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DEPARTMENT OF BUSINESS ADMINISTRATION AND
INFORMATION SYSTEMS

THE EFFECT OF STRESS ON EMPLOYEES' PRODUCTIVITY IN MANUFACTURING
SECTOR: A CASE STUDY OF META ABO BREWERY S.C

BY

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ADDIS ABABA ETHIOPIA

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DECLARATION

I declare that this Project entitled “**The Effect of Stress on Employees’ Productivity in Manufacturing sector: A Case study of Meta Abo Brewery share company**” is my original work and has not been submitted or presented at any university. I have completed this project independently with the guidance and support of my advisor Wasihun Mohamed (PhD) and that all sources of materials used for the thesis have been properly acknowledged on reference section .

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List of Abbreviations

WHO: World Health Organization

ILO: International Labor Organization

S.C : share company

HSE :Health and safety Executives

P-E: person environment

SPSS : statistical package for social science

BGI: Brasseries et Glacières Internationales

G.C : Gregorian Calender

ANOVA – analyses of Variance

Abstract:

This Project work examined the effect of stress on employee productivity in selected manufacturing firms in Ethiopia, Meta Abo Brewery. The Person-environment (PE) Fit theory was employed as the theoretical framework. The population of the study consisted of four hundred employees of Meta Abo Brewery. The statistical formula employed to determine the sample size of 100. The data generated were analyzed using descriptive statistics, correlation, and multiple regression analysis at a 5% level of significance. The results showed that work-family interaction exerts a significant negative influence on employee productivity, organizational climate has a significant negative effect on employee productivity and Role ambiguity has also a significant effect on employee productivity. The study, therefore, concluded that workplace stress has a significant negative effect on employee productivity in manufacturing firm – Meta Abo Brewery. The results of the regression analysis shows that the three independent variables (organizational climate, role ambiguity, work family interaction) of the study explains 35% ($R^2=0.35$) of the dependent variable (the productivity of employees).

The study among other things recommended that management should encourage employees to spend time with their family and that they should be allowed to go home at a reasonable time, create favorable work climate and establish a policy that will have good role clarity plans, which can relieve the employees from the future role ambiguity.

Key words: *Organizational climate, role ambiguity, lack of motivation, work family interaction, Employees productivity.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The term stress has been defined by many scholars. Stress represents a situation where a person is under pressure and does not have sufficient ability to cope with it. Jayashree (2010) perceive stress as a physical or emotional factor that causes bodily or mental tension, and maybe a factor in disease causation.

According to Ekienabor (2016), for years stress was described and defined in terms of external, usually, physical forces acting on an individual. Later, it was suggested that the individual's perception of, and response to stimuli or events were a very important factor in determining how that individual might react, and whether or not an event will be considered stressful. These authors further contend that most researchers acknowledged that both external and internal factors affect stress. They view stress as a response to external or internal processes, which reach levels that strain physical and psychological capacities beyond their limits.

Work stress is a subject which is difficult to stay away from. It is an excessive cost of doing business that influences both worker and corporate benefits. Stress is the demand of the day and it's exceptionally difficult to be totally without Stress. Work Stress or Work related Stress has turned into a popular expression and a late estimate is that stress results in lost work efficiency because of absence from work.

According to (ILO,2016) Work-related stress is determined by work organization, work design and labor relations and occurs when the demands of the job do not match or exceed the capabilities, resources, or needs of the worker, or when the knowledge or abilities of an individual worker or group to cope are not matched with the expectations of the organizational culture of an enterprise.

The workplace factors that can cause stress are called psychosocial hazards. The ILO defined psychosocial factors (hazards) in 1984, in terms of “interactions between and among work environment, job content, organizational conditions and workers’ capacities, needs, culture, personal extra-job considerations that may, through perceptions and experience, influence health, work Productivity and job satisfaction”.

A negative interaction Work related conditions and human factors may lead to emotional disturbances, behavioral problems, biochemical and neuro-hormonal changes, presenting added risks of mental or physical illness. On the contrary, when working conditions and human factors are in balance, work creates a feeling of mastery and self-confidence; increases motivation, working capacity and satisfaction; and improves health.

The term productivity was applied for the first time by François Quesnay, the mathematician and economist who was an adherent of physiocracy school. He believes that the authority of any government relies on increasing productivity in the agriculture sector by proposing the economic table. Productivity entails maximization of the use of resources, human force and schemes scientifically to decrease expenses and increase employees, managers and consumer satisfaction.

Mathis and Jackson (2000) define productivity as a measure of the quantity and quality of work done considering the cost of the resource it took to do the work. Productivity refers to the real output per unit of labor. It is a powerful driver of international capital flows. Its levels seem to be the highest in the United States as compared to the Euro area, because of higher employment rates in the U.S. (Skoczylas&Tissot, 2005).

Job Productivity can be viewed as an activity in which an individual is able to accomplish the task assigned to him/her successfully, subject to the normal constraints of reasonable utilization of the available resources. Overall, the employees are valuable asset to organizations. A good Productivity of the employees of an organization leads towards a good organizational Productivity thus making an organization more productive, successful and effective and the vice versa.

1.2 Background of the organization

Meta Abo Brewery s.c established in 1967 G.C by the Ethiopian government with annual capacity of 50,000hl and hired 128 employees, currently the brewery operators at 1.2mhl per annum capacity with employee's four hundred plus permanent and over thousand contractors.

Diageo acquires Meta in 2012, Diageo is rated in top 10 category for its employee empowerment and productivity globally, as world class organization Diageo believes in enriching people's jobs and giving authority to exercise control over and take responsibility for outcomes of efforts.

Meta as manufacturing site has been producing and distributing its products to consumers over half a century, connecting friends and families with its refreshing beer and draught.

Diageo owned Meta faced challenge over tax, market challenges and declined Productivity across its operations for years. As outlined by the capital magazine, Meta Abo brewery, which is based in Sebeta, Oromia region has about 3.7 billion birr in government tax debt starting from 2017.

In April 2022, BGI acquires Meta at a 60 birr per share value, which according to documents is a fizzled-out price point from the prior evaluation of 1000 birr per share value. This comes at a time when the factory was at a tip of crisis which is indicative of the nosedive devaluation of the company that has shrunk by 94 percent.

Following the acquisition, Meta Abo joins BGI's other five breweries with a combined production capacity of 5.2 million Hectoliters of beer annually which will now reach 6.4 million Hectoliters.

1.3 Statement of the problem

Many organizations, specifically manufacturing firms in the world are observing a shocking increase in the negative effects of stress on employee productivity (Henry & Evans, 2008). Most organizations, to accomplish higher productivity, end up saddling employees with an overload of work to meet deadlines, and this might have psychological and physical effects on the employees which may result in something contrary to what these organizations want to achieve.

According to International Labor organization (ILO,206), The related direct and indirect costs are only beginning to be quantified. Still, some developed countries assess the economic impact of work-related stress, associated behavioral patterns and mental health disorders.

According to Great Britain HSE Labor force study, in 2020/21 there were an estimated 822,000 workers affected by work-related stress, depression or anxiety. This represents 2,480 per 100,000 workers. In 2020/21 work-related stress, depression or anxiety accounted for 50% of all work-related ill health.

In the recent years prior to the coronavirus pandemic, the rate of self-reported work-related stress, depression or anxiety had shown signs of increasing.

According to Capital Magazine (2011), Meta Brewery is the second largest beer company in Ethiopia with a volume share of approximately 15%. From its brewery near the Ethiopian capital Addis Ababa, it produces and distributes its flagship national lager brands Meta and Meta Premium.

However, on March 23, 2022, Capital Magazine posts Meta Brewery has faced declined performance and announced for sale. Girmachew Mandefro, chairman of the trade union of Meta which has about 340 members from the total of 500 employees informed Capital that the management teams of Meta from Diageo have left the company without giving clear information about the new owners and their agenda for its employees.

Organizational decline is related to the deterioration of the resource base and performance of an organization for a sustained period of time. Despite there are more than ten beer companies in Ethiopia, the decline of the second largest brewery in the market is a point of attract for this project to study the Effect of stress on Employee productivity.

1.4 Research Question

This study has answered the following questions:

- What is the effect of organizational climate on employee productivity?
- What is the effect Role Ambiguity on employee productivity?
- What is the effect of Work – Family interaction employee on employee productivity?

1.5 Project Research Objective

1.5.1 General Objective

The General objective of this Project is to examine the effects of stress on employees' productivity at Meta Abo brewery share company.

1.5.2 Specific Objectives

The key specific objectives of this research are as follows:

- To Assess the effects of Organizational climate on employee's productivity
- To determine the effects of Role Ambiguity on employee's productivity
- To determine the effects of work – Family interaction on employee's productivity

1.6 Scope of the Study

This Project work will focus on Meta Abo Brewery S.C to examine the effect of stress on employee's productivity due to time constraint, confidentiality of data to work with more than one brewery, location of breweries and also availability of correspondents.

The study will also cover only the Supply operation Side of the brewery as the demand side employees spent most of their time on field sales activities which makes it difficult to get response.

1.7 Limitation of the Study

Manufacturing sector in Ethiopia is growing and cover wide area but this project will be taking one site as study scope to study effect of organizational climate, Role Ambiguity and work family interaction with its impact on employee productivity

The study is a quantitative research type. Organizational climate, Role ambiguity and work family interaction are the independent variables used in this study and the only dependent variable is employees 'productivity.

1.8 Significance of the Study

The benefit of this project is clear; because it will generate comprehensive information on stress and its effect on employees for the brewery to understanding overall impact of stress on productivity of the company and also can serve as input for future studies in this area.

1.9 Organization of the study

This Project work will be presented chapters. First chapter covers background of the study, problems statement, objectives, scope, limitations, significance of the project. The second chapter will focus on literature reviews and conceptual framework. The third chapter will outline the methodologies of the study and fourth chapter will present findings. Fifth chapter summaries findings, conclusion, limitations and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literatures from different authors in accordance to the objectives of the study. The chapter is sub-sectioned in the following: theoretical review, conceptual framework, and review of related studies.

2.1 Theoretical Framework

There are several existing theories that provide propositions as to how stress can occur within workplace settings.

2.1.1 Transactional theories of work-related stress

According to the transactional theory, the experience of stress in workplace is related with exposure to specific workplace situations, and an individual's appraisal of difficulty in handling. This experience is commonly accompanied by efforts to handle with the underlying problem and by variations in behavior and psychological functioning (Goh et.al., 2018, Chinyere et.al., 2019).

The transactional theory of work stress recognizes two types of appraisals that people tend to make. The first type is the primary appraisal, which is where people evaluate a specific future event based on its potential impact on their lives. Primary appraisals come in three flavors: threat, harm, and challenge. The first category includes dangers that employees predict may happen to them in the future, while the second refers to events that have already resulted in a loss from the employees' perspective. Meanwhile, challenge refers to harms that might occur when the person tries to deal with another event.

2.1.2 Interactional theories of work – related stress

Like the transactional theory of work stress, interactional theories of stress still focus on how the employee relates to their immediate surroundings. This environment includes the people they interact with, the opportunities and threats that exist around them, and the general organizational culture of the company. Interactional theories of stress focus on the relations of the environmental stimulus and the related individual reactions as a basis of stress (Lazarus, 2016).

One of the earliest interactional theories of job stress is The Person-Environment Fit (P-E Fit) Theory.

The Person-Environment Fit model purports that work related stress can occur when employees perceive a discrepancy between personal needs and the way in which the working environment fulfils employee needs. The Demand-Control-Support model suggests that the amount of stress experienced is dependent upon levels of work-related demands, perceived level of control to complete tasks and the amount of support that is available to employees in their profession.

According to Equity Theory, work related stress can occur when employees perceive that they provide more professional input into their interpersonal relationships and employing organization than the number of rewards received. The Transactional Model of Stress and Coping suggests that work stress levels are dependent upon internal cognitive processes and the way in which employees cognitively appraise work related challenges.

This project adopted Person Environment Fit (P-E Fit) theory by Caplan. According to this theory stress can arise due to a lack of fit between the individual's skills, resources and abilities, on the one hand, and the demands of the work environment.

The P-E Fit theory makes explicit the interaction between the individual and the environment in shaping their response to work situations and events, but also highlights the importance of the individual's perception of the environment; and the interaction between them. This model has brought key lessons for organizations in relation to stress identification and make management interventions and work-related health and well-being promotions.

The Job Demand-Control (JDC) model suggests that job stress can occur from interaction between various psychological job demands associated to workload such as emotional and cognitive demands, interpersonal conflict, job control associated to discretion of skill and authority decisions (Prem et.al., 2017).

This theory deals with estimating the results of psychological strain, and employees who experience high demands matching with low control are further expected to experience work-related psychological strain and distress (Beehr et al. 2011). Unlike the previous theory's, this model focuses on control which makes workers to cope up in manipulating their surroundings to reduce or avoid the feeling of stress. The job demands-control-support model teaches us that stress management should take the agency of employees into account.

2.2 Review of Related Literatures

2.2.1 Concept of Stress

Stress is a dynamic condition in which an individual is confronted with opportunity, constraint or demand related to what he desires and for which the outcome is perceived to be both uncertain and important according to Robbins (2004).

Imtiaz and Ahmad (2009) also described Stress as a mental sprain that is associated with the internal or external spur that renounces a person to respond towards its environment in a normal manner. Stress is a universal experience in the life of every organization and every executive, manager, and individual employee. It is a naturally occurring experience which may have beneficial or destructive consequences. The destructive consequences of a stressful experience are not inevitable. They only result from ineffective management of stress and stressful events.

There are several factors which cause stress in employees at work and these factors are job timings, pay, bonus, workload and peer attitude (Manzoor, 2011). Workload, technological problems, higher targets, compensation and salary, outcomes of decisions, management and peer support behavior, longer time frame are the main factors of causing stress in employees (Badar, 2011). With increase in designation, stress increases and factors of creating stress in employees are feeling undervalued, work home interface, fear of joblessness, traumatic incidents at work and economic instability.

Sehlen et al. (2014), defines work related stress, a state in which certain features of the work condition are supposed to cause poor physical or psychological health problems. Workplace stress arises when abilities are exceeded by demands, while work related strains are responses caused from the experience of stress.

2.2.2 Types of stress

According to (Chinyere et al., 2019; Imrab et al., 2014; Nyangahu & Bula, 2015) work related stress can be categorized into two:

(A) Positive stress (eustress), which is helpful in a situation we might sense challenged; However, the causes of stress will be possibilities that are significant to us, They assist in providing us with the desire and energy in attaining our aims and fulfilling our responsibilities.

(B) distress is a state that occurs when a person experience pain or perceives a risk or loss which Can affect him/her badly (Siegrist, 2017).

2.2.3 Causes of stress

Causes of stress at workplace Causes of stress can be divided into two categories based upon the source of the cause.

Two major classifications are:

Internal causes - These causes involve an individual's mind-set, way of thinking etc. These causes are originated from within the individual and lead to stress. These internal causes are based on perception of an individual. Even if no threat exists in the surrounding a person may feel a person or a situation threatening and may get stressed.

External causes- These causes include many external factors within an organization which affect an individual's Productivity in organization which are-

1. Job insecurity- When an employee works in an organization, fear of losing his/her job leads to chronic stress which causes reduced work quality.
2. Working hours- Very odd working hours may lead to many physiological problems in employees which may lead to stress during work.
3. Control at work- This refers to extent of control an employee has over his/her work. If employee has no or very little control over the work then he/she loses interest in the work and feels stressed to meet expectations of superiors.
4. Managerial style- The controlling style of managers effects stress of the employees. Managers with autocratic style of control give very little freedom to the employees in decision making and planning. So, employees working under such managers are stressed due to very less control over their work and very high restrictions.
5. Over load & under load- Overload of work means performing a large amount of work in a very short time Such heightened expectations from any individual may lead to stress. Elsewhere under load is very short amount of work to do and time available is too much. Here employee questions his/her capacity and feels stressed.

Ahmed & Ramzan (2015) mentions that work place stress decrease the morale of workers. Workplace events play a vital role in altering workers morale such as lack of union representation, employees being mistreated, cancelling benefits programs, heavy layoffs, low wages, cancellation of overtime, and sick building syndrome.

The Factors impelling morale of workers within the workplace can be demonstrated through the below given attributes: composition of team, realistic prospects for merit-based promotion, management style, the perceived status of the job being done by the company as a whole, Job security, organizational culture, the perceived economic or social value of the job being done by the company as a whole, workers feeling that their contribution is evaluated by their employer.

Based on above brief this project will focus on organizational climate, Role ambiguity and work family interaction to study effect of stress on employee's productivity.

2.2.4 Organizational climate and stress

The recurring patterns of behavior, attitude and feeling in the organization are called as climate that characterizes life in the organization. It is a psychological climate at individual level and when these individual perceptions are aggregated, it is characterized as organizational climate.

Organizational climate is defined as a global impression of one's organization and personal impact of the work environment, which influences the individual's work behaviors and job-related attitudes. It describes the perception of employees towards their organizations which would link to work attitude formation (Litwin & Stringer, 1968; Pritchard & Karasick, 1973).

Nath(1988) studied the effects of organizational climates, role stresses and locus of control on job involvement among banking professionals. He observed that subjects who experienced high role stress showed less job involvement as compared to the low role stress group. The high scoring goal group on four dimensions of organizational climate achievement, expert influence, affiliation and dependency scored significantly higher on job involvement as compared to the groups which scored low on these dimensions. (Nath, 1988).

Lack of participation in the decision-making process, lack of effective consultation and communication, unjustified restrictions on behavior, office politics and no sense of belonging are identified as potential sources of stressors.

Lack of participation in work activity is associated with negative psychological mood and behavioral responses, including escapist drinking and heavy smoking. Caplan et al. (1975).

Individuals' own perceptions of the work environment constitute psychological climate at the individual level of analysis, whereas organizational climate has been proposed as an organizational or unit-level construct. When employees within a unit or organization agree on their perceptions of the work context, unit-level or organizational climate is said to exist (Jones and James, 2004).

2.2.5 Role Ambiguity

According to Nyangahu & Bula (2015) role ambiguity will occur when workers don't have enough information regarding to the requirements of their role, how to succeed it, and the evaluation process. According to Basit et al., (2017) role ambiguity results in depression, anxiety, poor relationship with employees and lack of confidence.

Seibt et al, (2014) defined role ambiguity as a mirror of certainty on tasks, policies, clear guidance, power, time allocation, relationships, and the ability to visualize authorizations as an outcome of Productivity. It arises if certain portions become confusing, not clear, poorly defined, and incorrectly discussed.

Khuong and Yen (2016) argued that individuals experiencing role conflicts must go through more than two pressures at one-go and end-up following to one of the pressures. Chinyere et al., (2019) explained that role ambiguity also occurs when workers go through tough times trying to regulate more than two roles at similar periods. When individuals deal with role conflict (role ambiguity) they experience a huge crash in success, being immunologically loss with actuality and emotional challenge. Briefly, whenever a worker's career is being closely associated to other subordinates, the influence of role ambiguity is higher when we compare it to those workers' whose job is relatively independent.

2.2.6 Work family interaction

The balancing of work and family issues is becoming increasingly important for employees and employers to consider.

The focus towards work-family issues and work-family practices in particular, has been driven by a number of major demographic changes. These include the increased participation rates of working women and mothers (Milliken, Martins & Morgan, 1998), the rising number of dual-career couples and single parent families and the enlargement in the elderly population.

At the heart of work-family policies is the necessity for these programs to help employees balance their work and family roles.

Given the increase in workforce demographics, these changes have made balancing work and family considerably more challenging.

Kelliher and Anderson (2008) shows that UK firms have increasingly offered flexible work practices to respond to these challenges in work places.

Goodstein (1994) shows that these changes “have increased the interdependence of work and family spheres and intensified the conflicting demands of work and family” . Due to these factors, managing the conflict between work and family responsibilities has been recognized as a critical challenge for organizations.

2.2.7 Employee Productivity

Employees’ productivity is critical to raise employees’ Productivity which contributes to the success of organizations. Productivity is calculated by comparing total amount of health care output to the total amount of input used to produce this output.

Output can be measured through primary care, diagnostic facilities, outpatient, accident and emergency departments, volume of activity and mental health and community care settings. Input can be measured through labor, intermediate goods & services and capital (Bojke et al., 2012).

Previous literature has clearly discussed the advantages of employee productivity which would lead to organizational success. According to Sharma and Sharma (2014), higher productivity results in economic growth, higher profitability, and social progress. It is only by increasing productivity, employees can obtain better wages/ salaries, working conditions and larger employment opportunities.

Cato and Gordon (2009) demonstrated that the alignment of the strategic vision to employee productivity is a key contributor to the success of an organization. This alignment as a result would motivate and inspire employees to be more creative, and this ultimately can improve their performance effectiveness to accomplish organizational goals and objectives (Morales and Obdulio, 2014).

Moreover, higher productivity tends to increase the competitive advantage through reduction in costs and improvement in quality of output.

2.2.8 Empirical Literature on stress and productivity:

Imtiaz & Ahmad (2009) conducted a research on the impact of stress on employee productivity, Productivity and turnover in Twin Cities of Pakistan Rawalpindi/Islamabad, and identified the factors affecting stress as personal issues, lack of administrator support, lack of acceptance for work done, low span over work environment, unpredictability in work environment & inadequate monetary reward.

Their analysis showed immense support for negative relationship between stress and job Productivity.

Imrab et al. (2013) found that stress is responsible for decreasing the Productivity of bank employees. Ahmed & Ramzan (2013) too found a negative correlation between stress and job Productivity i.e. as the stress increases the job Productivity goes down and vice-a-versa.

Enyonam, Opoku, Addai and Batola (2017) who conducted a research to investigate the effect of Work related stress on job Productivity at Aspet A. Company Limited. A descriptive research design was adopted for the research. The sample size of the study was one hundred and nine, through the help of convenience sampling techniques.

Descriptive analysis factors were adopted by the study. It was clear from the findings that there are multiple causes of stress which have physical, emotional and psychological effects on employees at the company.

The study revealed that stress relation with workforce marital status, education, and working experience was negative. However, the study found out that stress among employees does enhance their job Productivity in a positive manner ($r = 0.348$, sig. value = .000). This gives the indication that as employee stress increases, their job Productivity also tends to increase and vice versa.

Alkubaisi, (2015) examined the stress effect of stress on work Productivity using quantitative field study on Qatari banking Sector. The cross-sectional method was adopted and inferential statistics, Spearman Correlation was used in testing hypotheses A sample ($n=124$) was randomly selected from the Qatari Banking Sector and various statistical analyses were performed on this data. The analysis has shown that the unclear role given to the employees and the workload has a direct relationship with work stress. One of the main findings is that work stress has a negative impact on employee Productivity.

2.3 Conceptual Framework

The conceptual framework presents an integrated way of looking at a problem under study (Liehr & Smith, 1999).

Conceptual frameworks are generative frameworks that reflect the thinking of the entire research process. Mostly, diagrams are created to clearly define the constructs or variables of the research topic and their relationships are shown using arrows.

This section introduces the project hypothesis and a conceptual framework model. Each key independent variable factor will be focus for the research questionnaire.

A schematic representation of the conceptual framework

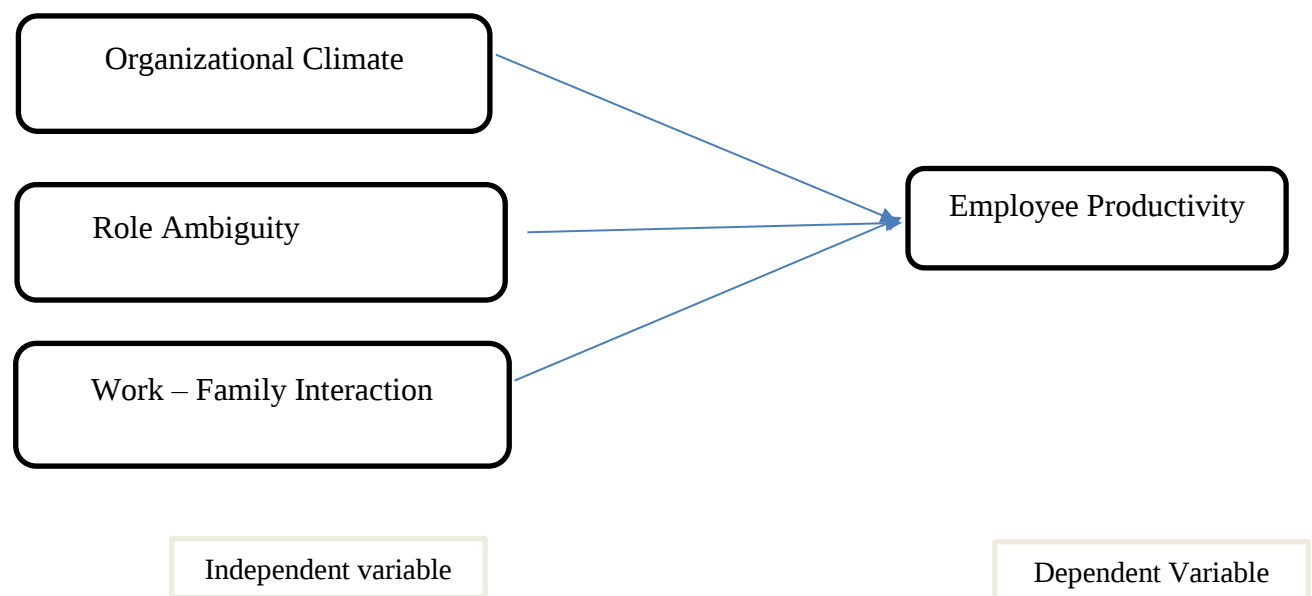


Fig.2.1 Conceptual framework

Adapted from: Mawanza, Wilford. (2017); The Effects of Stress on Employee Productivity

As stated above with the identified problem, research question and the objectives the following hypotheses were formed:

- H1: - Organizational climate has a significant effect on employees' productivity
- H2: - Role Ambiguity has significant effect on employees' productivity
- H3: - Work – Family Interaction has significant effect on employees' productivity.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter outlines an overview of the research study, research design, methodology data collection, target population, sampling procedure, source of data, method of Analysis, interpretation and presentation of the project.

3.1 Research Approach

Research design intends to provide an appropriate framework for a study. This design always focuses more on what of the research subject rather than the why of the research subject (Babbie, 1990).

To achieve the project objectives quantitative strategy is used, as this method support various means for collecting, analyzing, and interpreting data.

3.2 Research Design

The research design for this study is a descriptive survey research aimed at assessing stress and its effects on employees' productivity. Through the use of the descriptive survey the researcher seeks to probe deeply and analyze the factors that explain or influence the variable understudy. Its main advantage is that it produces a reasonable number of responses from a wide range of respondents whilst providing a more accurate picture of events at a point in time.

A descriptive study identifies and defines the problem, selects tools for collecting data, describes, analyzes and interprets the data (Creswell, 2003). This definition goes along with the objectives of this study as it has the potential to provide with a lot of information obtained from quite a large sample of individuals.

Leedy and Ormrod (2001) noted that survey is an economic way of collecting a certain amount of data from a sizable population.

The research methodology stretched from both primary data sources through to the secondary sources of data so as to reach out to as many opinions as possible in as far as the issue of stress and employee productivity was concerned.

3.3 Sample Frame and Technique

The project study is conducted at Meta Abo Brewery s.c which has more than one thousand employees and out of which four hundred are permanent also which are focus for the study. Simple random sampling technique is used to allow all has equal chances of participating. The population focus only on permanent employees at Sebeta site as they are more focused on the manufacturing side of the business.

3.4 Sample size

The target population of the study are the employees of Diageo – Meta brewery at supply chain. Currently the total number of employees in supply chain is four hundred. The researcher project adopt probability sampling methods which is simple random sampling methods to decrease the biasness of the sample determination because the target population of the study is large in number.

To determine the sample size of the study the researcher applied sample size determination formula ((Taro Yemane's formula)) , assumed with 95% confidence or 5% sample err)

$$n = \frac{N}{1 + N(e^2)}$$

Where n = required sample size

N= Total number of populations e= significant error (e=5% or 95% confidences level)

The sample size is N=400 and e=0.05 =200 participants

Therefore, the sample size of the study were 200 samples from 400 total populations. However, to have effective response rate and time constraints researcher used 100 questionnaires. The Sample consists of Operators, team leaders and quality analysts which were selected to fill questionnaires.

3.5 Data collection procedure

This project adopted primary data using questionnaire as collection method. The questionnaire was self-monitored to gather required information on stress's effect on employee's productivity at Meta Abo Brewery s.c. The questionnaire uses a 5-point Likers scale from 5 to 1 to measure and record data.

3.6 Data analysis Method

After all the data was collected from the Sample employees using questionnaires it was coded and entered into SPSS (Statistical package for social science) version 23 and the appropriate analysis of the data was done using both descriptive and inferential statistical measures.

A descriptive statistic comprising of measures of central tendency such as mean and standard deviations as well as measures of dispersion such as variance and range and regression analysis model will be applied to establish the effect of stress on employee productivity. Correlation Analysis is used to test the proposed hypothesis to check the relationship between stress and employee productivity.

The demographic characteristics of respondents and the responses of respondents towards each variable were analyzed using Descriptive statistics (mean and standard deviation). The relationship among the dependent variable and independent variables were analyzed using the correlation technique.

Finally based on the statistical results obtained a mathematical equation was developed using the independent variables (organizational climate, role ambiguity and work family interaction) and dependent variable (employees' productivity) of the study.

3.7 Reliability and Validity Measures

The reliability of the construct items under each variable were evaluated using Cronbach's coefficient alpha and the overall reliability for the 20 items was 0.73. The results of the reliability test is proved to be within the acceptable range.

Validity describes how well the data collected covers the actual area of the study. Fundamentally it means "measure what is intended to be measured" Taherdoost (2016). Content validity encompasses the measurement of a new survey instrument to confirm that it consists of all the items that are crucial and excludes unwanted items to a specific construct (Oluwatayo, 2012). The questioners used in this study are adapted from past literatures related to the topic with some adjustments.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

The key objective of this section is to analysis the data collected and to present the findings of the study. The demographic characteristics of the respondents, the descriptive statistics of all the variables used in this study, the correlation among the variables, the regression analysis and the results of hypothesis testing are presented and discussed.

4.2 Respondents Demographic characteristics

As per the first part of questionnaire, demographic data is generated as below table to show respondents Gender, Age, work experience and qualifications.

Table 4.1 demographic data of responders

		Frequency	Percent	Valid Percent	Cumulative percent
Gender	Male	40	40	40	40
	Female	60	60	60	100
Age	<30	19	19	19	19
	31-40	51	51	51	70
	41 – 50	28	28	28	98
	Above 50	2	2	2	100
Qualification	Graduate	32	32	32	32
	Postgraduate	18	18	18	50
	Technical	50	50	50	100
Work Experience	10 – 15 yrs.	9	9	9	9
	5 - 10 yrs.	12	12	12	21
	Above 15 yrs.	73	73	73	94
	Less than 5 yrs.	6	6	6	100

Source: SPSS version 23 output, 2022

As presented in the table 4.1 above the demographic data for gender indicates that out of 100 respondent's majority of them were female which consists of 60 (60%). 70% of the respondents were aged 31 – 40 years. qualifications of respondents were mostly technical (50%) as they work in brewery operations and experience levels in the manufacturing sector mostly lies above 15 yrs. (94%).

4.2 Descriptive statistics Analysis

This section outlines the summary of the descriptive statistics of all variables which were evaluated using a 5-point Likert scale. Statistical data analysis tools like frequency, mean, percentile, and standard deviation were used.

According to Madala (2014) argued that for 5-point likert scale questionnaires a mean score value above 3.75 is considered as high, between 3.35 and 3.75 is considered as moderate and below 3.35 is considered as lower.

4.2.1 Organizational climate

Table 4.2: Employees response to organizational climate

Variable	Response rate %						
	5	4	3	2	1	St. Dev	Mean
Organizational climate							
I receive appropriate benefits	26	65	9	0	0	0.57	4.17
At the organization I work in, provides all social guarantees	30	63	4	2	1	0.692	4.19
I receive timely help from their superiors at the organization I work in.	22	74	2	1	1	0.592	4.15
I get Timely and constructive feedback to my Productivity	24	78	4	0	0	0.45	4.14
Conflicts are resolved positively in the organization	24	74	2	0	0	0.65	4.22
	25.2	70.8	4.2	0.6	0.4	0.5908	4.174
Overall Average Mean=4.17, Agree= 0.4%, Neither agree nor disagree=4.2%, Disagree = 70.8% Strongly Disagree=25.2%							

Data source: SPSS Version 23.0 Analysis

As Indicated in the above table 4.2 majority of the respondents (70.8%) Disagree for working under positive organizational climate. It's clear that when Employees are not treated well at work there is a potential of misunderstandings among subordinates and superiors, resulting Stress. The average mean score of the respondents for Organizational climate is 4.17 which indicate a high score. This means that employees of the Meta Abo are experiencing poor work atmosphere in their daily tasks which leads to stress and it's also key indicator of declining company culture.

4.2.2 Role ambiguity

Table 4.3: Employees response to Role ambiguity

Variable	Response rate %						
	5	4	3	2	1	St. Dev	Mean
Role Ambiguity							
I have clear job description	26	65	9	0	0	0.57	4.17
I know how to handle unusual challenge sat work	31	65	4	0	0	0.529	4.27
I know how to handle non routine job activities	23	75	2	0	0	0.456	4.21
My work atmosphere allows me to exercise my leadership	17	78	5	0	0	0.468	4.12
I don't need to find new job better than my role	25	73	2	0	0	0.456	4.23
	24.4	71.2	4.4	0	0	0.4958	4.2
Overall Average Mean=4.2, Agree= 0%, Neither agree nor disagree=4.4%, Disagree = 71.2% Strongly Disagree=24.4%							

Data source : SPSS Version 23.0 Analysis

The above table 4.3 shows the average mean score of the respondents for role ambiguity is 4.2 which indicates a higher score and it's indicated that 71.2% of the respondents have agreed to disagree that they are unclear of their job roles, about handling challenges, on how they deal routine task load, and they feel lack of good and supportive atmosphere in their work.

Overall, this implies that employees of Meta experience lack of clarity regarding to their job roles and responsibilities and look for exit or be passive on their activities.

4.2.3 Work Family interaction

Table 4.4: Employees response to work family interaction

Variable	Response rate %						
	5	4	3	2	1	St. Dev	Mean
Work Family interaction							
My work has no interfere with my home and family	25	62	3	0	2	0.734	4.08
The amount of times my jobs take has no impact on meeting my responsibilities	31	64	3	0	1	0.69	4.22
Th job demand I bear onsite has no impact on my plan to do things at home	22	73	2	2	1	0.630	4.13
My job produces no strain that makes it difficult to fulfill my family duties	18	76	3	2	1	0.614	4.08
Due to work-related duties, I didn't make changes to my plan for family activities	24	73	0	2	1	0.563	4.19
	24	69.6	2.2	1.2	1.2	0.6462	4.14
Overall Average Mean=4.1, Agree= 1.2%, Neither agree nor disagree=1.2%, Disagree = 69% and Strongly Disagree=24%							

Data source: SPSS Version 23.0 Analysis

As per above table 4.4 the average mean score for work family interaction is 4.1 which is a higher score. From the above table 4.4 it can be observed that almost 70% of the respondents express their concern for not satisfied with the work practices provided by Meta Abo Brewery.

4.4.5 Employees Productivity

Table 4.5: Employees response regarding to their Productivity

Variable	Response rate %						
	5	4	3	2	1	St. Dev	Mean
Employee Productivity							
I arrive on time for my work	0	0	9	65	26	0.57	1.83
I had to put off some of my work	31	65	0	6	0	0.52	4.27
I had a problem concentrating	24	0	4	72	0	1.28	2.76
I had to let others take over some of my work	18	78	4	0	0	0.45	4.14
I value time management in my work	0	74	2	0	24	1.28	3.26
	14.6	43.4	3.8	28.6	10	0.82	3.25
Overall Average Mean=3.25, strongly Agree= 10%, Agree =28% Neither agree nor disagree=3.8%, Disagree = 43% Strongly Disagree=14.6%							

Data source : SPSS Version 23.0 Analysis

The responses presented in the table 4.5 shows Mean score of 3.25 for employees' productivity indicates a moderate mean score. This means that employees of Meta Abo Brewery have an average level of Productivity on their duties.

4.3 Reliability test

At this section the reliability test is done for the whole sample (on 100 respondents). The reliability of the items under each variable was evaluated using Cronbach's coefficient alpha. The overall reliability for the 20 items was 0.732.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.732	0.834	20

Data source : SPSS Version 23.0 Analysis

4.4 Correlation Analysis

The Pearson correlation coefficient which is denoted by r shows the extent of the relationship between two variables. The symbol of correlation coefficient, r , can be within the range of -1 and 1. The variable can be either negatively or positively correlated.

Negative correlation shows a negative association between two variables while a positive correlation shows a direct positive association between the variables.

The association between two variables will be very strong if the correlation coefficient (r) is 0.7 and above, substantial if it's between 0.5 and 0.69, moderate if it's between 0.3 and 0.49, low if it's between 0.1 and 0.29, and if it's between 0.01 and 0.09 (Pandey, 2017).

In this section to determine the degree of relationship between the dependent (employees Productivity) and independent variables (work family interaction, role ambiguity and organizational climate) the correlation analysis is presented in the table below.

Table 4.6: Correlation of variables

		Correlations			
		Organizational Climate	Role Ambiguity	Work Family Interaction	Employee productivity
Organizational climate	Pearson Correlation	1	-0.189	.286**	-0.016
	Sig. (2-tailed)		0.059	0.004	0.876
	N	100	100	100	100
role ambiguity	Pearson Correlation	-0.189	1	-0.178	-0.092
	Sig. (2-tailed)	0.059		0.076	0.362
	N	100	100	100	100
Work family interaction	Pearson Correlation	.286**	-0.178	1	-.326**
	Sig. (2-tailed)	0.004	0.076		0.001
	N	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

Data source : SPSS Version 23.0 Analysis

The outcome of the correlation analysis presented indicates that Organizational climate in the Brewery is negatively correlated with the Productivity of employees and the association is lower and significant at $r = -.01$ and $p < 0.01$.

The negative association between the variables indicates that when organizational climate instability increases the productivity of employees decreases.

Role ambiguity is negatively correlated with the Productivity of employees of the Brewery and the association is lower and significant at $r = -.09$ and $p < 0.01$. This indicates that an increment of role ambiguity in the brewery causes the product of employees to decline.

Work Family interaction is negatively correlated with the productivity of employees and the association is moderate and significant at $r = -.32$ and $p < 0.01$. This suggests that lack of good work family interaction has a corresponding effect on the productivity of employees of the Brewery.

4.4 Linear Regression Analysis

The main objective of multiple linear regression is to model the linear relationship between the dependent variable and independent variables”.

This multiple regression was used to determine the effects of the independent variables (organizational climate, role ambiguity, work family interaction) on the dependent variable (employees’ productivity).

4.4.1 Assumptions of multiple linear Regression Analysis

The assumptions are the residuals must be normally distributed, there must be a linear relationship between the dependent variable and independent variables, Homoscedasticity must be present and no multicollinearity. Few assumptions of the multiple regression model are discussed below.

A. Linearity assumption test

The Linearity assumption of Multiple Regression is that the relationship between the independent variables and dependent variable must be linear.

The linear relationship between the independent variables and outcome variable can be checked by using the scatter plots.

The Figure 4.1 below shows the scatter plots of the independent variables (organizational climate, role ambiguity and work family interaction) and dependent variable (employees productivity) indicating that the relationship can be displayed by a straight line signifying that the association among these variables is linear.

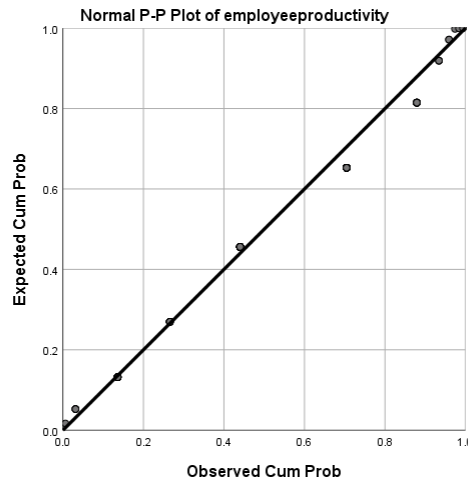


Figure 4.1: Linearity Test

Source: Data Survey SPSS output, 2022

B. Homoscedasticity assumption test

According to Williams et.al., (2014) if homoscedasticity occurs, there must be no patterns in the residuals but if heteroscedasticity occurs, the residuals could tend to exhibit greater variation in some systematic way. In the figure 4.2 below it's indicated that there appears no particular pattern in the data. Therefore, the homoscedasticity assumption is satisfied.

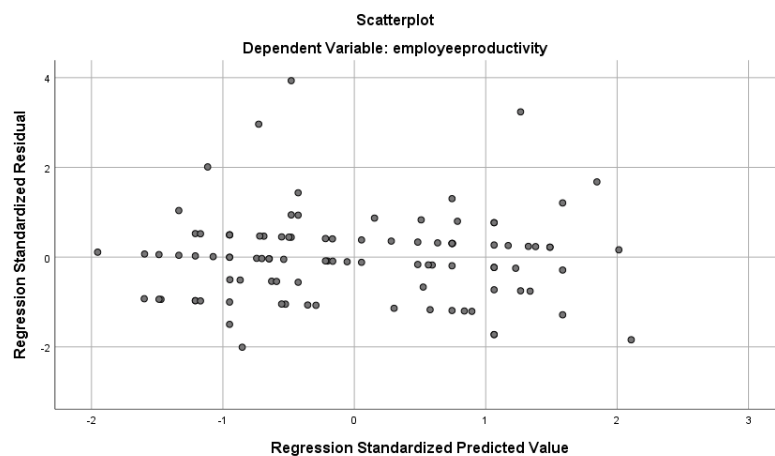


Fig 4.2 Homoscedasticity Test

Source: Data Survey SPSS output, 2022

C. Multicollinearity test

One of the assumptions of the multiple regression is there must not be a high correlation among the explanatory variables. Multicollinearity refers to the existence of a higher association among the predictor variables in the regression model.

The VIF (variance inflation factor) and the tolerance value tests are the most commonly used methods to check multicollinearity.

According to (Waters, 2003), To meet the assumption; the VIF values must be less than 10 and the tolerance values must be greater than 0.10

Table 4.7 multi collinearity test

Variables	Collinearity	
	Tolerance	VIF
Organizational climate	0.899	1.11
Role Ambiguity	0.947	1.05
Work Family Interaction	0.902	1.10

As per table 4.7 VIF values for each independent variable is less than 10 and the tolerance values are greater than 0.10 which meets the assumption.

4.4.2. Multiple Regression

Multiple regression results were employed to test the effect of independent or explanatory variables on the dependent variables. The result of the multiple regression analysis is presented in the tables below.

Table 4.8 Multiple Linear Regression Result

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.591 ^a	0.350	0.329	0.33888	1.801

a. Predictors: (Constant), work family interaction, role ambiguity, organizational climate

b. Dependent Variable: employee productivity

Data source : SPSS Version 23.0 Analysis

Table 4.8 shows that R^2 which measures the strength of the effect of an independent variable on the dependent variable have the value of 0.35. This implies that 35% of the variation in employee productivity is explained by variations in role ambiguity, work-family interaction and organizational climate, the rest 65% is determined by other factors not included in this research.

As the outcomes of table 4.9 indicates $F=17.2$ ($F>1$ and $p<0.01$) which means the regression model is significant and confident at 99%.

Table 4.9 Analysis of Variance Result summary

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.927	3	1.976	17.203	.000 ^b
	Residual	11.025	96	0.115		
	Total	16.952	99			

a. Dependent Variable: employee productivity

b. Predictors: (Constant), work family interaction, role ambiguity, organizational climate

Data source : SPSS Version 23.0 Analysis

Table 4.10: Regression Coefficient Analysis summary

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.468	.357		6.909	.000
	Organizational climate	-.440	.100	-.382	-4.401	.000
	Role ambiguity	.327	.081	.343	4.056	.000
	Work family interaction	-.097	.098	-.085	-.985	.327

a. Dependent Variable: Employees productivity

Data source : SPSS Version 23.0 Analysis

Based on the results obtained on the above table 4.10 a mathematical equation was developed using the independent variables (organizational climate, role ambiguity and work Family interaction and dependent variable (Employees productivity) of the study. The equation for the regression model is presented as follows.

$$Y = 2.46 + .32X_1 - .44X_2 - .097X_3$$

Whereas,

Y= Employee Productivity

X1= Organizational Climate X2= Role Ambiguity

X3= Work – Family interaction

4.4.3 Hypothesis Testing

The three hypotheses were tested based on standardized coefficients beta with 95% confidence level.

H1: Organizational climate has a significant effect on employee productivity.

organizational climate has a t-statistics of – 4.4 and a probability value of 0.00 which is statistically significant. Therefore, organizational climate has significant effect on employee productivity.

H2: Role ambiguity has a significant effect on employee productivity.

Role ambiguity has a t-statistics of 4.05 and a probability value of 0.00 which is statistically significant. Therefore, Role ambiguity has a significant effect on employee productivity

H3: Work-family interaction has significant effect on employee productivity.

Work-family interaction has a t-statistics of -0.98 and a probability value of 0.32 which is statistically significant. Therefore, Work-family interaction exerts a significant effect on employee productivity.

SUMMARY

In this chapter of the study the data collected was analyzed using SPSS software version 23.

The first section of the questionnaire (contains the demographic characteristics of the respondents) was analyzed first then the second section of the questionnaire was analyzed using the descriptive statistics of all the variables used in this study, then the correlation among the variables (the strength of association between two quantitative variables), and the regression analysis (use of various independent variables to predict the outcome of a dependent variable) was done.

The results of the correlation analysis indicates that organizational climate, role ambiguity, and work family interaction have a negative and significant effects on the performance of employees with values ($r=-.0.01$, $r=-.0.09$, $r=-.0.32$ and $p<0.01$) respectively.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section has a purpose of reviewing the major findings of the study, providing a conclusion on the findings of the study regarding to the objectives of the research to examine the effects of stress on the productivity of employees at Meta Abo Brewery s.c by means of factors such as organizational climate, Role ambiguity and work Family interaction.

A recommendation based on the conclusions, limitations of the Study and suggestions for future studies in the area were also incorporated at the end of this chapter.

5.2 Summary of Findings

The Key purpose of the study was to examine the effects of stress on the Productivity of employees at Meta Abo Brewery by investigating the effects of each determinant factor (organizational climate, Role ambiguity and work Family interaction) on the productivity of employees.

The summary of the findings of the analyzed data using descriptive statistics, correlation and regression analysis are presented below.

The results of the mean score values using the descriptive statistics indicates that organizational climate, Role ambiguity and work Family interaction with mean values (4.17, 4.2, 4.14) respectively are above the average mean point 3.5.

This implies that employees of Meta Abo agreed that they experience Poor organizational climate, being unclear of their job roles, and feel lack of healthy work family balance.

On the other hand, the mean score value for employee's productivity indicates that a moderate mean score with mean=3.25. This means that employees Meta Abo brewery have an average level of Productivity on their duties due to experiencing poor work climate, uncertainty or undefined job roles and being unsatisfied of the work family interaction practices provided by the company.

From the Pearson correlation results for organization work climate can be understood that it has a negative and significant effect on the productivity of employees with values ($r=-.016$ and $p<0.01$).

Moreover, from the regression result the beta coefficient value for organization climate is - 0.44 with a significant value of .000 which is lower than 0.05 which indicates it has a negative contribution to explaining the dependent variable (employees' productivity). From the Pearson correlation results for Role Ambiguity can be understood that it has a negative and significant effect on the productivity of employees with values ($r=-.09$ and $p<0.01$). Moreover, from the regression result the beta coefficient value for organization climate is - 0.3 with a significant value of .000 which is lower than 0.05 which indicates it has a negative contribution to explaining the dependent variable (employees' productivity). Furthermore, Work Family interaction has a Pearson correlation result $r=-.32$ and $p<0.01$ which indicates that poor work Family interaction is negatively and significantly correlated with the productivity of employees. The beta coefficient value for lack of motivation is -.09 with a significant value of .032 which is lower than 0.05. Finally, the results of the regression analysis shows that the three independent variables (organizational climate, Role ambiguity and work Family interaction) of the study explains 35 % ($R^2=0.35$) of the dependent variable (the productivity of employees).

5.3 Conclusions

It is clearly understandable that in every organization, a certain percentage of the working population suffers from stress, but stress should not be taken as an individual problem. If organizational management considers stress as an individual problem and not management problem, then they may be faced with issues of loss of productivity due to absenteeism, quitting of jobs, the total cost of work-related accidents and low-quality work. Finally, organizations need to handle stress positively to increase employee productivity. Based on the empirical analysis, the study, therefore, concludes that workplace stress has a significant negative effect on employee productivity in Meta Abo Brewery Share company.

5.4 Recommendations

Based on the findings of this study, the following recommendations are provided to decrease the effects of work-related stress on the productivity of employees. The statistical analysis revealed that the employees of Meta Abo are experiencing poor organizational climate, lack of role clarity and negative work family interactions which in turn affects their productivity negatively. So, the management of the company have to take into consideration on how to create favorable work climate, positive perception and consider it to be matching with their personal

objectives and so, they can demonstrate positive attitudes towards colleagues and the organization, Create Role description to specific details, establish a policy that will have good role clarity plans, which can relieve the employees from the future role ambiguity. and implement programs to assist workers having positive interaction between their life and work.

According to the regression analysis results the four independent variables (organizational climate, role ambiguity and work Family interaction) of the study only explains 35% ($R^2=0.35$) of the dependent variable (the productivity of employees).

So, the researcher recommends that further wider studies must be carried out comprising of other variables not included in this study to predict the effects of stress on the productivity of employees in this Brewery.

5.5 Limitations of the study

The Major challenge that the researcher has faced during conducting this study was some of the employees in the factory were unstable due to the company being sold and under heavy workload to site cleanup and preparation and this makes it difficult on gathering a more precise data and time to reach respondents, but with a lot of effort the researcher have tried to collect all the necessary data which is relevant for the study.

5.6 Suggestion for further study

The problem of stress is not well addressed regarding to the manufacturing sectors of developing countries such as Ethiopia, most studies the researcher reviewed are done on the service sectors such as banks, academic institutions, and hospitals. other broader research regarding to the issue must be done including other Breweries and manufacturing sectors in Ethiopia.

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APPENDICES

Appendix - 1

Research Project Questionnaire

Introduction;

Dear Respondent:

I am students at Addis Ababa University, school of commerce attending Masters in business leadership carrying out research Project on the effect of stress on employee's productivity at Meta Brewery s.c in partial fulfillment of a master's degree in Business Leadership.

Your cooperation and understanding are highly appreciated. All the information gathered will be treated confidential. You are not required to write your names on the questionnaire.

Thank you in advance for your kind collaboration and your time!

Section A : Demographic characteristics

1. Gender

Male ☐

Female ☐

2. Age:

<30 ☐ ,

31-40 ☐ ,

41 – 50 ☐ ,

Above 50 ☐

3. Academic Qualifications:

☐: Under Graduate

☐: Graduate

☐ : Post-Graduate

☐ : Professional

☐ : Technical

4. Work experience in this sector

☐ : Less 5 years

☐ : 5-10 years

☐ : 10-15 years

☐ :Above15 years

Section B: stress Related Questions

Please indicate your agreement to each of the following statements by putting a cross sign (X) in the appropriate answer box:

Where:

1- strongly disagrees, 2- disagree, 3- neutral, 4- agree, 5- strongly agree.

i. Questions Related to Organizational climate

Questions	5	4	3	2	1
I receive appropriate benefits					
At the organization I work in, provides all social guarantees					
I receive timely help from their superiors at the organization I work in.					
I get Timely and constructive feedback to my Productivity					
Conflicts are resolved positively in the organization					

ii. Questions Related to Role Ambiguity

Questions	5	4	3	2	1
I have clear job description					
I know how to handle unusual challenge sat work					
I know how to handle non routine job activities					
My work atmosphere allows me to exercise my leadership					
I don't need to find new job better than my role					

iii. Questions Related to Work Family Interaction

Questions	5	4	3	2	1
My work has no interfere with my home and family					
The number of times my jobs take has no impact on meeting my responsibilities					
Th job demand I bear onsite has no impact on my plan to do things at home					
My job produces no strain that makes it difficult to fulfill my family duties					
Due to work-related duties, I didn't make changes to my plan for family activities					

iv. Questions Related to Employee Productivity

Questions	5	4	3	2	1
I arrive on time for my work					
I had to put off some of my work					
I had a problem concentrating					
I had to let others take over some of my work					
I value time management in my work					

Thank you for your Participation