorganized retail. With a fallacy to earn more, people have been joining these two sectors making them entangled with stress. *Tamilzharasi and Uma* (2014), after a thorough study on the non-viability of the BPO (Business Process Outsourcing) sector, stated that the young generation of India is actually losing out in the BPO. The financial cause is associated with other behavioural and psychological causes affecting the masses of ITeS and Retail sector employees which are actually causing immense stress among them. According to *Baret et al.* (1999) variability and unpredictability in earnings and schedules affect workers' ability to make financial plans and as such also affects workers' ability to schedule other income earning activities or their personal and family life. As concluded by *Lewchuk et al.* (2003), many temporary agency workers receive poorer pay and employment conditions than workers performing similar tasks under traditional direct hiring arrangements. In her research, *Zeytinoglu* (2004) stated that workplace factors that are common to all workers in retail sector include industry restructuring and hazardous work conditions, which impact worker stress and organizational outcomes. Work environments can have both positive and negative consequences on psychological well-being of employees and thus any comprehensive understanding of the same must take into account both salubrious and harmful influences of work on workers' well-being *(Briner,* 2010*).* Excessive stress is an obvious health hazard, but what is less talked about are the effects of burnout on business performance. Stress makes people nearly three times as likely to leave their jobs, temporarily impairs strategic thinking, and dulls creative abilities (*Harvard Business review*, 2019). On the contrary, stress free and satisfied employees display greater level of job loyalty and commitment, resulting in lower level of turnover rates, lower costs and higher productivity (*Das and Roy*, 2020). Since one of the key stakeholders of any



ISSN 2076-9202

organization is its employees, the organization can reach its goals and prosper accordingly through the efforts of those employees. Therefore, it becomes the responsibility of the organization to look after the well-being of their employees and help them feel content in the work that they perform (*Das and Roy*, 2019). *Das and Chatterjee* (2011, 2012a, 2012b, 2013a, 2013b, 2014 and 2015) studied the causes of occupational stressors in service sector and also suggested strategic planning technique at individual and organizational level to combat stress.

The present research thus aims to identify the stress variables and consequently establish a comparative descriptive analysis among the ITeS and Retail sector employees in Kolkata, India. In the ITeS industry majority of the population, around 81.5% are in the age group between 20 to 25 years and the mean age of the employees is 24 years. The widespread nature of stress in IT has given rise to the term 'techno-stress', which is used to explain the rising levels of stress due to usage of computers. Craig Broad in early 1980's introduced the term techno-stress and defined it as a 'modern disease of adaptation caused by the inability to cope with new computer technologies in a healthy manner (*Ennis*, 2005). Thus, there is a strong need for systematic research on stress among ITeS professionals. On the other hand, Retail sector, having its root in mom and pop stores or kirana stores in India, bears minimum conception of an organized sector, thus garnering neglect in the aspect of employee satisfaction and stress mitigation. So, the situation itself demands the current research to explore the same.

## 2. OBJECTIVES

The main objective of this research is to analyze and examine the effects of occupational stress on the employees belonging to the ITeS and Retail sector in and around Kolkata, West Bengal, India. More specifically the study aims to:

1. Identify various constructs causing stress at individual and group level, both of organizational and extra-organizational nature.
2. Establish a comparative analysis of selected stress variables between the employees of ITeS and Retail Sector for a better understanding of their impact.

## 3. RESEARCH METHODOLOGY

The research is exploratory and empirical in nature. It examines the various factors resulting in stress, the consequences of stress and management of occupational stress in ITeS and Retail sectors. The research is based on the information collected through a structured questionnaire administered among selected respondents of different categories of employees related to ITeS and Retail sectors in and around the city of Kolkata, West Bengal, India. A structured questionnaire has been drafted initially and several rounds of pilot surveys were done to finalize it. The questionnaire is formed with the help of psychometric instruments like Occupational Stress Index *(Srivastava and Singh, 1981)*, Job Anxiety Scale *(Srivastava, 1985)*, Stress Resistant Cognitive Behavioural Patterns Scale *(Srivastava, 1997)* and Coping Strategies Scale *(Srivastava and Singh,1988)*.

For primary data collection stratified sampling is adopted as main sampling technique where two sectors are



ISSN 2076-9202

treated as different strata and then quota sampling is considered in different strata. The period of data collection extends from 2021 to 2022.

The statistical analysis of data is done through SPSS package. Descriptive statistical methods are used for the analysis of data collected from selected respondents. For qualitative analysis of data, ranking and different scaling techniques like Likert's Summated Scale, Semantic differential Scale is adopted.

## 4. DATA ANALYSIS AND FINDINGS

A cross-sectional study of 536 respondents, 213 respondents working in ITeS and 323 respondents from the Retail Industries, in Kolkata (West Bengal, India) has been conducted to have a better understanding of the causes, symptoms, consequences of stress, their work-life balance issues and coping strategies of work stress in their respective work places. Data have been collected from Tata Consultancy Services (TCS), International Business Machines Corporation (IBM), Wipro Limited and Infosys Limited in the ITeS sector and from Raymond Group, Shoppers Stop, Westside, Zodiac and Himalaya in Retail sector.

*Reliability of Data:* Cronbach's alpha coefficient confirms the internal consistency of the set of items of a given scale. As per general rule, any value greater than 0.50 is desirable under the Cronbach's alpha. The present data set for the study shows Cronbach's alpha for ORS scale equal to 0.8341 and work-life balance scale is 0.8917. Similarly, reliability of the set of items for job anxiety scale, physical, psychological and behavioural symptoms are tested and the values are 0.8156, 0.8467, 0.9048 and 0.8703 respectively.

*Stress Related Variables:* The different stress related variables considered for this research are

1. Personality Type
2. Stress Symptoms Inventory
    a) Physical Symptoms
    b) Psychological Symptoms
    c) Behavioural Symptoms
3. Occupational Stress Index
    a) Personal Vulnerability to Stress
    b) Job Demands and Anxiety
    c) Work-life Balance
4. Stress Resistant Cognitive Behavioural Patterns
    a) Cognitive Coping
    b) Behavioural Coping
    c) Cognitive with Behavioural Coping

### 4.1 GENERAL PROFILE OF RESPONDENTS

Respondents chosen for this research have been broadly classified into two categories - ITeS and Retail



ISSN 2076-9202

sector. Out of the total 536 respondents interviewed, 213 respondents or 39.7% belonged to the ITeS and subsequently Retail sector comprised of 323 or 60.3% of the respondents. Distribution of respondents on the basis of gender showed that male respondents consisted of a majority of 59.5% of the sample data set whereas female respondents comprised only 40.5% of the same. Further it can be observed that in the ITeS, there are 126 male respondents and 87 female respondents as compared to 193 male respondents and 130 female respondents in the Retail sector. On the basis of age, the data set has been classified into 5 categories creating a data range from 25 to 49 years. The main concentration of respondents was seen to be in the age group ranging from 30 to 35 years closely followed by 25 to 29 years. For analysis based on marital status, the data set is divided into the categories of married and unmarried where unmarried respondents comprise of 31.3% and married respondents comprises 68.7% of the dataset. Number of children is another criterion to segregate the data where respondents bearing single child is 46.6%, with two children is 22.1% and unmarried respondents comprised of 31.3% of the total data set. As for the educational qualification of the respondents, the value is 5.6%, 42.9% and 51.5% for Plus 2 level, Graduate level and Post Graduate level of qualification respectively. Monthly income of respondents ranges from Rs.10000/- to more than Rs.40,000/- where the class interval is 10,000 and there are 4 categories. A majority of 49.3% belonged to the income group of 20000 – 30000 closely followed by the income group of 30000 – 40000 with a 28.9% of respondents. Respondents considered for this study belonged from two types of families, either Nuclear or Joint where respondents from nuclear families stands at 56.2% and that of joint families stand at 43.8%. Respondents' job experience varies from 2 years to 8 years where there is 7 classes and the difference in each class is 1. The least experienced class occupies 0.4%of the data followed by 7.5%, 27.8%, 25.7%, 27.2%, 9.3% and 2.1% ranging from second lower category to the highest. The job profile or the designation of the respondents also varies. The job profile or the designation of the respondents also varied in several categories namely Executive, Faculty, Manager, Marketing, Sales and Technical people. Majority of the respondents belonged to the job profile of Marketing closely followed by Vigilance and Sales respectively. Distance between workplace and residence also plays an important role in determining the employee stress levels on a daily basis. Greater the distance more will be the physical exertion resulting in stress that might hamper their productivity at work place to a great extent. Majority respondents have their work places within a distance of considerable 6 to 10 km however closely followed by a distance of 16 to 20 km.

## 4.2 PERSONALITY PROFILE OF RESPONDENTS

The personality attributes of the respondents have been measured with the help of a bipolar scale (1-2-3-4-5). Two extreme ends of the scale are 1, which signifies extreme Type A and 5, which signifies extreme Type B. Altogether, there are twenty-two personality traits which are depicted from extreme Type B to extreme Type A of personality of respondents. The personality traits as identified are as follows: *tolerance, patience, rigidity, self-esteem, anxiety, intra psychic conflict, locus of control, emotional maturity, dependency, sensitivity, imagination, competitiveness, risk taking capacity, energy, aggression, quick and swift movements, dexterity, laid back, introvert, listening capacity, trustworthiness.* From the descriptive analysis it can be noted that the mean values of all the personality attributes ranges between 1.5 to 2.5 in the bipolar scale which reveal that among all the 536 respondents selected from ITeS and Retail sector, Type B



ISSN 2076-9202

personality characteristics are predominant in respondents. Again, a comparative study of personality profiles between ITeS and Retail sectors show that majority of the respondents belong to Extreme Type A personality. More than half of the respondents in the sample of 536 individuals i.e., 51.12% are possessing Extreme Type A personality and 24.07% belongs to Moderate Type A personality. Extreme Type B personality is seen among 6.53% and Moderate Type B personality among 18.28% of the respondents. Since Type A personalities are always too keen on completing their task fast, they are always in an urgency and thus might consequently become more frustrated and stressed.

## 4.3 STRESS SYMPTOMS OF RESPONDENTS

The symptoms of stress related variables are measured on a 5-point Likert Summated rating Scale: 5 denotes *Never*, 4 denotes *Occasionally*, 3 denotes *Sometimes*, 2 denotes *Quite Often* and 1 denotes *Almost Constantly*. Scores are computed from average ratings or scale-values of the individual items under respective variables.

The variable *Physical Symptoms of Stress* focuses on factors that affect the quality of work of employees in both ITeS and Retail sectors. A total of 20 symptoms have been considered namely headaches, muscular tension, gastric trouble, heart disease, high cholesterol, sexual dysfunction, back pain, sleeplessness, hair fall, skin problems, obesity, high blood pressure, high blood sugar, weakness, indigestion, constipation, rash, loss of appetite, migraine and visionary problem.

Table 1: Physical Symptoms of Stress of Respondents

| Physical Symptoms | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 105 | 49.30 | 158 | 48.92 | 263 | 49.07 |
| High | 80 | 37.56 | 132 | 40.87 | 212 | 39.55 |
| Moderate | 18 | 8.45 | 18 | 5.57 | 36 | 6.72 |
| Low | 10 | 4.69 | 15 | 4.64 | 25 | 4.66 |
| Total | 213 | 100.00 | 323 | 100.00 | 536 | 100.00 |

The mean score which ranges from 1.61-2.47 implies that respondents suffer from physical manifestations of stress quite often. More than 40% of the selected respondents experience the common physical problems like feeling physically tense, muscular spasms in back or neck, pain in knee-joints and shoulders, experiencing breathlessness due to anxiety, skipping meals due to busy schedule or loss of appetite, not including any form of physical exercise or yoga in daily routine and so on. Low mean value of the physical symptoms is noticed for attributes like feeling tense all over the body, profuse sweating, finding it difficult to relax, severe or chronic lower back pain, chronic headache or migraine, tension or muscular spasms in face area, neck, shoulders or knee joints thereby establishing the extent of ill effects that work stress can cause on the employees' physical health.

The variable *Psychological Symptoms of Stress* considers a total of 16 attributes relating to psychological stress levels of employees in ITeS and Retail sectors like lack of self-confidence, eliciting sympathy from



ISSN 2076-9202

others, forgetfulness, boredom, temper outburst, frustration, lack of concentration, feeling of guilt and worthlessness, suicidal thoughts, nervousness, helplessness, negativity, anxiety about job security etc.

Table 2: Psychological Symptoms of Stress of Respondents

| Psychological Symptoms | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 110 | 51.64 | 162 | 50.15 | 272 | 50.75 |
| High | 88 | 41.31 | 145 | 44.89 | 233 | 43.47 |
| Moderate | 10 | 4.69 | 8 | 2.48 | 18 | 3.36 |
| Low | 5 | 2.35 | 8 | 2.48 | 13 | 2.42 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |

The mean value ranges from 1.59-2.57 that establishes the fact that majority of the respondents are suffering from moderate level of psychological stress in their work place. Among all the attributes, more than 50% of the respondents are prone to psychological issues like consciously avoiding problem areas, forgetfulness, frustration, unable to trust anyone in life, feeling loneliness etc. Again, in continuous scale, high average mean value is noticed for attributes like forgetfulness, worried about job-security, feeling of being misunderstood by others. Thus, it is quite evident that stress can have an equally strong impact on the mental health of employees as it does for their physical health.

The variable BEHS indicates Behavioural Symptoms of Stress where a total of 12 behavioural attributes have been considered for the purpose of analysis. Example: poor decision making, inability to communicate, increased consumption of alcohol, smoking habits, takes anti depressive drugs, poor eye contact while talking etc.

The variable *Behavioural Symptoms of Stress* considers total of twelve behavioural attributes such as poor decision-making capacity, poor performance at work, inability of effective communication, increased consumption of alcohol, smoking habits, consumption of anti-depressant drugs, loneliness, distrust, poor eye contact while talking to others, less confidence etc. for the purpose of analysis.

Table 3: Behavioural Symptoms of Stress of Respondents

| Behavioural Symptoms | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 108 | 50.70 | 172 | 53.25 | 280 | 52.24 |
| High | 88 | 41.31 | 130 | 40.25 | 218 | 40.67 |
| Moderate | 10 | 4.69 | 11 | 3.40 | 21 | 3.92 |
| Low | 7 | 3.29 | 10 | 3.09 | 17 | 3.17 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |



ISSN 2076-9202

The mean scores range from 1.87-2.69 that showcases the common phenomenon of job stress induced behavioural changes. Frequency distribution as shown in the summary table clearly depicts that a majority of the respondents are suffering from high levels of behavioural symptoms of stress. Above 40% of the respondents are suffering from symptoms like being poor communication with others, concern regarding work-life balance or increased intake of substances like alcohol or cigarettes. Among the behavioural attributes, symptoms like going to work even when feeling sick, bringing work to home or anxiety of keeping the right balance are showing high mean value implying that employees in general deem there to be an imbalance in their personal and professional lives.

## 4.4 OCCUPATIONAL STRESS INDEX OF RESPONDENTS

Occupational Stress Index variables are divided into three categories, viz. Personal Vulnerability to Stress, Job Demands and Anxiety and Work-life Balance. The challenges faced by the employees in their work places are cumulatively considered to demonstrate the Occupational Stress Index. Personal Vulnerability focuses on how an individual is displeased by the constant strikes of stress at work place. A total of 13 factors namely jealousy and competition among colleagues, doubting own capabilities, contradictory self-beliefs etc. have been considered to bring more focus to the vulnerability caused due to stress among employees. Job Demands are the inherent needs that an individual expects from their work environment in order to ensure efficacy and productivity. It is the basics that need to be provided to all employees to maintain healthy working conditions at all times. A total of 31 factors namely physical working conditions, lack of recognition or appraisal, negative attitude of superiors or coworkers, payment structure etc. have been considered for analysis purpose. Work Life balance is the equilibrium that individual wants to maintain between work front and family. It is quite important to strike a harmonious balance between professional aspirations and personal life with family and friends for the sake of own mental and physical wellbeing. A total of 9 factors namely unreasonable working hours, late night shifts, inadequate leaves, being family's sole bread earners etc. have been considered under this construct for the purpose of analysis.

Table 4: Personal Vulnerability to Stress of Respondents

| Personal Vulnerability to Stress | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very high | 95 | 44.60 | 159 | 49.23 | 254 | 47.39 |
| High | 88 | 41.31 | 135 | 41.79 | 223 | 41.84 |
| Moderate | 20 | 9.40 | 19 | 5.89 | 39 | 7.28 |
| Low | 10 | 4.69 | 10 | 3.09 | 20 | 3.73 |
| Total | 213 | 100.00 | 323 | 100 | 536 | 100.00 |



ISSN 2076-9202

Table 5: Job Demands and Anxiety of Respondents

| Job Demand and Anxiety | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very high | 150 | 70.42 | 235 | 72.75 | 385 | 71.83 |
| High | 49 | 23.01 | 72 | 22.29 | 121 | 22.57 |
| Moderate | 11 | 5.16 | 8 | 2.48 | 19 | 3.54 |
| Low | 3 | 1.41 | 8 | 2.48 | 11 | 2.05 |
| Total | 213 | 100 | 323 | 100.00 | 536 | 100.00 |

Table 6: Work life Balance of Respondents

| Work life Balance | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very high | 0 | 0 | 0 | 0 | 0 | 0 |
| High | 152 | 71.4 | 236 | 73.1 | 388 | 72.4 |
| Moderate | 61 | 28.6 | 80 | 24.8 | 141 | 26.3 |
| Low | 0 | 0 | 7 | 2.2 | 7 | 1.3 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |

Attributes considered under *Personal Vulnerability to Stress* variable like failing to achieve desired work targets, feeling unsuitable for any particular assignment etc. are affecting 47% of respondents to a very high level and among 41% of respondents to an extent of high level. It is also observed that nuclear family structure acts as a hurdle for working individuals as compared to individuals living in a joint family. *Job Demands and Anxiety* because of non-supportive co-workers and supervisors, limited opportunity for growth, unfavorable working conditions etc. affects almost 71% of the respondents at a very high level of stress. Other factors under the category *Work-Life Balance* like one being the sole earner in the family, incapacity of devoting enough time to family, imbalance in personal life because of the strong desire to succeed in professional life etc. gives birth to high stress among 72% of the respondents. In order to achieve accomplishments at work place, employees are pushing aside their family lives that inadvertently affect both their mental and physical health.

## 4.5 STRESS RESISTANT COGNITIVE BEHAVIOURAL PATTERNS OF RESPONDENTS

Cognitive Behaviour therapy is a form of psychological treatment that has been demonstrated to be effective for a range of problems including depression, anxiety disorders, marital problems, eating disorders, severe



ISSN 2076-9202

mental illness and many such physical and mental health problems. This focuses on different ways to tackle problems by changing the way one thinks and behaves, by changing their outlook.

Table 7: Cognitive Coping Behaviour of Respondents

| Cognitive Coping | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 118 | 55.40 | 182 | 56.35 | 300 | 55.97 |
| High | 78 | 36.62 | 121 | 37.46 | 199 | 37.13 |
| Moderate | 10 | 4.69 | 11 | 3.40 | 21 | 3.92 |
| Low | 7 | 3.29 | 9 | 2.79 | 16 | 2.98 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |

Coping means to invest own conscious effort, to solve personal and interpersonal problems, in order to try to master, minimize or tolerate stress and conflict in every sphere of life, especially in work environment. The term coping generally refers to adaptive (constructive) coping strategies i.e., strategies which reduce stress. This adaptation means change in behaviour. A total of 11 factors namely delegation of work and responsibilities, not over pressurizing oneself with targets, promptness in dealing with complicated work situations, being self-sufficient etc. have been considered to bring about more focus on the coping mechanisms of employees with stress. Dealing very confidently in difficult situation, accepting challenging situation head first, adapting to new work cultures, be open about constant changes etc. helps combat negative impacts of stress among 56% of the respondents chosen in this research.

Table 8: Behavioural Coping of Respondents

| Behavioural Coping | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 117 | 54.93 | 221 | 68.42 | 338 | 63.06 |
| High | 75 | 35.21 | 95 | 29.41 | 170 | 31.72 |
| Moderate | 11 | 5.16 | 5 | 1.55 | 16 | 2.98 |
| Low | 10 | 4.70 | 2 | 0.62 | 12 | 2.24 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |

Behavioural Coping emphasis is placed on overcoming skill deficits thereby increasing the person's ability to cope with high-risk situations like interpersonal difficulties and intrapersonal discomfort, such as anger or depression. A total of 16 factors namely engaging oneself in cultural activities like dance, music, art, practicing yoga, meditation or any other form of exercise, positivity budding from one's faith in God, health consciousness, conducting regular medical check-ups etc. have been considered as various factors considered under this variable. Behavioural coping like believing in God, healthy lifestyle including regular physical exercise or yoga practices along with a balanced diet etc. are helping 63% of the respondents to



ISSN 2076-9202

overcome high levels of stress.

Table 9: Cognitive with Behavioural Coping of Respondents

| Cognitive with Behavioural Coping | ITeS | | Retail | | Overall | |
|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % |
| Very High | 113 | 53.05 | 158 | 48.92 | 271 | 50.57 |
| High | 80 | 37.56 | 138 | 42.73 | 218 | 40.67 |
| Moderate | 17 | 7.98 | 17 | 5.26 | 34 | 6.34 |
| Low | 3 | 1.41 | 10 | 3.09 | 13 | 2.42 |
| Total | 213 | 100 | 323 | 100 | 536 | 100 |

A total of 12 factors namely maintaining a balance of personal and professional life, optimistic attitude towards life, being aware of reality of situations, dependable on beliefs as mentioned in Gita, responsible behaviour towards work, maintain coordination, opt for recreational activities time and again like annual holidays etc. have been considered under this variable. All the factors considered in Cognitive with Behavioural Coping of respondents showcases a positive response from them in their coping efforts, almost 51%. Factors like optimistic attitude towards life, engaging in recreational activities or holidays at least once in a year, maintaining deadline at work etc. are all practices moderately followed by the respondents since the mean scores vary from 1.70 – 2.39 for Cognitive with Behavioural Coping of respondents.

## 4.6 COMPARISON OF STRESS RELATED VARIABLES BETWEEN ITES AND RETAIL SECTORS

The mean scores of all stress variables in ITeS and Retail sectors show the following comparative picture:

Table 10: Sector-wise Comparison of Stress Variables among Respondents

| Stress Variables | Mean Score | |
|---|---|---|
| | ITeS | Retail |
| Personality Type | 1.95 | 1.71 |
| Physical Symptoms | 1.47 | 1.18 |
| Psychological Symptoms | 1.35 | 1.53 |
| Behavioural Symptoms | 1.61 | 1.58 |
| Personal Vulnerability to Stress | 1.41 | 1.47 |
| Job Demand and Anxiety | 1.68 | 1.91 |
| Work – Life Balance | 2.28 | 2.09 |
| Cognitive Coping | 1.56 | 1.56 |
| Behavioural Coping | 1.43 | 1.69 |



ISSN 2076-9202

| | | |
|---|---|---|
| Cognitive with Behavioural Coping | 1.59 | 1.37 |

Figure 1: Semantic Differential Graph for Comparison between ITeS and Retail Sector

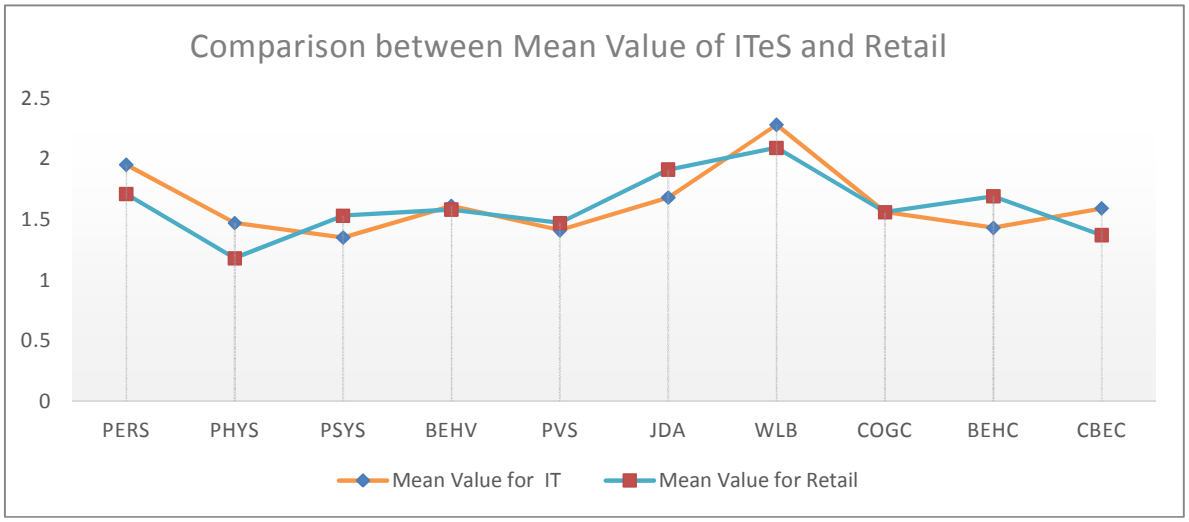


Table 11: Occupational Stress Attributes of Respondents

| **Occupational Stress Attributes** | **ITeS** | | | | | **Retail** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Personal Vulnerability to stress** | **Mean** | **Median** | **S.D.** | **Skew** | **Kurt** | **Mean** | **Median** | **S.D.** | **Skew** | **Kurt** |
| If I want to achieve the desired target & fail to achieve after two or three attempts, I get frustrated | 2.42 | 2.00 | 1.185 | .515 | -.615 | 1.95 | 2.00 | 1.148 | 1.307 | 1.019 |
| I feel unhappy if I do not get adequate feedback of my performance | 2.15 | 2.00 | 1.259 | .764 | -.495 | 2.56 | 2.00 | 1.484 | .372 | -1.313 |



ISSN 2076-9202

| Occupational Stress Attributes | ITeS | | | | | Retail | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Certain level of stress helps to enhance my performance resulting in a more adjusted personality | 2.26 | 1.00 | 1.491 | .644 | -1.148 | 2.59 | 2.00 | 1.596 | .348 | -1.461 |
| I become worried listening to my colleagues, problems | 1.87 | 1.00 | 1.501 | 1.275 | -.157 | 2.05 | 1.00 | 1.527 | 1.032 | -.598 |
| My own values & self-concepts contradict with the requirements of organizational role | 2.47 | 2.00 | 1.475 | .496 | -1.162 | 2.12 | 2.00 | 1.362 | .985 | -.314 |
| I can't link my role with the other role in the organisation | 2.43 | 2.00 | 1.511 | .455 | -1.325 | 1.99 | 1.00 | 1.319 | .960 | -.491 |
| I always succeed in achieving targets | 1.90 | 2.00 | 1.163 | 1.500 | 1.566 | 2.04 | 2.00 | 1.103 | 1.017 | .387 |
| I think I am not suitable for the work assigned to me; I do not feel satisfied to perform the present work | 2.23 | 2.00 | 1.233 | .641 | -.645 | 2.18 | 2.00 | 1.218 | .649 | -.707 |
| I feel that I am unable to perform my work as efficiently as I can | 1.44 | 1.00 | .560 | .803 | -.387 | 1.51 | 1.00 | .693 | 1.689 | 4.639 |
| I am afraid of false allegations | 1.49 | 1.00 | .989 | 2.324 | 4.942 | 1.88 | 1.00 | 1.308 | 1.336 | .519 |



ISSN 2076-9202

| **Occupational Stress Attributes** | **ITeS** | | | | | **Retail** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I observe that my colleagues do not express real happiness on my promotion or success or achievements | 1.56 | 1.00 | 1.134 | 2.108 | 3.295 | 1.69 | 1.00 | 1.311 | 1.662 | 1.174 |
| Wherever my officers or supervisors observe my activities I undergo a state of tension and fear | 1.74 | 1.00 | 1.212 | 1.513 | .897 | 1.82 | 1.00 | 1.281 | 1.345 | .374 |
| Most of the time I find that there is person among my colleagues in whom I can confide | 2.15 | 2.00 | 1.183 | .924 | .183 | 2.07 | 2.00 | 1.136 | .920 | .083 |
| Job Demand& Anxiety | Mean | Median | S.D. | Skew | Kurt | Mean | Median | S.D. | Skew | Kurt |
| My job has limited opportunities for learning & growth | 2.56 | 3.00 | 1.325 | .034 | -1.520 | 2.57 | 2.00 | 1.376 | .181 | -1.423 |
| My supervisors & Co-workers are non-supportive | 2.00 | 2.00 | 1.147 | 1.031 | .378 | | | | | |
| Interpersonal conflicts exist in the group which I belong | 2.15 | 2.00 | 1.335 | .757 | -.719 | 2.16 | 2.00 | 1.257 | .784 | -.513 |
| My organizational climate is totally task-oriented, unfriendly and hostile | 1.60 | 1.00 | 1.268 | 2.046 | 2.677 | 1.78 | 1.00 | 1.344 | 1.477 | .676 |



*ISSN 2076-9202*

| **Occupational Stress Attributes** | **ITeS** | | | | | **Retail** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I am afraid of being transferred to a new location | 2.38 | 2.00 | 1.198 | .843 | .068 | 2.31 | 2.00 | 1.429 | .890 | -.565 |
| It is difficult for me to cope up with rotating work-shifts | 2.23 | 2.00 | 1.283 | .733 | -.582 | 2.36 | 2.00 | 1.430 | .530 | -1.153 |
| I do not know what is expected of me & what exactly is my responsibility | 2.10 | 2.00 | 1.215 | .813 | -.433 | 2.04 | 1.00 | 1.367 | 1.141 | -.022 |
| *My superiors always focus on negative while ignoring & performance* | 2.00 | 2.00 | 1.192 | 1.006 | .211 | 2.17 | 2.00 | 1.224 | .903 | .054 |
| *I always feel that I have too much to do but don't have enough time to complete it.* | 2.09 | 1.00 | 1.331 | .818 | -.648 | 1.86 | 1.00 | 1.246 | 1.132 | -.046 |
| Non-availability of resources hinders effective role performance | 1.45 | 1.00 | .987 | 2.438 | 5.226 | 1.54 | 1.00 | 1.031 | 2.121 | 3.750 |
| Sometimes it becomes complicated problem for me to make adjustment between political/group pressure | 1.91 | 2.00 | 1.212 | 1.489 | 1.369 | 2.05 | 1.00 | 1.392 | 1.087 | -.191 |



*ISSN 2076-9202*

| Occupational Stress Attributes | ITeS | | | | | Retail | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| The responsibility for the efficiency & productivity of employees is thrust upon me | 2.45 | 2.00 | 1.477 | .474 | -1.219 | 2.58 | 2.00 | 1.475 | .268 | -1.423 |
| Owing to excessive workload I have to manage with insufficient numbers of employees & resources | 2.44 | 2.00 | 1.371 | .583 | -.882 | 2.30 | 2.00 | 1.330 | .717 | -.540 |
| My opinions are sought in framing important policies or changing or modifying working systems & conditions | 2.54 | 2.00 | 1.446 | .331 | -1.314 | 2.52 | 2.00 | 1.502 | .373 | -1.351 |
| There exists sufficient mutual cooperation and team spirit among employees in solving administrative problems of organization | 2.63 | 3.00 | 1.469 | .095 | -1.599 | 2.42 | 1.00 | 1.658 | .539 | -1.455 |
| I get less salary in comparison to the quantum of my work | 2.60 | 3.00 | 1.409 | .379 | -1.027 | 2.46 | 2.00 | 1.305 | .605 | -.655 |



ISSN 2076-9202

| Occupational Stress Attributes | ITeS | | | | | Retail | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Some of my assignments are quite risky & complicated I would like to take on more responsibility than I am handling at present | 2.53 | 2.00 | 1.550 | .411 | -1.381 | 2.55 | 2.00 | 1.532 | .305 | -1.499 |
| I have to do such work as ought to be done by others | 3.01 | 3.00 | 1.546 | .015 | -1.483 | 2.78 | 2.00 | 1.448 | .364 | -1.258 |
| I have to take crucial decisions in the matters of employees' grievances, transfers and /or promotions | 1.85 | 1.00 | 1.106 | 1.379 | 1.229 | 1.99 | 1.00 | 1.263 | 1.083 | .127 |
| I work in a safe & comfortable working environment | 1.77 | 1.00 | 1.231 | 1.327 | .420 | 1.55 | 1.00 | 1.089 | 1.908 | 2.604 |
| I like to attend training programmes to enhance my professional expertise | 2.46 | 2.00 | 1.618 | .467 | -1.473 | 2.29 | 1.00 | 1.518 | .548 | -1.405 |
| I work under tremendous time4 pressure | 2.68 | 3.00 | 1.588 | .258 | -1.494 | 2.64 | 3.00 | 1.338 | .279 | -1.055 |
| The organizational infra structure does not enable for effective job performance | 2.12 | 2.00 | 1.253 | .885 | -.217 | 2.11 | 2.00 | 1.196 | .763 | -.400 |



ISSN 2076-9202

| **Occupational Stress Attributes** | **ITeS** | | | | | **Retail** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| The organizational structure does not help to develop latent talents | 1.55 | 1.00 | 1.025 | 2.108 | 3.943 | 1.56 | 1.00 | 1.077 | 2.146 | 3.770 |
| My officers and co-workers misunderstand me | 1.99 | 1.00 | 1.251 | .936 | -.529 | 2.07 | 1.00 | 1.238 | .586 | -1.272 |
| I often feel that my performance is not objectively appraised and given due significance | 2.18 | 2.00 | 1.443 | 1.064 | -.308 | 2.41 | 2.00 | 1.616 | .637 | -1.257 |
| I feel that the services of workers of other companies are more secure than those of the workers of this company | 2.08 | 2.00 | 1.124 | .949 | .283 | 1.99 | 2.00 | 1.161 | 1.174 | .575 |
| Arguments with my boss make me anxious | 2.19 | 2.00 | 1.344 | .749 | -.744 | 1.76 | 1.00 | 1.179 | 1.445 | .886 |
| Whether overtime is provided or not | 1.35 | 1.00 | .477 | .645 | -1.598 | 1.61 | 2.00 | .489 | -.439 | -1.818 |
| Suffering of ITeS employee because of foreign projects | 4.06 | 4.00 | .231 | 3.876 | 13.144 | 4.10 | 4.00 | .299 | 2.697 | 5.304 |
| More emphasis on customer care | 4.05 | 4.00 | .222 | 4.081 | 14.791 | 4.95 | 5.00 | .224 | -4.02 | 14.294 |
| Work-Life Balance | Mean | Median | S.D. | Skew | Kurt | Mean | Median | S.D. | Skew | Kurt |
| My house is situated far away from my work place | 1.85 | 1.00 | 1.294 | 1.152 | -.216 | 1.93 | 1.00 | 1.274 | .954 | -.638 |



*ISSN 2076-9202*

| Occupational Stress Attributes | ITeS | | | | | Retail | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I am the only bread earner of family | 1.78 | 1.00 | 1.263 | 1.507 | 1.078 | 1.89 | 1.00 | 1.339 | 1.262 | .210 |
| I am unable to devote sufficient time to my family because of excessive workload | 2.43 | 2.00 | 1.467 | .670 | .167 | 2.28 | 2.00 | 1.495 | .767 | -.910 |
| I often get worried what will happen to my family if I am turned out of my job | 1.28 | 1.00 | .617 | 2.180 | 2.180 | 1.64 | 1.00 | 1.010 | 1.62 | 2.031 |
| How working hours is affecting life | 4.27 | 4.00 | .574 | -.078 | -.477 | 3.90 | 4.00 | .594 | .032 | -.215 |
| Whether adequate leave is provided or not | 4.06 | 4.00 | .231 | 3.876 | 13.144 | 4.10 | 4.00 | .299 | 2.69 | 5.304 |
| Whether employees can enjoy Sundays or holidays | 4.06 | 4.00 | .231 | 3.876 | 13.144 | 4.10 | 4.00 | .299 | 2.697 | 5.304 |
| Pressure on employees on Public Holidays & days of Special offer | 2.15 | 2.00 | .665 | 4.081 | 14.791 | 4.84 | 5.00 | .671 | -4.02 | 14.294 |
| Night Shift | 4.66 | 5.00 | .966 | -2.49 | 4.348 | 1.68 | 2.00 | .943 | 2.29 | 5.872 |

Table 12: Stress Resistant Cognitive Behaviour among Respondents

| Attributes of Cognitive Behaviour | ITeS | RETAIL |
|---|---|---|



ISSN 2076-9202

| A. Cognitive Coping | Mean | Median | S.D. | Skew | Kurt | Mean | Median | S.D. | Skew | Kurt |
|---|---|---|---|---|---|---|---|---|---|---|
| I never try to do too much in too little time | 1.79 | 1.00 | 1.246 | 1.522 | 1.061 | 1.61 | 1.00 | 1.191 | 2.017 | 2.839 |
| My organization has added facilities for physical exercises in its premises | 2.10 | 1.00 | 1.303 | .647 | -1.124 | 2.53 | 3.00 | 1.466 | .239 | -1.483 |
| I deal very confidently with any difficult situation | 1.31 | 1.00 | .670 | 2.879 | 10.106 | 1.47 | 1.00 | .923 | 2.019 | 3.264 |
| Take situation as a challenge and work harder to deal with it | 1.90 | 2.00 | .941 | 1.854 | 4.234 | 1.93 | 2.00 | 1.147 | 1.483 | 1.613 |
| Delegate some of the responsibilities to others | 2.10 | 2.00 | 1.175 | .862 | -.070 | 2.19 | 2.00 | 1.211 | .852 | -.085 |
| I try to come out of the state of uncertainty or indecisiveness as soon as possible | 2.48 | 2.00 | 1.399 | .403 | -1.220 | - | - | - | - | - |
| I try to find out complete or long-term solution to any problem rather than particular temporary ones | 2.08 | 2.00 | 1.139 | .684 | -.620 | 2.11 | 2.00 | 1.151 | .802 | -.089 |
| I prioritize my responsibilities and take them up accordingly | 2.26 | 2.00 | 1.419 | .595 | -1.208 | 2.37 | 2.00 | 1.376 | .325 | -1.466 |
| Neither I expect much from others nor do I depend totally on others | 2.11 | 1.00 | 1.532 | .978 | -.675 | 2.33 | 2.00 | 1.529 | .771 | -.994 |



ISSN 2076-9202

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I believe we can learn something also from adversities or failures or setbacks and mistakes | 2.32 | 2.00 | 1.378 | .590 | -.976 | 2.43 | 2.00 | 1.413 | .588 | -.954 |
| Devote more time and energy to meet the demands of the situation | 2.21 | 2.00 | 1.429 | .757 | -.884 | 2.04 | 1.00 | 1.386 | .935 | -.606 |
| **B. Behavioural coping** | **Mean** | **Median** | **S.D.** | **Skew** | **Kurt** | **Mean** | **Median** | **S.D.** | **Skew** | **Kurt** |
| My close & reliable friends give a sympathetic hearing to my problem | 1.93 | 2.00 | 1.178 | 1.188 | .453 | 1.97 | 1.00 | 1.343 | 1.139 | -.073 |
| I believe God is my best friend & seek His support at times of need | 2.17 | 2.00 | 1.209 | .673 | -.868 | 2.00 | 2.00 | 1.152 | 1.087 | .341 |
| I do regular exercise | 2.11 | 2.00 | 1.243 | .857 | -.393 | 2.54 | 2.00 | 1.354 | .430 | -1.081 |
| I follow a proper balanced diet | 2.32 | 2.00 | 1.458 | .777 | -.775 | 2.55 | 2.00 | 1.481 | .405 | -1.290 |
| I practice deep breathing &Asanas | 2.52 | 2.00 | 1.143 | .865 | .153 | 2.42 | 2.00 | 1.257 | .800 | -.282 |
| I seek help of the psychological counselors when required | 2.48 | 2.00 | 1.242 | .339 | -1.060 | 2.69 | 3.00 | 1.450 | .214 | -1.376 |
| I do meditate or swim | 2.36 | 2.00 | 1.365 | .592 | -.898 | 2.42 | 2.00 | 1.384 | .529 | -1.040 |
| I go for regular medical check up | 2.19 | 2.00 | 1.278 | .819 | -.539 | 2.23 | 2.00 | 1.287 | .799 | -.591 |
| Music acts as a great healing agent | 1.47 | 1.00 | .882 | 1.965 | 3.033 | 1.66 | 1.00 | 1.154 | 1.676 | 1.587 |



*ISSN 2076-9202*

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|---|---|---|---|---|---|---|---|---|---|---|
| Though I discharge my duties with full competence and integrity, I don't try for perfection | 1.87 | 1.00 | 1.360 | 1.160 | -.263 | 2.07 | 1.00 | 1.423 | .850 | -.823 |
| Weekend relaxations restore my energy | 2.41 | 2.00 | 1.306 | .337 | -1.180 | 2.24 | 2.00 | 1.326 | .566 | -1.053 |
| I systematically collect information before coming to a decision | 1.97 | 2.00 | 1.181 | .991 | -.239 | 2.07 | 2.00 | 1.306 | .936 | -.450 |
| Put aside other activities in order to concentrate on the problem | 2.21 | 2.00 | 1.437 | .848 | -.701 | 2.05 | 2.00 | 1.276 | .968 | -.247 |
| React aggressively to those who are responsible for the situation | 2.13 | 2.00 | 1.233 | .722 | -.677 | 2.21 | 2.00 | 1.301 | .878 | -.233 |
| Try to release the emotional distress by talking to someone | 2.67 | 3.00 | 1.525 | .279 | -1.413 | 2.07 | 1.00 | 1.291 | .875 | -.499 |
| Developing a hobby helps me to cope up with stress | 2.29 | 2.00 | 1.427 | .566 | -1.235 | 1.80 | 1.00 | 1.135 | 1.300 | .684 |
| C. Cognitive with Behavioural coping | Mean | Median | S.D. | Skew | Kurt | Mean | Median | S.D. | Skew | Kurt |
| I have optimistic attitude towards life and do not get hopeless in any situation | 2.30 | 2.00 | 1.307 | .856 | -.390 | 2.09 | 2.00 | 1.129 | 1.021 | .400 |
| Accept the reality and work on modifying the behaviour or policies that caused the situation of stress | 1.74 | 1.00 | 1.164 | 1.432 | .912 | 1.67 | 1.00 | 1.071 | 1.805 | 2.695 |



ISSN 2076-9202

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I don't compare myself only with those who are better off & more contended but also with them who are inferior or less happy | 2.23 | 2.00 | 1.229 | .512 | -1.100 | 2.33 | 2.00 | 1.389 | .503 | -1.197 |
| Before taking any decision or making any action, I consider its far reaching outcomes | 2.47 | 2.00 | 1.396 | .421 | -1.166 | 2.27 | 2.00 | 1.355 | .684 | -.894 |
| I confine my needs & aspirations within my capability and resources | 2.55 | 2.00 | 1.253 | .599 | -.467 | 2.35 | 2.00 | 1.179 | .453 | -.625 |
| I believe in as well as try to practice the Gita's philosophy that "my right is to work only, but never to the fruit (outcomes) thereof | 1.78 | 1.00 | 1.434 | 1.528 | .633 | 1.88 | 1.00 | 1.426 | 1.286 | .039 |
| I try to maintain co-ordination among family, professional and social roles | 1.72 | 1.00 | 1.110 | 1.580 | 1.689 | 2.04 | 2.00 | 1.266 | 1.115 | .188 |
| I complete important tasks within due time. I don't defer them for the last moment | 1.93 | 1.00 | 1.280 | .956 | -.513 | 2.22 | 1.00 | 1.410 | .529 | -1.332 |
| I prevent my job from making excessive in roads into my personal life | 1.81 | 2.00 | .968 | 1.047 | .485 | 2.04 | 2.00 | 1.196 | .876 | -.232 |
| Making annual holidays compulsory | 1.82 | 2.00 | 1.014 | 1.280 | 1.102 | 1.85 | 1.00 | 1.198 | 1.472 | 1.219 |



ISSN 2076-9202

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Physically withdraw from the situation temporarily | 2.30 | 2.00 | 1.452 | .650 | -.975 | 2.18 | 1.00 | 1.448 | .831 | -.804 |

Irrespective of longer work hours and high job anxiety in ITeS, the personal need and satisfaction of employees in this sector are better met with comparatively better pay packages, good inter personal relationships at work fronts, constant social networking and so on. Personal face-to-face interview with many of these employees in call centers and BPOs supported the fact that though they are in constant stress due to role overload and job anxiety but they are also more focused in joining the economic, political and social mainstream and have more satisfaction in terms of financial and social independence than employees coming from the retail. Retail sector employees on the other hand are mostly working in retail store of garments, sewing industry, food processing, grocery and daily consumable items, jewellery showrooms, consumer durables to name a few. Information was mainly collected from employees engaged in garment sector, organized retail centers, cash counter and customer service jobs which require longer shift in odd hours or the need to work alone at night or in early morning in isolated areas or being responsible for handling money or valuables like closing the cash register(s) and depositing the money after work or being in charge of opening and closing the store. In retail sector, despite spending long hours at workplace, pay is quite low as compared to ITeS, which leads to higher levels of frustration among these employees. Employees in retail jobs have to face a lot of work-life imbalance and they have no time to socialize because they themselves work in very stressful conditions. Furthermore, the lack of job enrichment or promotion opportunities, as compared to ITeS, (because employees in this sector are mostly contingent and casual workers and having less skill and education having very poor pay packages as compared to other sector) becomes another source of work stress and dissatisfaction. Personal need satisfaction is highest for employees in ITeS, which is possible because of much better pay package, enabling them to maintain a lavish lifestyle. Compensation and benefits show the highest mean score in ITeS. Today, more people with higher educational qualifications are interested and inclined towards taking jobs in ITeS sectors due to better career prospects and growth. As the Retail sector is mostly unorganized, it aces major disadvantages with regards to standard pay structure, job security, good incentive plans, as compared to ITeS. The mean score of stress variables of ITeS is higher for variables like Personality Type, Physical, Behavioural, Job Demands and Anxiety, Work Life Balance and Cognitive and Behavioural Coping, while the mean score of Retail is higher for variables Psychological, Personal Vulnerability to Stress, Cognitive Coping and Behavioural Coping.

## 5. CONCLUDING REMARKS

From the above study, it is established that there is presence of high levels of stress in both the sectors - ITeS and Retail. This can be attributed to the high job responsibilities, long working hours, poor work-life balance, lack of job security, high job demands, lower pay scales to name a few. In both these sectors, we see a gap in the expected working conditions of the employees and the actual environment they deal in. This in turn breeds high level of stress affecting these sectors. Human capital, namely the employees, is the pillars in



ISSN 2076-9202

both ITeS and Retail sector. If they are not treated humanely, it cannot lead to the development of the organizations and by extension, the industries.

Today in a world predisposed to stress, certain steps can be adopted to reduce said stress and make the work more interesting by new innovative ideas. From the above study, it can be deduced that retail sector employees should be provided with yoga, meditation, music and art classes. Introduction of counseling and therapy sessions can provide guidance to deescalate stressful events in the work place. Not only that, introduction of sports and physical exercises, like indoor and outdoor games can be organized for the employees, allowing them to relieve the physical symptoms and manifestations of stress. Other interesting ways to mitigate work place stress might be to arrange picnics and events for the employees, making them visit different places, helping them to enjoy themselves and thereby reducing work pressure and stress. Stress, if not given much importance to, can prove to have significant negative impacts in the life of any individual, thereby taking a toll on their mental as well as physical health. To ensure that stress does not negatively hamper the productivity and efficiency of employees, it is of utmost importance that sectors predominantly dependent on its human resources take these matters very seriously and accordingly deal with them for the benefit of people and organization both.

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# A COMPARATIVE STUDY BETWEEN PUBLIC AND PRIVATE SECTOR IN THE ASPECT OF SERVICE QUALITY: SPECIAL REFERENCE TO BANKING INDUSTRY IN SRI LANKA

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**Abstract**

The service sector in Sri Lanka accounted for 51.3% of the Gross Domestic Production (GDP) respectively with financial being a key performing sub-sector. The main objective of this research is to identify and compare the quality of the service of private and public banks by identifying factors that are required to achieve the expected level. Data was collected through mystery shopping and 662 responses were gathered from both public and private banks in Sri Lanka. The results revealed that private banks have achieved higher levels of service quality with compare to public banks. 82% is achieved by the private sector banks and public sector banks achieved only 78% in terms of service quality. According to the gap analysis, 11% gap is identified in public banks and only 8% is required to improve in private banks. Furthermore, public sector bank should focus their attention on responsiveness and empathy in a very critical manner.

**Keywords:** Banking Sector, Service quality, Service quality gap, SERVQUAL model, Sri Lanka

## 1. Introduction

The banking industry is performing a crucially important role in the Sri Lankan economy. Sri Lankan economy has entered into an accelerated growth path of achieving a Rs. 100 billion economy with USD 4,000 per capita income by 2016. In this scenario, the Sri Lankan banking sector holds more than 55% of the financial sector assets of the country (Central Bank 2016). 48.2% of the GDP is controlled by the industries and service sectors contribute to the 51.3% of GDP (Central Bank 2016). Asset base of Rs. 6,972 billion dominates by the modern banking system in Sri Lanka at the end of 2014, accounting for 57.9% of the total assets of the financial system (Central Bank, 2015). The financial system of a country is much needed for the successful economic development and performance of all the countries. It plays a major role in the Sri Lankan economy also. It can be seen that banks and financial institutions are special components of the wealthy and beneficial financial system of the country (Raza, Amjad, & Akram, 2011). Simultaneously, Commercial banks contribute to the economic growth of the country by making funds available for investors



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to borrow as well as improving financial deepening in the country (Otuori, 2013). Thereby, the efficiency and stability of the country will depend on the performance of the banking industry.

Public sector and private sector commercial banks are the two main categories in Sri Lankan commercial banks. Currently, the banking system consists of 33 banks, of which 25 are Licensed Commercial Banks (2 state banks, 11 domestic private banks, and 12 foreign banks) and 8 are Licensed Service Banks (6 state banks and 2 private banks) (Central Bank 2015). These 22 commercial banks in Sri Lanka are serving a relatively small population of nearly 20 million. The quality of service is very much important for the banking industry to attract new customers and retain customers in this competitive banking industry since all other factors such as interest rates; product types are quite similar in all the banks.

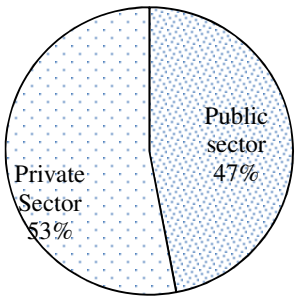


**Fig.** 01: Market share by total assets (Source: Central Bank of Sri Lanka, 2013)

Private sector banks have a high market share, 53% comparatively to the public sector's market share of 47% by total assets in 2013 as shown in Fig. 01 in Sri Lanka.

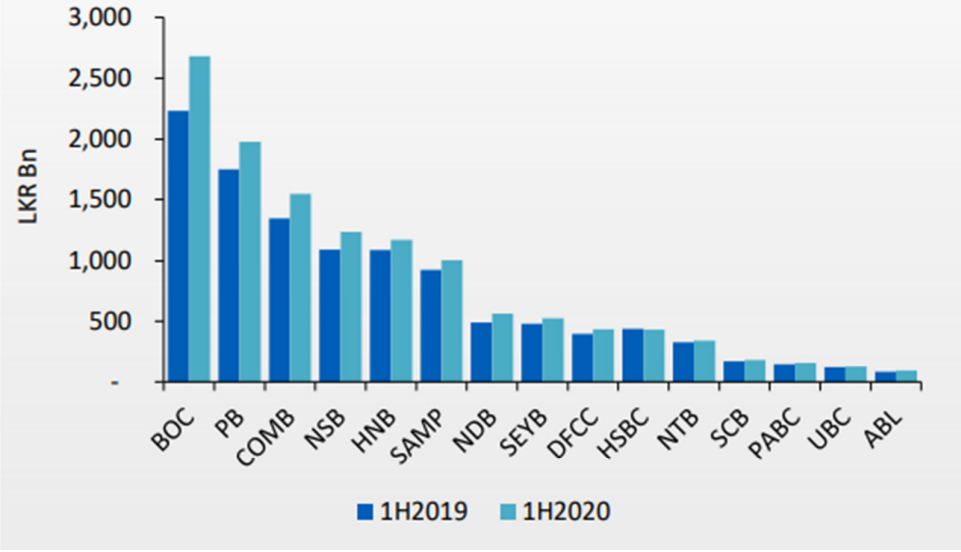


Fig. 02: Assets-based comparison

The market share of the state banks had declined to 40.2% as shown in Fig. 02 by the end of June 2020 from 47% in 2013 due to aggressive growth by private banks (KPMG, 2020). Although the public sector banks



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are getting support from the government, their performance is low with comparative to the private banks. Previous studies also mentioned that private banks had high financial performance than state banks (Velnampy and Anojan, 2014).

It is interesting to find the reason why the private sector is having better performance or have high deposit rate, than the public sector. Return on Asset (ROA), Return on Investment (ROI), Net Profit Margin, Market share, and Service Quality are the most significant factor that is used to measure the performance of the bank. If the bank has more service quality it is a direction that shows the bank has high performance (Chowdhury, Leena Afroz Mostofa; Shaha, Saju, 2016). Service quality impacts organizational outcomes such as performance superiority (Portela & Thanassoulis, 2005). The service quality is considered in this study to identify the performance differences.

Although there are research studies that have been conducted to investigate the service quality in many countries, not much attention has been given to the banking industry in Sri Lanka (Yapa & Hasara, 2013). Few numbers of studies conducted to analyze the service quality of the banking industry in Sri Lanka and they have most probably focused entire banking system without analyzing public and private banks separately (Hussaien, 2020). There is a study related to the service quality of the banking industry that focused on both private and public sector banks in Ambalangoda city in Sri Lanka (Yapa & Hasara, 2013). It is difficult to find the study related to the service quality of both private and public sector banks with considering the entire Sri Lanka.

Hence, this study is focused to achieve the following objectives.

- Identify and compare the quality of the service of private and public banks in Sri Lanka
- Identify factors that need to be improved in public and private banks in Sri Lanka through the service quality gap

## 2. Literature Review

### 2.1. Banking industry and service quality

There is a very huge competition in the banking sector with the advancement of technology (Harvey, 2010). Minjoon Jun Shaohan (2001) focused that the banks are improving their service quality which is derived from ten dimensions; reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding of the customer, collaboration, and continuous improvement through providing inter-banking to face this competition. Service quality in the broader context should have much attention because it has an obvious relationship with costs, financial performance, customer satisfaction, and customer retention in the banking sector.

Quality of service gives a competitive advantage to compete in the competitive banking sector. It may be the reason for more research in the field regarding this service quality. Mainly Parasuraman et al.(1988, 1991, and 1994) Brown et al. (1989), Cronin and Taylor (1994), Dhabolkar et al. (2000), etc give much contribution to doing more research regarding service quality in banking industries. Most researchers prove that there is a positive relationship between service quality and customer loyalty by using strong statistical



ISSN 2076-9202

evidence. And also it is proved that service quality has a great influence and positive significant correlation with customer loyalty (Zahir Osman, Liana Mohamad, Ratna Khuzaimah Mohamad, 2015). Good service quality of the banks will make satisfied customers and because of customer satisfaction, it makes loyal customers. Better service quality of the Bank will determine customer satisfaction and customer loyalty of the customers (Panda, 2003; Jones, 2002 as cited by Lymperopoulos et al., 2006).

Many researchers have shown repeatedly that service quality may show direction to superiority performance (Portela & Thanassoulis, 2005), increase sales profit (Levesque & Mc. Dougal, 1996) and have high market share, improve customer relations, enhance corporate image, and promote or enhance customer loyalty (Newman, 2001; Szymigin & Carrigan, 2001; Caruana, 2002; Ehigie, 2006). Marinating better customer service helps to have customer satisfaction and customer loyalty. The service quality is the most considerable and significant reason or factor to have a maximized profit and to be succeeded or to be survived in today's competitive banking.

Better service quality of the banks shows the direction to have higher revenues, increased cross-sell ratios, higher customer retention (Bennett and Higgins, 1988), and expanded market share (Bowen and Hedges, 1993). And also Storey and Easingwood (1993) proved that the total quality is the most important factor for the success of new financial services and Bennett and Higgins (1988) mentioned that the service quality of the banking sector gives a competitive edge in the competitive banking sector.

The service quality of the bank helps to increase the image of the bank. The service quality gap and satisfaction determine loyalty in a retail bank setting. The perceived quality is the main factor that helps to enhance the public image of the bank. And also it is proving that the service quality of the bank has a direct impact on customer satisfaction and customer loyalty to the bank. So it is significant to have better customer service to have a high profit through customer satisfaction and customer retention.

Many researchers measured the service quality to improve or enhance the quality of service of the bank after identifying the importance of the service quality of the bank. The survey was done to determine the service quality of the bank and credit union by Allred and Addams (2000) by surveying the bank and credit union customers. He indicated that there are eleven factors that mainly affect the service quality of the bank The eleven factors are, access, courtesy, communication; credibility, security, empathy, tangibles, basic service, fairness, fixing mistakes, and guarantees. The findings of this research shows that the service quality can help to have a distinct marketing edge, higher customer retention (Bennett and Higgins, 1988), and expanded market share (Bowen and Hedges, 1993).

It is very important to study the service quality of the bank in the Sri Lankan context because it will help banks to improve or enhance their service quality to have satisfied customers and loyal customers.

However, the lack of analytical data related to the banking sector in Sri Lanka with comparing both the public and private sectors in terms of service quality is a matter for the customers to identify the suitable bank to carry their accounts (Anjalika & Priyantha, 2018). Comparing major public and private banks of Sri Lanka is a key for the bankers to identify their level and identify the key areas to improve.

### 2.2. Models Evaluating Service Quality of Bank

Asubonteng, McCleary, and Swan (1996) mentioned that there are many measurements and dimensions to measure and evaluate the service quality of the banks in the banking sector.



ISSN 2076-9202

**SERVQUAL Model**

Early service quality models (Gronroos 1982, Parasuraman et al. 1988) have emphasized factors which can be used as components or to measure service quality. In the initial stage, Parasuraman (1988) developed an initial pool of 97 items through a series of focus group sessions conducted with the customers. Then by having greater reliability of 0.9, the initial 97 items is reduced to 22 items to form the SERVQUAL scale by Parasuraman (1988). The 22 items were developed under five dimensions of tangibles, responsiveness, reliability, assurance, and empathy. And also Parasuraman use this SERVQUAL model to find the gap between perceived and expected service quality that is called as service quality gap in a service organization or a company in 1988.

SERVQUAL deals with five service quality dimensions.

1- Tangibles
2- Reliability
3- Responsiveness
4- Assurance
5- Empathy

(Parasuraman et al. 1988)

The SERVQUAL can be considered as the gap model, that is measuring the service quality as the calculated difference between customer expectations and the actual performance of a service encounter. The SERVQUAL model's questionnaire covers these five components in two sections. One section is used to measure the perception of the customer and other one is used to measure the expectation. 22 statements were included in each section.

**SERVPERF Model**

The SERVPERF was developed as a response to critical SERVQUAL analysis, by Cronin and Taylor (1992) which can be used to measure the quality of service through solely performance perception ratings. Cronin and Taylor (1992) said that the SERVPERF model is more in conformance with the existing attitude and customer satisfaction literature and is superior to the perception-expectation gap by considering the empirical evidence across four industries (banks, pest control, dry cleaning, and fast food).

SERVQUAL model is selected as the scale for this research. Because this research is a comparative study of service quality between public banks and private banks, and also this research is finding the service quality gap. It means the gap between perceived service and expected service which can be measured by only using the SERVQUAL model. Within all other models, the SERVQUAL model is more appropriate for this research to accomplish the research objective.

**Mystery Shopping**

Previously mystery shopping is used to avoid employee theft by private investigators, especially in retail stores and banks. Wilmark is the founder of the term "Mystery Shopping" which was started using the technique for the evaluation of service to the customer in 1940. In 1970 and 1980 there was very popular



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for this word. Mystery shopping met worldwide growth and became a very important industry, which is worth around $1.5 billion worldwide (Ramesh, 2010).

Mystery shopping is defined as a method of *"The use of individuals trained to experience and measures any customer service process, by acting as potential customers and in some way reporting back on their experiences in a detailed and objective way"* (Wilson, 2008). Mystery shopping is an observational method that can be used to measure and evaluate the service quality to the customers (Wilson, 2008).

Mystery shopping can be used,

- To measure the quality of the service delivery to the customer
- To comply with specific standards, guidelines, or demands
- To position the quality of the service on a scale
- To benchmark the customer service of the service organization or the company from its competitors
- To identify the failures or the weak points in the service delivery process

Mystery shopping is a very famous method in the banking industry to identify the level of customer service. (Hotchkiss, 1995)

Researchers can be used mystery shopping as a method to measure customer satisfaction (Wilson, 2008), and also mystery shopping can be used as a method to investigate the gap in service quality (Grove et al., 1992).

Research that is based on service situations such as banks, restaurants, shops, travel agencies, airlines, and car dealers can be used in mystery shopping because mystery shopping is a very important method that can be used to conduct an accurate and unbiased investigation or a survey.

This research used mystery shopping as a method to collect the primary data for this research through the developed questionnaire.

## 3. Methodology

The methodology consists of two sections. Those are the perception and expectations of service quality of the banks. SERVQUAL, a well-known model is used to measure the service quality of the banks in this study. The following five dimensions are used to identify the service quality of the banks according to the SERVQUAL method. They are,

1- Tangibles- the availability of physical facilities, equipment, and personnel

2- Reliability- the ability of the service provider to perform a service dependably and accurately

3- Responsiveness- the willingness of service provider to assist customers and deliver prompt services

4- Assurance- the customers can put their trust in service provider employees

5- Empathy- the individualized care and attention that customer receives from service deliver

(Parasuraman et al.1988).

This research is discussing a comparative study between public and private banks by considering the service quality.

And also the service quality gap is calculated by getting the difference between expected and perceived service. And also there are five gaps,



ISSN 2076-9202

01. Tangibles Gap = Perceived Tangibles value –Expected Tangibles value
02. Responsiveness Gap = Perceived Responsiveness value – Expected Responsiveness value
03. Assurance = Perceived Assurance value – Expected Assurance value
04. Reliability Gap = Perceived Reliability value - Expected Reliability Value
05. Empathy = Perceived Empathy value – Expected Empathy value

### 3.1. Details of the Variables

As per the model developed, the variables of tangibles, responsiveness, assurance, reliability, and empathy are used to measure by giving a questionnaire for the selected unit of analysis. The questionnaire is developed to measure the factors of tangibles, responsiveness, assurance, reliability, and empathy.

SERVQUAL model's first factor is "Tangibles". Tangibles mean the appearance of physical facilities, equipment, personal, and communication materials. The questionnaire included statements that describe the cleanliness of the bank environment, modern equipment of the bank, physical facilities of the bank, bank officers well dressed and appearance neat, and the appearance of the physical facilities of the bank is in keeping with the type of services provided. The tangible is measured using five statements according to the SERVQUAL model.

The second factor is "Responsiveness". Responsiveness means the willingness of the bank employees to help the customer and whether the employees of the bank provide prompt services or not. The questions in the questionnaire under responsiveness measures that the employees in the bank are promoting services, give the information on exact services, willingness to help the customer, and are never busy to requested services of the customer. The responsiveness is evaluated through four statements according to the SERVQUAL model.

"Assurance" is the third factor of the SERVQUAL model. Assurance indicates the knowledge and politeness of employees with evaluating their ability to make trust and confidence. And also assurance means that customers can put their trust in service provider employees. The assurance factor of the bank is measured from the responses of the respondents to the questions in the given questionnaire. Assurance was measured through the questionnaire by using the statements that include the information regarding the bank is consistently courteous with customers, employees of the bank are polite to the customers, the employees of the bank give understandable and clear information to the customers, the employees' behavior makes confidence in the customer, and the customer has a feel safe in their transaction. The assurance is measured through six statements according to the SERVQUAL model.

SERVQUAL model's fourth factor is "Reliability". Reliability means the ability of the employees in the bank to perform the promised services dependably and accurately. This questionnaire includes the statement of the promises of the bank to provide the services and do so, if the customer has a problem that the bank shows a sincere interest to solve the problem, the bank is keeping promises to do something by a certain time, and the bank is performing the services correctly at the first time. Reliability is recognized through five statements according to the SERVQUAL model.

SERVQUAL model's fifth factor is "Empathy". Empathy means the employees of the bank have caring about the customers and the individualized attention paid to the customers that are provided by the bank. Empathy is measured in this questionnaire by having the statements that the bank gives individual attention,



ISSN 2076-9202

the bank has operating hours convenient to customers, the bank has the customer interest best in heart, and the employees of the bank understand the customer specific needs. Empathy is measured through four statements according to the SERVQUAL model.

### 3.2. Population and Sample size

This research is based on public banks and private banks in Sri Lanka. Three main public banks and three large private banks are considered in this study. The sample has been selected by assuming every branch is providing the same products and services in the comparatively same way.

In this study, all the branches of the selected public and private banks are considered as a population and it was 2,361. The sample is selected based on the Morgan table and it was 327 branches. Two respondents including the researcher filled the 662 questionnaires in this research. Table 01 represents the details of public and private banks.

Table 01: Number of branches of selected banks in Sri Lanka

| | Number of Branches |
|---|---|
| Public Bank (Three banks) | 1613 |
| Private Bank (Three banks) | 748 |
| **Population** | 2,361 |
| **Sample** | 327 |

## 4. Result and discussion

### 4.1. Perceived service quality

The Cronbach's alpha value is calculated to illustrate the reliability of each variable and the results are represented in Table 02.

Table 02: Reliability Analysis – Perceived quality

| Variable | No of Item | Cronbach's alpha |
|---|---|---|
| Tangible | 4 | 0.709 |
| Responsiveness | 4 | 0.715 |
| Assurance | 6 | 0.857 |
| Reliability | 5 | 0.808 |
| Empathy | 4 | 0.691 |

All the variables can be accepted since all the values are more than 0.6 which is the acceptable level of reliability test (Ursachi et al., 2015).

The principle component analysis was conducted for all the items which are used to measure the variables. Only one item was removed in the 'Tangible' variable since its significant value is less than 0.5. All other



ISSN 2076-9202

items are considered for further analysis since their significant values are more than 0.5.

Then the correlation analysis is conducted by using the bivariate test in the SPSS. Table 03 represents the correlation values of the variables.

Table 03: Results of Correlation Analysis – Perceived quality

| | Tangible | Responsiveness | Assurance | Reliability | Empathy |
|---|---|---|---|---|---|
| Tangible | 1 | 0.393 | 0.498** | 0.460 | 0.403 |
| Responsiveness | 0.393 | 1 | 0.616** | 0.647** | 0.576** |
| Assurance | 0.498** | 0.616** | 1 | 0.687** | 0.576** |
| Reliability | 0.460 | 0.647** | 0.687** | 1 | 0.653** |
| Empathy | 0.403 | 0.576** | 0.576** | 0.653** | 1 |

** Correlation is significant at the .01 level (2-tailed)

The correlation matrix shows that there is a significant correlation between Tangibles and Assurance at 0.01 levels. Correlation between Responsiveness with Assurance, Reliability, and Empathy at 0.01 levels is also significant. Further, there is a significant relationship between Assurance with Reliability and Empathy at 0.01 levels. Reliability and Empathy are also having a significant correlation at 0.01 levels.

The result of the descriptive statistics and one sample T-test for the public and private banks is shown in Table 04.

Table 04: Analysis of Perceived quality

| Public or Private Bank | N | Minimum | Maximum | Mean | T-Value | Significance Value | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Public Bank | 308 | 2.82 | 4.70 | 3.9762 | 19.187 | 0.000 | 0.44064 |
| Private Bank | 354 | 2.87 | 4.85 | 4.1191 | 21.311 | 0.000 | 0.45780 |

The mean value of service quality for the Public sector banks is 3.9762 while private sector banks are 4.1191. The T-value of service quality of the public and private banks is respectively 19.187, and 21.311. So the T-value of service quality of the public and private banks is significant. And also the significant value of service quality of the public and private banks is 0.000 which is less than 0.05. The service quality of public and private banks is significant. It indicates that the private banks' service quality is better than public banks' service quality.

Table 05: Compare Public and Private Banks based on SERVQUAL Model – Perceived quality

| Public or Private Bank | N | Mean | T-Value | Significance Value |
|---|---|---|---|---|
| **Public Bank** | | | | |
| Tangible | 308 | 4.2500 | 22.341 | 0.000 |



ISSN 2076-9202

| | | | | |
|---|---|---|---|---|
| Responsiveness | 308 | 3.7433 | 10.887 | 0.000 |
| Assurance | 308 | 4.2911 | 20.959 | 0.000 |
| Reliability | 308 | 3.8667 | 13.634 | 0.000 |
| Empathy | 308 | 3.7300 | 10.646 | 0.000 |
| **Private Bank** | | | | |
| Tangible | 354 | 4.3500 | 20.673 | 0.000 |
| Responsiveness | 354 | 3.9688 | 18.129 | 0.000 |
| Assurance | 354 | 4.2917 | 19.895 | 0.000 |
| Reliability | 354 | 4.0650 | 17.347 | 0.000 |
| Empathy | 354 | 3.9375 | 13.255 | 0.000 |

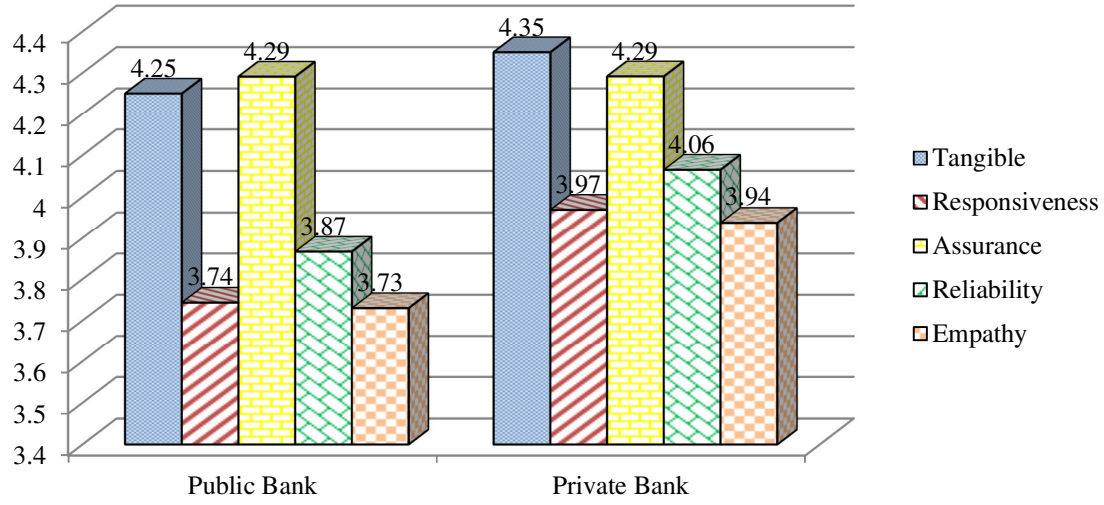


Fig. 03: Compare Public and Private Banks According to Five Factors

Fig. 03 and Table 05 represents the values for the five dimensions of public bank and private bank separately. T- Value of Tangible, Responsiveness, Assurance, Reliability, and Empathy of Public Bank and private bank is greater than 2. And also the significance value of every factor of a public and private bank is 0.000 which is less than 0.05. So, the tangible, responsiveness, assurance, reliability, and empathy values of the public and private bank are significant at a 95% significance level.

Fig. 03 represents the comparison between public and private banks according to the five factors of the SERVQUAL model Tangible, Responsiveness, Assurance, Reliability, and Empathy. Private Banks' have higher values for all the variables in this SERVQUAL model except 'Assurance'. Both public and private banks earned the same value for the 'Assurance'.

The findings of this research study prove that the service quality of private sector banks is greater than public sector banks.



ISSN 2076-9202

### 4.2. Expected Service Quality

Service Quality Gap is measured by using the following formula,

- Service quality gap= Perceived Service Quality - Expected Service Quality.

If there is positive value for the service quality gap, it indicates that the bank exceeds the customer's expectation. If so, the bank makes delighted customers. If the service quality gap is equal to zero it means that the customer expectation is covered by the customers with making satisfied customers. The bank performance is less than customer expectation when there is a negative value for the service quality gap. The result makes dissatisfied customers.

The Cronbach's alpha value is calculated to illustrate the reliability of each variable and the results are represented in Table 06.

All the variables have values of more than 0.6 which is the acceptable level of reliability test (Ursachi et al., 2015).

Table 06: Reliability Analysis – Expected quality

| Variable | No of Item | Cronbach's alpha |
|---|---|---|
| Expected Tangible | 5 | 0.745 |
| Expected Responsiveness | 4 | 0.606 |
| Expected Assurance | 6 | 0.662 |
| Expected Reliability | 5 | 0.670 |
| Expected Empathy | 4 | 0.724 |

Table 07 illustrates the results of correlation analysis for the expected service quality variables.

Table 07: Results of Correlation Analysis – Expected quality

| | Expected Tangible | Expected Responsiveness | Expected Assurance | Expected Reliability | Expected Empathy |
|---|---|---|---|---|---|
| Expected Tangible | 1 | -0.018 | 0.021 | 0.027 | -0.073 |
| Expected Responsiveness | -0.018 | 1 | 0.641** | 0.548** | 0.549** |
| Expected Assurance | 0.021 | 0.641** | 1 | 0.718** | 0.668** |
| Expected Reliability | 0.027 | 0.548** | 0.718** | 1 | 0.721** |
| Expected Empathy | -0.073 | 0.549** | 0.668** | 0.721** | 1 |

** Correlation is significant at the .01 level (2-tailed)

The correlation matrix shows that there is a significant correlation between Expected Responsiveness with Expected Assurance, Expected Reliability, and Expected Empathy at a 0.01 level. The correlation between Expected Assurance with Expected Reliability and Expected Empathy is also significant at a 0.01 level. And



ISSN 2076-9202

also there is a significant relationship between Expected Reliability and Expected Empathy at a 0.01 level.

Table 08: Analysis of Service quality gap

| Service quality gap | | Mean | T-Value | Significance Value |
|---|---|---|---|---|
| Public Bank | 5 | 0.5504 | -42.731 | 0.000 |
| Private Bank | 6 | 0.4452 | -45.502 | 0.000 |

Mean value, T-Value, and the significant value of service quality gap between public and private banks are mentioned in Table 08. It indicates that the service quality gap is significant at a 95% significance level and the service quality gap is higher in public banks' than the private banks.

The service quality gap is mentioned for both private and public banks based on the SERVQUAL model in Fig. 04. Both private and public banks need to focus the responsiveness, reliability, and empathy to improve the level of service quality since the service quality gap is higher compared to the other variables. Especially Public sector banks should focus on and improve responsiveness and empathy.

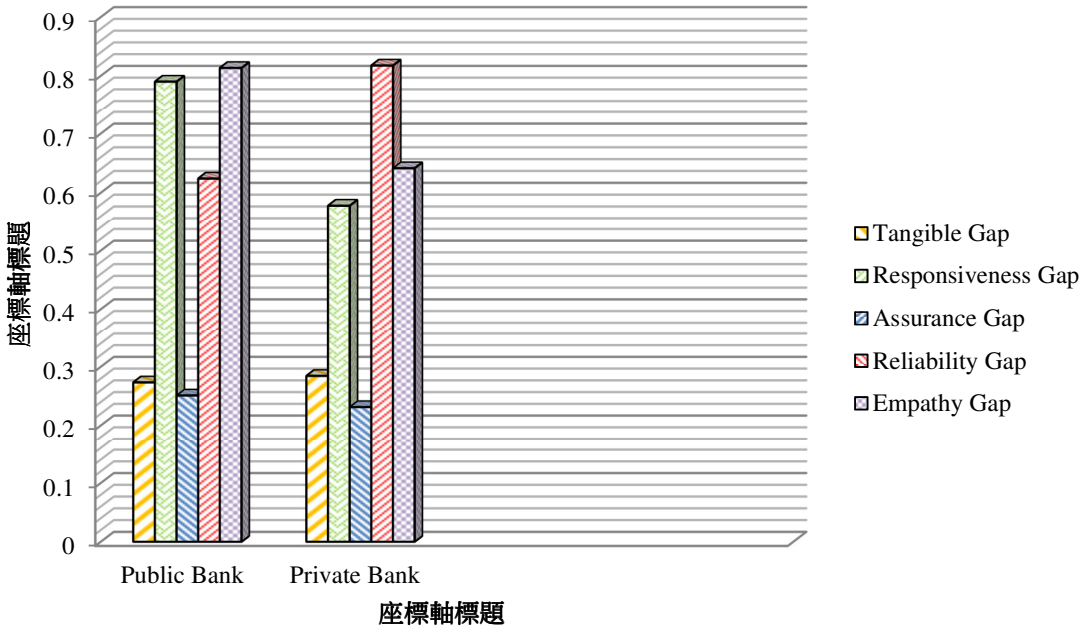


Fig. 04: Analysis of Service quality gaps

## 05. Conclusion and Recommendations

The aim of this study is to compare the quality of the service of private and public banks and identify factors that need to be improved in a public bank and private bank through service quality gap. The data was



ISSN 2076-9202

collected using the mystery shopping method considering three main public banks and three large private banks. Altogether 327 branches were covered island-wide with gathering 662 questionnaires.

The first objective is achieved by analyzing the result of public and private banks separately. The private banks have achieved higher levels of service quality with compare to the public banks. Private sector banks scored about 82% and public sector banks achieved only 78% in terms of service quality. According to the five factors of the SERVQUAL model of Tangible, Responsiveness, Assurance, Reliability, and Empathy, Private Banks' have higher values for all the variables in this SERVQUAL model except 'Assurance'. Both public and private banks earned the same value for the 'Assurance'. The result indicates that both private and public sector banks have the opportunity to grow in terms of service quality and especially public sector banks should give more attention to that.

The gap analysis is conducted to achieve the second objective, to identify the factors to improve to achieve higher service quality. The service quality gap is calculated by identifying perceived value and the expected value using mystery shopping. The previous findings were confirmed further according to the gap analysis and the result mentioned that the service quality gap is higher in public Banks than the private banks. 11% gap is identified in public banks and only 8% is required to improve in private banks.

And also Table 09 is representing the items that should be improved in each dimension for all banks based on the SERVQUAL model. Both private and public banks need to focus the responsiveness, reliability, and empathy to improve the level of service quality. Especially Public sector banks should focus and improve responsiveness and empathy.

Table 09: Summary of Service Quality Gap

| | Public Banks | Private Banks | | |
|---|---|---|---|---|
| Tangible | | | | Sufficient or little more to improve |
| Responsiveness | | | | Need Sufficient attention |
| Assurance | | | | Must improve immediately |
| Reliability | | | | |
| Empathy | | | | |

**Future Research**

The present study is based on the enhancement of the service quality of banks to enhance the performance of the banks or to reduce the gap between public and private sector banks regarding service quality. However, service quality is not the only factor that affects the performance of the banks or the gap between public and private banks. By investigating more factors and more generalized output can be obtained. Therefore, this research study can be extended up to more factors rather than service quality. This study has selected only six banks which include three government banks and three private banks. Sri Lanka is having more than 23 licensed commercial banks. This research can be further extended by covering more public and private banks which can be a real reason to generalize the outcome.



ISSN 2076-9202

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# ASSESSING THE IMPLICATIONS OF JOB SATISFACTION TOWARDS EMPLOYEE PERFORMANCE: INSIGHTS FROM PUBLIC SERVANT PROFESSIONALS (PSPS)

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**Abstract**

The purpose of this study is to assessing the effect of job satisfaction on employee performance based on the perception of public servant professionals in Bangladesh. The design of the empirical study was based on primary data that was gathered using a structured questionnaire. The respondents were selected based on a convenient sampling method and the sample size was 500 Public Servant officials. The data was analyzed using the Statistical Package for Social Science (SPSS) - 23. Through the use of SPSS, Structural Equation Modeling (SEM) is utilized to assess the causal effect of the predictors. Analysis indicates that the work environment and training and development are a significant predictor of Job satisfaction except for the other one variable-pay and promotion. Practically, the result of this study presents a snapshot of the satisfaction level of public servants working at the selected organization of Bangladesh. Findings of this study may help the policy makers to analyze the satisfaction level of the public servants of Bangladesh and how they can motivate public servants to perform their job properly and efficiently. Further research can start investigating the potential interactions and effects of these variables studied in this research and other extraneous variables.

*Keywords:* **Employee Performance, Job Satisfaction, Pay and Promotion, Training and Development, Work Environment.**



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## 1.0 Introduction

Many studies have been conducted on the subject of improving the competitiveness and standard of Bangladesh's public sector. Job satisfaction may come from allowing employees to be self-directed and strong relationships with colleagues (Lin, 2007). Sometimes this requires tweaking of organization goals to boost employee motivation (Bin, 2015). Employee Performance, as defined by Campbell (1990) is "what the organization hires one to do and do well". Performing employees help leaders to create excellent organizations. According to research carried out by Ab Malek, Mazli et al. (2019) states that employees' attitude toward work is largely affected by the work environment such as a positive and safe work environment, dedicated management, career development, pay raises and promotions, and the job itself. It is widely known that the citizen's understanding of the public servants and the quality of the service they provide is negative. On the other hand, renowned former public servant cum academician Ali (2004) gave opinion regarding all those studies, in his book 'Bangladesh Civil Service: A Political Administrative Perspective'. He said:' the theoretical content of most work appears to avoid the fact that officials operate in a particular system and that the expected outcomes are less than satisfactory in terms of the environment. Little to no attention was required to pay in the study efforts to bring a holistic view in terms of factors that make the civil service professionally effective for desirable policy outcome in governance".

Job satisfaction and performance are some of the behaviors that mainly impact Human Resources Management practices. Performance and productivity directly impact the level of employee satisfaction. According to (Ng & Feldman, 2009), having the right training can have a strong positive effect on employee performance. Moreover, Job satisfaction enhances the retention level of employees and reduces the expense of hiring fresh employees. Many of the determinants have been explored to understand job satisfaction such as management role, work motivation, pay, other benefits, work environment, and employee training perception. This research will explore the relationship status Job satisfaction level of employees of the public that influence on employee performance. Moreover, Job satisfaction is the result of many other factors such as a good work environment, appropriate pay and promotion systems, Training, and development is given to employees. So all this comes together and creates job satisfaction and any one`s absence could greatly affect the satisfaction level. The Particular Purpose of our study is to understand the factors that affect the satisfaction level of an employee in an organization and up to what extent they impact the satisfaction of employees. Specifically, we took Work Environment, Pay and Promotion, and Job Training and Development as the attributions to see their impact on the satisfaction level of employees, which consequently effect on employee performance.

Bangladesh is a typical case in which it remains illusory to establish a sound and rational management of human resources. The situation develops the need to define the underlying causes and bring them into an evaluation of the job satisfaction issue in the public sector. In such a situation, the job satisfaction of public servants becomes an important issue that has to be taken into account in order to achieve the ultimate goals of the public sector in Bangladesh. Public service efficiency and motivation are essential for better governance. We have to apply every possible tool for enhancing the efficiency of the public service



*ISSN 2076-9202*

considering the incentive systems and administrative culture in Bangladesh. As public servants are responsible for implementing the government's all development programs and providing services directly to the common people, success and failure of the Bangladesh government in guaranteeing quality public service delivery and enhancement of performance vary depending on the sincere attempts of its human resources posted in the field level. A large number of studies have been conducted on the effects of motivation and ability on performance in western countries, but little information is available in this realm regarding developing countries like Bangladesh. Particularly, there is no study of Job satisfaction found regarding the perceptions of the public officers. The latest public management analysis has launched to emphasize the need to study how public organizations' unique features affect employee attitudes, behaviors, and decision making (Pandey & Wright, 2006; Park & Rainey, 2007; Yang & Pandey, 2009). The primary objective of this study has identified and analyzes the factors which create job satisfaction of the public servant in Bangladesh which influences their job performance. In line with the objectives, this research has structured the following questions. (i) What are the important factors that contribute to the satisfaction of public servant professionals? (ii) Does the correlation exist between job satisfaction and employee performance? (iii) Are the public servants of Bangladesh working in the field level satisfied with their present job condition and situation?.

## 2.0 Theoretical Framework and Hypothesis Development

### *2.1 Work Environment (WE) and Job Satisfaction (JS)*

According to Herzberg (1968) and Spector (2006); the work environment is an important factor for employees ' happiness, which is that the new research found that the scholars are happier playing a role in their job satisfaction (Forsyth & Copes, 1994; Ellickson & Logsdon, 2001: Carlan, 2007; Rainey, 2009). The workplace consists of physical and social working conditions. People want to work in an atmosphere that is relaxed, safe, clean, modern, and fitted (Qun, 2002) and Work under good conditions like temperature, lighting, and noise (Green, 2000). For example, people may be upset if unexpected sounds such as telephones, talks, or crowds are overwhelmed (Moenga et al., 2018) and Lack of lighting or temperature creates pressure (Deranty & MacMillan, 2012). A work environment with job status, resources, support, access to information, and a sense of empowerment among employees increases employees' satisfaction towards work and eventually, it increases the organization's outcome (Yusuf & Bit-Lian, 2020). The work environment has a profound impact on individual and organizational productivity. To achieve productive work performance demands for job satisfaction among employees (Muguongo et al., 2015). It implies that people that are comfortable within their work environment will work much more effectively and it will enjoy the working system more than those who are embarrassed. Therefore, you should perceive certain parts of your employees' work area quite thoughtfully. Many issues are affecting the satisfaction of the work environment. As mentioned earlier that according to research carried out by Ab Malek et al. (2019) stated that employees' attitude toward work is largely affected by the work environment, working conditions such as a positive and safe work environment, dedicated management, career development, pay raise and



ISSN 2076-9202

promotions, and the job itself. Furthermore, job satisfaction influences employee performance. It has been further added that job satisfaction also can help the organization to retain its employees.

**$H_1$:** *Work Environment (WE) has a significant effect on the Job Satisfaction (JS) of a public servant.*

*2.2 Pay and Promotion (PP) and Job Satisfaction (JS)*

Pay is perceived as monetary and extrinsic recompense that includes wage, bonus, and living costs allowance, etc. Pay is a vital feature. Armstrong (2009) stated that it is better to differentiated performance management and pay, "abstracting" both, to make a distinction between developmental prospects and the impact of your performance on incremental pay increases. He explains the problems in having to pay for performance wherein it requires being observable on various levels, thus fact-based, and this evidence requires be seeing to be transparent and fair and not conducting behind locked doors. The main factors for job satisfaction were the salary and the analysis was carried out concerning the level of job satisfactoriness of public sector employees (Sokoya, 2000). The study of the relationship between job satisfaction and pay also found that work satisfaction is influenced by pay (Nguyen et al., 2003). Survey results of Kathawala et al. (1990) say that the pay package is the single factor that increases employee productivity and satisfaction in the automotive sector. It should be remembered that compensation is a very effective tool for controlling employee revenues. It also promotes the employee's organization, which also attracts the employee with the work (Zobal 1998; Chiu et al., 2002), for an employee, the employee's salaries are most relevant (Cappelli & Sherer, 1988; Clark & Oswald, 1996). Hammermesh (2001) found that the rise in earning shocks temporarily impacts satisfaction for employees. Pay Appraisal and career development like promotions and recognition enhance employee's motivation to work which eventually results in overall improved performance, increased overall productivity (Hussain et al., 2019).

**$H_2$:** *Pay and Promotion (PP) has an insignificant effect on the Job Satisfaction (JS) of a public servant.*

*2.3 Training and Development (TD) and Job Satisfaction (JS)*

Training is the process for civilizing the talents, skills, and knowledge of people who shape their thoughts and suggestions to improve their performance. We may say that the majority of the studies are a constant process of profound concern. Hee and Jing (2018) suggested that the investment in the workforce is actually for the organization's own benefit as the trained workforces have higher productivity and contribute to higher organizational efficiency and such an organization is worthy to attract workforce with greater quality. Training and development are being used as an important tool that delivers knowledge, expertise, and abilities and modifies their actions and behaviors to be successful in the present, as well as in the future (Ahmed & Yohanna, 2014). This leads to improving personal and corporate performance (Al-Mzary et al., 2015; Okechukwu, 2017). When employees attended training programs, they achieve self-confidence of



ISSN 2076-9202

making their jobs, they observe career development opportunities and they think that their companies invest in them (Jun, et al., 2006). It is important for every organization since it is meant not only to improve the skills, attitudes, and behaviors of employees but also to adapt them to new technologies that in turn increase individual and corporate performance (Khan et al. 2016). Researchers Afsana et al. (2015) and Singh et al. (2016) identified that some significant connections were between training and development and the success of employees. Another research in the UK, (Jones et al., 2009) Stress the positive part of work satisfaction training for employees. (Blum & Kaplan, 2000) they have described the opportunity to learn new skills and work satisfaction with each other positively. In addition to helping organizations succeed employees have the impression that they will be making a real difference in achieving goals and objectives. (Gerbman, 2000). Organizations implementing workforce development programs are more pleased with lower turnover levels (Wagner, 2000). According to Stacey Wagner, a manager with the American Society for Training and Development, training builds employee loyalty because employees know the organization is going to invest in their futures (Shelton, 2001).

> **$H_3$:** *Training and Development (TD) has a significant effect on the Job Satisfaction (JS) of a public servant.*

### *2.4 Job Satisfaction (JS) and Employee Performance (EP)*

Job satisfaction is the collection of feelings and beliefs of the people about various aspects of their jobs, such as work environment, career prospects, interest in the tasks, etc. According to Robbins and Judge (2013) "job satisfaction describes a positive feeling about a job, resulting from an evaluation of its characteristics." Basically, job satisfaction is about liking job and finding fulfillment in what do. Job satisfaction is a good or optimistic psychological state as a result of an appraisal of work or experience (Locke, 1976). According to Rainey (2009), Job satisfaction in the organizational analysis is the most commonly observed predictor which is important because people have what kind and specific characteristics of their job. Rice et al. (1989) proposed that "Satisfaction is partly defined by the variations resulting from a subjective evaluation process involving the appraisal of current work performance against certain professional reference criteria." Job satisfaction is an important variable that provides an understanding of employees ' general feelings and ways of thinking about work. Therefore, the employee's satisfaction with his work expectations and solutions are forwarding his task. Employment satisfaction depends on how fulfilled one's desires are in a career (Togia et al., 2004). Various research studies demonstrate the positive effects of competitive awards and compensation strategy on employee performance. It is important to recognize that the compensation strategy should not be limited to standard bonuses and basic pay, but accounting should also include incentive, corporate support, and appreciation. Management should therefore consistently evaluate and re-examine the pay strategy and ensure that employee performance has a fair and equitable distribution. This increases employee productivity and satisfaction (Olabode et al., 2019). It thus endorses the idea that the connection between incentives and compensation and the performance of employees exists in a positive and meaningful manner. Meyer (2002) proposed that low job satisfaction has a bad effect on the engagement of workers and



ISSN 2076-9202

successively results in achieving organizational goals and efficiency. The research model and hypotheses are established from the above literature and theoretical support.

**$H_4$:** *Job Satisfaction has (JS) a significant effect on Employee Performance (EP) of public servants.*

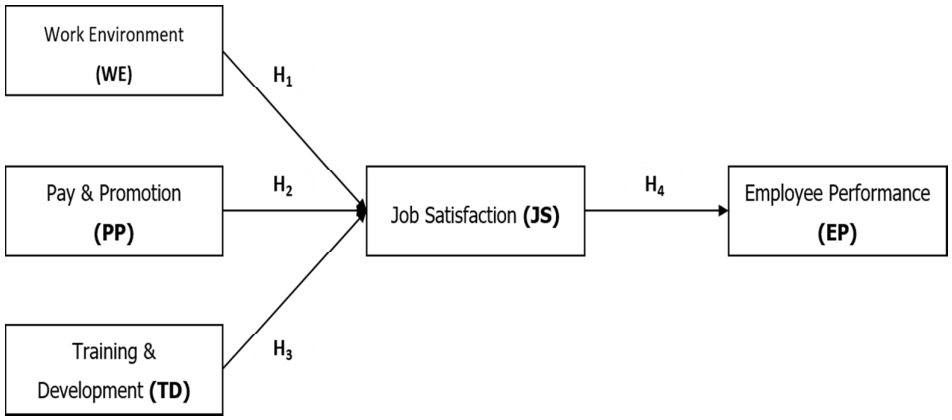


***Figure-1: Conceptual Model Associated with the Hypothesis***

## 3.0 Research Methodology

### *3.1 Sampling Method and Sample Size*

This study is undertaken in the administrative hospital educational and financial fields by the public servants. The collection of data is important for analysis, as data is designed to improve the comprehension of a theoretical context (Bernard, 2017). For the study, a simple random sampling approach had been used. A method of simple random sampling is a kind of sampling which is most effective when a specific cultural area is to be researched by well-informed experts in the field. Significant sources, reflective community members are listeners who are familiar with the culture and able and willing to express their interpretation (Bernard, 2017). Because this analysis focused solely on the mindset and experience of public servants of Bangladesh, the best choice for this thesis is a purposeful sampling. A total of 560 of the 600 questionnaires administered were returned with a response rate of 89.28 percent. Just 500 were considered useful for the study after review from the returned questionnaires and chosen for analysis. Through having visited the subject areas, the researcher directly distributed and collected the questionnaire. A few surveys also have been sent out by e-mail. Responses are checked over most of the telephone with respondents if required. The honesty and impartiality theory was upheld in the case of quantitative analysis. Thus, statistical data were trustworthy and reliable.

### *3.2 Development of the Questionnaire*

The Rensis Likert scale is the measurement scale used in this report. This is the most frequently used



ISSN 2076-9202

approach for quantifying scientific methods (Smith, 2005; Kidwell, 2009). It allows an individual to express agreement or disapproval and to obey the statement. The scale of Likert uses a scale of 5 or 7 but the most common scale is the scale of 5 dots. A 5 point set of "STRONGLY AGREE," "AGREE," "NEUTRAL," "DISAGREE" and "STRONGLY DISAGREE" are used for this analysis. The central point of this measure, “neutral”, signifies unpredictability or “neither agree or disagree”. Peterson (2002) stated that the reliability of data received from a questionnaire is proportionate to the questionnaire's reliability. This leads to successful questionnaires that make it difficult for a person to give accurate answers to questions (Hague, 1993). The survey has been structured to research core architectural topics, including structure, sequence and time frame, vocabulary and architecture (Rea et al., 2012) the questionnaire began with a cover letter to introduce and describe the applicants ' sample priorities. Voluntary involvement in this survey was one of the most important characteristics of this research.

### *3.3 Data Analysis Techniques*

The analytics process is where the researcher continually represents data collected, shifting deeper for knowledge and presenting the data, and deriving an analysis of the larger meaning of the data (Creswell, 2003). Vast amounts of data must be translated into simplified formats, to make it easier for the readers to view and understand. Objective analysis is concerned with understanding phenomena by collecting quantitative data interpreted in statistical forms. SPSS- 23 is used for this research as statistical techniques for the collection and interpretation of the primary data from the survey. The organization has widely used its resources to provide descriptive statistics on frequencies and interstitial columns, and the correlation coefficient of Pearson and the study of several regressions.

## 4.0 Data Analysis

### *4.1 Respondents Profile*

The first step of the data analysis involved the testing of the answers and marking them with a single number (percentage and table), and the generation of descriptive statistics. The concise data analyzes provide the reader with a description of current numbers and values (Dwivedi & Weerakkody, 2007). The study was distributed between January2020 and February2020 based on the questionnaire. 560 public servants received the questionnaire. 60 questionnaires were not correctly completed and thus discarded following the analysis of the finished surveys. A total of 500 questionnaires were retained, providing an appropriate IS-field response rate of 89.28 per cent (Baruch & Holtom, 2008) for the final study. The table presents the features of the respondents including their genders ages, marital status. Detailed consideration will be paid to the demographic history of the respondent. The table shows that 162 (32.4%) females and 338 (67.6 %) males were sexually active. In relation to age, the results showed that the majority of respondents identified 53.0% in age groups of 30-40 years, followed by the age group of more than 60 years, which represents about 6.4%. The age group of 40-50 couples was followed by 22.4% and the age group 50-60% is followed by 6% of the total. Ultimately, only 12.2% of the respondents were young academics, younger than 30 years of age. And



ISSN 2076-9202

the table indicates that 131 single (25.2%), 345 married people (70.0%) and 24 (4.8%) divorced individuals in terms of marital status. In addition, the postgraduate sample was 28.8 percent; the graduate sampled 35.2 percent, the college level 17.4 and 18.6. With regard to employment rating, officials were managers at35.3%, middle managers at 24.8%, and senior managers at 18.4% and general managers at 21.6%. With 40.2% for the the education sector, 25.2% for the hospital sector, 15.4% for the administrative and 19.2% for the financial sectors were.

***Table-1:*** **Respondents Profile**

| Variable | Attributes | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Gender | Male | 338 | 67.6 | 67.6 | 67.6 |
| | Female | 162 | 32.4 | 32.4 | 100.0 |
| Age | 18-30 Years | 61 | 12.2 | 12.2 | 12.2 |
| | 30-40 Years | 265 | 53.0 | 53.0 | 65.2 |
| | 40-50 Years | 112 | 22.4 | 22.4 | 87.6 |
| | 50-60 Years | 30 | 6.0 | 6.0 | 93.6 |
| | 60- up Years | 32 | 6.4 | 6.4 | 100.0 |
| Marital Status | Single | 126 | 25.2 | 25.2 | 25.2 |
| | Married | 350 | 70.0 | 70.0 | 95.2 |
| | Divorced | 24 | 4.8 | 4.8 | 100.0 |
| Educational Level | College | 93 | 18.6 | 18.6 | 18.6 |
| | Graduate | 176 | 35.2 | 35.2 | 53.8 |
| | Post Graduate | 144 | 28.8 | 28.8 | 82.6 |
| | Others | 87 | 17.4 | 17.4 | 100.0 |
| Job Ranking | General Staff | 108 | 21.6 | 21.6 | 21.6 |
| | Manager | 176 | 35.2 | 35.2 | 56.8 |
| | Middle Manager | 124 | 24.8 | 24.8 | 81.6 |
| | Senior Manager | 92 | 18.4 | 18.4 | 100.0 |
| Organization | Finance | 96 | 19.2 | 19.2 | 19.2 |
| | Education | 201 | 40.2 | 40.2 | 59.4 |
| | Hospital | 126 | 25.2 | 25.2 | 84.6 |
| | Administrative | 77 | 15.4 | 15.4 | 100.0 |

*4.2 Results of the Reliability Test*

The reliability and validity of the research tool had to be developed to ensure that it was reliable. Until conducting statistical techniques on the data generated, the reliability and validity of the instrument must be evaluated. The data and, consequently, the research are of high quality and allow for reliable findings



ISSN 2076-9202

(Straub, 1989). The measurement accuracy and stability are assessed as reliability. The 0.80 standards for reliable measurements for the initial scales have been met in Cronbach alpha scores (Straub, 1989). Four scales were very accurate and 8 were very consistent. (Hinton et al., 2004). Straub (1989) stated that the findings of a reliable instrument are better supported and the parameter estimates are more efficient because of the high and excellent reliability score of the research instrument, so that more confidence in the data obtained by this instrument can be gained.

***Table-2:*** **Results of Reliability Analysis**

| Variables | Cronbach alpha (α) |
|---|---|
| Work Environment (WE) | 0.901 |
| Pay and Promotion (PP) | 0.868 |
| Training and Development (TD) | 0.869 |
| Job Satisfaction (JS) | 0.864 |
| Employee Performance (EP) | 0.865 |

*4.3 Confirmatory Factor Analysis (CFA)*

**4.3.1 Convergent Validity**

Composite Reliability (CR) and Average Variable Extracted (AVE) were used to calculate convergent validity (Fornell & Larcker, 1981). At least 0.7 should be a typical CR value, while 0,5 or higher should be considered acceptable AVE (Hair Jr, 2006). All loading factors should be greater than 0.5 and should be high. (Fornell & Larcker, 1981). The loading value of each element is equal or greater than 0.5, and p <0.001. Therefore, reinforced construction efficiency ranged from 0.87 to 0.94. The average variances reported between 0.69 and 0.82 were above the acceptable 0.50 point (Anderson et al., 2006), that means that more than half of the variance observed in the items is their hypothesized influences. As shown in the table, the updated measurement models have achieved convergent validity.

***Table-3:*** **Convergent Validity**

| Variables | Items | AVE | CR |
|---|---|---|---|
| Work Environment (WE) | WE1 | 0.588 | 0.949 |
| | WE2 | | |
| | WE3 | | |
| | WE4 | | |
| | WE5 | | |
| Pay and Promotion (PP) | PP1 | 0.579 | 0.947 |
| | PP2 | | |
| | PP3 | | |



ISSN 2076-9202

| | | | |
|---|---|---|---|
| | PP4 | | |
| | PP5 | | |
| Training and Development (TD) | TD1 | 0.578 | 0.939 |
| | TD2 | | |
| | TD3 | | |
| | TD4 | | |
| | TD5 | | |
| Job Satisfaction (JS) | JS1 | 0.846 | 0.955 |
| | JS2 | | |
| | JS3 | | |
| | JS4 | | |
| Employee Performance (EP) | EP1 | 0.675 | 0.969 |
| | EP2 | | |
| | EP3 | | |
| | EP4 | | |
| | EP5 | | |

### *4.3.2 Discriminant Validity*

Recognition of the similarity between the constructs tests the discrimination validity. Fornell & Larcker (1981) suggested that the square root of the building's AVE should be higher than the association of structure with other buildings for discriminant validity to be satisfactory. Peng and Lai (2012) proposed that the inter-construct similarity of the average difference derived from each construct should be less than the square root. This analysis showed that the inter structural associations of the individual factors are less than the square root of the average variance. The table indicates that all the systems were different. The diaconal shows the AVE values of each building in the diaconal, which were higher than the other correlation values between the construction structures.

***Table-4:*** **Discriminant Validit**

| Constructs | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Work Environment WE) | 0.768 | | | | |
| Pay and Promotion (PP) | .370** | 0.763 | | | |
| Training and Development (TD) | .268** | .238** | 0.759 | | |
| Job Satisfaction (JS) | .369** | .333** | .462** | 0.918 | |
| Employee Performance (EP) | .331** | .225** | .318** | .298** | 0.818 |

*4.4 Hypotheses Testing*

The Structural Equation Model (SEM) results described in the tables, which declared that all hypothesized



ISSN 2076-9202

relations between independent and dependent variables other than one in the model were supported. For example, in the model, the hypothesized path between Work Environment with Employee Satisfaction, Training and Development with Job satisfaction and Job satisfaction with Employee performance with CR value.

***Table-5:*** **Standardized Path Coefficients and Hypotheses Result for the Model**

| Hypothesis | Path | β | S. E. | P-value | CR | Results |
|---|---|---|---|---|---|---|
| **H1** | WE ---->JS | 0.325 | 0.084 | 0.007 | 2.753 | **Accepted** |
| **H2** | PP---->JS | -0.154 | 0.085 | 0.194 | -1.307 | **Rejected** |
| **H3** | TD---->JS | 0.709 | 0.033 | 0.000 | 4.243 | **Accepted** |
| **H4** | JS----> EP | 0.497 | 0.050 | 0.000 | 2.835 | **Accepted** |

The work environment variable has a significant positive relationship with job satisfaction, according to the findings of data analysis. In particular, with (β = 0.325) and (p<.007), this variable has a significant positive relationship. This shows that workplace satisfaction contributes to more than 32 percent. The current study results Support the **$H_1$.** There is no significant link between pay and promotion and job satisfaction (β = -0.154) and (p<.194) in the statistical analysis results of the study. Pay and promotion lead to employee satisfaction by more than 15 percent, according to these results. This research result does not support the **$H_2$.** The analysis of the results confirmed that the relationship between training and development and job satisfaction is significantly positive (β = .709) and (p<.000). Training and development contribute 71% more to employee satisfaction, according to these results. The study results support **$H_3$**. The results of the research statistics show that job satisfaction and employee performance have significant positive links (β =.497) and (p<.000). The results show that job satisfaction adds 49% more to job performance. The study results support **$H_4$.**

## 5.0 Discussions

The objective greatly affiliated with this study was seeing the relationship between referents of the research and job satisfaction as well as how profound is the effect of the interpretations on employee performance. For this reason, the work environment, pay, and promotion, training, and development were the factors selected for this research. This research is unique because this is the only research concerning the effects of job satisfaction of Bangladeshi public servants on employee performance. The focus of this research is on the factors to make the work of the public servants of Bangladesh more satisfying, which impact their work performance. The specific goals are to measure the satisfaction of the officials and to identify the different factors to satisfy the work. The efforts have been made to achieve the level of job satisfaction that public sector officials now perceive as working in a different organization, such as administrative, financial, educational, and hospital. In this effort, the government has also sought to determine the significant factors which affect job satisfaction and the extent of its contribution. The results of the study are described here.



*ISSN 2076-9202*

This study focuses on the introduction of the public servant's satisfaction and performance in Bangladesh. This study is aimed at studying the factors influencing the satisfaction and performance of public sector employees in Bangladesh. This study formulated three research questions and developed four hypotheses. In this study, a majority of public servants have found themselves moderately satisfied with their current positions and situations. Each participant was required to assess their overall satisfaction at a 1-5 point that was not completely satisfying to every participant. Data form ratings show that 46.9% of respondents were moderately satisfied and 12.8% were fully satisfied with their positions. However, 26.2% of the respondents are partially dissatisfied with their job considering everything.

The findings show a significant positive relationship between Bangladeshi public servants' job satisfaction and employee performance. As workers are fulfilled with their jobs, the more they are satisfied, the more and genuinely they strive for rewards for organizations, the higher the performance level. Job satisfaction is very important for the success of employees. Each organization's main objective is to improve the performance of its employees in a highly competitive environment to enable them to survive. The public sector faces increasing demand for efficiency and cost-efficiency with a growing public management strategy, which raises interest in public servant's performance quality (Osborne & Gaebler, 1992; Vermeeren et al., 2011). Several studies have found that workers in the public sector are less happy than their private partners with their external incentives and work environment (Cherniss & Kane, 1987; McCue & Gianakis, 1997). Norris (2004) stated that employment, experience, and job satisfaction among government workers have been studied. In this study, a key issue arises as far as the employee's satisfaction is concerned, compared to other aspects of the benefit to social service workers, by their chances of supporting and recognizing them. The Bangladeshi Administrative Reform Commission established the following factors that influence public servants ' motivation for employer health, respect for community, job/life balance, and opportunity to serve in the country and job profile variance. However, working with Bangladesh Public Servant on job satisfaction is very limited in the study. Furthermore, research efforts are hardly found on the part of Bangladeshi public servants working on the sector. On the other hand, the determinants, associations, and effects of work fulfillment have been examined by public administration experts from different countries (Wright and Kim, 2004, Kim, Leong et al., 2005, Park and Rainey, 2007). In this context, Khaleque and Rahman (1987) research on efficiency, commitment, and skills has been viewed as being more important than self-employment, the status of employment, management policy and decision making involvement than good work relationships, work-life, work environment, acknowledgment of good work and job security. The public sector faces increasing demand for efficiency and cost-efficiency with a growing public management strategy, which raises interest in public servant's performance quality (Osborne & Gaebler, 1992; Vermeeren et al., 2011). Although there are fairly mixed reviews of the direct impact of job satisfaction on efficiency or profitability, its effect on turnover, absence, citizenship, and other organizational attitudes and behavior is well-founded (Harrison et al., 2006). Several studies have found that workers in the public sector are less happy than their private partners with their external incentives and work environment (Cherniss & Kane, 1987; McCue & Gianakis 1997). McCue and Gianakis (1997) stated that the relationship between satisfaction and efficiency based on data obtained by the local financial authorities in Ohio has been studied.



ISSN 2076-9202

## 6.0 Implications

The results of the study show that job satisfaction with performance is very high. As employees are pleased with their jobs, the more they are happy, the more and more they are truly working towards the good of organizations, the higher the level of efficiency. Job satisfaction is influenced by many factors including incentive, reward, promotion, and happiness (Chow et al., 2015; Chih et al., 2017). A satisfied employee is a well-performed employee; employee satisfaction work as a catalyst to motivate an employee and it eventually improves performance and is more productive to meet the organizational goals (Lai et al., 2017). According to research conducted out by Rahayu, Rasid et al. (2019) showed that enhanced job satisfaction would improve the performance of employees. The satisfaction at work is therefore extremely important for employee performance. This study also shows that certain other causes are closely correlated with the overall satisfaction of Bangladeshi public servants that has an effect on their performance. Jahan (2006) stated that many motivating and de-motivating Bangladesh Civil Service (BCS) factors have been established. With some interesting results, she came out. Inadequate salaries have been described as the major obstacle in accession to the civil service by most candidates in urban and rural areas. The work environment was also too restrictive to allow innovation to be achieved. Employment safety is considered to be the most motivating factor for BCS joining and she pointed out that 45 percent of employees think about job security, with 55 percent thinking that the status and power of employees motivate them to work in public services, but 27 percent of employees think about job security and 14 percent think about the state and the power of the employer. Karim (2009) revealed that many Bangladeshi government officials have entered the public service, more motivated by the dedication of the public service than pay and other benefits. Nevertheless, Debnath et al. (2011) also showed that low wages, lack of promotional incentives, poor management, and job insecurity were the most significant reasons for Bangladeshi Public Servants.

## 7.0 Limitations and Future Research Direction

The research has found important findings on the relationship between the impact on jobs work environment, pay and promotion, training and development, and job satisfaction of public employees in Bangladesh. However, this work is insufficient to be taken into consideration. Because of these weak points, the results of this study should be carefully interpreted. The results of the study cannot, therefore, be deduced from others, which compromises the intrinsic validity of the analysis. Secondly, the sample size is not enough to generalize any type. However, 500 respondents from Bangladeshi government servants were supported by the data. Small sample size may affect the statistical performance and accuracy of model parameter estimates and the overall model fit indexes (Vermeeren et al., 2011). Potential researchers are advised to focus to ascertain the reason behind this. More investigation will show the causes and the future possibilities for research are immense. In particular, a comparative study between public and private sector workers can be provided. The findings of this analysis can be inferred that variables can have effects on staff output other than the four variables taken into account in this study. Further work is therefore required to further explore the



ISSN 2076-9202

possible interactions and effects of these and other international variables.

## 8.0 Conclusions

In summary, the public servants have had valuable contributions and their responses have been evaluated according to the above findings. The patterns found in the above findings were fairly consistent with previous job satisfaction and employee performance studies. Studies on job satisfaction and efficiency of employees have been inadequate in Bangladesh's public sector. The research highlighted the positive impact of employee satisfaction on the performance of the company. On the basis of these findings, the preparation and development of employees and of their working environment have the highest impact on their performance. The data available to the employer have provided the organization's Human Resources department with sufficient evidence to determine the best approaches to improve employee performance. However, immediate approaches may not extend to long-term talent management goals, as the performance of employees depends heavily upon skills, motivation, and opportunities that change rapidly with growth.

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# UNEMPLOYMENT: A PROBLEM PROVING TO BE DISADVANTAGEOUS TO THE TRIBAL INDIVIDUALS

**Dr. Radhika Kapur**

**Abstract**

Employment opportunities is regarded as one of the essential areas, which the tribal individuals aim to acquire on a comprehensive basis. The tribal individuals, belonging to all communities are overwhelmed by various types of problems, which give rise to impediments within the course of acquisition of employment opportunities. Some of these are, they possess low literacy skills or no literacy skills at all; they are unaware in terms of various factors; they are residing in backwardness and seclusion; do not possess adequate skills; are not aware in terms of modern, scientific and innovative methods and so forth. Due to these factors, they are unable to get engaged in reputed and well-paid employment opportunities. Hence, in order to fulfil all their needs and requirements and sustain their living conditions in an adequate manner, they are dependent upon the natural environmental conditions. The various types of job duties that they are engaged in are, hunting and gathering, fishing, production and manufacturing, agriculture and farming practices and so forth. Therefore, in order to get engaged in well-paid employment opportunities, it is of utmost significance for them to possess adequate knowledge and up-grade their competencies and abilities. The main concepts that are taken into account in this research paper are, the problem of unemployment is unfavourable upon the overall living conditions of tribal individuals, causes of unemployment among tribal individuals and effects of unemployment among tribal individuals.

**Keywords:** Aims, Employment Opportunities, Living Conditions, Resources, Skills, Tribal Individuals, Unemployment

It is stated that an aimless life is the meaningless life. Hence, it is indispensable for all individuals and communities to formulate certain aims and objectives (Tribals staring at Lack of Livelihood Opportunities in Mysuru District, 2020). These are formulated in personal and professional spheres. The individuals, belonging to tribal communities also have various aims and objectives to achieve. The primary aims of tribal individuals are to get engaged in various types of employment opportunities, generate a source of income, promote better livelihoods opportunities and bring about improvements in their overall quality of lives. In order to achieve these goals, they are putting in efforts to their best abilities. They are inculcating the traits of diligence, resourcefulness and conscientiousness. When the tribal individuals are participating in various types of livelihoods opportunities, they ensure that they are in accordance to their competencies, abilities, needs and requirements. In some cases, they experience number of problems and challenges within the course of looking for various types of employment opportunities. The problems of poverty, backwardness and illiteracy is severe among tribal communities. The primary reason being, they are unaware. As to get



*ISSN 2076-9202*

engaged in well-paid employment opportunities, it is essential for the tribal individuals to be aware in terms of concepts, methods, approaches and factors.

The tribal individuals are primarily engaged in the production and manufacturing processes (Are Scheduled Tribes Losing Out in the Job Market? 2015). They are engaged in the production of artworks, handicrafts, jewellery, food items, garments and so forth. Apart from the production processes, they are skilled at dancing, singing, playing of musical instruments, role playing, and various types of sports and physical activities. When they are competent at these activities, they make use of them to generate a source of income and promote better livelihoods opportunities. In the present existence, the tribal individuals have recognized the meaning and significance of education. They aspire to acquire good-quality education. They form the viewpoint that when they will acquire good-quality education, they will be able to acquire reputed and well-paid employment opportunities. The tribal individuals, particularly when they are not skilled and competent in terms of various areas, experience problems in acquisition of employment opportunities. In other words, there is an increase in the rate of unemployment among them. Therefore, one is able to understand that due to lack of skills and abilities and when they possess low literacy skills or no literacy skills at all, there is an increase in the rate of unemployment among them.

The effects of unemployment are disadvantageous upon the overall living conditions of the tribal individuals. In other words, they experience problems in fulfilling their needs and requirements, achieving goals and objectives and bringing about improvements in their overall quality of lives. It is apparently understood, tribal individuals aspire to not only up-grade their living conditions, but they also aspire to acquire education and enhance their career prospects. They aspire to get engaged in reputed and well-paid employment opportunities. In other words, promoting well-being is regarded as one of the indispensable aims of tribal individuals (Well-being Concepts, n.d.). This can be facilitated in a well-ordered and satisfactory manner, when they will be engaged in good employment opportunities. The research studies have indicated, when the tribal individuals migrate to urban communities to acquire good-quality education, they are likely to get engaged in well-paid employment opportunities. They augment their knowledge and competencies in such a manner that they are able to find employment opportunities. They get employed in various types of organizations, which enable them to generate a source of income and make use of their educational qualifications to their best abilities. The problem of unemployment is prevalent among tribal individuals, which is proving to be disadvantageous to them to a major extent.

**The Problem of Unemployment is Unfavourable upon the overall Living Conditions of Tribal Individuals**

The primary aims of tribal individuals are to acquire good-quality education, augment their skills and abilities, get engaged in various types of employment opportunities, generate a source of income, promote better livelihoods opportunities, enrich their living conditions and bring about improvements in their overall quality of lives. Apart from inculcation of the traits of diligence, resourcefulness and conscientiousness and generating information in terms of various methods and approaches, it is necessary to generate income. Financial resources are the key to achieve the desired goals and objectives. When they will possess sufficient resources, they will be able to render a significant contribution in achievement of various goals and objectives in personal and professional spheres. Through engagement in various types of employment



ISSN 2076-9202

opportunities, the tribal individuals will be able to accumulate the resources that are necessary in sustaining their living conditions in a well-organized and satisfactory manner. On the other hand, when they are not engaged in any type of employment opportunities, they will experience scarcity of resources. Therefore, it is clearly understood to the individuals, belonging to tribal communities that the problem of unemployment is unfavourable upon their overall living conditions.

In the present existence, with advancements taking place, with the advent of modernization and globalization, the tribal individuals have recognized the meaning and significance of education. The tribal individuals aspire to acquire education and enhance their career prospects. This can be facilitated in a well-organized and satisfactory manner, when they will be engaged in good and well-paid employment opportunities. The research studies have indicated, the tribal individuals migrate to urban communities to acquire good-quality education. The reason being, the system of education in tribal communities is not in a well-developed state. There are number of areas, which are deficient. When the tribal individuals will acquire good-quality education, they will not only be able to get engaged in various types of employment opportunities, but also contribute in leading to enrichment of their career prospects, achievement of goals and objectives and sustenance of their living conditions in a worthwhile and efficient manner. One of the important points that needs to be acknowledged is acquisition of education is facilitated, when there will be possession of financial resources. Therefore, it is clearly understood to the individuals, belonging to tribal communities that the problem of unemployment is unfavourable upon their overall living conditions.

**Causes of Unemployment among Tribal Individuals**

Among tribal individuals, there are numerous causes of unemployment. In some cases, the causes are experienced in a major form, whereas, in case of others, they are experienced in a minor form. In some cases, they can be overcome in a manageable manner, whereas, in other cases, the tribal individuals experience problems in overcoming them. When the tribal individuals are dedicated towards acquiring education, enhancing their career prospects, achieving goals and objectives and bringing about improvements in their overall quality of lives, in such cases, they put into practice the measures and approaches, which are necessary to overcome unemployment. In some cases, when they are well-aware, they are able to find employment opportunities on their own (Successful, 2021). But when they are not aware, they need to take help and support from others. The other individuals include, family and community members. The causes of unemployment among tribal individuals are stated as follows:

**Poverty and Backwardness**

The tribal individuals are residing in the conditions of poverty and backwardness on a large scale. The condition of poverty is characterised by lack of resources. When they will not possess sufficient resources, it is stated, they are overwhelmed by the condition of poverty. On the other hand, when tribal individuals are residing in backwardness, they are unaware in terms of various factors. One of the problems, which they experience is, they make use of traditional methods in the implementation of various tasks and activities. They are unaware in terms of modern, innovative and scientific methods. When the tribal individuals are unaware in terms of these methods, they will do experience problems in finding employment opportunities. Hence, in order to acquire good and well-paid employment opportunities, it is of utmost significance for the tribal individuals to put into practice the measures and strategies to overcome the conditions of poverty and



ISSN 2076-9202

backwardness. Therefore, one is able to understand that poverty and backwardness are regarded as one of the crucial causes of unemployment.

**Lack of Literacy Skills**

In order to acquire good and well-paid employment opportunities, it is of utmost significance for the tribal individuals to hone their literacy skills. The literacy skills are low among tribal individuals. They possess either low or none literacy skills. Literacy skills are the skills, which enable the tribal individuals to read, write and solve numerical problems. When they are engaged in the production and manufacturing processes, then too the possession of literacy skills would prove to be beneficial and meaningful to them. On the other hand, when the tribal individuals possess low or lack literacy skills, they will experience problems in acquisition of employment opportunities. When there is lack of literacy skills among these individuals, they experience number of problems not only in acquisition of various types of employment opportunities, but also in enhancing their career prospects, achieving goals and objectives and bringing about improvements in their overall quality of lives. Therefore, one is able to acknowledge on a wide scale that lack of literacy skills are regarded as one of the indispensable causes of unemployment.

**Underdeveloped System of Education**

In tribal communities, the system of education is not in a well-developed state. There are number of areas, which are deficient. These are, teaching-learning methods, instructional strategies, teaching-learning materials, assessment strategies, extra-curricular and creative activities, infrastructure, amenities, facilities, buildings, classrooms and the overall environmental conditions. When these areas will not be in a well-developed state, it is apparently understood that there will be occurrence of problems and barriers within the course of acquisition of education. When the tribal individuals will not be able to acquire good-quality education, they will not only experience problems in getting engaged in various types of employment opportunities, but also in enhancing their career prospects, achieving goals and objectives and sustaining their living conditions in an effective manner. Hence, it is necessary to formulate measures to bring about improvements in the overall system of education. Therefore, it can be stated, due to underdeveloped system of education, the tribal individuals are not only experiencing problems in acquisition of education, but it is giving rise to problems and impediments within the course of acquisition of employment opportunities as well.

**Lack of Communication Skills**

Due to residing in the condition of backwardness, the tribal individuals do not possess effective communication skills. Communication takes place in a verbal and in a written form. Verbal communication is face to face or over the phone. Whereas, written communication takes place through messages, emails, letters and notices. In putting into practice the communication processes in an effective manner, there are various aspects, which need to be taken into account, i.e. making use of polite language and decent words; treating others with respect and courtesy; maintaining eye contact, particularly when communicating face to face; providing factual information; implementing the traits of morality and ethics; technical skills need to be honed, primarily in case of written communication; one needs to form positive viewpoints regarding others; making use of a common language; speaking clearly and fluently and forming an effective social circle. When communication skills will not be honed, the tribal individuals will experience problems in



*ISSN 2076-9202*

acquisition of employment opportunities. Therefore, lack of communication skills have unfavourable effects in acquisition of employment opportunities, enhancing career prospects and up-grading one's living conditions.

**Lack of Technical Skills**

In acquisition of various types of employment opportunities, technical skills are regarded to be utmost significance. These skills render a significant contribution in not only acquisition of employment opportunities, but also in enhancing career prospects and up-grading one's overall standards of living. Hence, tribal individuals need to pay attention towards honing these skills. The various types of technologies used within various types of employment settings are, computers, lap-tops, printers, photo-copiers, scanners, audio-visual aids and so forth. Within the course of putting into practice various types of job duties in employment settings, technical skills facilitate number of areas, i.e. effective communication processes; generating information in terms of various areas; preparing reports and documents; conducting analysis of data collected; conducting research in terms of various aspects; giving presentations; taking out prints; scanning documents; photo-copying documents and all types of job duties are facilitated through the utilization of technologies. When tribal individuals will not possess technical skills, they will not be able to carry out their job duties well. Therefore, lack of technical skills is regarded as one of the essential causes of unemployment.

**Inability to Provide Solutions to various Types of Problems**

In the lives of the tribal individuals, they experience number of problems. These problems are, poverty and backwardness, lack of literacy skills, homelessness, criminal and violent acts, lack of effective communication skills, inability to make use of various types of technologies, unawareness in terms of various factors, residing in seclusion and loneliness, utilization of traditional methods in putting into practice various tasks and activities and inability to manage financial and material resources. In some cases, they are unable to make provision of solutions to these problems. When they will experience barriers and will not be able to provide solutions to all these problems, they will not be able to get engaged in various types of employment opportunities. As putting into practice various types of job duties in employment settings is not manageable. The tribal individuals need to experience problems and provide solutions to them. Therefore, one can acknowledge widely, when they will not be able to provide solutions to various types of problems, they will not be able to carry out their job duties successfully and meet the expectations of their employers.

**Unawareness in terms of various Factors**

In order to acquire various types of employment opportunities, to enhance one's career prospects, achieve personal and professional goals and objectives and sustain one's living conditions in an effective manner, it is indispensable for the tribal individuals to be aware in terms of various factors. The important factors in terms of which one needs to be aware are, ways of implementing effective communication processes; coping with various types of problems and challenges; methods of utilizing various types of technologies; managing financial and material resources; utilizing modern, scientific and innovative methods; being aware in terms of marketing strategies; information regarding labour market factors; needs and requirements of the customers; morality and ethics; and honesty, righteousness and truthfulness. The awareness in terms of these factors is acquired on one's own or through seeking guidance and assistance from other individuals. Hence,



ISSN 2076-9202

when the tribal individuals will be well-aware, they will be able to overcome the barriers within the course of acquisition as well as implementation of job duties within employment settings. Therefore, one can acknowledge on a comprehensive basis, when tribal individuals will be unaware in terms of various factors, they will not be able to carry out their job duties successfully, meet the expectations of their employers and incur the feeling of job satisfaction.

**Seclusion and Loneliness**

When tribal individuals are residing in seclusion and loneliness, they are unaware in terms of various factors. One of the problems, which they experience is, they make use of traditional methods in the implementation of various tasks and activities. This is particularly when they are engaged in the production and manufacturing processes. They are usually unaware in terms of modern, innovative and scientific methods. When the tribal individuals are unaware in terms of these methods, they will do experience problems in finding employment opportunities. Due to residing in seclusion and loneliness, they are unaware in terms of various aspects, i.e. marketing strategies, labour market factors and needs and requirements of the customers. Hence, in order to acquire good and well-paid employment opportunities, it is of utmost significance for the tribal individuals to put into practice the measures and strategies to overcome seclusion and loneliness. It is of utmost significance for them to integrate with the mainstream society. Therefore, when tribal individuals are residing in seclusion and loneliness, they will experience problems in acquiring employment opportunities.

**Utilization of Traditional Methods in Tasks and Activities**

When tribal individuals are engaged in the production and manufacturing processes of various items, they are utilizing traditional methods. In the utilization of these methods, the job duties are carried out in a more time consuming manner. They are usually unaware in terms of modern, innovative and scientific methods. When the tribal individuals are unaware in terms of these methods, they will do experience problems in doing well in their job duties, meeting the expectations of their employers and incurring the feeling of job satisfaction. Within employment settings, when the employees are not aware in terms of pioneering methods, they will experience problems in generating the desired outcomes. In the acquisition of employment opportunities, the individuals are required to go through interviews and in some cases, they are also required to take written tests. One of the important aspects that needs to be taken into account is, one should be experienced. In the production and manufacturing processes, one should be well-equipped with the usage of modern, innovative and scientific methods. Therefore, when tribal individuals are unaware in terms of these methods and are utilizing traditional methods, they will experience problems within the course of putting into practice the job duties within employment settings.

**Inability to Manage Resources**

The tribal individuals need to be well-equipped in terms of measures and approaches to manage resources in an efficient manner. The various types of resources that need to be managed by them are, financial resources, material resources and technical resources. Management of resources is an aspect in terms of which the tribal individuals need to be skilled at throughout their lives. This is irrespective of their occupations, communities, categories and backgrounds. When they are determined towards promoting their well-being and enriching their living conditions, they need to manage these resources in a well-ordered and appropriate



*ISSN 2076-9202*

manner. When the tribal individuals are engaged in employment opportunities, they are usually required to live at a distance from their homes. They need to pay attention upon all tasks and activities on their own. In order to be successful within employment settings, management of these resources is regarded as fundamental. Therefore, when tribal individuals are unaware in terms of the procedures and are unable to manage resources, they will experience problems and challenges within the course of putting into practice the job duties within employment settings, meeting the expectations of their employers, incurring the feeling of job satisfaction and leading to up-gradation of the overall structure of the organizations.

**Effects of Unemployment among Tribal Individuals**

The effects of unemployment among tribal individuals are imposing major barriers within the course of generating a source of income, promoting better livelihoods opportunities and bringing about improvements in their overall quality of lives. It is indispensable to formulate measures and programs, which would render a significant contribution in alleviating these effects and promoting well-being and goodwill among tribal individuals (Community Wellbeing, 2016). The tribal individuals need to focus upon honing their skills and abilities that would enable them to find employment opportunities and do well in them. The effects of unemployment among tribal individuals are, occurrence of conflicts and disagreements; health problems and illnesses; increase in poverty; giving up hopes and aspirations; inability to hone skills and abilities and inability to fulfil needs and requirements. These are stated as follows:

**Occurrence of Conflicts and Disagreements**

When the tribal individuals are unemployed, they experience scarcity of financial resources. Due to scarcity of financial resources, they experience problems within the course of achievement of personal and professional goals and sustaining their living conditions in a well-ordered and satisfactory manner. As a result, they get overwhelmed by the psychological problems of anger and frustration. When one is angry and frustrated, it is comprehensively understood, there will be occurrence of conflicts and disagreements within households among family members. These take place in a major as well as in a minor form. It is indispensable for the tribal individuals to put into operation peaceful conflict resolution methods. Therefore, one is able to understand on a comprehensive basis that occurrence of conflicts and disagreements is regarded as one of the major effects of unemployment that is experienced by tribal individuals on a large scale.

**Health Problems and Illnesses**

Unemployment causes health problems and illnesses among tribal individuals physically as well as psychologically. Their physical health conditions get effected, as well as they experience the psychological problems of anger, stress, anxiety and frustration. In the personal as well as professional lives of the tribal individuals, they do undergo problems and situations, which enable them to feel anger, stress, anxiety and frustration. When these are experienced in a minor form, they can be controlled. In other words, the tribal individuals are able to cope with them in an effective manner. But when they are experienced in a major form, they are likely to have unfavourable effects upon the overall personality traits and living conditions of the tribal individuals. Therefore, one is able to understand on a wide scale, health problems and illnesses is regarded as one of the crucial effects of unemployment that is experienced by tribal individuals to a major extent.



*ISSN 2076-9202*

**Increase in Poverty**

The condition of poverty is characterised by lack of resources. The problem of poverty among individuals, belonging to tribal communities is severe. When tribal individuals will not possess sufficient resources, it is stated, they are overwhelmed by the conditions of poverty. When one is engaged in various types of employment settings, one is able to generate a source of income to promote their living conditions in an effective manner. On the other hand, when the tribal individuals are residing in poverty, they will experience problems in acquiring education, honing skills and abilities, fulfilling needs and requirements and bringing about improvements in their overall quality of lives. When the rate of unemployment among tribal individuals is high, then it leads to an increase in poverty. Therefore, one is able to acknowledge, increase in poverty is regarded as one of the indispensable effects of unemployment that is experienced by tribal individuals, belonging to all communities.

**Giving up Hopes and Aspirations**

When the tribal individuals are engaged in various types of employment settings, one is able to generate a source of income to promote their living conditions in an effective manner, but they have other hopes and aspirations, which they aspire to achieve. The indispensable goals of tribal individuals are to acquire good-quality education, attain well-paid employment opportunities, enhance their career prospects and enrich their living conditions. When they will be employed, they will have sufficient financial resources, which are necessary to fulfil hopes and aspirations. On the other hand, when they are not employed, there will be occurrence of problems within the course of fulfilment of hopes and aspirations. As a consequence, one will have to give up them. Therefore, it can be stated, giving up hopes and aspirations is regarded as one of the vital effects of unemployment that is experienced by tribal individuals, belonging to all communities.

**Inability to hone Skills and Abilities**

When the tribal individuals are engaged in various types of employment settings, they are able to hone their skills and abilities. The various types of skills that are honed are, communication skills, technical skills, decision making skills, analytical skills, problem-solving skills, critical thinking skills, professional skills, leadership skills, personal skills, negotiation skills, creative skills and time management skills. In personal as well as in professional lives, one needs to focus upon honing these skills. In the implementation of job duties in various types of employment settings as well, these skills need to be utilized. Furthermore, one needs to be aware in terms of conflict resolution methods, work ethics and professionalism. When the tribal individuals are overwhelmed by the problem of unemployment, they are unable to hone skills and abilities. Therefore, inability to hone skills and abilities is regarded as one of the crucial effects of unemployment that is experienced by tribal individuals, irrespective of their occupations, communities, categories and backgrounds.

**Inability to fulfil Needs and Requirements**

When the tribal individuals are engaged in various types of employment settings, they are able to generate a source of income. When they generate sufficient income, they are able to fulfil their needs and requirements in a manageable way. On the other hand, when the tribal individuals are unemployed, they are in some cases not even able to fulfil their nutritional requirements. They are dependent upon the natural environmental conditions to obtain the food items. Hence, one can understand, when the tribal individuals are overwhelmed



*ISSN 2076-9202*

by the conditions of poverty and unemployment, they experience number of problems and challenges within the course of fulfilment of their needs and requirements. Hence, getting engaged in various types of employment settings is regarded as indispensable for them. Therefore, inability to fulfil needs and requirements is regarded as one of the essential effects of unemployment that is experienced by tribal individuals, irrespective of their occupations, communities, categories and backgrounds.

**Conclusion**

The primary aims of tribal individuals are to get engaged in various types of employment opportunities, generate a source of income, promote better livelihoods opportunities and bring about improvements in their overall quality of lives. In order to achieve these goals, they are putting in efforts to their best abilities. Furthermore, they need to inculcate the traits of diligence, resourcefulness and conscientiousness. The tribal individuals are overwhelmed by certain factors, which are leading to an increase in the rate of unemployment among them. The problem of unemployment is unfavourable upon the overall living conditions of tribal individuals. The causes of unemployment among tribal individuals are, poverty and backwardness, lack of literacy skills, underdeveloped system of education, lack of communication skills, lack of technical skills, inability to provide solutions to various types of problems, unawareness in terms of various factors, seclusion and loneliness, utilization of traditional methods in tasks and activities and inability to manage resources. Effects of unemployment among tribal individuals are, occurrence of conflicts and disagreements; health problems and illnesses; increase in poverty; giving up hopes and aspirations; inability to hone skills and abilities and inability to fulfil needs and requirements. Finally, it can be stated, when the tribal individuals are acquiring employment opportunities and overcome unemployment, they will be able to benefit on a comprehensive basis.

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# POVERTY AND BACKWARDNESS: UNFAVOURABLE IN LEADING TO UP-GRADATION OF THE LIVING CONDITIONS OF TRIBAL INDIVIDUALS

**Dr. Radhika Kapur**

**Abstract**

The tribal individuals are residing in the conditions of poverty and backwardness. The condition of poverty are characterised by scarcity of financial resources. Whereas, the condition of backwardness is characterised by seclusion. It is apparently understood, tribal individuals have the primary aims of generating a source of income, sustaining their living conditions in an adequate manner and in bringing about improvements in their overall quality of lives. In order to achieve these aims, they need to work diligently and conscientiously towards their job duties. Furthermore, they need to augment their knowledge and understanding in terms of modern, scientific and innovative methods. One of the important aspects that needs to be taken into account is, they need to hone their communication skills and integrate with the mainstream society. When the individuals belonging to tribal communities are well-equipped in terms of various methods and approaches, they will be able to achieve their goals and objectives in a well-organized and satisfactory manner. The tribal individuals are rendering a significant contribution in alleviating the conditions of poverty and backwardness. They are migrating to urban communities to acquire education and get engaged in employment opportunities. In this manner, they are contributing significantly in up-grading their overall living conditions. Therefore, in order to lead to progression and goodwill, one needs to reinforce socialization and augment their skills and abilities. The main concepts that are taken into account in this research paper are, causes of poverty, effects of poverty and the condition of backwardness is disadvantageous upon the lives of tribal individuals.

**Keywords:** Abilities, Backwardness, Poverty, Resources, Scarcity, Skills, Tribal Individuals

The tribal individuals are overwhelmed by the conditions of poverty and backwardness. Poverty is characterised by scarcity of financial resources (10 Common Root Causes of Poverty, n.d.). Financial resources are regarded as one of the indispensable resources that are necessary to fulfil all needs and requirements and sustain one's living conditions in a satisfactory manner. When the tribal individuals experience scarcity of financial resources, they undergo problems in achieving their goals and objectives. Financial resources are required for numerous aspects, i.e. implementation of various types of household chores, taking care of health care needs, acquisition of education, reinforcing productivity and profitability, travelling from one place to another, and fulfilling other needs and requirements. Hence, one of the indispensable aims of tribal individuals is to get engaged in job duties and activities, which would render an



*ISSN 2076-9202*

important contribution in generating a source of income. When they are able to generate adequate income, they will be able to fulfil the needs of not only themselves, but also their families. Therefore, crucial aspects that needs to be taken into account are, the tribal individuals will be able to alleviate the conditions of poverty, when they will work diligently towards acquisition of various types of employment opportunities in accordance to their skills and generate a source of income.

Backwardness is the state, which is characterised by seclusion (11 Top Causes of Global Poverty, 2020). The tribal individuals are residing in hills, mountainous regions and plains. They are dependent upon the natural environmental conditions for the sustenance of their living conditions. These individuals have their own norms, values, beliefs, and cultures, in accordance to which they live their lives. The tribal individuals are aware of the point that to enrich one's living conditions, they need to integrate with others. As one cannot carry out their job duties, tasks and activities in seclusion. It is necessary to put into practice effective communication processes. When one experiences any problems within the course of putting into practice the job duties or need to obtain ideas and suggestions from others, one has to hone their communication skills and interactive abilities. On the other hand, the conditions of backwardness will cause unfavourable effects upon the overall living conditions of the tribal individuals. These individuals communicate within their own communities. But they also are required to put in efforts to hone their communication skills and interact with the mainstream society. Therefore, one is able to understand that it is of utmost significance for tribal individuals to implement measures to alleviate backwardness.

When the conditions of poverty and backwardness will be alleviated, the tribal individuals will be able to benefit to a major extent. In the present existence, with advancements taking place and with the advent of modernization and globalization, the tribal individuals are migrating to urban communities to get enrolled in educational institutions and promote better livelihoods opportunities. When they will acquire good-quality education, they will be able to get engaged in reputed and well-paid employment opportunities. These can be acquired in various types of organizations as well. In this manner, they will be able to generate awareness in terms of various areas, hone their communication skills, achieve personal and professional goals and bring about improvements in their overall quality of lives. The tribal individuals not only aim to alleviate the conditions of poverty and backwardness, but they aim to promote well-being and goodwill of their family and community members. Apart from leading to up-gradation of career prospects, the tribal individuals get engaged in various types of tasks and activities, which would contribute in an effectual manner in leading to enhancement of skills and abilities. In order to do well in one's lives, it is necessary to hone time management, decision making, problem-solving, analytical, critical thinking, creative and leadership skills.

**Causes of Poverty**

In tribal communities, there are number of situations and cases, which the tribal individuals experience (What are the Main Causes of Poverty? 2021). These give rise to the conditions of poverty. The causes of poverty are experienced by the tribal individuals in a major as well as in a minor form. When they take place in a major form, they may or may not be able to provide solutions to them. On the other hand, when they take place in a minor form, they are able to solve the problems in a satisfactory manner. In alleviating the conditions of poverty, one needs to obtain help and support from others. The family members need to work in collaboration and integration with each other to alleviate the conditions of poverty. When one is



ISSN 2076-9202

conducting research in terms of poverty and backwardness, which are likely to have unfavourable effects upon the overall living conditions of the tribal individuals, it is necessary to generate information in terms of the causes of poverty. These are stated as follows:

**Scarcity of Resources**

The conditions of poverty are primarily characterised by scarcity of financial resources. Financial resources are regarded as the resources that are necessary to fulfil needs and requirements and sustain one's living conditions in a satisfactory manner. When the tribal individuals experience scarcity of financial resources, they undergo problems in achieving their goals and objectives. Financial resources are required for numerous aspects, i.e. implementation of various types of household chores, taking care of health care needs, acquisition of education, reinforcing productivity and profitability, travelling from one place to another, and fulfilling other needs and requirements. Apart from financial resources, material resources are also essential resources. When the tribal individuals will possess sufficient finances, they will be able to have access to material resources. When the tribal individuals will not possess sufficient resources, they will be overwhelmed by the conditions of poverty. Therefore, scarcity of resources is regarded as one of the significant causes of poverty.

**Inadequate Access to Clean Water and Nutritious Food**

Diet and nutrition is considered as one of the crucial aspects, which all individuals need to pay attention towards, irrespective of their age groups, gender, communities, categories and backgrounds. These need to be focused upon throughout the lives of the individuals. The tribal individuals have inadequate access to clean water and nutritious food. They are dependent upon the natural environmental conditions for the fulfilment of their dietary needs and requirements. In tribal homes, there is scarcity of water. Hence, in order to obtain water they are dependent upon the water bodies. Food items are obtained from the forests. But in some cases, they are not sufficient, hence, the tribal individuals are required to experience scarcity. When they will not be able to satisfy their nutritional requirements, they are poverty stricken. Therefore, one is able to understand that inadequate access to clean water and nutritious food is the cause of poverty, which is acknowledged on a comprehensive basis.

**Occurrence of Natural Calamities and Disasters**

Due to the occurrence of natural calamities and disasters, the tribal communities have experienced loss of wealth, property and lives to a major extent. These are earthquakes, floods, Tsunamis, and drought. When these take place in a major form, the tribal individuals are unable to find means to protect themselves and safeguard their property and assets. In other words, in some cases, the losses suffered are so immense that it is not possible for the tribal individuals to overcome them in a manageable way. Hence, the ultimate outcome is that the conditions of poverty get aggravated. When the tribal individuals will not have a place to live nor any resources to satisfy all their needs and requirements, they will be overwhelmed by the conditions of poverty. Therefore, it can be stated, occurrence of natural calamities and disasters is the cause of poverty, which is recognized by the tribal individuals, belonging to all communities.

**Lack of Education**

Through acquisition of education, one is able to not only acquire knowledge in terms of lesson plans and academic concepts, but they are able to augment their skills and abilities, acquire good employment



*ISSN 2076-9202*

opportunities and are able to bring about improvements in their living conditions. When the tribal individuals possess low education or no education at all, they are unable to differentiate between appropriate and inappropriate. Furthermore, they are unable to look for ways that are necessary to enrich their living conditions. One of the major problem is, the unawareness among tribal individuals is giving rise to unfavourable effects. Hence, when they will not be aware in terms of methods and strategies that are necessary to promote better livelihoods opportunities, they will be overwhelmed by the conditions of poverty. Therefore, lack of education not only enables the tribal individuals to remain unaware in terms of various factors, but these are regarded as one of the essential causes of poverty.

**Inadequate Skills and Abilities**

The tribal individuals get engaged in various types of tasks and activities, which would contribute in an effectual manner in leading to enhancement of skills and abilities (Ability, 2021). In order to do well in one's lives, achieve the desired goals and objectives and lead to enrichment of living standards, it is necessary to hone time management, decision making, problem-solving, analytical, critical thinking, creative and leadership skills. When they possess inadequate skills and abilities, they will be overwhelmed by the conditions of poverty. The reason being, they will not be able to generate information and put into practice the measures and strategies that are required to bring about improvements in their living conditions. When these skills are not well-developed among tribal individuals, they experience problems in personal and professional spheres. In other words, when they lack these skills, they will experience problems in promoting better livelihoods opportunities. As a consequence, they will experience poverty. Therefore, inadequate skills and abilities not only have unfavourable effects upon the personality traits of the tribal individuals, but they will also experience the conditions of poverty.

**Lack of Livelihoods Opportunities**

Livelihoods opportunities are regarded as essential to generate a source of income to fulfil all needs and requirements and to sustain one's living conditions in an adequate manner (What is a Livelihood? 2021). The tribal individuals are engaged in numerous livelihoods opportunities. These are, production of handicrafts, artworks, food items, jewellery, garments and so forth; participation in extra-curricular and creative activities, such as, dancing, singing, playing of musical instruments, sports, physical activities and so forth; hunting and gathering; fishing and they are migrating to urban communities as well to promote better livelihoods opportunities. In some cases, the tribal individuals are able to obtain access to livelihoods opportunities in a manageable way. Whereas, in other cases, they experience problems in having access to them, doing well in their job duties, generating a source of income and leading to up-gradation of their living conditions. Hence, they experience poverty. When they will not be able to participate in livelihoods opportunities due to some reasons, the ultimate outcome is, the conditions of poverty will get intensified. Therefore, due to lack of livelihoods opportunities, there will not be sufficient financial resources and the conditions of poverty will be reinforced.

**Large number of Members in Family**

In tribal communities, the number of family members are large. In most cases, there are more than two children in the family. When the number of members in family are large, it is comprehensively understood, when the tribal individuals are engaged in minority jobs and experience scarcity of financial resources, they



ISSN 2076-9202

will experience problems in fulfilling the needs and requirements of their family members. Normally, the main reason of having more than two children is, the tribal individuals form the viewpoint that the more the family members, the more the assistance they will obtain in leading to up-gradation of their living conditions. When they are engaged in a family business of production and manufacturing, in such cases, all family members will work in collaboration and integration with each other to lead to an increase in productivity and profitability. But due to lack of resources, there are occurrence of barriers in promoting their well-being. Therefore, large number of members in family is regarded as one of the causes of poverty, particularly when the individuals are unable to fulfil their needs and requirements, make provision of good-quality education, and promote well-being.

**Lesser Utilization of Resources**

When the tribal individuals are engaged in minority jobs, they are unable to generate a source of income and lead to up-gradation of their living conditions. In other words, the income is barely enough to fulfil the needs and requirements of the family members, provide them good-quality education, augment their skills and abilities and promote their well-being. Furthermore, in tribal households, savings are made by the parents for the marriage of their children as well, particularly daughters. When they are required to spend financial resources on important matters, in such cases, the utilization of resources is less on other areas. For example, when one has to save financial resources for marriage, one is not likely to spend them on other areas, such as acquisition of education. The tribal individuals form the viewpoint that when they experience dearth of financial resources, they need to spend them, only where they are required and prevent wastage. They augment their critical thinking skills to think regarding the aspects, which are more important and which are less important. Therefore, lesser utilization of resources is regarded as one of the vital causes of poverty.

**Shortage of Capital and Entrepreneurship**

In order to achieve desired goals and objectives, sustain one's living conditions in an adequate manner and lead to up-gradation of one's standards of living, it is of utmost significance to possess sufficient capital. Entrepreneurship is regarded as one of the activities of setting up business or businesses with the hope of leading to an increase in productivity and profitability. When the tribal individuals get engaged in the production and manufacturing processes, they are required to possess sufficient resources and capital. As in the production of various types of handicrafts as well, raw materials are required. Furthermore, it is necessary for them to be well-equipped in terms of marketing strategies. When the tribal individuals are overwhelmed by the conditions of dearth, they will experience shortage of capital and entrepreneurship. This is apparently understood, when there will be shortage of capital and entrepreneurship, it will render a significant contribution in aggravating the conditions of poverty. Therefore, one is able to acknowledge, shortage of capital and entrepreneurship is a cause of poverty, particularly among tribal individuals, who are having their own businesses of production and manufacturing.

**Occurrence of Conflicting Situations**

In tribal households in some cases, there are occurrence of conflicting situations among individuals. These situations may take place in a major form or in a minor form. When they assume a major form, they are required to be well-aware and put into practice peaceful conflict resolution methods. One of the



*ISSN 2076-9202*

important aspects that needs to be taken into account is, communication needs to take place in an effective manner and one needs to treat each other with respect and courtesy. In some cases, when there are occurrence of conflicting situations in a major form, then out of the feelings of anger and frustration, the individuals may spend financial resources on the areas, which are not considered important. When they are angry, they are unable to implement critical thinking and decision making skills. In other words, they are unable to make wise and productive decisions. Furthermore, the terms and relationships among the tribal individuals get impeded. Therefore, occurrence of conflicting situations is a cause of poverty, particularly when the tribal individuals are unable to make wise decisions, regarding the utilization of financial resources.

**Effects of Poverty**

The effects of poverty are unfavourable and disadvantageous upon the overall living conditions of the tribal individuals. There are occurrence of various types of barriers within the course of bringing about improvements in their overall quality of lives. The effects of poverty are, problems in acquisition of education; impediments in promoting good health and well-being; barriers in up-gradation of competencies and abilities and being overwhelmed by the psychological problems. There is a need to formulate measures and programs, which would make provision of help and support to the tribal individuals to alleviate the effects of poverty from having detrimental effects upon their lives. Furthermore, they need to be prevented from assuming a major form. The effects of poverty are stated as follows:

**Problems in Acquisition of Education**

Through the acquisition of education, tribal individuals are able to augment their skills and abilities, acquire good employment opportunities, bring about improvements in their living conditions and differentiate between appropriate and inappropriate. Hence, they aspire to get enrolled in educational institutions to acquire education. In tribal communities, the system of education is not in a well-developed state. Hence, they aim to migrate to urban communities to get enrolled in educational institutions. In order to acquire good-quality education, the financial resources are regarded as indispensable, these need to be spend on books, stationary, bags, transportation and so forth. Hence, when the tribal individuals are unable to acquire education and get compelled to give up their aspirations, it is regarded as one of the unfavourable effects of poverty. Therefore, occurrence of problems within the course of acquisition of education is an effect of poverty.

**Impediments in promoting good Health and Well-being**

In promoting good health and well-being, the tribal individuals are required to pay attention on number of aspects that involve expenses. In this case, there are number of aspects that need to be taken into account. These are, diet and nutrition, obtaining medical check-ups on regular basis, treating health problems and illnesses and generating information in terms of modern, scientific and innovative methods. When the tribal individuals are overwhelmed by the conditions of poverty, they experience impediments in promoting good health and well-being. When they are required to migrate from one region to another to obtain medical check-ups, transportation costs are involved. Due to the conditions of poverty they experience problems in meeting the expenses involved. They are unable to transfer and get compelled to obtain resources from the natural environmental conditions. Therefore, occurrence of impediments in



*ISSN 2076-9202*

promoting good health and well-being is an effect of poverty.

**Barriers in up-gradation of Competencies and Abilities**

Up-gradation of competencies and abilities is regarded as one of the imperative aspects that tribal individuals focus upon throughout their lives. In the present existence, it is of utmost significance for them to augment their technical skills. In order to be well-equipped in terms of usage of technologies, one needs to possess sufficient financial resources. As these can be honed through getting enrolled in educational institutions and training centres. Apart from technical skills, in up-grading of personal, professional, soft and creative skills as well, pursuance of educational and training programs would be effective and worthwhile. For this purpose, one needs to possess sufficient financial resources. When there will be scarcity of financial resources, there will be occurrence of barriers in up-gradation of competencies and abilities. Therefore, effect of poverty is recognized in barriers taking place within the course of up-gradation of competencies and abilities.

**Being overwhelmed by the Psychological Problems**

In tribal households, the individuals are usually overwhelmed by the psychological problems. The various types of psychological problems that are experienced are, anger, stress, anxiety and frustration. These may take place among these individuals on a frequent or on a less frequent basis. Provided they need to be aware in terms of ways of coping with them. The major causes for the occurrence of these problems are, scarcity of resources, inadequate access to clean water and nutritious food, lack of education, insufficient skills and abilities, lack of livelihoods opportunities, lack of provision of equal rights and opportunities, discriminatory treatment, backwardness, loneliness and seclusion and giving up hopes and aspirations. When there will be scarcity of financial resources, conditions of poverty will be experienced. Furthermore, there will be occurrence of psychological problems. Therefore, effects of poverty are recognized, when these are regarded as primary in giving rise to various types of psychological problems.

**The Condition of Backwardness is Disadvantageous upon the Lives of Tribal Individuals**

The tribal individuals are normally aware of the aspect that to enrich one's living conditions, they need to integrate with others. In other words, they need to augment their communication terms and interactive abilities. As one cannot carry out their job duties, tasks and activities in seclusion. When one is working in collaboration and integration with others, one will not only be well-aware in terms of procedures, but one will also do well and generate the desired outcomes. It is indispensable to put into practice effective communication processes. When one experiences any types of problems within the course of putting into practice the job duties or need to obtain ideas and suggestions from others, one has to obtain help and assistance from others. On the other hand, the conditions of backwardness will cause unfavourable effects upon the overall living conditions of the tribal individuals. These individuals communicate within their own communities. But they also are required to put in efforts to hone their communication skills and interact with the mainstream society. Therefore, one is able to understand that the condition of backwardness is disadvantageous upon the lives of tribal individuals.

In the present existence, the tribal individuals are recognizing the meaning and significance of education. They are aware that through acquisition of good-quality education, they are able to augment their skills and abilities, acquire employment opportunities, generate a source of income, bring about



ISSN 2076-9202

improvements in their living conditions and differentiate between appropriate and inappropriate. Hence, they aspire to get enrolled in educational institutions to augment their educational skills. In tribal communities, there is a need to formulate programs and measures to lead to up-gradation of the system of education. As there are number of aspects, which need to be improved. The tribal individuals aim to migrate to urban communities to get enrolled in educational institutions. In order to acquire good-quality education, they need to hone their social skills, generate information in terms of various areas and integrate with the mainstream society. On the other hand, when they are residing in the condition of backwardness, they are not being able to generate information or augment their knowledge in terms of various areas. Therefore, it is clearly understood, condition of backwardness is disadvantageous upon the lives of tribal individuals.

Acquisition of various types of employment opportunities is one of the primary aims of tribal individuals. The minority jobs do not enable them to lead to an increase in the source of income. Hence, to generate sufficient financial resources and sustain one's living conditions in an effective manner, it is necessary to alleviate backwardness. One needs to hone personal and professional skills. These skills can be honed, when the tribal individuals are determined, informative and communicate with the mainstream society. One of the important factors that needs to be taken into account is, one needs to make use of a common language. When the tribal individuals are aware of the common language, they will be able to put into practice communication processes in an effective manner. In this manner, they will be able to overcome backwardness. Within employment settings, one needs to augment their communication skills and interact with other members. When the tribal individuals are residing in backwardness, they are to experience barriers within the course of putting into operation the job duties. Therefore, it can be stated, condition of backwardness is disadvantageous upon the lives of tribal individuals.

In order to achieve personal and professional goals, promote better livelihoods opportunities and bring about improvements in their overall quality of lives, it is necessary for the tribal individuals to generate awareness in terms of various areas. When they are engaged in the production processes, they not only need to be aware in terms of methods and procedures, but they need to be well-equipped in terms of marketing strategies and needs and requirements of the customers. When the tribal individuals are residing in backwardness, they are usually unable to augment their knowledge and understanding in terms of various areas. One of the major advantages of alleviating backwardness is, the tribal individuals are augmenting their knowledge in terms of modern, scientific and innovative methods. In the production processes, agricultural sector and farming practices and in other fields as well, where the tribal individuals are engaged, these methods can be utilized. When the tribal individuals are residing in backwardness, they are to experience obstacles within the course of putting into operation modern, scientific and innovative methods. Therefore, condition of backwardness is disadvantageous upon the lives of tribal individuals.

**Conclusion**

The tribal individuals are overwhelmed by the conditions of poverty and backwardness. Poverty is characterised by scarcity of financial resources. Backwardness is the state, which is characterised by seclusion. The tribal individuals are residing in the conditions of backwardness and seclusion. One cannot carry out their job duties, tasks and activities in seclusion. Hence, it is necessary to put into practice effective communication processes. One needs to integrate with the mainstream society. The causes of poverty are,



*ISSN 2076-9202*

scarcity of resources, inadequate access to clean water and nutritious food, occurrence of natural calamities and disasters, lack of education, inadequate skills and abilities, lack of livelihoods opportunities, large number of members in family, lesser utilization of resources, shortage of capital and entrepreneurship and occurrence of conflicting situations. The effects of poverty are, problems in acquisition of education; impediments in promoting good health and well-being; barriers in up-gradation of competencies and abilities and being overwhelmed by the psychological problems. The condition of backwardness is disadvantageous upon the lives of tribal individuals. Finally, it can be stated, when the tribal individuals will implement adequate measures to alleviate the conditions of poverty and backwardness, they will be able to contribute significantly in achieving personal and professional goals and bring about improvements in their overall quality of lives.

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# IMPACT OF INVENTORY MANAGEMENT ON FIRM PERFORMANCE

# A CASE STUDY OF LISTED MANUFACTURING FIRMS ON HOSE

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**Abstract**
This study aims to analyzing the impact of inventory management on performance of listed manufacturing firms on Ho Chi Minh City Stock Exchange (HOSE). The study employed a descriptive research design. A cross sectional secondary data over a ten-year period starting from 2010 to 2019 was gathered for the analysis from the audited financial statements and annual reports of fifty manufacturing firms listed on HOSE. Return on assets and operating cash flows were examined as determinants of firm performance. The empirical findings established that the main variable, inventory conversion period has a significant negative effect on firm profitability and operating cash flow, hence an indication that inventory management is significantly related to firm performance of manufacturing firms in Vietnam.
**Key words:** inventory management, Vietnam, firm performance.

## 1. Introduction

Over the past few years, the concept of inventory management has attracted a great deal of attention from both students and researchers in universities and industries (Prempeh, 2015, 2016; Fosu, 2016; Mensah, 2016; Mwangi, 2016). Numerous attempts and resources have been devoted to the investigation of inventory management effects on organizational operation. Inventory management denotes one of the most crucial assets that most businesses possess, since "the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company" (Prempeh, 2016). Generally, current assets account for the vast majority of company investments especially companies operating under manufacturing industry, of which inventory is the most significant component (Carter, 2002; Prempeh, 2016). Thus, inventory should be well managed in order to facilitate operations. Furthermore, because of the high economic value of inventory as it constitutes an idle resource of a firm, the more efficient the management of inventory is, the higher level the capital productivity reaches. Inventory management is an essential concern in manufacturing systems of every business. Inadequate inventory has an inauspicious effect on system productivity, while excessive stocks involve redundant costs, which can adversely affect the firm's profits (Jiangab et al., 2011). Inordinate inventory is not desirable for long-term operation since high levels of stockpile increase carrying cost and as inventory increases, the profitability decreases (Priyanka & Hemant, 2015). Having an appropriate inventory control strategy allows the firm to maintain an optimum level of inventories. For instance, being able to clear the aggregate frozen amounts of stocks or inventories significantly enhances the firm's efficiency in the use of its resource (Ziukov, 2015). Furthermore, by utilizing an efficient inventory management system, profitability of an enterprise can be substantially



*ISSN 2076-9202*

escalated since profitability enhancement is typically minimizing costs and funds invested while maximizing revenues and returns. As such, a well-functioning inventory system has a great effect on total firm's performance as well as that of the firm's managers (Akindipe, 2014). Thus, inventory management plays a vital role in operating a healthy and efficient business.

There is increasing emphases on inventory management as a basis through which businesses can attain competitive commercial advantages and enhance internal productivity as well as customer satisfaction (Fosu, 2016). Hence, several companies make optimization of management inventory their main objective and channel the vast majority of company's investments to rationalize their inventory management (Shang and Seddon, 2002). However, inventory control is often disregarded by managers even though inventory practices of most firms represent a significant proportion of their total budget. There are several companies with huge amount of cash tied up for a long period because of the floppy inventory management system or inefficiencies in controlling inventory (Fosu, 2016). A firm's cash flow therefore might be directly restrained by poor inventory management (Christopher and Peck, 2004). Hence, an optimum inventory management policy is widely acknowledged that it enables businesses to achieve higher levels of productivity which considerably affects the profit margin of the company. A large majority of companies has contemporarily used inventory as a buffer between processes that offer variations and handle incertitude. With a dynamic and erratic market that generates arbitrariness of demand and production processes that work best under economies of scale, inventory constitutes a way to balance these conflicting goals (Fosu, 2016). In an attempt to determine the effectiveness of inventory management on firm performance, many inspections have been conducted to discover a proper orientation and operating strategy for long term competitiveness and productivity. Despite numerous approaches, empirical studies have declared divergent global findings conducted on management of inventory. For example, Prempeh (2016) recorded a significant positive relationship between inventory management and profitability. The direct correlation between inventory management and firm's capacity to earn was also reinforced based on evidence gathered from previous materials (Appiah, 2014; Mwangi, 2016; Bingilar, 2016). On the contrary, Hornbrinck (2013), Mensah (2015) and Sitienei and Memba (2015) studies illustrated a negative relationship. Nevertheless, the vast majority of these studies cannot recognize the influence of inventory management on firms operating cash flows. This study is specifically aimed at Vietnam's manufacturing industry because of the lack of knowledge and documents that seek to inspect the effects of inventory management on fabrication company performance. Hence, the availability of researches on inventory management in Vietnam is quite rare since most of them have preponderantly been done in other countries. Moreover, the few studies conducted have a tendency to focus on just a single or few manufacturing enterprises (Prempeh, 2016; Fosu, 2016). Hence, the motivation of this paper on the relationship between inventory management and performance of listed manufacturing firms in Vietnam.

In this study, we particularly concentrated on the influence of inventory management on performance of Vietnamese manufacturing companies. The overriding objective of the current study is to seek for reliable evidence and to clarity any doubt about the relationship between inventory management and financial performance of manufacturing companies listed on HOSE. According to Mwanzi (2015) and Nyambura (2016), inventory management and its influences on firm performance could be measured using profitability



ISSN 2076-9202

and cash flow from operation of a firm. Mwangi (2016) findings leaned on these two variables as well. Therefore, the literature in this study could be respectively addressed by: first investigating the overall magnitude of influence of inventory management on financial performance (profitability and operating cash flow) of a business and second by examining the correlation (negative or positive) and significance levels and finally determining circumstances that might restrain efficiency of inventory management on firm performance. The current study therefore is able to fill an significant gap in connecting inventory management of the developing and contemporary manufacturing industry in Vietnam and the way it make contributions to company performance as well as the Vietnamese economy in GDP.

This study therefore constitutes a valuable and useful material to management of manufacturing firms in Vietnam, as it findings will provide them a source of evidence to determine whether inventory management has noticeable impacts on their firms' profitability and operating cash flows. The study will also make a substantial contribution to inventory management policy-making of any business, as they can take advantage of the findings to establish proper policies on inventory management. In addition, the study will be appreciated by researchers in the field of business, as it will reinforce the availability of empirical evidence on inventory management, firm profitability and operating cash flows.

## 2. Literature Review

### 2.1.Inventory management

Inventory is the term for the stockpiles of tangible products including raw materials, supplies, work-in-progress (WIP) and finished goods which are hold or stored by a business for trading and producing goods available for sales (Tersine, 1988; Pycraft, 2000; Chase et al., 2004; Lwiki et al., 2013 and Ballou, 2014). Raw materials are basic commodities/components of a product such as steel or lumber yet to be converted through a fabrication or modification process (Pandey, 1995 and Kakuru, 2000). Supplies include items such as Maintenance, Repair and Operating (MRO) inventory that do not go into the final product. Pandey (1995) defined work-in-progress as semi-finished manufacturing products that go through numerous stages of fabrication in a production process. During this process, the working capital must be considered in terms of minimizing the buffer stocks, eliminating the production process, reducing the overall production cycle time while the raw materials and finished goods must be minimized in the production area. WIP must be carefully examined to determine how long it takes for products to be available for sale. This stage is usually done by the quality control procedures (Birt et al., 2011; Cinnamon et al., 2010). Finished goods are assembled items that have completed every stage of the production process and ready for sale and delivery to customers (Kothari, 1992). Inventory represents one of the most crucial assets of a business because of the ability to connect products with advertising, consumption and customer demand (Pandey, 1995). Also, inventory turnover represents one of the essential sources of revenue generation and future profits for the company's shareholders. In respect of the manufacturing industry, inventory is described as an idle stock that a company holds for fabricating its products for commerce and usage. An inventory system illustrates a set of policies and manipulation that a business establishes to supervise and sustain an ideal inventory levels, inventory volume and replenishment. According to Stevenson (2010), Inventory Management is defined as a framework employed in firms in managing its interest in inventory. It is the combination of recording and observing of stock level, estimating future demand, and settling on when and how to arrange (Adeyemi &



ISSN 2076-9202

Salami, 2010). Furthermore, as stated by Kotler (2002), inventory management consists of the planning, coordinating, controlling and organizing of all inventory levels of raw materials, WIP and finished goods. Inventory management is described as the art and science of sustaining stock levels of a group of the least cost items with other relevant objectives set by management (Jessop, 1999). On the other hand, Deveshwar and Dhawal (2013) demonstrated that inventory management is a method that companies use to arrange, stockpile, and replace inventory, to maintain an appropriate supply of goods as well as minimize cost. Choi (2012) indicates that having an efficient inventory management policy is integral in the operation of any business because adequate amount of inventory is required to minimize the risk of stock outs of a business. Thus, keeping stock is considered as a significant strategy by companies to fulfill customers' demands without taking the risk of frequent shortages while maintaining the high level of services. In modifying inventory level, Drurry (2004) asserts that ordering costs, holding costs and shortage costs are three types of inventory cost that firms should concern. Ordering costs illustrate expenditures incurred in placing and receiving an order for inventory supply including budgeting, preparing invoices communication and paper work, observation, insurance and other related costs. Holding costs or carrying costs are those associated with storing inventory that remains unsold in the warehouse. A firm's holding costs include the risk cost of goods damaged, lost or obsolete, as well as that of storage space, labor, insurance and opportunity cost. Gourdin (2001) asserts that there is a positive correlation between these cost and firms' inventory level. Meanwhile, shortage costs result when internal and external inventory demands exceed the capability to supply of firms. Firms could lose customers to competitors during stock out as well as suffer loss of customer goodwill and late charge. Therefore, managers should consider how to maintain the costs at reasonable level while fulfill customer demand is necessary, which is the purpose of inventory management, involving the time and volume of replenishment.

### 2.2.Inventory management techniques

Inventory management is extremely important to any business since it is custom-made to minimizing costs or escalating profits while satisfying customer's demands by ensuring that balanced items of stock are sustained at the proper quality, quantity, and that are obtainable at the right time and in the right place. This section will demonstrate the concepts of the common techniques used in inventory management.

**Economic Order Quantity (EOQ):** As stated by Bowersox (2002), it is necessary to keep the inventory management organized in a logical way so that the enterprise could be able to recognize the proper time and the relevant quantity to order. This must be achieved through calculating the Economic Order Quantity (EOQ). EOQ is the ideal order quantity a company should purchase for its inventory in order to minimize inventory holding costs and order-related costs. The EOQ plays as part of a constant review inventory system in which the inventory level is always examined and a fixed number of units are ordered every time the inventory level reaches a particular reorder point. A model for determining the specific reorder point and the desirable reorder quantity is provided to guarantee the instantaneous replenishment of inventory with no insufficiencies. With regard to small business owners, EOQ appears as an useful tool that help making decisions about the amount of holding inventory, the optimal quantity of items to order each time, and the frequency of reordering items to attain the most favorable costs. Pecuniary requirement amount engages correlation to arrange their stock re-establishment on an ideal assumption. For instance, the preparation can be scheduled to happen from month to month, quarterly, half annually, or annually. By doing so, it allows businesses to have negligible limit costs or zero inside their circulation focuses. Along these lines, as associations attempt to enhance the stock administration, the EOQ and Re-Order Point (ROP) are necessary



ISSN 2076-9202

instruments that associations can utilize. The formula for EOQ also takes account of inventory holding costs including storage, ordering costs and shortage costs. This production-scheduling model was established in 1913 by Ford W. Harris and has been supplement over time. Along with this formula, demand, ordering, and holding costs are all assumed remain constant.

The Formula for Economic Order Quantity Is

$$Q = \sqrt{\frac{2DS}{H}}$$

where:

$Q$ = EOQ units

$D$ = Demand in units (typically on an annual basis)

$S$ = Order cost (per purchase order)

$H$ = Holding costs (per unit, per year)

The main objective of the EOQ formula is to figure out the optimal number of re-ordering product units so that a company can reduce its costs related to purchasing, distribution and storing the units. This could be explained as ordering costs decrease, holding costs appreciate and converge at the minimum point of ordering cost curve and carrying cost line thereby regulating inventory purchase and storage for even production flow (Lwiki et al., 2013; Olufemi et al., 2016; Kumar, 2016).

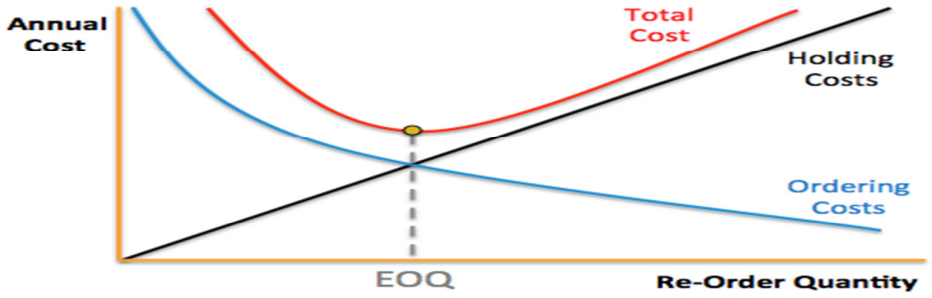



Figure 2.3 **EOQ Model**

EOQ is a significant cash flow instrument for any business to minimize the cost of inventory and the amount of cash tied up in the balance of inventory. For many companies, inventory accounts for the highest proportion of asset owned by the company, and these businesses must ensure the sufficiency of inventory to meet the needs of their customers. By determining a favorable reorder point, the business avoids stock-out and is able to fulfill all customer demands. If the inventory is exhausted, there is a shortage cost, which is the profit loss because the company cannot handle an order. Having an inventory shortage also mean the company may lose the customer credit or having less client orders in the future.

**Just in Time Model (JIT):** Producing high quality products while maintaining low expense and consistent availability of stockpile is the ultimate objective of most manufacturers. In an effort to accomplish this objective, many manufacturers have implemented just-in-time processing. The JIT technique is considered as a Japanese philosophy because in the 1970s, the famous Japanese car manufacturer Toyota adopted the system. JIT processing is a management technique that prioritizes reducing time and cost as well as eliminating poor quality (Shin et al., 2015). JIT associated with assembling which consists of having the right things in the right quality and quantity as well as in the proper place and at the desirable time (Lucey, 1994; Obiri-Yeboah et al., 2015). The less a firm spends on storing and delivering the stock, the less obsolescence of quality it has. Therefore, the success of the JIT production process depends on steady production, decent craftsmanship, no machine malfunctions, and trustworthy suppliers. Utilization of JIT technique results in a substantial increment in quality, profitability, and effectiveness in inventory management, enhanced overall performance, and abatements in expenses and dissipation.

On the one hand, there are several advantages of utilizing JIT inventory systems in comparison with traditional models. Production runs are steady and rapid, which allows manufacturers to quickly move from one product to another. Moreover, this method lowers costs by minimizing stockpile needs. Companies also



ISSN 2076-9202

save their money on purchasing raw materials because they buy just exactly the quantity needed to make the ordered products. On the other hand, the disadvantages of JIT inventory systems involve potential collapses in the chain of production. If a raw materials supplier has a malfunction and the goods cannot be delivered in time, this could possibly freeze the entire production process. Also, unexpected abnormal order for goods may cause the late distribution of finished products to end clients.

**Pareto (ABC) Model:** First appeared as a model developed from Vilfredo Pareto principle in the late 19th century, ABC is an essential analysis approach used to classify items, events, or activities based on their importance or value in a given context. It is commonly applied in inventory management where it is used to categorize stock items into groups according to the total amount of money spent each year on, or total stockholding expense of, each item. In association with the ABC system, inventories are organized in groups according to priority as 'A', 'B', and 'C' with breaking points (Pandey, 1995; Bloomberg et al., 2002; Obiri-Yeboah et al., 2015; Drury, 2006). A things account for the first rank in organization efforts and supervision consumption. Meanwhile, C things get the base thought, and B things are in the middle. In more detail, top value items attract larger concern and classified "A", while items with the most control are classified "B" and those classified "C" are items of fairly low value (Ravinder and Misra, 2014). High-priced financed, demand and important income generating items are more careful overseen under class "A" than less profitable and demand class "C" elements. This can be explained that it is obviously irrational to spend equal concern on inventory which generates low profit and raises cost (Pandey, 1995). In addition the ABC system ranks based on the following criteria: A things account for approximately 70–80% of the company's annual consumption and only 10–20% of total stocked items. Meanwhile, B things represent roughly 15–25% of annual use esteem and 30% of aggregate of inventory units, and C things characterize 5% of the annual application of esteem and half of the total amount of stocked items.

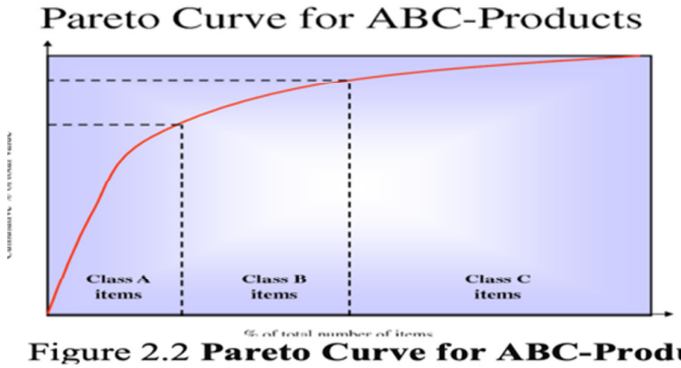



Figure 2.2 **Pareto Curve for ABC-Products**

2.3.Firm profitability

Profitability is the ability to earn a profit of a business. Profitability arises when the aggregate amount of revenue is greater than the aggregate amount of expenses in a reporting period. In other words, this is a company's capability of using its resources to generate revenues in excess of its expenses from its operations for a certain period of time (Farah & Nina, 2016). Profit is the difference between revenue received from sales and total costs which includes material costs, labor and so on (Stierwald, 2010).Thus, the ultimate goal of most organizations is maximizing the generation of profit (Niresh & Velnampy, 2014). In general, profit usually represents the entrepreneur's reward for his/her investment which is the main incentive for entrepreneur to conduct business. Moreover, profit is also considered as a determinant for measuring performance of a business (Ogbadu, 2009). The two integral aspects of profitability are revenues and expenses. On the one hand, revenues denote the business income which illustrates the amount of money earned from selling products or providing services to customers. On the other hand, in order to generate



ISSN 2076-9202

income through manufacturing and providing services, company resources like cash are used to pay for operating costs such as employee wages, rent, utilities, and other necessities in the production process. Thus, profitability portrays the efficiency of the management in converting the firm's resources into profits (Muya & Gathogo, 2016). Furthermore, profitability looks at the correlation between the revenues and expenses to determine the current level of firm performance and the future potential growth a company might have. Profitability represents one of four building blocks for evaluating financial statements and company performance as a whole. Efficiency, solvency, and market prospects are the other three factors. These key concepts are utilized by investors, creditors, and managers to examine the current state of a company and its future growth potential if operations are well-managed. Profitability illustrates either economic profits or accounting profits and it is the predominant target of a business venture (Anene, 2014). Thus, the importance of profitability is significant to the firm's owners as well as the managers and other stakeholders that are involved or associated to the firm operating system since profitability provides valuable insights into the financial well-being and business performance. Profitability ratios are financial metrics normally used by analysts and investors to measure and evaluate the capability to generate income relative to revenue, balance sheet assets, operating expenses, and owners' equity of a company during a given period of time. Companies also use profitability ratios as determinants of the firm's earning capacity and consider as a firm's growth and success indicator (Majed, Said & Firas, 2012). Thus, a higher ratio or value is normally sought-after by most companies, as this commonly indicates the business is healthy by generating earnings, profits, and cash flow. Most commonly used profitability ratios are Gross Profit Margin, EBITDA Margin, Operating Profit Margin, Net Profit Margin, Cash Flow Margin and Return on Assets.

### 2.4.Operating cash flow

Operating cash flow, often called cash flow from operations is an efficiency measurement that calculates the amount of cash a business produces from its regular operating activities within a specific period of time by deducting operating expenses from total revenues (Rashvand & Tariverdi, 2015). Operating cash flow denotes the ability of a company to generate sufficient positive cash flow to maintain its sustainable growth of operations without relying on secondary sources of revenue like external financing or raising additional investment. Operating cash flow includes all the activities that could have considerable influences on the company net profit (Nwanyanwu, 2015). Operating cash flow begins with net income (from the bottom of the income statement), adds back any non-cash items, and adjusts for changes in net working capital, to attain the total amount of cash generated or consumed in the given period. Generally, operating cash flow is defined as a source of business cash and signifies the efficiency with which a company apportions its accrual cash flow (Aliakbari, 2015). Operating activities are the core activities of a company involved in manufacturing, distributing and selling its products or providing services to its customers as well as generating revenues, general administrative and maintenance activities (Duhovnik, 2008; Amuzu, 2010). Some common operating activities include cash receipts from goods sold, payments to employees, taxes, and payments to suppliers. Operating activities are an entity's preponderant revenue-generating activity, so cash flows are commonly involved with revenues and expenses. Thus, operating activities generally represent the majority of a company's cash flow and significantly determine the company's net profit or loss (Nwanyanwu, 2015). Operating cash flow is vital to financial analysts and investors because it provides a clear picture of the current status of the operations of the company. A positive cash flow from operations indicates the ability of a company to pay its debts in the long run as well as avoid insolvency. According to Telmoudi, Ziadi & Noubbigh (2010), operating cash flow can be determined either by a direct method or indirect method. The direct method equation simply subtracts operating expenses from total revenues which



ISSN 2076-9202

is precise and simple, but does not reveal much information about the company to investors such as its operations, or the sources of cash. Meanwhile, the indirect method equation adjusts net income for changes in all non-cash accounts on the balance sheet. Depreciation and amortization is added back to net income while it is adjusted for changes in accounts receivable and inventory. The formula of the indirect method is noticeably more complicated in comparison with the direct method, but more details about the company's operations are provided.

### 2.5.Empirical literature review

Studies by Salla (2013) argue that the success of inventory management is highly dependent on technological and managerial resources. Based on analyzing a sample of 20 large cement enterprises in India, Ashok (2013) indicates that inventory holding establishes a correlation between production and revenue. In addition, Ashok (2013) illustrates that there is an inverse relationship between inventory conversion period and profitability. According to another research by Anuo (2014), firms' financial system as reflected in cash, trade credit policy and leverage has a substantial impact on inventory accumulation denoting that financial strength does affect the growth level of firm's inventory. On the other hand, Maria and Jones (2003) argue that ensuring the supply of superior products at relatively less cost is the most important ingredient of proper inventory management practice. Furthermore, their research indicates that establishing as well as maintaining a daily ordering and frequent calculation of inventory turnover is necessary for any business to enhance their inventory management system. Additionally, as stated by Ballon (2000), inventory expenditures should be carefully considered before making inventory decisions. According to the outcome of his research, inventory carrying costs typically fluctuate from approximately 20% to 40% of inventory value. Palmer and Dean (2000) then come out with the belief that relevant selection of inventory management practice is obligatory for any firm's inventory management performance. An efficient and reliable inventory tracking system is essential for enhancing a firm's profitability. Frequent inspecting and keeping accurate records of inventory units allows firms to avoid pilferages and obsolescence as well as maintain optimal levels without distracting operations. As illustrated by Nyabwanga (2013) research, high-level financial performance is positively correlated to efficiency in inventory management which includes tracking of inventory levels. Neither excessive nor insufficient inventories are desirable. Gill, Biger, and Mathur (2010) demonstrate that excess inventory is an operational liability, because it uses valuable storage space and increases inventory costs. Raw material ordering frequency is identified as an important factor contributing to inventory cost and frequent ordering in small quantity is also considered as an important strategy. Abundant inventories cause the costs of stockpile to rise necessarily and as a result, the firm's profitability is decreased whereas inadequate inventories cause disruption to the company operation (Atrill, 2006). As mentioned by Ashok (2013), the performance and operation of any business is significantly dependent on the proper and timely flow of inventory. Inventory could be considered as a determinant in the measurement of the liquidity and operating efficiencies of any enterprise. Inventory applications could be examined using inventory turnover as a measure of the number of times per annum stock or inventory has been replaced. Ashok (2013) study used regression analysis to determine the impact of inventory, conversion period over gross operating profit and established a significant negative linear relationship between inventory conversion period and profitability. Meanwhile, Dong and Su (2010) believe



ISSN 2076-9202

that there is a correlation between firm's profitability and liquidity and firm's working capital management. The study analyzed a sample of companies listed in the Vietnam Stock Exchange for the two-year period starting from 2006 by use of pooled data. Cash conversion cycle and related elements were the predominant factors for measuring capital management and the study discovered that the relationship among these variables was strongly negative and that profitability grew as the debtor's collection period and inventory conversion period reduced. According to further researches by Lindo (2009), Padach (2006) and Rajesh (2011), the increase in frequency of stock turnover in a given period directly relating to the amount of gross profit leads to the growth of importance of inventory turnover measurements. As strongly claimed by those studies, the higher inventory turnover levels, the more favorable it is for the business. Inferior rates of inventory turnover may indicate an excess of stock, inappropriate purchasing as well as poor sales strategies. Moreover, the studies by Lindo, Padach and Rajesh are supported by the strategic profit model under the Dupont formula that if inventory turnover increases, firms generate more sales for every unit of asset held. The study by Lazaridis and Dimitrios (2005) concentrated on the significance of maintaining inventory at an optimal level by assessing the relationship between working capital management and corporate profitability found a highly negative correlation between inventory turnover period and firm financial performance. Furthermore, Mathuva (2009) study focusing on the impact of working capital management components on corporate profitability by analyzing a sample of 30 listed firms in the Nairobi Stock Exchange for the 15-year period between 1993 and 2008. The pooled OLS and the fixed effects regression model were implemented and the study discovered a strongly positive significant relationship between conversion of inventories into revenue and profitability. Based on the outcome of the study of Mathuva (2009), companies manage to maintain adequate levels of inventory are capable of lowering costs of business interruptions in the production process as well as reduce the risk of losing firm business due to insufficiency of products. Therefore, the hypothesis is proposed:

*$H_0$: Inventory management has significant effects on firm performance of listed manufacturing firms in Vietnam.*

## 3. Methodology

### 3.1.Data Collection

The research is collected from Thomson Reuters of 50 fabrication firms listed on HOSE from 2010 to 2019.

### 3.2.Data Analysis

This study employed ordinary least squares (OLS) in form of regression equations with the support of Software for Statistics and Data Science to analyze the collected data. A two-stage technique, Pearson correlation and multiple estimation method including OLS, Fixed effect, Random effect, Generalized least square, was implemented.

### 3.3.Research model

Model 1: $ROA = \beta_0 + \beta_1(ICP) + \beta_2(OE) + \beta_3(FG) + \beta_4(FS) + \varepsilon$

Model 2: $CFO = \beta_0 + \beta_1(ICP) + \beta_2(OE) + \beta_3(FG) + \beta_4(FS) + \varepsilon$

Where;

ROA = Return on assets = Net income/total assets

CFO = Cash flows from operations = Cash flow to sales ratio = Net operating cash flow/Net sales

ICP = Inventory conversion period = ICP = Av.stock/Cost of sales x 365



ISSN 2076-9202

OE = Operating efficiency as a measure of management efficiency = OE
= Operating expense/Total income
FG = Firm growth = FG = $(Sales_t - Sales_{t-1})/Sales_{t-1}$
FS = Firm size = FS = Natural log of total assets
$B_0$ = Constant
$B_1 - \beta_4$ = Regression Coefficients
ε = Error term

## 4. Data Analysis, Results and Interpretation

### 4.1.Descriptive Statistics

**Table 4.1 Summary Descriptive Statistics**

```
. sum ROA CFO FG ICP OE LnFS
```

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ROA | 500 | 9.93308 | 9.93482 | -31.72 | 72.19 |
| CFO | 500 | 8.10264 | 15.68319 | -201.48 | 167.82 |
| FG | 500 | 11.83776 | 31.83819 | -84.06 | 213.4 |
| ICP | 500 | 99.42068 | 74.01923 | 0 | 618 |
| OE | 500 | 4.883 | 3.610144 | .34 | 41.15 |
| LnFS | 500 | 27.48531 | 1.445755 | 24.41655 | 31.99059 |

.

According to the results in Table 4.1 above, the study observed that the average value of return on assets (ROA) was 0.0993 which indicates a relatively decent profitability for a significant majority of manufacturing firms. The study also witnessed that the average cash flow from operations (CFO) was fairly good (positively) at 0.0810 and the mean inventory conversion period was 99 days which indicates on average manufacturing enterprises in Vietnam spend 99 days on converting inventory into sales. The average operating efficiency ratio was remarkably low at only 0.0488 which is an indication that expenses accounted for nearly 5% of the total revenue of the manufacturing firms hence significantly efficient operating system. It is also noted that the average rate of firm growth was rather good at 11.84%. The last observation was the average firm size calculated by taking natural log of total assets which was relatively high at 27.485 hence an indication of a decent growth of manufacturing firms in Vietnam.

### 4.2.Correlation Analysis

*Model 1 using ROA*

**Table 4.2 Correlation Matrix using ROA**



ISSN 2076-9202

| | ROA | ICP | LnFS | FG | OE |
|---|---|---|---|---|---|
| ROA | 1.0000 | | | | |
| ICP | -0.2807* | 1.0000 | | | |
| LnFS | 0.1126* | 0.1299* | 1.0000 | | |
| FG | 0.2292* | -0.0536 | 0.1335* | 1.0000 | |
| OE | -0.0696 | 0.1698* | -0.2462* | -0.1347* | 1.0000 |

.

According to the results on table 4.2 and the graph above, the three variables including inventory conversion period (ICP), firm size (FS) and firm growth (FG) were correlated with profitability measured using ROA at the 5% significance level. Meanwhile, the opposite is true for operating efficiency (OE). The study witnessed a negative correlation between inventory conversion period and profitability. Furthermore, the results also indicate a positive correlation between profitability and firm growth and firm size. Hence, we need to consider the phenomenon of multi-collinearity.

*Model 2 using CFO*

**Table 4.3 Correlation Matrix using CFO**

| | CFO | ICP | LnFS | FG | OE |
|---|---|---|---|---|---|
| CFO | 1.0000 | | | | |
| ICP | -0.2569* | 1.0000 | | | |
| LnFS | 0.1011* | 0.1299* | 1.0000 | | |
| FG | 0.1052* | -0.0536 | 0.1335* | 1.0000 | |
| OE | -0.0512 | 0.1698* | -0.2462* | -0.1347* | 1.0000 |

According to the results on table 4.3 and its following graph, the study observed that all the independent and control variables were correlated with profitability measured using operating cash flow at the 5% significance level with the only exception of operating efficiency. It can be witnessed that there were a negative correlation between operating cash flows (OCF) and inventory conversion period (ICP) whereas firm growth (FG) and firm size (FS) positively affected the operating cash flow.

### 4.3.Regression Analysis

*Model 1 using ROA*

**Table 4.4 Linear Regression Coefficients using ROA**

| Source | SS | df | MS | Number of obs | = | 500 |
|---|---|---|---|---|---|---|
| | | | | F(4, 495) | = | 20.30 |
| Model | 6940.00859 | 4 | 1735.00215 | Prob > F | = | 0.0000 |
| Residual | 42311.6105 | 495 | 85.4780009 | R-squared | = | 0.1409 |
| | | | | Adj R-squared | = | 0.1340 |
| Total | 49251.6191 | 499 | 98.7006394 | Root MSE | = | 9.2454 |

| ROA | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| ICP | -.0394794 | .0057755 | -6.84 | 0.000 | -.050827 | -.0281318 |
| LnFS | .9202507 | .3021576 | 3.05 | 0.002 | .3265812 | 1.51392 |
| FG | .062733 | .0132087 | 4.75 | 0.000 | .0367809 | .0886851 |
| OE | .1111546 | .1215101 | 0.91 | 0.361 | -.1275845 | .3498937 |
| _cons | -12.72061 | 8.382268 | -1.52 | 0.130 | -29.18983 | 3.7486 |

As can be seen from the table, the P-value of inventory conversion period (ICP), firm size (FS) and firm growth (FS) were less than 0.05 which indicates profitability is affected by inventory management, firm growth levels and size of a firm. Meanwhile, management efficiency had remarkably high P-value at 0.361 which is greater than 5% significance level, hence no significant effect on firm profitability.

On the other hand, based on the results observed from ordinary least squares estimation model, the author discovered that the R-squared and adjusted R-square were relatively low at 14.09% and 13.4% respectively hence an indication that approximately 14% variation of ROA was explained by independent variables. Therefore, the result of OLS model was undesirable.

**Table 4.5 Multicollinearity test of the variables**



ISSN 2076-9202

| Variable | VIF | 1/VIF |
|---|---|---|
| OE | 1.12 | 0.890185 |
| Size | 1.11 | 0.897630 |
| ICP | 1.07 | 0.937299 |
| FG | 1.03 | 0.968579 |
| Mean VIF | 1.08 | |

In evaluating the value of VIF, the value greater than 2 indicates a high probability of the multicollinearity while the value less than 2 denotes no multicollinearity. In contrast, the VIF value greater than 10 indicates the existence of multicollinearity between the variables. According to the table, the observed value of VIF was less than 2. Hence, the result obtained from multicollinearity test indicates that there was no multicollinearity phenomenon. However, as mentioned in the findings of table 4.4, the value of the R-squared and adjusted R-squared of the OLS model were not desirable. Therefore, another model must be conduct instead to provide the optimal results.

**Table 4.6 The homoscedasticity test for model 1**

Cameron & Trivedi's decomposition of IM-test

| Source | chi2 | df | p |
|---|---|---|---|
| Heteroskedasticity | 75.71 | 14 | 0.0000 |
| Skewness | 12.35 | 4 | 0.0149 |
| Kurtosis | 1.53 | 1 | 0.2162 |
| Total | 89.60 | 19 | 0.0000 |

In order to test the homoscedasticity of the variables, the study conducted White test, of which the result is illustrated in table 4.6. It is clear that the p-value of the White test was 0.000 which was less than the significance level of 5%. Therefore, the null hypothesis was rejected which indicates there was the no homoscedasticity among the variables.

**Table 4.7 The Breusch – Pagan test for heteroscedasticity for model 1**

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of ROA

chi2(1) = 16.02

Prob > chi2 = 0.0001

The Breusch – Pagan test for heteroscedasticity revealed the p-value almost equal 0 at 0.0001 which was lower than 0.05. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted which indicates that the variance of a variable had a tendency to change. In order to manage panel data, the fixed effect and random effect models were employed.

**Table 4.8 Fixed effect model for ROA**

Fixed-effects (within) regression — Number of obs = 500
Group variable: Code1 — Number of groups = 50

R-sq: — Obs per group:
within = 0.1827 — min = 10
between = 0.0149 — avg = 10.0
overall = 0.0038 — max = 10

F(4,446) = 24.93
corr(u_i, Xb) = -0.6186 — Prob > F = 0.0000

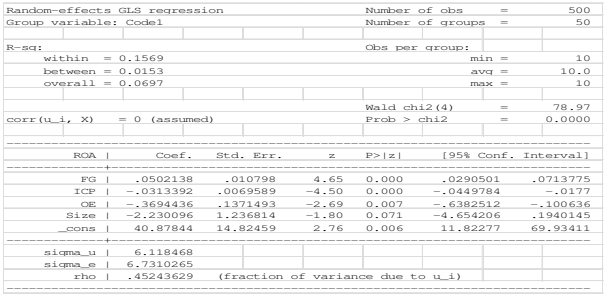
| ROA | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| FG | .0462061 | .0108006 | 4.28 | 0.000 | .0249797 | .0674326 |
| ICP | -.0294822 | .0075846 | -3.89 | 0.000 | -.0443882 | -.0145762 |
| OE | -.4947883 | .1458735 | -3.39 | 0.001 | -.781473 | -.2081035 |
| Size | -9.452388 | 1.939696 | -4.87 | 0.000 | -13.26447 | -5.640309 |
| _cons | 127.5638 | 23.15364 | 5.51 | 0.000 | 82.06001 | 173.0676 |
| sigma_u | 9.7670599 | | | | | |
| sigma_e | 6.7310265 | | | | | |
| rho | .67799562 | (fraction of variance due to u_i) | | | | |

F test that all u_i=0: F(49, 446) = 9.96 — Prob > F = 0.0000



ISSN 2076-9202

**Table 4.9 Random effect model for ROA**



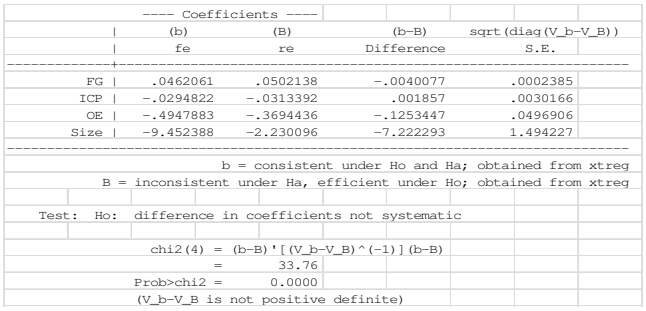
```
Random-effects GLS regression                   Number of obs      =       500
Group variable: Code1                           Number of groups   =        50

R-sq:                                           Obs per group:
     within  = 0.1569                                         min =        10
     between = 0.0153                                         avg =      10.0
     overall = 0.0697                                         max =        10

                                                Wald chi2(4)       =     78.97
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          FG |   .0502138    .010798     4.65   0.000     .0290501    .0713775
         ICP |  -.0313392   .0069589    -4.50   0.000    -.0449784     -.0177
          OE |  -.3694436   .1371493    -2.69   0.007    -.6382512    -.100636
        Size |  -2.230096   1.236814    -1.80   0.071    -4.654206    .1940145
       _cons |   40.87844   14.82459     2.76   0.006     11.82277    69.93411
-------------+----------------------------------------------------------------
     sigma_u |  6.118468
     sigma_e |  6.731026
         rho |  .45243629   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

**Table 4.10 The Hausman test for model 1**



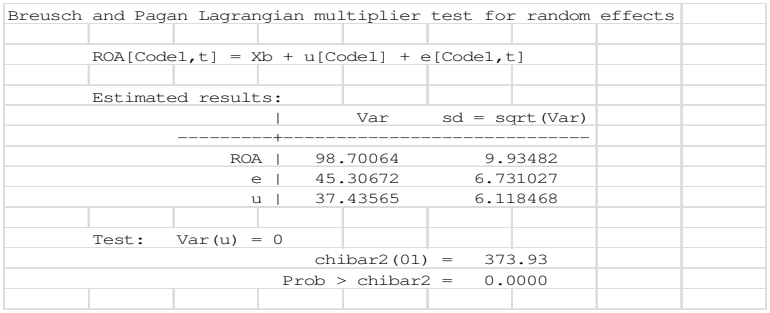
```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe           re         Difference          S.E.
-------------+----------------------------------------------------------------
          FG |    .0462061     .0502138       -.0040077        .0002385
         ICP |   -.0294822    -.0313392        .001857         .0030166
          OE |   -.4947883    -.3694436       -.1253447        .0496906
        Size |   -9.452388    -2.230096       -7.222293        1.494227
------------------------------------------------------------------------------
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

  Test:  Ho:  difference in coefficients not systematic

              chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =       33.76
            Prob>chi2 =      0.0000
            (V_b-V_B is not positive definite)
```

Table 4.10 illustrates the Hausman test using to select the more appropriate model between fixed effect model and random effect model. Based on the result of the Hausman test, it can be observed that the p value of the Hausman test was almost 0 which was lower than 0.05. Therefore, the null hypothesis was rejected hence an indication that fixed effect model should be chosen in regression model.

**Table 4.11 Breusch and Pagan Lagrangian multiplier test for model 1**



```
Breusch and Pagan Lagrangian multiplier test for random effects

        ROA[Code1,t] = Xb + u[Code1] + e[Code1,t]

        Estimated results:
                             |       Var     sd = sqrt(Var)
                    ---------+-----------------------------
                         ROA |    98.70064         9.93482
                           e |    45.30672        6.731027
                           u |    37.43565        6.118468

        Test:   Var(u) = 0
                                  chibar2(01) =    373.93
                                Prob > chibar2 =    0.0000
```

According to the result of Breusch and Pagan test from table 4.9, the study witnessed a 0.000 p-value which is less than 0.05. Therefore, the alternative hypothesis is accepted and the null hypothesis is rejected hence an indication that the random effect model is appropriate.

**Table 4.12 The Woolridge test for model 1**



*ISSN 2076-9202*

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,       49) =     21.362
           Prob > F =      0.0000
```

According to the Wooldridge test for autocorrelation in panel data, it is clear that the p-value of the test was 0.000 which was less than 5% level of significance. Therefore, the null hypothesis was rejected which indicates that there was autocorrelation phenomenon.

**Table 4.13 The unit root test for ROA**

```
Levin-Lin-Chu unit-root test for ROA
------------------------------
Ho: Panels contain unit roots               Number of panels  =     50
Ha: Panels are stationary                   Number of periods =     10

AR parameter: Common                        Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included

ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                     Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -11.9133
 Adjusted t*         -6.2367        0.0000
------------------------------------------------------------------------------
```

According to the result of the unit root test for ROA in table 4.13, it is clear that the p-value was 0.000, hence an indication that data panels were stationary.

**Table 4.14 The stationary test for ROA**

```
Hadri LM test for ROA
---------------------

Ho: All panels are stationary               Number of panels  =     50
Ha: Some panels contain unit roots          Number of periods =     10

Time trend:         Not included            Asymptotics: T, N -> Infinity
Heteroskedasticity: Not robust                                   sequentially
LR variance:        (not used)
------------------------------------------------------------------------------
                     Statistic      p-value
------------------------------------------------------------------------------
 z                   11.1381        0.0000
------------------------------------------------------------------------------
```

The stationary test for ROA provided the 0.000 p-value which indicates that some panels contained unit roots. Hence, the Generalized least squares model was conducted in order to reinforce the evaluation.

**Table 4.15 The Generalized Least Squares model for ROA**

```
Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   no autocorrelation

Estimated covariances      =        50          Number of obs      =       500
Estimated autocorrelations =         0          Number of groups   =        50
Estimated coefficients     =         5          Time periods       =        10
                                                Wald chi2(4)       =    114.00
                                                Prob > chi2        =    0.0000
------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          FG |   .0552837   .0104049     5.31   0.000     .0348904    .075677
         ICP |  -.034423   .0038163    -9.02   0.000    -.0419028   -.0269431
          OE |   .1559845   .0824809     1.89   0.059    -.0056751    .3176441
        Size |   1.291203   .4898777     2.64   0.008     .3310606    2.251346
       _cons |  -4.368235   5.824144    -0.75   0.453    -15.78335    7.046878
------------------------------------------------------------------------------
```

Based on the observation and testing of four models pooled OLS, fixed, random and Generalized Least Squares (GLS), the study discovered that the results of the GLS model is optimum for the study analysis and is consistent with the supposed hypotheses. The results observed from the GLS model indicate a significant positive relationship between size of an enterprise (FS), firm growth levels (FG) and firm profitability



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whereas inventory conversion period (ICP) negatively affects profitability of listed manufacturing firms in Vietnam at the 5% significance level. Their correlation coefficient were 1.291, 0.055 and -0.034 respectively. Meanwhile, the management efficiency (OE) variable witnessed a relatively high P-value at 0.059 which is higher than 0.05, hence no significant impact of operating efficiency on firm profitability measured using ROA. Overall, based on the results obtained from table 4.15, the study reveals a significant negative relationship between the main variable inventory conversion period and profitability of listed manufacturing companies in Vietnam.

*Model 2 using CFO*

**Table 4.16 Linear Regression Coefficients using CFO**

```
. reg CFO ICP LnFS FG OE

      Source |       SS           df       MS      Number of obs   =       500
-------------+----------------------------------   F(4, 495)       =     12.41
       Model |  11187.8701         4  2796.96752   Prob > F        =    0.0000
    Residual |  111547.345       495  225.348172   R-squared       =    0.0912
-------------+----------------------------------   Adj R-squared   =    0.0838
       Total |  122735.215       499  245.962355   Root MSE        =    15.012

------------------------------------------------------------------------------
         CFO |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         ICP |  -.0587522   .0093776    -6.27   0.000    -.0771771   -.0403273
        LnFS |    1.48144   .4906065     3.02   0.003     .5175123    2.445368
          FG |   .0381871   .0214467     1.78   0.076    -.0039508    .0803249
          OE |   .1735669   .1972932     0.88   0.379    -.2140684    .5612023
       _cons |  -28.0736    13.6101    -2.06   0.040    -54.81429   -1.332905
------------------------------------------------------------------------------
```

According to the results obtained, it is clear that inventory conversion period and size of a business had their P-value less than 0.05 which indicates that inventory management and firm size did affect manufacturing firm profitability at 5% significance level. Meanwhile, the P-value for management efficiency was substantially high at 0.379, hence no significant effect on firm profitability measured using CFO. The final observation is the fairly high P-value of firm growth variable at 0.076 which is at 10% significance level. On the other hand, based on the results observed from ordinary least squares estimation model, the author discovered that the R-squared and adjusted R-square were relatively low at 9.12% and 8.38% respectively hence an indication that approximately 9% variation of ROA was explained by independent variables. Therefore, the result of OLS model was undesirable.

**Table 4.17 Multicollinearity test of the variables**

| Variable | VIF | 1/VIF |
|---|---|---|
| OE | 1.12 | 0.890185 |
| Size | 1.11 | 0.897630 |
| ICP | 1.07 | 0.937299 |
| FG | 1.03 | 0.968579 |
| Mean VIF | 1.08 | |

As mentioned in table 4.5 above, the value of VIF is lower than 2 which denotes no multicollinearity among these variables. However, as mentioned in the findings of table 4.16, the value of the R-squared and adjusted R-squared of the OLS model were not desirable. Therefore, another model must be conduct instead to provide the optimal results.

**Table 4.18 The Homocedasticity test for model 2**



ISSN 2076-9202

| Cameron & Trivedi's decomposition of IM-test | | | |
|---|---|---|---|
| Source | chi2 | df | p |
| Heteroskedasticity | 163.22 | 14 | 0.0000 |
| Skewness | 27.37 | 4 | 0.0000 |
| Kurtosis | 1.94 | 1 | 0.1638 |
| Total | 192.52 | 19 | 0.0000 |

Table 4.24 demonstrates the homoscedasticity test of the variables via White test. According to the result observed in table 4.24, it is clear that the p-value of the White test was 0.000 which was less than the significance level of 5%. Therefore, the null hypothesis was rejected which indicates there was the no homoscedasticity among the variables.

**Table 4.19 The Breusch – Pagan test for heteroscedasticity for model 2**

| Breusch-Pagan / Cook-Weisberg test for heteroskedasticity | |
|---|---|
| Ho: Constant variance | |
| Variables: fitted values of CFO | |
| chi2(1) | = 455.48 |
| Prob > chi2 | = 0.0000 |

The Breusch – Pagan test for heteroscedasticity revealed the p-value almost equal 0 at 0.0001 which was lower than 0.05. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted which indicates that the variance of a variable had a tendency to change. In order to manage panel data, the fixed effect, random effect models were employed.

**Table 4.20 Fixed effect model for CFO**

| Fixed-effects (within) regression | | | | Number of obs | = | 500 |
|---|---|---|---|---|---|---|
| Group variable: Code1 | | | | Number of groups | = | 50 |
| R-sq: | | | | Obs per group: | | |
| within = 0.0790 | | | | min | = | 10 |
| between = 0.0067 | | | | avg | = | 10.0 |
| overall = 0.0065 | | | | max | = | 10 |
| | | | | F(4,446) | = | 9.57 |
| corr(u_i, Xb) = -0.4862 | | | | Prob > F | = | 0.0000 |
| CFO | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
| FG | .0114883 | .0206909 | 0.56 | 0.579 | -.0291755 | .0521521 |
| ICP | -.0383957 | .0145299 | -2.64 | 0.009 | -.0669513 | -.00984 |
| OE | -1.20422 | .2794521 | -4.31 | 0.000 | -1.753426 | -.6550137 |
| Size | -7.094687 | 3.715905 | -1.91 | 0.057 | -14.39754 | .2081705 |
| _cons | 102.3515 | 44.35577 | 2.31 | 0.021 | 15.17918 | 189.5237 |
| sigma_u | 11.300011 | | | | | |
| sigma_e | 12.894729 | | | | | |
| rho | .43437336 | (fraction of variance due to u_i) | | | | |
| F test that all u_i=0: F(49, 446) = 4.59 | | | | | Prob > F = 0.0000 | |

**Table 4.21 Random effect model for CFO**

| Random-effects GLS regression | | | | Number of obs | = | 500 |
|---|---|---|---|---|---|---|
| Group variable: Code1 | | | | Number of groups | = | 50 |
| R-sq: | | | | Obs per group: | | |
| within = 0.0596 | | | | min | = | 10 |
| between = 0.0788 | | | | avg | = | 10.0 |
| overall = 0.0635 | | | | max | = | 10 |
| | | | | Wald chi2(4) | = | 31.67 |
| corr(u_i, X) = 0 (assumed) | | | | Prob > chi2 | = | 0.0000 |
| CFO | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
| FG | .0243806 | .0200903 | 1.21 | 0.225 | -.0149956 | .0637568 |
| ICP | -.0467422 | .0117674 | -3.97 | 0.000 | -.0698058 | -.0236785 |
| OE | -.5582343 | .2371695 | -2.35 | 0.019 | -1.023078 | -.0933907 |
| Size | .9362482 | 1.751455 | 0.53 | 0.593 | -2.49654 | 4.369037 |
| _cons | 4.011294 | 21.02523 | 0.19 | 0.849 | -37.1974 | 45.21999 |
| sigma_u | 6.9413149 | | | | | |
| sigma_e | 12.894729 | | | | | |
| rho | .22467022 | (fraction of variance due to u_i) | | | | |

**Table 4.22 The Hausman test for model 2**

| | ---- Coefficients ---- | | | |
|---|---|---|---|---|
| | (b) fe | (B) re | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
| FG | .0114883 | .0243806 | -.0128923 | .0049494 |
| ICP | -.0383957 | -.0467422 | .0083465 | .0085234 |
| OE | -1.20422 | -.5582343 | -.6459857 | .1477975 |
| Size | -7.094687 | .9362482 | -8.030935 | 3.277248 |
| b = consistent under Ho and Ha; obtained from xtreg | | | | |
| B = inconsistent under Ha, efficient under Ho; obtained from xtreg | | | | |
| Test: Ho: difference in coefficients not systematic | | | | |
| chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B) | | | | |
| = 27.41 | | | | |
| Prob>chi2 = 0.0000 | | | | |
| (V_b-V_B is not positive definite) | | | | |

In order to select the more appropriate model between fixed effect model and random effect model, the study conducted the Hausman test. Based on the result obtained from table 4.20, it can be observed that the p



ISSN 2076-9202

value of the Hausman test is almost 0 which is lower than 0.05. Therefore, the null hypothesis is rejected hence an indication that fixed effect model should be chosen in regression model.

**Table 4.23 Breusch and Pagan Lagrangian multiplier test for model 2**

Breusch and Pagan Lagrangian multiplier test for random effects

CFO[Code1,t] = Xb + u[Code1] + e[Code1,t]

Estimated results:

| | Var | sd = sqrt(Var) |
|---|---|---|
| CFO | 245.9624 | 15.68319 |
| e | 166.274 | 12.89473 |
| u | 48.18185 | 6.941315 |

Test: Var(u) = 0

chibar2(01) = 97.72

Prob > chibar2 = 0.0000

According to the result of Breusch and Pagan test from table 4.21, the study witnessed a 0.000 p-value which is less than 0.05. Therefore, the alternative hypothesis is accepted and the null hypothesis is rejected hence an indication that the random effect model is appropriate.

**Table 4.24 The Woolridge test for model 2**

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F( 1, 49) = 1.201

Prob > F = 0.2785

According to the Wooldridge test for autocorrelation in panel data, it is clear that the p-value of the test was 0.2785 which exceeded the 5% level of significance. Therefore, the null hypothesis was accepted which indicates that there was no first-order autocorrelation.

**Table 4.25. The unit root test for CFO**

Levin-Lin-Chu unit-root test for CFO

Ho: Panels contain unit roots — Number of panels = 50
Ha: Panels are stationary — Number of periods = 10

AR parameter: Common — Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included

ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

| | Statistic | p-value |
|---|---|---|
| Unadjusted t | -12.2123 | |
| Adjusted t* | -5.9320 | 0.0000 |

Table 4.25 illustrates the unit root test for CFO. It is clear that the p-value was 0.000. Therefore, the null hypothesis was rejected which indicates that the data panels were stationary.

**Table 4.26. The stationary test for CFO**

. xtunitroot hadri CFO

Hadri LM test for CFO

Ho: All panels are stationary — Number of panels = 50
Ha: Some panels contain unit roots — Number of periods = 10

Time trend: Not included — Asymptotics: T, N -> Infinity
Heteroskedasticity: Not robust — sequentially
LR variance: (not used)

| | Statistic | p-value |
|---|---|---|
| z | 4.1885 | 0.0000 |

The stationary test for CFO provided the p-value at 0.000 hence an indication that the null hypothesis was rejected and some panels contained unit root. Therefore, the Generalized least squares model was conducted in order to reinforce the analysis.

**Table 4.27 The Generalized Least Squares model for CFO**



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Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: heteroskedastic
Correlation: no autocorrelation

| | | | |
|---|---|---|---|
| Estimated covariances | = | 50 | |
| Estimated autocorrelations | = | 0 | |
| Estimated coefficients | = | 5 | |
| Number of obs | = | 500 | |
| Number of groups | = | 50 | |
| Time periods | = | 10 | |
| Wald chi2(4) | = | 164.46 | |
| Prob > chi2 | = | 0.0000 | |

| CFO | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| FG | .0414877 | .0103835 | 4.00 | 0.000 | .0211364 | .0618391 |
| ICP | -.037819 | .0036413 | -10.39 | 0.000 | -.0449558 | -.0306822 |
| OE | .3340161 | .0782964 | 4.27 | 0.000 | .1805579 | .4874743 |
| Size | 3.394685 | .3694411 | 9.19 | 0.000 | 2.670594 | 4.118776 |
| _cons | -31.57259 | 4.399926 | -7.18 | 0.000 | -40.19628 | -22.94889 |

According to the results observed from the GLS model, it is clear that there was a significant positive relationship between size of an enterprise (FS), firm growth levels (FG), operating efficiency (OE) and firm performance measured using CFO at 5% significance level. Their correlation coefficients were 3.395, 0.041 and 0.334 respectively. Meanwhile, inventory conversion period (ICP) with p-value 0.000 and -0.038 correlation coefficient denotes a significant negative influence on operating cash flow of listed manufacturing firms in Vietnam. Overall, based on the results obtained from table 4.27, the study reveals a significant negative relationship between the main variable inventory conversion period and cash flow from operating activities of listed manufacturing companies in Vietnam.

## 5. Interpretation of the Findings

From the results above, the study declared that a change in inventory conversion period has a negative effect on profitability of manufacturing firms listed on HOSE. It indicates that an increase in the number of days it takes Vietnamese manufacturing firms to convert inventory into sales negatively affects and restrains their profitability. As stated by Sitienei and Memba (2015), Mwangi (2016), there is a negative correlation between inventory turnover as well as inventory conversion period of a firm and its capacity to earn profits. According to the findings from GLS model for ROA, the study also established that firm size and firm growth levels are positively related to profitability hence an implication that small and medium enterprises and firms with poor levels of growth rate have a tendency to suffer lower profitability. Normally, large enterprises should have better opportunity to approach the wide range of customers while small businesses are constrained because of their limited branches. The study therefore reasserted the findings of Mwangi (2016) and Farah and Nina (2016) whose studies also revealed that firm growth levels have positive significant influence on profitability. Meanwhile, operating efficiency has no significant impact on firm profitability measured using return on assets. On the other hand, the findings from GLS model for CFO established that all independent variables have significant effects on cash flow from operating activities. Operating cash flow of listed manufacturing firms in Vietnam is negatively significantly related to inventory conversion period hence an implication that the lower the number of days inventory is converted into revenue, the greater the cash flow from operating activities. Furthermore, the study also revealed that firm size, firm growth levels and efficiency of operation positively influences Vietnamese manufacturing firms operating cash flow, which indicates that large enterprises and enterprises that can enhance their income while able to lower the amount of expense tend to have higher operating cash flow. Additionally, the findings from the descriptive statistics revealed that the average ROA for listed manufacturing firms in Vietnam was 0.0993 and average CFO was 0.0810 while average ICP was 99 days. The ten-year period also witnessed the average management efficiency ratio of fifty manufacturing firms listed on HOSE was 4.883% while the average rate of firm growth and firm size was 11.84% and 27.485 respectively. Also, the Pearson



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correlation analysis outcomes revealed a negative relationship between profitability measured using ROA and inventory turnover period and a positive correlation between profitability and firm growth and firm size. The research further discovered a negative relation between cash flow from operating activities and inventory conversion period while firm growth levels and firm size are positively related to operating cash flow. Meanwhile, from both correlation analysis models, the study witnessed an insignificant influence of management efficiency on profitability of listed manufacturing firms on HOSE.

## 6. Conclusion

This paper investigated and evaluated the impact of inventory management on performance of listed companies in the Vietnamese manufacturing industry. A cross sectional audited financial data of fifty listed manufacturing firms on Ho Chi Minh City Stock Exchange over a ten-year period starting from 2010 formed the basis for the data analysis. The findings of the study revealed that inventory conversion period adversely influence profitability of listed manufacturing firms in Vietnam. Hence the conclusion deriving from the study illustrates that an increase in inventory days has a tendency to reduce and constrain the capability to gain profits of listed manufacturing firms on HOSE. The findings of the study also declared that firm growth levels and size of an enterprise are positively related to profitability measured using return on assets thus the conclusion that businesses with high growth rate and large businesses tend to achieve higher levels of profitability. The observed findings also established that inventory conversion period adversely and significantly influences operating cash flows hence an indication that an increase in number of days manufacturing firms spend on converting inventory into sales leads to a reduction in operating cash flow. Moreover, the study revealed that there is a positive significant correlation between firm size, firm growth levels, management efficiency and operating cash flows hence the conclusion that the larger firm size and growth rates, the higher cash flow from operating activities. The final observation derived from the study is management efficiency does not have significant impact on profitability of manufacturing firms listed on HOSE. Overall, according to the findings obtained, the study concludes that inventory management significantly influences performance of manufacturing firm listed on HOSE.

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# PROMOTING TEAMWORK: INDISPENSABLE IN LEADING TO SUCCESS OF THE INDIVIDUALS AND ORGANIZATIONS

**Dr. Radhika Kapur**

**Abstract**

In educational institutions of all levels and in various types of employment settings, the instructors, supervisors and employers put emphasis upon promoting teamwork. When the individuals are working in team, they are able to benefit to a major extent. They will development mutual understanding with other individuals, exchange ideas and viewpoints and provide solutions to various problems. Furthermore, the individuals are doing well in their jobs and generate the desired outcomes. When there is encouragement of teamwork, the individuals develop motivation towards leading to up-gradation of the overall structure of the organizations. The individuals are overwhelmed by number of job duties and responsibilities. These take place in the personal as well as in the professional lives of the individuals. Hence, when there will be encouragement of teamwork, one will be able to alleviate work pressure. When the job duties will be divided, one will not feel job stress. In order to do well in one's jobs and generate the desired outcomes, one needs to be well-aware in terms of job duties and responsibilities and promote a normal mind-set. Therefore, all the members of the organizations understand that promoting teamwork is indispensable in leading to success of the individuals and organizations. The main concepts that are taken into account in this research paper are, understanding the meaning and significance of teamwork, benefits of teamwork and the factors highlighting the role of team leaders.

**Keywords:** Desired Outcomes, Individuals, Job Duties, Motivation, Organizations, Team Leaders, Teamwork

In educational institutions at all levels, and various types of employment settings, one needs to pay attention towards promoting teamwork (Heathfield, 2021). Teamwork is when the individuals are required to work with other members in a team. The team can be of two or more individuals. The instructors, supervisors and employers are encouraging teamwork. In a team, there is a team leader, who is focusing upon generating the desired outcomes. When the individuals are working in a team, they are able to carry out their job duties in a well-organized manner, generate the desired outcomes and lead to up-gradation of the overall structure of the organization. The team members make provision of help and support to each other in providing solutions to various types of problems. Furthermore, when mutual understanding will be developed among them, they will contribute significantly in achieving the desired goals. When the individuals are working in a team, they are able to develop motivation towards the implementation of job duties. The main reason being, when the individuals are working in a team, they are having the opportunities of getting to know each other. They divide the job duties and responsibilities, so they are able to alleviate



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work pressure and complete them on time. Therefore, teamwork is regarded as effective and worthwhile.

The individuals in educational institutions at all levels, and various types of employment settings are required to form positive viewpoints in terms of various aspects. The individuals are usually different from each other in terms of caste, creed, race, religion, ethnicity, age, gender, educational qualifications, personalities, communities, categories and backgrounds. In order to incur the feeling of job satisfaction, it is necessary for the individuals to work in collaboration and integration with each other. One cannot carry out their job duties in isolation, hence, it is of utmost significance for them to form cordial and sociable terms and relationships with each other. When the job duties are complicated, one usually feels anxiety and stress. But when the individuals are working in a team, they are able to overcome the psychological problems of anxiety and stress. Help and support from other members will prove to be effectual and meaningful. The implementation of communication processes in an effective manner is regarded as the key in doing well in one's job duties, generating the desired outcomes, forming sociable terms and relationships with each other, promoting teamwork and leading to up-gradation of the overall structure of the organization. Therefore, through implementation of teamwork, one is able to incur the feeling of job satisfaction and overcome the psychological problems of anxiety and stress.

In order to be successful in the implementation of job duties, it is indispensable for the individuals to be well-equipped in terms of various methods, approaches, and procedures. In the present existence, one needs to make use of modern, scientific and innovative methods. Through promoting teamwork, one is able to generate information and put them into practice in a satisfactory manner. In some cases, when the job duties are complicated, one is meant to acquire support from team members. All the team members need to develop positive viewpoints in terms of each other. When someone has put into operation the job duties, which are not pleasant and appealing, in such cases, one needs to make provision of constructive criticism. When criticism is provided in a constructive manner, the individuals will put in wholehearted efforts to bring about improvements. In some cases, the projects are lengthy and complicated (Introduction to Project Work, 2010). When two or more members are working on a project, they will be assigned the job duties in accordance to their competencies and abilities. In this manner, they will be able to contribute in a significant way in alleviating work pressure. Therefore, through implementation of teamwork in an effective manner, one will be able to acquire information regarding strategies and approaches and alleviate work pressure.

**Understanding the Meaning and Significance of Teamwork**

When the individuals are working in a team, they have a common goal or objective to achieve. All the members of the team need to understand each other's viewpoints and perspectives and work in co-ordination with each other. In putting into operation various types of job duties and responsibilities, the individuals are required to promote teamwork. In order to put into operation job duties in a successful manner, there are various factors which need to be taken into account i.e., being well-equipped in terms of job duties and responsibilities; implementing the communication processes in an effective manner; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; forming positive viewpoints in terms of various factors as well as other individuals; promoting a normal mind-set; possessing the abilities to work under stress; generation of information regarding approaches and methods; development of mutual understanding with others; making use of modern, scientific and innovative methods;



ISSN 2076-9202

providing solutions to various types of problems; development of motivation; making wise and productive decisions and taking out time for all tasks and activities. Through communicating in an effective manner with team members, one is able to augment information in terms of these factors. Therefore, one can understand the meaning and significance of teamwork, through implementation of these factors in an appropriate manner.

In all levels of education from nursery schools till the university level education, the instructors and supervisors form the viewpoint that learning among students will be reinforced, when they will implement communication processes and develop interactive abilities with their classmates. The instructors and supervisors usually give them assignments, which are required to be carried out in a team. In this manner teamwork will be promoted. On the other hand, in various types of organizations, where the individuals are engaged in employment opportunities, the supervisors and employers give them assignments and projects, which they are required to work in a team. It is believed on a comprehensive basis that teamwork will lead to reinforcement of goodwill. In order to be successful in the implementation of various types of job duties, it is indispensable for the individuals to be well-equipped in terms of various types of strategies. The members of the team make provision of support and assistance to each other in doing well in their job duties, generating the desired outcomes and achieving the desired goals and objectives. The individuals are able to understand the meaning and significance of teamwork, when one is working with other members in a successful manner and are implementing job duties in an efficient manner.

**Benefits of Teamwork**

The instructors, supervisors and employers are forming the viewpoint that encouraging teamwork will be efficacious and useful to not only the students and employees, but also to the overall structure of the organization. The research studies have indicated, in schools, within classroom settings, the teachers encourage teamwork among students, when they are required to work even on minor assignments, which can be completed in about half an hour. When the individuals are working in a team, they are able to form positive viewpoints and concentrate on their job duties in a well-organized manner. Teamwork is regarded as favourable in doing well in one's job duties, generating the desired outcomes, forming sociable terms and relationships with each other, promoting well-being and goodwill and leading to up-gradation of the overall structure of the organization. The individuals are working on their projects and other assignments on an individual basis or in a team. When they will carry out teamwork, they will be able to generate information not only in terms of methods of putting into operation the job duties, but also other individuals. In order achieve the desired goals and objectives, one is required to encourage teamwork. The benefits of teamwork are stated as follows:

**Providing Solutions to various Types of Problems**

Problems are regarded as an integral part of the lives of the individuals. Within the course of pursuance of education and within the course of putting into operation one's job duties within employment settings, there are occurrence of problems and challenges. The team members make provision of help and support to each other in providing solutions to various types of problems. Furthermore, when mutual understanding will be developed among them, they will contribute significantly in achieving the desired goals. When the problems are severe and take place in a major form, the team leaders are approached. It is the job duty and



ISSN 2076-9202

responsibility of the team leaders to ensure the team members are putting into operation their job duties in a well-organized and satisfactory manner. Obtaining help and support from other members will prove to be effectual and meaningful. The implementation of communication processes in an effective manner is regarded as the key in providing solutions to various types of problems. When the individuals are making use of modern, scientific and innovative methods, one needs to obtain help, particularly when there are occurrence of any types of problems. Therefore, providing solutions to various types of problems is a benefit of teamwork, which is recognized by the individuals in educational institutions at all levels, and in various types of employment settings.

**Development of Motivation**

In order to be successful in the implementation of job duties, it is indispensable for the individuals to develop motivation (Clear, n.d.). When the individuals are working in a team, they are able to develop motivation towards the implementation of job duties. The instructors, supervisors and employers are giving rewards and opportunities to develop motivation among individuals. These will enable them to form positive viewpoints and their mind-sets will be stimulated towards learning and implementation of various types of job duties. Even when the job duties are complicated, then too the individuals need to form positive viewpoints. Apart from forming positive viewpoints, the individuals are required to put in wholehearted efforts towards the implementation of job duties. The main reason being, when the individuals are working in a team, they are having the opportunities of getting to know each other. Apart from implementing the communication processes in a formal manner, it is necessary to establish informal terms and relationships as well. They divide the job duties and responsibilities, so they are able to alleviate work pressure and complete them on time. Therefore, teamwork is regarded as effective and worthwhile. Therefore, development of motivation is a benefit of teamwork, which is indispensable to the individuals in all settings.

**Incurring the feeling of Job Satisfaction**

The individuals in educational institutions at all levels, and various types of employment settings are required to form positive viewpoints in terms of various aspects. They should be encouraged towards the achievement of goals and objectives. The individuals are usually different from each other in terms various factors. In order to incur the feeling of job satisfaction, it is necessary for the individuals to work in collaboration and integration with each other (Bourne, 2020). When the individuals are satisfied with their jobs, they will develop motivation as well as put in efforts to their best abilities in doing well in one's job, achieving the desired goals and in leading to up-gradation of the overall structure of the organization. One cannot carry out their job duties in isolation, hence, it is of utmost significance for them to form cordial and sociable terms and relationships with each other. When cordial and sociable terms and relationships are encouraged, the individuals are able to do well in their job duties and incur the feelings of pleasure and contentment. Therefore, incurring the feeling of job satisfaction is a benefit of teamwork, which is essential to the individuals in doing well in their job duties and in promoting well-being and goodwill.

**Overcoming the Psychological Problems of Anxiety and Stress**

When the job duties are complicated, one usually is overwhelmed by the psychological problems of anxiety and stress. One cannot carry out their job duties in isolation, hence, it is of utmost significance for them to form cordial and sociable terms and relationships with each other. When the individuals are working



*ISSN 2076-9202*

in a team, they are able to overcome the psychological problems of anxiety and stress. Obtaining help and support from other members will prove to be effectual and meaningful. The implementation of communication processes in an effective manner is regarded as the key in doing well in one's job duties, generating the desired outcomes, forming sociable terms and relationships with each other, promoting teamwork, leading to up-gradation of the overall structure of the organization and overcoming the psychological problems of anxiety and stress. Hence, through implementation of teamwork, one is able to overcome the psychological problems of anxiety and stress. One needs to ensure these psychological problems do not turn into impediments within the course of putting into operation the job duties and achieving desired goals and objectives. Therefore, overcoming the psychological problems of anxiety and stress is a benefit of teamwork, which has been acknowledged by the individuals on a comprehensive basis.

**Generation of Information regarding Approaches and Methods**

In order to be successful in the implementation of job duties, it is indispensable for the individuals to be well-equipped in terms of various approaches, and methods. In the present existence, with advancements taking place, one needs to make use of modern, scientific and innovative methods. These are to be utilized in an effective manner in various types of job duties within educational institutions at all levels, and various types of employment settings. Through promoting teamwork, one is able to generate information and put them into practice in a satisfactory manner. In some cases, when the job duties are complicated, one is required to acquire support from team members. All the team members need to develop positive viewpoints in terms of each other. When they are imparting information, they need to ensure, it is accurate and will prove to be meaningful and worthwhile to them. When the team members generate information regarding approaches and methods, they are able to incur the feelings of pleasure and contentment and develop motivation towards putting into operation job duties. Therefore, generation of information regarding approaches and methods is a benefit of teamwork, which has been regarded as useful to the individuals, particularly when they are determined towards enhancing their career prospects.

**Alleviating Work Pressure**

In some cases, the assignments, reports, projects and other types of job duties are lengthy and complicated. When two or more members are working on a project, they will be assigned the job duties in accordance to their competencies and abilities. Some members may have more job duties as compared to the others. But when the team members form the viewpoint that working in collaboration and integration with each other will be soothing, they will contribute in a significant manner in alleviating work pressure. In this manner, they will do well in their job duties, generate the desired outcomes, form sociable terms and relationships with each other, and lead to up-gradation of the overall structure of the organization. Even when the individuals are located at a distance and do not meet each other on a frequent basis, through the utilization of technologies, one is able to communicate with each other. When the individuals have any doubts, they need to clarify them on an immediate basis. Through implementation of teamwork in an effective manner, one will be able to acquire information regarding strategies and approaches and alleviate work pressure. Therefore, alleviating work pressure is a benefit of teamwork, which has been soothing to the individuals to a major extent.

**Doing Well in one's Job Duties**



*ISSN 2076-9202*

It is comprehensively understood, all individuals aspire to do well in their job duties in educational institutions at all levels, and in various types of employment settings (How to List Job Responsibilities in Job Listings, 2021). When the individuals recognize the meaning and significance of teamwork, they will generate information in terms of various aspects, which are necessary in doing well in one's job duties. In doing well in one's job duties, one needs to take into account various factors, i.e. being well-equipped in terms of job duties and responsibilities; implementing the communication processes in an effective manner; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; forming positive viewpoints in terms of various factors as well as other individuals; generation of information regarding approaches and methods; development of mutual understanding with others; making use of modern, scientific and innovative methods; providing solutions to various types of problems, and development of motivation. When the individuals are working in a team, they are able to carry out their job duties in a well-organized manner, generate the desired outcomes and lead to up-gradation of the overall structure of the organization. The team members make provision of help to each other in doing well in one's jobs. Therefore, doing well in one's job duties is a significant benefit of teamwork.

**Generating the Desired Outcomes**

When the individuals are wholeheartedly dedicated towards generation of the desired outcomes, they are required to recognize the meaning and significance of teamwork, and generate information in terms of various aspects. The various factors are, being well-equipped in terms of job duties and responsibilities; implementing the communication processes in an effective manner; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; forming positive viewpoints in terms of various factors as well as other individuals; generation of information regarding approaches and methods; development of mutual understanding with others; making use of modern, scientific and innovative methods; providing solutions to various types of problems; development of motivation; making wise and productive decisions and taking out time for all tasks and activities. Through teamwork, the individuals are able to generate information in terms of these factors. But it is of utmost significance for the individuals to implement these factors in a useful and satisfactory manner. Therefore, one is able to understand that generating the desired outcomes is a benefit of teamwork, which has been meaningful to the individuals in educational institutions at all levels, and in all types of employment settings.

**Promoting Well-being and Goodwill**

It is comprehensively understood that individuals are not only determined towards doing well in their job duties and enhancing career prospects, but they also are required to pay attention towards promoting well-being and goodwill. In the implementation of this task in an effective manner, the various factors which need to be taken into account are, being well-equipped in terms of job duties and responsibilities; implementing the communication processes in an effective manner; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; forming positive viewpoints in terms of various factors as well as other individuals; promoting a normal mind-set; possessing the abilities to work under stress; generation of information regarding approaches and methods; development of mutual understanding with others; making use of modern, scientific and innovative methods; providing solutions to various types of problems; development of motivation; making wise and productive



ISSN 2076-9202

decisions and taking out time for all tasks and activities. Through communicating in an effective manner with team members, one is able to augment information in terms of these factors. The team members make provision of help and support to each other in promoting well-being and goodwill. Therefore, promoting well-being and goodwill is regarded as one of the important benefits of teamwork.

**Leading to Up-gradation of the overall Structure of the Organization**

Leading to up-gradation of the overall structure of the organization is an important task towards which all the members of the organization need to focus upon, irrespective of their job positions in the hierarchy. In educational institutions at all levels, the educators and students need to work in co-ordination with each other in leading to up-gradation of the overall system of education. On the other hand, in various types of employment settings, the supervisors and employers are required to make provision of equal rights and opportunities to all the members. Furthermore, there should not be any type of discrimination on the basis of any factors. When the individuals are working in a team, they are able to carry out their job duties in a well-organized manner, generate the desired outcomes, achieve the desired goals and lead to up-gradation of the overall structure of the organization. The team members make provision of help and support to each other in providing solutions to various types of problems. In addition, when mutual understanding will be developed among them, they will contribute significantly in leading to up-gradation of the overall structure of the organization. Therefore, leading to up-gradation of the overall structure of the organization is a benefit of teamwork, in the achievement of which the members of the team put in their wholehearted efforts.

**The Factors highlighting the Role of Team Leaders**

In a team, there is a team leader. The team leaders need to ensure, the individuals are not overwhelmed by any problems and challenges. They are motivated and wholeheartedly dedicated towards the implementation of job duties. The team leaders are required to focus upon generating the desired outcomes. When the individuals are working in a team, they are able to carry out their job duties in a well-organized manner, generate the desired outcomes and lead to up-gradation of the overall structure of the organization. In order to achieve these goals and objectives, the team leaders make provision of help and support. The team leaders need to be well-versed in terms of job duties and responsibilities throughout their jobs. The factors highlighting the role of team leaders are, guiding the individuals in the right direction; managing resources in an effective manner; listening to grievances and providing solutions; identifying the limitations and bringing about improvements; ensuring the job duties are completed on time and creating an amiable working environment. These are stated as follows:

**Guiding the Individuals in the right Direction**

The team members usually make provision of help and support to each other in doing well in their job duties and in generating the desired outcomes. It is the job duty of the team leaders to make sure, the individuals are guided in the right direction. Furthermore, when mutual understanding will be developed among them, they will contribute significantly in achieving the desired goals. When the problems are severe and take place in a major form, the team leaders are approached. It is the job duty and responsibility of the team leaders to ensure the team members are putting into operation their job duties in a well-organized and satisfactory manner. Obtaining help and support from the team leaders and listening to them will prove to be effectual and meaningful. Therefore, guiding the individuals in the right direction is a key factor highlighting



ISSN 2076-9202

the role of team leaders.

**Managing Resources in an effective Manner**

The team leaders need to make sure the resources are managed in an effective manner. The various types of resources that need to be managed are, human, financial, material, and technical resources. One needs to be well-equipped in terms of various types of measures and approaches to make use of and manage resources in an effective manner. The resources are regarded as indispensable in doing well in one's job duties and in generating the desired outcomes. It is the job duty of the team leaders to ensure, the resources are managed in a well-ordered and satisfactory manner. When these resources are made use of in putting into operation various types of job duties, preparation of reports, assignments and projects, all the members of the team need to make use of them in a satisfactory manner. Wastage of resources should be prevented. Therefore, managing resources in an effective manner is a crucial factor highlighting the role of team leaders.

**Listening to Grievances and providing Solutions**

In educational institutions at all levels, and various types of employment settings, there are various types of grievances. The members of the team are normally required to undergo situations or deal with individuals, which in some cases may give rise to impediments within the course of putting into operation various job duties. It is the job duty of the team leaders to make sure, the individuals are not overwhelmed by any problems and challenges. When the grievances are experienced in a major form, they are likely to assume a form of barriers. The team leaders need to ensure, they listen to grievances and provide solutions to various types of problems in an adequate manner. When they are giving ideas and suggestions to the individuals, they ensure, they prove to be meaningful and useful to them. Therefore, listening to grievances and providing solutions is a fundamental factor highlighting the role of team leaders.

**Identifying the Limitations and bringing about Improvements**

Within the course of pursuance of education and within the course of putting into operation one's job duties within employment settings, there are occurrence of limitations. These take place within the course of implementation of job duties and achievement of desired goals and objectives. The team leaders make provision of help and support to each other in providing solutions to various types of problems. Furthermore, when mutual understanding will be developed among them, they will contribute significantly in achieving the desired goals and objectives. When the problems are severe and take place in a major form, the team leaders are approached. It is the job duty and responsibility of the team leaders to ensure the team members are putting into operation their job duties in a well-organized and satisfactory manner. Obtaining help and support from team leaders is necessary in identifying the limitations and bringing about improvements. Therefore, identifying the limitations and bringing about improvements is regarded as one of the significant factors highlighting the role of team leaders.

**Ensuring the Job Duties are completed on Time**

It is of utmost significance for the team leaders to ensure, the job duties are completed on time. In some cases, the job duties, projects and assignments are time consuming and lengthy. In such cases, the supervisors normally give more time. When the individuals are well-versed in terms of their job duties and responsibilities and make use of modern, scientific and innovative methods in the implementation of job



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duties in an effective manner. It is the job duty and responsibility of the team leaders to ensure the team members are well-equipped in terms of time management skills. These skills will enable the individuals to assign priorities. The tasks, which are more important as compared to the others are carried out first. When the job duties are completed on time, the individuals incur the feelings of pleasure and contentment. Therefore, ensuring the job duties are completed on time is regarded as one of the meaningful factors highlighting the role of team leaders.

**Creating an Amiable Working Environment**

In the creation of an amiable working environment, the various factors which need to be taken into account are, being well-equipped in terms of job duties and responsibilities; implementing the communication processes in an effective manner; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; forming positive viewpoints in terms of various factors as well as other individuals; promoting a normal mind-set; possessing the abilities to work under stress; generation of information regarding approaches and methods; development of mutual understanding with others; making use of modern, scientific and innovative methods; providing solutions to various types of problems; development of motivation; making wise and productive decisions and taking out time for all tasks and activities. The team leaders provide information in terms of these factors and put emphasis upon their reinforcement. Therefore, creating an amiable working environment is regarded as one of the essential factors highlighting the role of team leaders.

**Conclusion**

In educational institutions at all levels, and various types of employment settings, teamwork is promoted. Teamwork is when the individuals are required to work with other members in a team. The team can be of two or more individuals. The instructors, supervisors and employers are paying attention towards encouraging teamwork. The benefits of teamwork are, providing solutions to various types of problems, development of motivation, incurring the feeling of job satisfaction, overcoming the psychological problems of anxiety and stress, generation of information regarding approaches and methods, alleviating work pressure, doing well in one's job duties, generating the desired outcomes, promoting well-being and goodwill and leading to up-gradation of the overall structure of the organization. The factors highlighting the role of team leaders are, guiding the individuals in the right direction; managing resources in an effective manner; listening to grievances and providing solutions; identifying the limitations and bringing about improvements; ensuring the job duties are completed on time and creating an amiable working environment. Finally, it can be stated, when teamwork will be promoted, the individuals will be able to develop mutual understanding, promote well-being and goodwill and lead to up-gradation of the overall structure of the organization.

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# RELATION BETWEEN INFLATION AND UNEMPLOYMENT: A SCENARIO OF BANGLADESH

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**Abstract**

**Background:** Inflation and unemployment problem is a major problem all over the world specially in Bangladesh. The economic development of a country depends on these two macro-economic variables. There are different types of research studies have been conducted to analyze taking with this type of variables, however some of the analyses were only econometric analysis, time series analysis etc. whereas in this research, trying to investigate the causal effect relationship between inflation and unemployment of Bangladesh with forecasting and accuracy of forecasting.

**Methods:** The secondary data are collected from world bank (www.worldbank.org), which data are analyzed using different econometrics methods including time series analysis. To analyze the specified macro-economic data (inflation, unemployment), Jarque-Bera test is used for normality checking, stationarity is checking through Augmented Decay-Fuler Test, whether two variables are co-integrated or not-checking through Jonathon co-integration test and finally testing causal relationship between two variables using Granger Causality test and fitted ARIMA model is used to forecast the next year's inflation rate and unemployment rate and accuracy of forecasting using Machine Learning Technique.

**Results:** The lowest inflation rate was in 2001 (2%), whereas highest inflation rate is 2011 (14%), and the highest unemployment rate is in 2021, which is about above 6%. And the standard deviation of inflation rate (2.2432) is also more spreader than the unemployment rate (1.0016), the P-value of both variables are greater than 0.05 using Jarque Bera Test, their correlation is 0.14. After taking 2$^{nd}$ difference the p-value are 0.05 and 0.02211, For null hypothesis **r = 0, r =** 1, at 5% level of significance, critical value is 15.67, and 9.24, using Granger Causality test p-value = 0.01649 and finally draw forecasting plot to show Philip Curve relationship. The MSE=0.51, MAE = 0.57 for Random Forest Algorithm.

**Conclusion**

After analyzing findings show that both variables are normally distributed, there is very low positive correlation (0.14), non-stationary at two integrated level, co-integrated two each other, Granger Causality test shows that inflation causes unemployment but not vice-versa, and forecasting result also shows that there exist Philip Curve relationship-inverse relationship between inflation rate and unemployment rate of Bangladesh. Random Forest Algorithm is the best Algorithm among linear regression, decision tree, random forest, and K-Nearest Neighbors.



*ISSN 2076-9202*

**Keywords:** Inflation, Unemployment, Jonathon co-integration test, Granger Causality test, Linear regression, Decision tree, Random forest, and K-Nearest Neighbors, Forecasting.

## Introduction

Now-a-days in Bangladesh inflation and unemployment both are important economic indicator and macro-economic variables. These two variables are inter-related – long run or short run relationship. The high inflation and high unemployment both are problem of a country. Hence a country needed to control both variables simultaneously. In the short run when inflation is high the unemployment is low, however in long run Scientist Philip shows that there is a negative relationship-so identifying this problem in Bangladesh is the main issue. Is there a causal effect of inflation due to unemployment or vice versa? [7]

If this problem is solved for a country, which is benefitted economically. If inflation rate is low-people will buy of their essential needs sufficiently through their earning money. But otherwise population of a country faces serious problem to their life leading. On the other hand, high unemployment is also problem for a country because increasing unemployment results frustration, occurrence of suicide, involving criminals, drug-addicting and so on in young generation increased-society faced a dangerous problem. So, authority needed as early as possible to solve unemployment and inflation problem from a country.
To solve this problem is so hard because of some reasons-political reasons, lack of theoretical knowledge, insufficiency of data etc. To solve this issue, in this study have been trying to determine the casual relationship between inflation and unemployment and both econometric analysis and time series analysis will be conducted to complete this study.

At first descriptive statistics is used to get preliminary idea about two variables – observing that inflation rate is more spreader than unemployment rate. For testing normality, Jarque Bera test is used – showing results of normality of two variables, checking correlation – explain that very low positive relationship between two variables, also verifying whether they are co-integrated or not- results provide that both are co-integrated to each other, and final testing through Granger test conclude inflation causes unemployment but not vice versa.

There are different types of research studies have been conducted to analyze taking with this types of variables, however some of the analyses were only econometric analysis, time series analysis etc. whereas in this research, trying to investigate the causal effect relationship between inflation and unemployment of Bangladesh with forecasting and accuracy of forecasting using mean squared error and mean absolute error.

Inflation means rising price level of commodities and inflation rate is the percentage change in the rice level from the previous period. There are different types of inflation such as Creeping or Mild Inflation, Walking Inflation (3-7), Galloping and Hyperinflation for short duration, Stagflation, Deflation, Disinflation, Reflation etc. On the other hand, unemployment is the most important determinant of a country's standard of



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living. The people who would like to work but cannot find a job are not contributing to the economy's production of goods and services known as unemployment. The unemployment problem can be divided into two categories i.e. the long run problem and short run problem. The unemployment rate means the percentage of the labor force that is unemployed. And labor force means total number of workers including both employed person and unemployed person. There is an inverse relationship between inflation and unemployment - Phillips curve. [7]

Friedman showed that in the past several decades, professional views on the relation between inflation and unemployment have gone through two stages and are now entering a third. The first was the acceptance of a stable trade-off (a stable Phillips curve). The second was the introduction of inflation expectations, as a variable shifting the short-run Phillips curve, and of the natural rate of unemployment, as determining the location of a vertical long-run Phillips curve. The third is occasioned by the empirical phenomenon of an apparent positive relation between inflation and unemployment. The paper explores the possibility that this relation may be more than coincidental. [3]

S. Mukoka explained the causal relationship between inflation and unemployment of Zimbabwe. He/she showed that inflation does causal relation with unemployment and also unemployment does causal relation with inflation and suggested job creators to reduce unemployment resulting decline inflation rate. [8]

Selim et al. compared the effects of interest-free and interest-based monetary policy between two rates i.e. inflation rate an unemployment rate among 23 developed countries, which are divided into two groups. After analyzing the authors saw that 12 countries, where misery index (MI) is lawer compared to other group of countries. [9]

Sri et al. described the comparison between econometric modeling (ARIMA, SARIMA, ARCH, GARCH, TGARCH and EGARCH) and machine learning model (Logistic regression, SVM, Decision Tree, KNN, Random forest, regularization) with accuracy. Findings of their article showed that EGARCH and KNN are best for unemployment data in econometric modeling and machine learning model respectively, whereas EGARCH and SVM are best for inflation rate. [10]

## Methods and Materials

### Description of Data

The secondary data will be used for analyzing this study and will be collected from **www.worldbank.org** over a 30-years period, starting in 1991. Both econometric analysis and time series analysis will be conducted to determine the casual relationship between inflation and unemployment. To find out the relationship between two variables e.g. inflation and unemployment data - descriptive statistics, normality testing, correlation test, augmented dickey fuller unit root test, co-integration test, granger causality test, and fitted ARIMA model have been conducted to forecast future value.



*ISSN 2076-9202*

**Description of methods**

**Normality testing (Jarque Bera Test)**

The most common test for normality of residuals is the Jarque-Bera test. The Jarque-Bera test assumes a variable being normally distributed with zero skewness and kurtosis equals to three.[6]

The null hypothesis of the test is:

Null hypothesis: Inflation rate (IR) and Unemployment rate (UR) of Bangladesh, both are normality distributed.

Alternative hypothesis: Inflation rate (IR) and Unemployment rate (UR) of Bangladesh, both are not normality distributed. The univariate Jarque-Bera test statistic is

$$\text{Jarque-Bera} = \frac{n}{6}\left[\widehat{Skewness}^2 - \frac{(\widehat{Kurtosis}-3)^2}{4}\right] \sim \chi^2_{\alpha,2}$$

If Jarque-Bera is less than $\chi^2_{\alpha,2}$or p-value is greater than 0.05 then accept the null hypothesis - Inflation rate (IR) and Unemployment rate (UR) of Bangladesh, both are normality distributed.

**Correlation Test**

Using correlation test we would like to know the strengthens and direction of variables. If correlation is greater than 1 then the variables are positively correlated otherwise negatively correlated. And if r =1, perfectly positively correlated, 0.9 < r < 1, strongly correlated and if r < 0.5, so they are weakly correlated.

**Unit Root Test-Augmented Dickey-Fuller**

For testing stationarity Augmented Dickey-Fuller is used. The procedure of Augmented Dickey-Fuller is given below:

$$U_t = \rho U_{t-1} + \epsilon_t$$

$$\Rightarrow U_t - U_{t-1} = (\rho - 1)\ U_{t-1} + \epsilon_t$$

*and for inflation,*

$$I_t = \rho I_{t-1} + \epsilon_t$$

$$\Rightarrow I_t - I_{t-1} = (\rho - 1)\ I_{t-1} + \epsilon_t$$

Null hypothesis, Ho: $\rho = 1$, the series has unit root or the series is non-stationary.

Alternative hypothesis, Ho: $\rho \neq 1$, the series has not unit root or the series is stationary.

If calculated t statistic is less than ADF statistic or p-value is greater than 5% level of significance, then accept the null hypothesis - the series has unit root or the series is non-stationary. [1]

And if the series is non stationary then difference will be taken until the series is stationary. The first difference is $\Delta U_t = U_t - U_{t-1}$ and 2nd difference is $\Delta U_{t1}$ and so on.

**Co-integration Test (Johansen Co-integration test)**

If two variables both are nonstationary time series- stationary at the same integrated level – their linear combination is stationary –are called both time series are co-integrated.



ISSN 2076-9202

**Steps of conducting Johansen Co-integration test**

1. All the variables must be integrated at the same order that means the variables will be stationary after same integrating.
2. Optimal lag selection (4, max lag=7): the lag is selected using AIC method. The lowest value of AIC selected as a lag value.
3. Apply **Johansen** Co-integration test: here Trace test statistics is used to get results.

Null hypothesis, r = 0: No co-integration among variables.
Alternative hypothesis: There exist co-integration among variables.
Or
Null hypothesis, r = 1: At least one variable is co-integrated.
Alternative hypothesis: At least one variable is not co-integrated.

If trace statistic is less than 5% of critical value, then accept the null hypothesis otherwise rejected. [1]

**Granger Causality Test**

After testing co-integration, if variables are co-integrated then we need to justify is independent variables are causal exist for dependent variable or vice versa. Sometimes vice-versa relation not be exist all-time.

Null hypothesis: independent variable does not cause effect dependent variable.
Alternative hypothesis: Independent variable does cause effect dependent variable.
OR vice-versa.
Here series must be stationary and lag order is selected using AIC method.
As p value is greater than 0.05 so accept the null hypothesis that means independent variable does not cause effect with dependent variable.

**Auto-correlation Function (ACF) and Partial Auto-correlation Function (PACF)**

The auto-correlation function and partial auto-correlation function is used to choose the value of "q" and "p". The ACF at lag is

$$\rho_k = \frac{Covariance\ at\ lag\ k}{variance}$$

If we plot $\rho_k$ against k, the graph is known as population correlogram. The number of lags between inner line and outer line until the first lag is introverted is chosen "q" value.
And the PACF at lag is

$$\rho_k = \frac{Covariance\ at\ lag\ k}{variance}$$

If we plot $\rho_k$ against k, the graph is known as population correlogram. The number of lags between inner line and outer line until the first lag is introverted is chosen "p" value. [1]

**Autoregressive Integrated Moving Average (ARIMA)**



*ISSN 2076-9202*

Here the order of ARIMA model is (p, d, q), where p is the order of partial auto-correlation function, d is the difference operator until the time series is stationary, and q is the order of auto-correlation function. This fitted ARIMA model is used to forecast future values. [1]

**Linear regression**

Linear regression is a useful tool for predicting a quantitative response. It is still a useful and widely used statistical learning method in supervised learning. It measures the association between response variable and predictor variable.

Consider two models

$$Y = \beta_0 + \beta_1 X + \mathcal{E} \rightarrow \text{Simple linear regression model}$$

and

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_p X_p + \mathcal{E} \rightarrow \text{Multiple linear regression model. [2,4,5,11]}$$

**Decision tree**

Decision trees are a type of supervised Machine Learning (in which we will explain what the input is and what the corresponding output is in the training data) where data is continuously split according to a certain parameter.

- The tree can be explained by decision nodes and leaves.
- The decision nodes are where data are split.
- And the leaves are the decisions or final outcomes.

There are two types of decision tree

1. Classification tree (Y/N type)
2. Regression tree (continuous type)

In this research used Regression tree (continuous type). [2,4,5,11]

**Random forest**

In random forest algorithm regression problem is used-dividing original data set into subset and finding appropriate model for each subset. Final result is concluded based on averages of each sub set result. [2,4,5,11]

**K-Nearest Neighbors**

K-NN means K-Nearest Neighbors which is supervised machine learning algorithm. It can be used for both classification and regression problem. It classifies a data point based on how its neighbors are classified. It is also called a lazy learner algorithm because it does not learn from the training set immediately instead it stores the dataset and when it gets new data, then it classifies that data into a category. It works on a similarity measure. K is a parameter that refers to the number of nearest neighbors to include in the majority voting processes (classification) or averages(regression). In this research used Regression tree (continuous type).

Steps of K-NN algorithm:

1. Calculate the Euclidian distance from unknown data points.



ISSN 2076-9202

2. Sort all data points based on distance.
3. Take K-Nearest Neighbors based on Euclidian distance.
4. Among these K Neighbors, count the number of smallest/nearest data points in each category.
5. Assign the new data points to that category for which the number of neighbors are maximum.
6. Our model is ready for predict. [2,4,5,11]

## Result and Discussion

### Graphical representation of inflation (%) and unemployment (%)

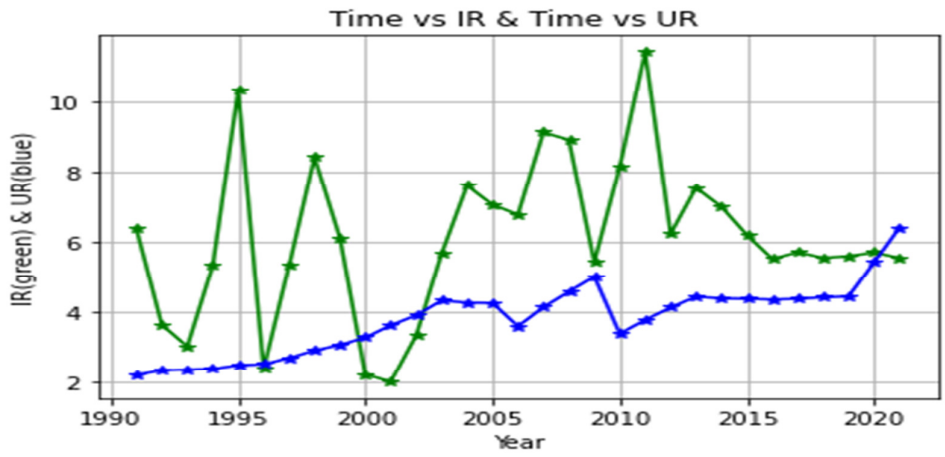


**Figure 01: Year vs Inflation & Year vs Unemployment**

The above line graph represents data about how the percentages of inflation and unemployment changed in Bangladesh over a thirty-year period, starting in 1991. Overall, it can be seen that inflation rate was less than unemployment rate in 2000, 2001, 2002, and 2021 respectively, and the lowest inflation rate was shown over the period in 2001 (2%), whereas highest inflation rate is 2011 (14%). On the other hand, except four years (2000, 2001, 2002, and 2021), in over the period unemployment rate was less than inflation rate but the highest unemployment rate is in 2021, which is about above 6%.

### Descriptive Statistics

**Table 01: Descriptive Statistics of the Unemployment Rate (UR) and Inflation Rate (IR)**

| Descriptive Stat. | Inflation Rate | Unemployment Rate |
|---|---|---|
| Mean | 6.09 | 3.79 |
| Median | 5.70 | 4.12 |
| Maximum | 11.40 | 6.40 |
| Minimum | 2.01 | 2.20 |
| Standard dev. | 2.2432 | 1.0016 |
| Skewness | 0.16 | 0.19 |
| Kurtosis | -0.21 | -0.31 |
| Observations | 31.00 | 31.00 |



ISSN 2076-9202

From table 1, see that the average inflation rate (6.09) is greater than the unemployment rate (3.79) and standard deviation of inflation rate (2.2432) is also more spreader than the unemployment rate (1.0016), observing that of inflation rate is widely spread out comparative to unemployment rate.

Now checking whether two variables are normality distributed or not. In this case Jarque Bera Test is used to check normality test of both two variables.

**Normality Testing (Jarque Bera Test)**

**Table 02: Normality Test using Jarque Bera Test**

| | **Inflation Rate** | **Unemployment Rate** |
|---|---|---|
| Chi-squared | 0.1525 | 0.22717 |
| df | 2 | 2 |
| P-Value | 0.926 | 0.8926 |

The table 2 provides that, the P-value of both variables are greater than 0.05 (at 5% level of significance), accept the null hypothesis - both variables (IR & UR) are normally distributed.

**Correlation Test**

**Table 03: Correlation analysis between two variables**

| | **Inflation Rate** | **Unemployment Rate** |
|---|---|---|
| **Inflation Rate** | 1 | 0.14 |
| **Unemployment Rate** | 0.14 | 1 |

The correlation tests show a positive relationship between the two macro-economic variables under study and strengthens (0.14) of them are so weak to each other.

**Unit Root Test-Augmented Dickey-Fuller Test**

**Table 04: Unit root test-ADF**

| | | | **After first difference** | | **After 2nd difference** | |
|---|---|---|---|---|---|---|
| | Inflation | Unemployment | Inflation | Unemployment | Inflation | Unemployment |
| Dickey-Fuller | **-1.6505** | **-1.4825** | **-3.121** | **-1.9** | **-4.5767** | **-4.013** |
| Lag order | **3** | **3** | **3** | **3** | **3** | **3** |
| p-value | **0.7073** | **0.772** | **0.142** | **0.6111** | **0.01** | **0.02211** |

**In the inflation rate data,** from table 04, see that since p-value = 0.7073 and after taking 1st difference p-value = 0.142 are greater than 0.05 in both cases that means null hypothesis is accepted – the inflation rate is non stationary time series whereas p-value = 0.01 is smaller than 0.05 that means null hypothesis is rejected – the inflation rate is stationary time series after taking 2nd difference.



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**In the unemployment rate data, since** p-value = 0.772 and p-value = **0.6111** in the first term and after taking first difference both are greater than 0.05 that means null hypothesis is accepted – the unemployment rate is also non stationary time series. But p-value = **0.02211** is smaller than 0.05 that means null hypothesis is rejected – the unemployment rate is stationary time series after taking 2nd difference.
As two macroeconomic variables are both non-stationary time series – need to test of co-integration.

**Co-Integration Test (Johansen Co-integration test)**

**Table 05: Johansen Co-integration test (Trace test)**

| | | **Critical Values** | | |
|---|---|---|---|---|
| | **Test Stat** | **10pct** | **5pct** | **1pct** |
| **r <= 1** | 2.378485 | 7.52 | 9.24 | 12.97 |
| **r = 0** | 17.3869 | 13.75 | 15.67 | 20.20 |

For null hypothesis **r = 0,** at 5% level of significance, critical value is 15.67, which is less than 17.389, reject the null hypothesis - so there exist co-integration between variables. Alternatively, for null hypothesis **r = 1,** at 5% level of significance, critical value is 9.24 which is greater than 2.378485, accept the null hypothesis - so there also exist co-integration between variables.

**Granger Causality Test**

To test granger causality optimum lag selection is needed. Here I have used AIC for selecting lag-the lowest AIC is highest lag.
Null hypothesis: Inflation rate does not cause effect unemployment rate.
Alternative hypothesis: Inflation rate causes effect unemployment rate. Or Vice versa.

**Table 06: Granger Causality Test**

| **Null hypothesis** | **Test statistic** | **P-Value** |
|---|---|---|
| Inflation does not cause unemployment | 19.361 | 0.01649 |
| Unemployment does not cause Inflation | 0.5839 | 0.7665 |

Since p-value = 0.01649 is less than 0.05 so reject the null hypothesis - conclude that inflation causes unemployment of Bangladesh. Alternatively, p-value = 0.7665 is greater than 0.05 so accept the null hypothesis that means unemployment does not cause inflation.



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**Time Series Analysis of Inflation rate and unemployment rate**

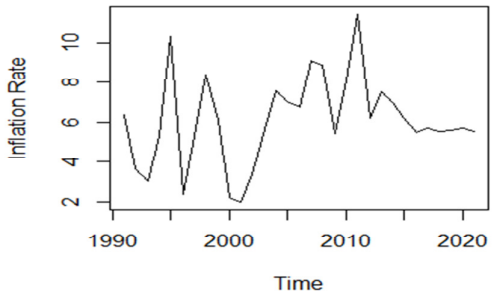



**Figure-02: Time series plot of IR**

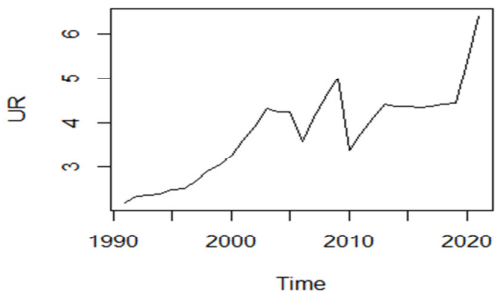



**Figure-03: Time series plot of UR**

Form this time series plot see that inflation rate is not stationary. Hence needed logarithmic transformation and differentiation to transform stationary data.

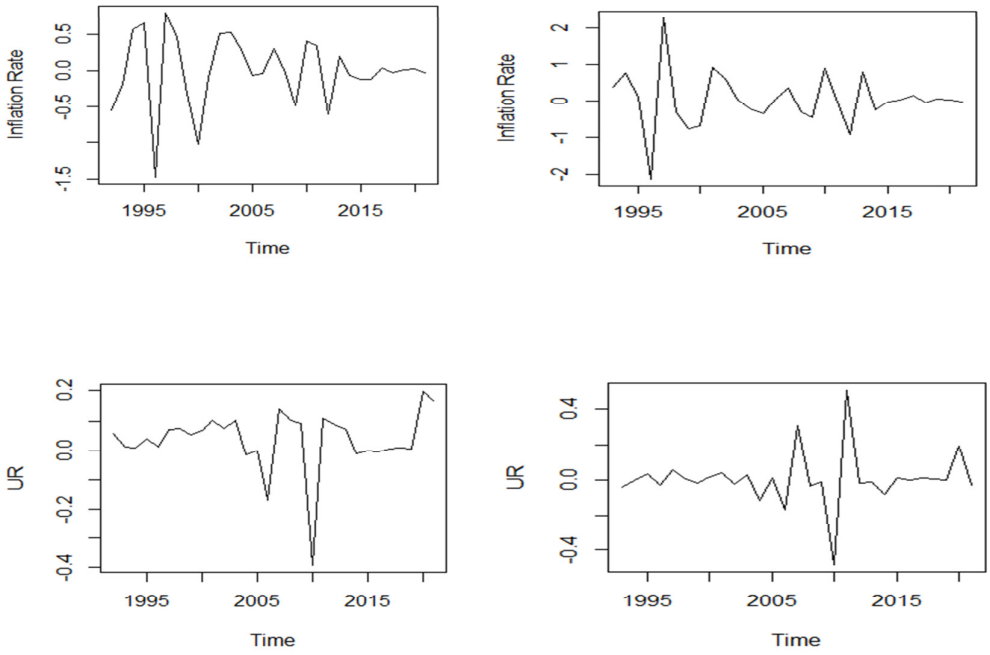



**Figure-04: first difference and 2nd difference of IR & UR**

After taking second difference IR and UR are stationary. To choose the value of p, q, the ACF, and PACF have applied here.



*ISSN 2076-9202*

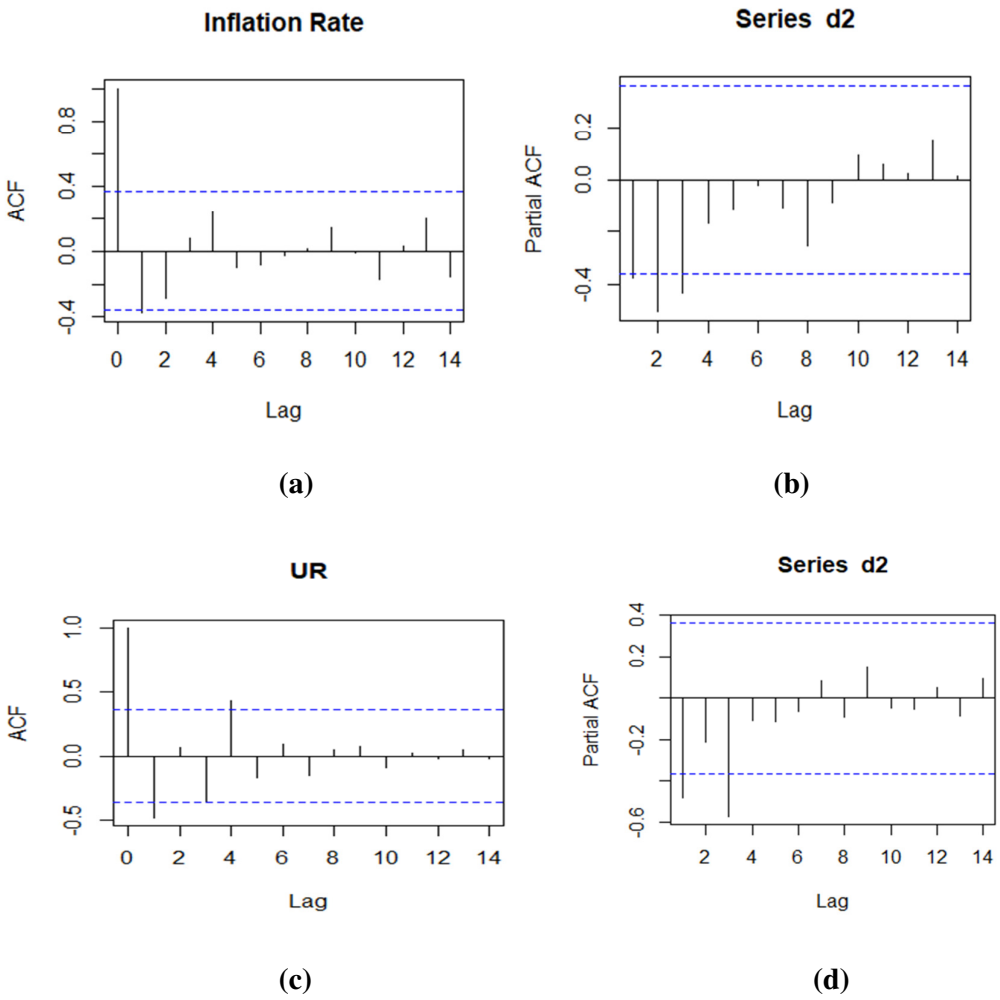



**Figure-05: ACF and PACF of IR and UR**

Here figure (a), (b) are the ACF and PACF of inflation rate and figure (c), (d) are the ACF and PACF of unemployment rate. The expiations are given table:

**Table-07: Fitted Model of inflation and unemployment**

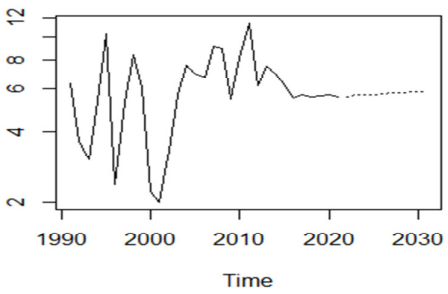
| | **Fitted ARIMA model for inflation** | **Fitted ARIMA model for unemployment** |
|---|---|---|
| **p** | **2** | **0** |
| **d** | **2** | **2** |
| **q** | **1** | **1** |

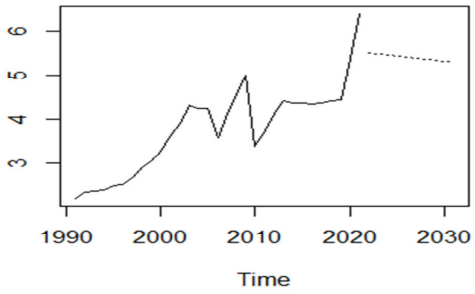
**Table-08: Forecasting inflation rate & unemployment rate for next 10 years**

| Year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|---|---|---|---|---|---|---|---|---|---|---|
| IR | 5.58 | 5.70 | 5.70 | 5.70 | 5.75 | 5.75 | 5.79 | 5.81 | 5.84 | 5.87 |
| UR | 5.51 | 5.49 | 5.46 | 5.44 | 5.41 | 5.39 | 5.37 | 5.34 | 5.32 | 5.29 |

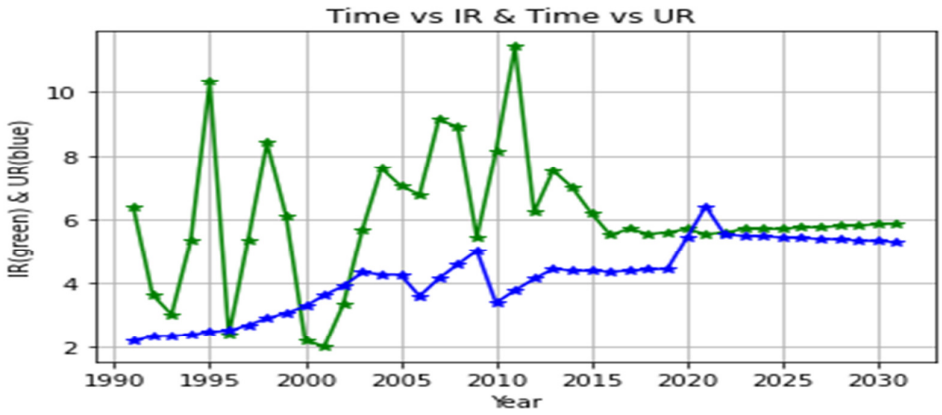


*ISSN 2076-9202*




(a) (b)




(c)

**Figure-06: Original time series plot with forecasting**

Form table-08 and figure-06, shows that forecasting inflation rate and unemployment rate for next 10 years (2022-2031). The fig-06 (c) represents the forecasting value also with original value, which conclude the Philip curve also-negative relationship between inflation rate and unemployment rate.

**Table-09: Forecasting accuracy using Machine Learning Algorithm**

| | Linear Regression | Decision Tree | Random forest | K-Nearest Neighbors |
|---|---|---|---|---|
| **MSE** | 0.64 | 0.81 | 0.51 | 0.85 |
| **MAE** | 0.71 | 0.66 | 0.57 | 0.73 |

From table-09, see that mean squared error (MSE) and mean absolute error (MAE) both are low with respect to random forest algorithm-so can say that random forest model is best regression model for predicting future value.



*ISSN 2076-9202*

## Conclusion

The lowest and highest inflation rate was shown over the period in 2001 (2%) and 2011 (14%). On the other hand, unemployment rate was less than inflation rate in whole period but the highest unemployment rate is in 2021, which is about above 6%.

The average inflation rate (6.09) is greater than the unemployment rate (3.79) and standard deviation of inflation rate (2.2432) is also more spreader than the unemployment rate (1.0016), observing that of inflation rate is widely spread out comparative to unemployment rate.

Both variables (IR & UR) are normally distributed based on Jarque Bera Test and there is a weak positive relationship between the two macro-economic variables under study and strengthens (0.14) of them are so weak.

The inflation rate and unemployment rate both are stationary time series after taking 2nd difference, so there exist co-integration between variables. And granger causality test shows that inflation causes unemployment of Bangladesh but not vice versa. And forecast of between two variables for next 10 years also represents that there is a Philip curve relationship. Random forest model is best regression model among machine Learning Technique for predicting future value.

## Declarations

### Availability of data and materials:

The secondary data will be used for analyzing this study and will be collected from https://datacatalog.worldbank.org. over a 30-years period, starting in 1991.

**Competing interest:** "The authors declare that they have no competing interests" in this section.

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**Author contributions:** All works of this study have done by only one author (Nasrin Khatun, Assistant Professor, Department of Statistics, Jahangirnagar University, Savar, Dhaka-1342)

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# IMPLEMENTATION OF EVALUATION METHODS IS VITAL IN IDENTIFYING THE PERFORMANCE OF INDIVIDUALS

**Dr. Radhika Kapur**

**Abstract**

In educational institutions at all levels and in various types of employment settings, the instructors and supervisors are required to make use of various types of evaluation methods. The primary objective of the evaluation methods is to find out how much the individuals have learned and understood. In some cases, the academic subjects and job duties are complicated, whereas, in other cases, they are simple and manageable. When the individuals do well, they receive positive feedback. On the other hand, when they experience setbacks, they need to put in efforts to bring about improvements. When the instructors, supervisors and employers are wholeheartedly dedicated towards their job duties. When they form the viewpoint that up-gradation of human resources will contribute in an efficacious manner in achieving professional goals and leading to enhancement of the overall structure of the organization, they will focus upon development of human resources. Hence, evaluation methods aim to identify the standing of the individuals. The evaluation methods are of various types and they need to be implemented in accordance to the job duties of the individuals. Therefore, one is able to understand on a comprehensive basis that implementation of evaluation methods is vital in identifying the performance of individuals. The main concepts that are taken into account in this research paper are, measures required in leading to up-gradation of the evaluation methods, benefits of evaluation methods and implementation of evaluation methods within employment settings.

**Keywords:** Educational Institutions, Employment Settings, Evaluation Methods, Feedback, Individuals, Measures, Performance

The evaluation methods are required to be put into practice in educational institutions at all levels (What is Evaluation? n.d.). When the students get enrolled in educational institutions or training centres, the instructors are not only imparting them information in terms of academic subjects and lesson plans, but they are putting into operation the teaching-learning methods and instructional strategies. These have the primary aims of leading to their effective growth and development and to find out how much the students have learned and understood. After teaching them academic subjects and lesson plans, the instructors are implementing evaluation methods. The main aim of evaluation methods is to find out how much the students have learned and whether the teaching-learning methods and instructional strategies have proven to be worthwhile or there is a need to bring about improvements. When the students do well, it signifies that the instructors are making use of teaching-learning methods and instructional strategies in an efficacious manner. On the other hand, when students experience setbacks in their performance, in such cases, the instructors need to ensure, they make use of teaching-learning methods and instructional strategies in a meaningful



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manner. Therefore, the evaluation methods prove to be useful in promoting student learning, enabling instructors to do well in their jobs and leading to up-gradation of the overall system of education.

When the different types of evaluation methods are put into operation in an effective manner, the instructors and the students benefit to a major extent. They render an important contribution in assessing the performance of the students and teaching methods implemented by instructors (How to Assess Student's Learning and Performance? 2021). In some schools, mainly in rural communities, the instructors are utilizing traditional methods in teaching students. On the other hand, in urban areas, they are making use of modern, scientific and innovative methods in the implementation of various types of teaching-learning methods and instructional strategies. The evaluation methods enable the instructors to identify the usefulness of modern, scientific and innovative methods. In educational institutions at all levels, the students are encouraged to participate in various types of academic activities. These academic activities not only facilitate understanding among students regarding academic subjects, but also contribute in a significant manner in honing of skills and abilities. The academic activities need to be in accordance to the grade levels of students, academic subjects, academic goals and the overall system of education. Therefore, it can be stated, the evaluation methods are advantageous in identifying of modern, scientific and innovative methods and academic activities that are implemented.

The instructors need to make sure the students are able to make use of their knowledge, skills and abilities not only in getting the degree and achieving educational goals, but they also make sure that the students are able to put into practice their knowledge in practical life as well. The instructors ensure that the students are not only able to acquire an efficient understanding of the academic subjects and lesson plans within the classroom settings, but make use of them in practical life as well. The evaluation methods contribute significantly in finding out whether the students are able to make use of their knowledge, skills and abilities in promoting their well-being. The evaluation methods are utilized to promote professional development of instructors and students. When the feedback given by the instructors is positive, the students feel elated. On the other hand, when the feedback is negative, the instructors and students are required to inculcate the traits of diligence, resourcefulness and conscientiousness to bring about improvements. These methods need to be put into operation on a regular basis. Therefore, when the instructors are well-aware in terms of evaluation methods, they will contribute in an effectual manner in promoting student learning and leading to up-gradation of the overall system of education.

**Measures required in leading to Up-gradation of the Evaluation Methods**

In educational institutions of all levels, it is the job duty of the instructors to put into practice the measures in leading to up-gradation of the evaluation methods on a regular basis. In some cases, the lesson plans are cumbersome. The students experience problems in acquiring their efficient understanding. In such cases, the instructors reiterate the concepts and make provision of all types of assistance to the students in enabling them to understand the concepts in a well-ordered manner and achieving educational goals. The various types of evaluation methods are, class assignments, homework assignments, tests, exams, debates, presentations, competitions, events, exhibitions, group discussions, reports, documents, projects and so forth. In order to lead to progression of the students and the overall system of education, the instructors need to make use of pioneering methods. The instructors need to be well-aware in terms of measures required in



ISSN 2076-9202

leading to up-gradation of the evaluation methods. Conducting research on regular basis through making use of various sources will contribute in a significant manner in generating information in terms of the measures. These are stated as follows:

**Inculcating the Traits of Morality and Ethics**

In educational institutions at all levels, when the instructors are putting into operation their job duties of teaching students and students are getting engaged in learning, they are working in collaboration and integration with each other (The Benefit of Evaluating your Development Process, 2021). Hence, in order to do well in one's job duties and generate the desired outcomes, one needs to inculcate the traits of morality and ethics. The instructors make provision of knowledge and understanding among students that inculcation of these traits will enable them to do well in their job duties and generate the desired outcomes. These traits are regarded as the key in acquiring an efficient understanding of the academic concepts, achieving educational goals and leading to up-gradation of the overall system of education. In the implementation of evaluation methods, these traits will facilitate in generation of the desired outcomes. Therefore, inculcating the traits of morality and ethics is a measure required in leading to up-gradation of the evaluation methods. This has been acknowledged by the instructors in promoting student learning and leading to their well-being and goodwill.

**Developing Motivation among Students**

When the students get enrolled in educational institutions or training centres, the instructors are not only imparting them information in terms of academic subjects and lesson plans, but they are encouraged towards participation in other academic activities as well. In some cases, the students are overwhelmed by number of problems and challenges, particularly, when they are required to take tests, exams, or participate in debates, competitions, events, and so forth. The instructors are required to develop motivation among students. Motivation is developed by giving of rewards and providing opportunities, which would be effectual in leading to enrichment of their career prospects. When instructors are making provision of any opportunities, they need to make sure they are efficacious and advantageous to the students and the overall system of education. Through development of motivation, their mind-sets will be stimulated and they will develop enthusiasm towards learning. In the implementation of evaluation methods, the students are motivated towards learning. Therefore, developing motivation among students is a measure required in leading to up-gradation of the evaluation methods. This has been recognized by the instructors in making provision of help and support to the students in enhancing their career prospects.

**Implementing Communication Processes in an Effective Manner**

The instructors and students are required to work in collaboration and integration with each other. For this purpose, the communication processes need to take place in an effective manner. The communication processes are regarded as the key towards implementation of job duties and achievement of desired goals. These take place in a verbal as well as in a written form. One needs to make use of polite language and decent words in putting into operation communication processes in an effective and satisfactory manner. Implementing communication processes in an effective manner is of utmost significance in acquiring an efficient understanding of the academic concepts, achieving educational goals and leading to up-gradation of the overall system of education. In the implementation of evaluation methods, the instructors and students



*ISSN 2076-9202*

are required to exchange ideas and viewpoints and discuss various other factors as well. Therefore, implementing communication processes in an effective manner is a measure required in leading to up-gradation of the evaluation methods. This has been put into operation by the instructors and students in doing well in one's job duties and in generating the desired outcomes.

**Encouraging Question and Answer Sessions**

Within the classroom settings, after the instructors have imparted information to the students in terms of academic subjects, they are required to encourage question and answer sessions. These sessions will enable the students to clarify their doubts and not be overwhelmed by any problems and difficulties. When the students are to participate in any types of evaluation methods, they need to clarify their doubts and problems and be well-prepared. Encouraging question and answer sessions is of utmost significance in acquiring an efficient understanding of the academic concepts, achieving educational goals and leading to up-gradation of one's career prospects. In the implementation of evaluation methods, the instructors need to make sure, the students are well-prepared. When they will be well-prepared, they will not be overwhelmed by the feelings of vulnerability and apprehensiveness. Furthermore, the students will lead to up-gradation of communication skills and interactive abilities. Therefore, encouraging question and answer sessions is a measure required in leading to up-gradation of the evaluation methods. This has been put into operation by the instructors on a regular basis, in case of students, belonging to all grade levels.

**Utilizing Modern, Scientific and Innovative Methods**

When the modern, scientific and innovative methods are put into operation in different types of evaluation methods in an effective manner, the instructors and the students benefit to a major extent. The various types of modern, scientific and innovative methods are, charts, graphs, maps, models, pictures, images, designs, technologies and so forth. One of the major benefits of these methods is that the tasks and activities can be carried out in a less time consuming and efficient manner. These methods render an important contribution in assessing the performance of the students and teaching methods implemented by instructors. In educational institutions of all levels, utilization of these benefits contribute in leading to up-gradation of the evaluation methods and the members develop motivation towards the implementation of job duties. Getting engaged in regular practice will enable the students to be well-equipped in terms of these methods. In putting into operation evaluation methods in a satisfactory manner, the instructors are required to make use of these methods. Therefore, utilizing modern, scientific and innovative methods is a measure required in leading to up-gradation of the evaluation methods. These have been put into operation by the instructors in all academic subjects.

**Obtaining Ideas and Suggestions from Individuals in Leadership Positions**

In order to achieve educational goals and lead to up-gradation of the evaluation methods, the instructors are required to obtain ideas and suggestions from individuals in leadership positions. The individuals in leadership positions are the heads, directors and principals. They have the primary aims of promoting well-being and goodwill of the members and leading to up-gradation of the overall system of education. Hence, they put in their best abilities towards putting into operation their job duties. There are organization of discussion meetings, where they make provision of ideas and suggestions to the other members. These contribute in an efficacious manner in leading to up-gradation of the evaluation methods and the overall



*ISSN 2076-9202*

system of education. The communication processes are regarded as the key in this case, when the leaders are giving ideas and suggestions, they should be listened to and put into operation in an appropriate manner. The communication takes place face to face, through phone, and exchanging emails and messages. Therefore, obtaining ideas and suggestions from individuals in leadership positions is a measure required in leading to up-gradation of the evaluation methods. This has been regarded as efficient and worthwhile in educational institutions at all levels.

**Conducting Research on regular Basis**

Conducting research on regular basis through making use of various sources will contribute in a significant manner in generating information in terms of various aspects. From nursery schools till the university level education, the instructors need to be well-equipped in terms of not only the academic subjects and lesson plans, teaching-learning methods and instructional strategies, but also the evaluation methods. Hence, in order to augment their knowledge, skills and abilities, one needs to conduct research on regular basis. The various sources that are made use of are, books, articles, projects, reports, newspapers, magazines, other reading materials, technologies and internet. The utilization of these sources will render an important contribution in honing information among instructors and students in terms of various subjects, concepts and factors. In putting into operation evaluation methods in a satisfactory manner, the instructors are required to conduct research on regular basis. Therefore, conducting research on regular basis is a measure required in leading to up-gradation of the evaluation methods, which have been put into operation by the instructors and students, particularly when they are required to augment their knowledge and understanding in terms of various subjects and concepts.

**Bringing about Changes**

With advancements taking place and with the advent of modernization and globalization, one needs to bring about changes in the evaluation methods. When changes are to be made, it needs to be ensured, they are approving and meaningful to the students in augmenting their learning. In case of any problems and difficulties, the instructors make provision of help and assistance to the students in doing well in their job duties and in generating the desired outcomes. When changes are brought about in the evaluation methods, the students should not feel anxious. When they develop positive thinking and inculcate the traits of diligence, resourcefulness and conscientiousness, they are able to make efficient use of various types of evaluation methods in doing well in one's job duties and in achieving academic goals. In putting into operation evaluation methods in a satisfactory manner, the instructors are required to bring about changes. Therefore, bringing about changes is a measure required in leading to up-gradation of the evaluation methods. This has been put into operation by the instructors and students, particularly when they are determined towards implementation of academic activities in an appropriate manner and in leading to up-gradation of the overall system of education.

**Providing Feedback in an Appropriate Manner**

When the feedback given by the instructors is positive, the students feel elated. On the other hand, when the feedback is negative, the instructors and students are required to inculcate the traits of diligence, resourcefulness and conscientiousness to bring about improvements. The instructors need to ensure, feedback is provided in a verbal as well as in a written manner through utilization of appropriate and suitable



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ways. These ways need to be put into operation on a regular basis throughout their jobs. Hence, when the instructors are well-aware in terms of ways of providing feedback in an appropriate manner, they will contribute in an effectual manner in enabling the students to know how they are performing. In this manner, they will lead to up-gradation of the overall system of education. Feedback enables the instructors to find out whether evaluation methods have been put into operation in an appropriate manner or there is a need to bring about improvements. Therefore, providing feedback in an appropriate manner is a measure required in leading to up-gradation of the evaluation methods. This has been put into operation by the instructors in terms of various types of evaluation methods.

**Promoting Teamwork**

When the students are required to work on assignments or projects or prepare reports and documents, the instructors encourage the students to work in a team. It is encouraged in educational institutions at all levels. In order to develop motivation towards learning and to do well in academic tasks and activities, it is indispensable for the students to form cordial and sociable terms and relationships with each other and the instructors. This is facilitated through promoting teamwork. When they are working in a team, they have assistance available from the other members in the implementation of job duties in a satisfactory manner and in generating the desired outcomes. The team can be formed of two or more individuals. One of the major benefits of teamwork is, the job duties get divided among team members. Furthermore, they are able to obtain help from each other in providing solutions to various types of problems and difficulties. In putting into practice various types of evaluation methods in a satisfactory manner, the instructors need to encourage teamwork among students. Therefore, promoting teamwork is a measure required in leading to up-gradation of the evaluation methods. This measure is useful in developing motivation among students, required in doing well in their studies and in achieving educational goals.

**Benefits of Evaluation Methods**

From nursery schools till the university level education, the instructors need to be well-equipped in terms of evaluation methods (Sawchuk, 2015). When they are putting them into operation, they need to make sure they are efficacious and advantageous to the students and the overall system of education. With advancements taking place and with the advent of modernization and globalization, one needs to bring about changes in the evaluation methods. When changes are to be made, it needs to be ensured, they prove to be favourable and meaningful to the students in augmenting their learning. In case of any problems and difficulties, the instructors make provision of help and assistance to the students in doing well in their job duties and in generating the desired outcomes. The benefits of evaluation methods are, identifying the academic performance of the students; recognizing the teaching-learning methods and instructional strategies; ascertaining the usefulness of modern, scientific and innovative methods; detecting the utilization of various types of academic activities; honing the abilities to utilize these methods in practical life and promoting professional development of instructors and students. These are stated as follows:

**Identifying the Academic Performance of the Students**

When the students get enrolled in educational institutions or training centres, the instructors are not only imparting them information in terms of academic subjects and lesson plans, but they are putting into operation the teaching-learning methods and instructional strategies that have the primary aim of leading to



ISSN 2076-9202

their effective growth and development. After teaching them academic subjects and lesson plans, the instructors are implementing evaluation methods. The aim of these methods is to identify the academic performance of the students. Apart from academic performance, the instructors are required to find out how much the students have learned and understood. When the students achieve good grades, the evaluation methods are useful in making provision of information to the instructors and students that they are proceeding in the right direction and will be successful in putting into operation various tasks and activities. Therefore, identifying the academic performance of the students is regarded as one of the crucial benefits of evaluation methods. This has been recognized by the instructors in promoting student learning and leading to their well-being and goodwill.

**Recognizing the Teaching-Learning Methods and Instructional Strategies**

The main aim of evaluation methods is to find out how much the students have learned and whether the teaching-learning methods and instructional strategies have proven to be worthwhile or there is a need to bring about improvements. When the students do well, it signifies that the instructors are making use of teaching-learning methods and instructional strategies in an efficacious manner. On the other hand, when students experience setbacks in their performance, in such cases, the instructors need to ensure, they make use of teaching-learning methods and instructional strategies in a meaningful manner. Hence, the evaluation methods prove to be useful in promoting student learning, enabling instructors to do well in their jobs and leading to up-gradation of the overall system of education. They contribute in a significant manner in recognizing the usefulness of teaching-learning methods and instructional strategies. Therefore, recognizing the teaching-learning methods and instructional strategies is regarded as one of the indispensable benefits of evaluation methods, which have been acknowledged by the instructors in educational institutions at all levels.

**Ascertaining the Usefulness of Modern, Scientific and Innovative Methods**

When the modern, scientific and innovative methods are put into operation in different types of evaluation methods in an effective manner, the instructors and the students benefit to a major extent. One of the major benefits of these methods is that the tasks and activities can be carried out in a less time consuming and efficient manner. These methods render an important contribution in assessing the performance of the students and teaching methods implemented by instructors. In some schools, mainly in rural communities, the instructors are utilizing traditional methods in teaching students. The modern, scientific and innovative methods are not in a well-developed state. On the other hand, in urban areas, in educational institutions at all levels, they are making use of modern, scientific and innovative methods in the implementation of various types of teaching-learning methods and instructional strategies. The evaluation methods enable the instructors to identify the usefulness of modern, scientific and innovative methods. Therefore, ascertaining the usefulness of modern, scientific and innovative methods is regarded as one of the vital benefits of evaluation methods, in terms of which, the instructors are augmenting their knowledge and understanding on a regular basis.

**Detecting the Implementation of various Types of Academic Activities**

In educational institutions at all levels, the students are encouraged by the instructors to participate in various types of academic activities. The different types of academic activities are, debates, assignments,



ISSN 2076-9202

competitions, events, exhibitions, group discussions, reports, documents, projects and so forth. These academic activities not only facilitate understanding among students regarding academic subjects, but also contribute in a significant manner in honing of skills and abilities. The academic activities need to be in accordance to the grade levels of students, academic subjects, academic goals and the overall system of education. Hence, it can be stated, the evaluation methods are advantageous in identifying various types of academic activities that are implemented. These need to be put into operation on a regular basis. When the students participate in these activities, they develop motivation towards learning and achievement of educational goals. Furthermore, they are able to overcome the feelings of vulnerability and apprehensiveness. Therefore, detecting the implementation of various types of academic activities is regarded as one of the essential benefits of evaluation methods, in terms of which, the instructors need to be aware throughout their jobs.

**Honing the Abilities to utilize these Methods in practical Life**

The instructors need to make sure the students are able to make use of their knowledge, skills and abilities not only in acquiring an efficient understanding of the academic subjects and lesson plans, getting the degree and achieving educational goals, but they also make sure that the students are able to put into practice their knowledge in practical life as well. For example, when individuals are pursuing a computer training program, they are not only making use of their computer skills to do well in their academic performance, but also for other purposes in practical life. The instructors ensure that the students are not only able to acquire an efficient understanding of the academic subjects and lesson plans within the classroom settings, but make use of them in practical life as well. The evaluation methods contribute significantly in finding out whether the students are able to make use of their knowledge, skills and abilities in promoting their well-being. Therefore, honing the abilities to utilize these methods in practical life is regarded as one of the meaningful benefits of evaluation methods, which the instructors are putting into practice on a regular basis in educational institutions at all levels.

**Promoting Professional Development of Instructors and Students**

The evaluation methods are utilized to promote professional development of instructors and students. The reason being, when the instructors will carry out their job duties in a well-ordered and satisfactory manner and students will do well in their job duties, they will contribute in an efficacious manner in leading to their professional development. When the feedback given by the instructors is positive, the students feel elated. On the other hand, when the feedback is negative, the instructors and students are required to inculcate the traits of diligence, resourcefulness and conscientiousness to bring about improvements. These methods need to be put into operation on a regular basis. Hence, when the instructors are well-aware in terms of ways of promoting professional development of students, they will contribute in an effectual manner in promoting student learning and leading to up-gradation of the overall system of education. Therefore, promoting professional development of instructors and students is regarded as one of the important benefits of evaluation methods, which the instructors are focusing upon when they are imparting information to the students in terms of academic subjects and lesson plans.

**Implementation of Evaluation Methods within Employment Settings**

In various types of employment settings as well, there are implementation of various types of



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evaluation methods. The individuals in leadership positions are vested with the authority and responsibility of implementing these methods on a regular basis. They are normally implemented in case of all employees. When they are implementing these methods, they need to ensure, they prove to be efficacious and meaningful in achieving academic goals and leading to up-gradation of the overall structure of the organizations. The various types of evaluation methods are, assignments, debates, presentations, group discussions, reports, documents, projects and so forth. In order to lead to progression of the employees and the overall structure of the organizations (Teacher Evaluation, 2020), instructors and supervisors need to make use of pioneering and scientific methods in honing these methods. The instructors and supervisors need to be well-aware in terms of measures required in leading to up-gradation of the evaluation methods. When the teachers get recruited in educational institutions, the principals or other individuals put into operation the evaluation methods. In this manner, they will come to know how they are performing. Therefore, it can be well-understood, when employees are evaluated by their supervisors or employers, they are able to generate adequate awareness in terms of their performance.

In this case, there are various factors that need to be taken into account, i.e. augmenting knowledge, competencies and abilities; making wise and productive decisions; implementing time management skills; organizational goals and objectives; needs and requirements of the employees; job duties and responsibilities of the employees; inculcating the traits of morality and ethics; implementing the traits of diligence, resourcefulness and conscientiousness; implementing ways of developing motivation among employees; implementing communication processes in an effective manner; encouraging question and answer sessions; utilizing modern, scientific and innovative methods; listening to the grievances of the employees and providing meaningful solutions and making provision of help and support to them to do well in their job duties and generate the desired outcomes. When these factors will be put into operation in an appropriate manner, one will be able to not only do well in their job duties and achieve organizational goals, but one will be able to contribute in a significant manner in leading to up-gradation of the evaluation methods. Therefore, in the implementation of the evaluation methods in an effective and worthwhile manner, all the members of the organization, irrespective of their job positions in the hierarchy need to be well-equipped in terms of these factors.

**Conclusion**

The evaluation methods are required to be put into practice in educational institutions at all levels. When the students get enrolled in educational institutions or training centres, the instructors put into operation these methods to assess the performance of the students and the usefulness of teaching-learning methods and instructional strategies. Measures required in leading to up-gradation of the evaluation methods are, inculcating the traits of morality and ethics, developing motivation among students, implementing communication processes in an effective manner, encouraging question and answer sessions, utilizing modern, scientific and innovative methods, obtaining ideas and suggestions from individuals in leadership positions, conducting research on regular basis, bringing about changes, providing feedback in an appropriate manner, and promoting teamwork. The benefits of evaluation methods are, identifying the academic performance of the students; recognizing the teaching-learning methods and instructional strategies; ascertaining the usefulness of modern, scientific and innovative methods; detecting the



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implementation of various types of academic activities; honing the abilities to utilize these methods in practical life and promoting professional development of instructors and students. Evaluation methods are implemented within employment settings as well. Finally, it can be stated, when evaluation methods will be implemented in a satisfactory manner, the instructors will contribute in promoting student learning, facilitating achievement of educational goals and leading to enrichment of the overall system of education.

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