SOCIOECONOMIC FACTORS INFLUENCING LABOUR PRODUCTIVITY IN THE MANUFACTURING SECTOR IN THE COAST REGION, TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ECONOMICS (MSC-Econ)

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CERTIFICATION

The undersigned certifies that he has read and here by recommends for acceptance by the Open University of Tanzania a dissertation entitled, **"Socioeconomic Factors Influencing Labour Productivity in the Manufacturing sector in the coast region, Tanzania"** in Partial fulfillment of the requirements for the award of Degree of Masters of Science in Economics (Msc. - Economics).

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Prof. Deus Ngaruko

(Supervisor)

……

Date

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DECLARATION

I, **Winniemary Erasto Mfugale,** declare that, the work presented in this dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfillment of the requirement for the Degree of Science in Economics (MSc-Econ.).

……..……..

Signature

……

Date

DEDICATION

I dedicate this work to my beloved parents Mr. & Mrs. Mfugale, my husband Mr. Emmanuel D. Makondo, my brother Early Mfugale, my late sister Catherine Mfugale and my other family members and friends for their endless support, love, courage, prayers, care, moral, material and financial support.

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ABSTRACT

This study aims at assessing the socio economic determinants of Labour productivity in manufacturing sector, a case of Pwani Region. The main objective was to assess the influence of employee wage, human capital and firm working environment on labour productivity. The study applies Ordinary Least Square (OLS) technique to analyze the Labour productivity multiple regression model by using cross sectional data and tested for linearity, homoscedasticity, multicollinearity and normality. The study adopted human capital theory, Wage efficiency theory and theory of production. The target population was 384 employees from food processing industries in the region. The study adopted stratified sampling technique. Findings indicate that Human capital, employee wage and firm working environment have positive and significant relationship with Labour productivity and all variables had positive association with labour productivity.. The study recommends that the government to encourage technical training, mentoring technology transfer, and employers should hire educated workers since they have high chance of increasing labour productivity. More educational instructions such as primary and secondary schools, colleges, universities should be established and young people should be motivated to join. This is due to the reason that, educated workers with required knowledge and skills are more innovative which leads to increased labour productivity.

Keywords: *Socioeconomic Factors, Manufacturing Sector, Labour Productivity.*

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Industrial development has played a critical role in promoting economic growth and development in most economies (AFDB, 2018). Particularly, the manufacturing sector has played a significant role in reshaping the economies of emerging countries by creating mass employment possibilities and increasing GDP. Over time, this has resulted in an improvement in people's well-being (Kamaku& Waari, 1998). The growth of this sector is also very beneficial because it helps the development of other sectors through forward and backward linkages, hence it is critical to guarantee that it is well developed (Ngugi, 2019).

Tanzania's industrial sector output increased by 48 percent to USD 13.5 billion (33 percent of GDP) in 2018, compared to USD 9.1 billion in 2014. Construction (50 percent), manufacturing (31 percent), mining (15 percent), electricity supply (3 percent), and 3 percent for water supply, sewerage, and waste management (BOT, 2020). The ability of firms to survive in any industry in the current globalization era and increased competition depends on its productivity which motivates development and economic growth (Papadogns, & Voulgaris, 2005).For nations to be more effective in commerce its necessary to comprehend their levels of productivity and make efforts to compare them (Cobet& Wilson2002). Productivity improvement is vital because it enhances rapid growth (Faruq & Telaroli, 2011).

Labour productivity is a very significant determinant of a country’s per capita income over the long term since it determines the competitiveness of industrial

products and thus profitability of industries in both domestic and foreign markets. High labor productivity means high utilization of capital and thus lowers per unit cost of goods and services. Measured the ratio of total output value or profit or stock price to total labor employed in producing the output. Labor productivity shows a difference between firms, as those that are innovative record high levels of profits. Labor productivity growth in Tanzania is 8% per year for major enterprises and 13% per year for large exporters. Labor productivity growth in businesses with lesser than 50 employees, on the other hand, runs from 3 percent to 0 percent. In comparison, job growth in these tiny businesses can reach 13%, while employment growth in businesses with 50 or more employees averages 0% (McMillan& Zeufack, 2021).

According to the (THDR, 2017) report, socioeconomic indicators in Pwani region were encouraging in 2015.The records indicated that the regions Gross Domestic Product (GDP) was Tshs 1,644,964 in 2015 while Tshs 1,403,185 was the GDP per capita. The Pwani Region investment Guide (PRIG) shows a total 1192 industrial enterprises were already established in the region whereby, 701 were micro-enterprises, 350 small-scale enterprises, 86 medium scale and 55 large-scale enterprises in operation (PRIG, 2019).

1.2 Research Problem Statement

Since the industrial revolution era, the manufacturing sector has played a vital role in transforming the economies in both developed and developing countries through the mass generation of output and employment opportunities which has consequently led to improvement in people's welfare and economic growth over (Kamaku,& Waari , 1998). Tanzania’s manufacturing sector remains relatively small, where most

activities involve the production of consumer products such as foods and beverages, tobacco, wood-related products and textiles. Manufacturing sector is very important and still remains to be the dependable source of both government and individual revenue in Tanzania despite its shrinking size. The sector accounts for over half of the annual government revenue collection (Newman et al., 2016).

The contribution from the manufacturing sector to the overall GDP of the country has averaged 8 percent over the last decade; however, activities within the sector have been registering an annual growth of over 4 percent and the sector is currently the third most important to the Tanzanian economy behind agriculture and tourism (Ellis et al., 2018) report that Tanzania's labour productivity is relatively high. Although employment growth in the formal sector has increased, the bulk of employment growth is accounted for by firms in the informal sector; these informal firms contribute more than one percentage point to economy-wide labour productivity growth (Kweka, et al., 2018).

An increase in labour productivity will lead to increased growth in the industrial sector which will enhance positive benefits that accrue to an economy such as job creation, an increase in per capita income as well as an improved balance of payment accounts arising from value addition to a country's exports. This creates the need to investigate and understand socio-economic factors that determine labour productivity for the manufacturing sector to increase labour productivity.

1.3 Objectives of the Study

1.3.1 Main Objective

The study main objective was to assess how employee wages contribution, firm

working environment, and human capital influence labor productivity for the manufacturing sector in the coastal region.

1.3.2 Specific Objectives

The study intended to

i. Analyse the contribution of employee wages in influencing labour productivity in the manufacturing sector in Coastal region
ii. Examine how the firm's working environment influences labour productivity in the manufacturing sector in Coastal region
iii. Evaluate the contribution of Human capital in improving labour productivity in the manufacturing sector in Coastal region

1.4 Research Hypothesis

i. The wage does not influence labor productivity in the manufacturing sector
ii. The firm working environment has no effect on labor productivity in the manufacturing sector
iii. Human capital has no effect on labor productivity in the manufacturing sector

1.5 Significance of the Study

This study is essential since it provides basic information on issues of linkages between labor productivity and its contribution to innovations in the manufacturing sector. This helps the government, non-government institutions, policymakers, and development practitioners to better design their development policies and specific interventions aiming at promoting the growth and development industrial sector. The policies also help the concerned bodies to focus working on the important

determinants of labor productivity which directly influence the success of the manufacturing sector.

1.6 Organization of the Study

This research is organized into five chapters chapter one includes the background of the study, statement of the problem, objectives of the study, Research questions, significance of the study, and organization of the study Chapter two presents the literature Review which includes Definition of terms, theoretical review, Empirical review, research gap and conceptual framework chapter three presents the research methodology which comprises of type of the study, population target, sample size and the sampling technique, Data collection methods and the general econometric model, chapter four includes research findings and analysis and chapter five involves a conclusion of the study, recommendations, and areas for further study..

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of Concepts

2.1.1 Labour Productivity

The numerical measurement of the input to output ratio in production is known as productivity (Greenberg, 1961). This definition of productivity also includes different factors of quality management and organizational structures (Heap, 1992). According to (Mill, 1989), the definition of productivity ratio varies according to industrial type. For example the construction industries define labor productivity, as the ratio of completed work to work hours expected to perform the task (Nasirzadeh & Nojedehi, 2013). In their research, Hong and Kirk (1995) discovered that as the size of an organization grows, so does employee productivity. Further, Labour productivity is derived by calculating the ratio of output (GDP) per employed worker as presented in equation 1.

$$LP = \frac{Y}{L} \quad \text{.....1}$$

Where LP= Labour productivity

Y= Volume or value of output produced at a given time

H= Hours spent in the production of output

L= Number of workers involved in the production of output

In this study, labour productivity was measured by the time of task completion of labour and the quality of product labour produce in the manufacturing firm. Equation 2 will be used,

$$Time\ of\ Task\ Complition = \frac{Planned\ task\ Time}{Actual\ implementation\ Time} \quad \text{..... 2}$$

2.1.2 Manufacturing Sector

Manufacturing involves the procedures of converting raw materials into finished goods by using methods such as human labour or machinery depending on the firm's cost effective plan of production. Large scale industries use assets which involve gathering line processes and the latest sophisticated technology for mass production. Economies of scale boost productivity which help manufactures produce at a lower cost. The manufacturing process enables transformation of raw materials to final products which ultimately sells for more money than the value of the raw materials Manufacturing firms create profit through increasing the value of raw materials. Methods and techniques used in manufacturing process change frequently and also rapid technological advancement rise production level in manufacturing sector. Moreover, technological flexibility raises employee productivity.

2.1.3 Socioeconomic Factors

Socioeconomic status describes the social and economic background of groups of people such as households or individuals basing on the fact that societies have unequal status structures (Hollingshead, 1975). It typically includes acquired wealth status, income, employment, education, community safety, and social support systems that have big effect on how well and long a person lives.

2.2 Theoretical Literature Review

2.2.1 Human Capital Theory

Becker & Schultz (1960), two economists argued that investing in training and education may increase productivity. As the world accumulated more physical capital, attending education became more cost-effective. The workforce now

includes a larger percentage of educated people. Intellectual and human capital is regarded as regenerative sources of productivity. To boost innovation or creativity, organizations try to foster these sources. The Human capital hypothesis is explained by Corvers (1997) in connection to the diffusion, worker and research effects.

The worker effect is referred to as the "own productivity" impact, is basing on the idea that businesses only produce one good with the help of education as a production component and that other resources are made available. More physical output is said to arise from workers with higher levels of knowledge using resources more effectively. To put it another way, basing on the number of hours worked, education improves effective labor input. Highly educated workforce causes the production possibility curve to move outwards (Welch, 1973).

Effect of diffusion According to the diffusion effect, higher educated people can easily adapt technological changes and new production practices. According to Nelson & Phelps (1966), "education speeds the process of technical dissemination" because educated individuals make good innovators (Bartel & Lichtenberg, 1987). Furthermore, (Nelson & Phelps, 1966) underlines how crucial it is for work performed to be able to receive, decode, and comprehend information.

Higher education levels reduce the risk involved in decisions to advance in new processes and products and enhance the ability to differentiate between more and less profitable innovations. Education thereby increases the likelihood of success and promotes early acceptance of novel concepts. Higher proportions of intermediate and highly skilled people result in the faster and more successful adoption of innovations

and higher productivity increases when compared to low-skilled workers.

The research effect is the ability of higher education to serve as a significant input factor in research and development (R&D) activities, which is a key predictor of technological advancement and a gain in productivity (Romer, 2006) and (Grossman and Helpman, 1992). To increase technological knowledge and productivity progress, a sizeable number of intermediate and highly qualified individuals are needed attributed to complexity of R&D activities.

2.2.2 Wage Efficiency Theory

According to the efficiency wage theory, labour productivity will rise through the following channels if wages/salaries are higher than the marketing clearing level

i) Improved worker health; workers who are better paid are more likely to consume a healthier diet, which makes them healthier and more productive.

ii) Lower employee turnover; better-paid employees are easier to keep, which helps to maintain skill and experience (institutional memory).

iii) The capacity of the workforce; highly skilled people are drawn to higher pay.

iv) Worker effort; highly compensated employees are more likely to be highly motivated and to feel a strong connection to the company. The two models below are used to summarize the aforementioned effects. The incentives-driven model, also referred to as the Shirking model (Stiglitz et al., 1984), explains that employees will be more motivated to retain their employment as wages increase and also employees will work harder for the purpose of raising their productivity to avoid being fired (Griliches, 1986; Hall and Mairesse,

1995;Heshmati, 2002).

The gift exchange model is based on the indication between an employer and an employee is altered by higher wages that means employees will strive to be more productive and feel more devoted to the employer.

Numerous empirical studies that support the wage-efficiency hypothesis, such as Huang et al., (1998) analysis of the Chinese industrial sector, have demonstrated that wages have a greater impact on productivity change than human capital. The study conducted in Chile in 1991 by Romaguera et al. supports the hypothesis of efficiency wages. The validity of this idea has been proven by Mühlau and Lindenberg (2003) utilizing statistical data from Japan and the United States. According to the theory of efficiency wages, it is therefore conceivable that businesses will retain high pay even in the face of a labor excess to preserve high levels of worker productivity.

2.2.3 Theory of Production

The production theory clarifies how certain firm chooses how much raw material it will utilize or employ, along with how much of a given commodity it will sell or manufacture. A production function explains a technical link between the number of physical inputs and output changes when a particular technology is used is how the theory is expressed.

This connection is represented by a general production function that

$Y = f(k, l, m \ldots\ldots Z)$

Where Y stands for the firm's output, *k, l, and m* stand for physical capital, Labour,

and material input respectively and Z stands for additional elements that have impacts in production process.

The frequent used production function is adopted from cobb & Douglas (1928). This function expresses a technical relationship between output and two or more input such as capital and labor as expressed by this function. The function assumes perfect competition and a constant return to scale (Cobb & Douglas, 1928).

2.3 Application of Theories in the Study

This study applied the wage efficiency and human capital theories. These theories identify various socio-economic aspects which are used as variables that affect labour productivity in this study. The wage efficiency theory explains the effects of wage on labour productivity and the human capital theory speculates how education, training, experience have positive or negative impact on labour productivity.

2.3 Empirical Literature Review

2.3.1 Labour Productivity and Wages

Herman, (2020), conducted a study to examine the wages and labor productivity in the manufacturing sector in Romania. This study's objective is to objectively investigate the link between labor productivity and wages in the Romanian manufacturing sector from 2008 to 2016. It is motivated by the need to boost labor productivity and how wages are related to it to raise the living standards of employees. According to our research, Romania's manufacturing industry makes a sizable contribution to the value-added and employment of the non-financial business economy.

According to the findings of the correlation and regression study, wages in the manufacturing sector of Romania increased between 2008 and 2016 as an outcome of higher worker productivity. Furthermore, it appears from our research that high worker productivity is the main factor contributing to high wages in some manufacturing subsectors. The results also highlight high gaps between labor productivity and wages among some manufacturing subsectors, which can result in declining labor shares and, as a result, increased social inequality. These gaps between wages and labor productivity have been present and have grown consistently throughout the manufacturing sector from 2008 to 2016.

Fallahi, et al., (2011) examined the business-level variables affecting worker productivity in Iran's manufacturing sector. The study employed cross-sectional regression models and descriptive statistics on a sample of 12,299 industrial companies. The pay efficiency hypothesis was supported by the study's findings, which indicated that salary was the most significant explanatory variable affecting labor productivity in industrial enterprises.

A study on Factors Affecting the Construction Sector Labour Productivity in Zimbabwe was done by Nyoni & Bonga in 2016. Zimbabwe is a rising nation, and the building sector is significant. The purpose of this study is to identify the key factors that influence Zimbabwe's construction labor productivity. Using surveys with both organized and unstructured questions, data was gathered. To choose the target audience, fifty (50) questionnaires were filled out and scored. Using a straightforward ordinal scale based on a 5-point Likert scale, contractors, consultants, and other experts expressed their views on the relative importance of

twenty-two (22) pre-selected criteria on construction labor productivity. The information was examined using the Relative Importance Index (RII). According to the results, the top thirteen (13) factors influencing construction labor productivity in Zimbabwe include the availability of experienced personnel, late or non-payment of wages and salary, suitability and/or adequacy of capital, non-payment to suppliers, and education and training.

The prompt payment of salary, wages and investments in employee training and development are amongst the intervention strategies that are advised to increase construction labor productivity in Zimbabwe. Dearden et al., (2006)revealed that in the United Kingdom, a 1% increase in skilled workers led to a 0.6% boost in labor productivity and a 0.3% increase in earnings. They found that training increases worker productivity more than wage increases do because of wage adjustments and labor market competition in a less-than-ideal way.

2.3.2 Firm Working Environment and Labour Productivity

Elaho et al. (2022) conducted an analysis of the workplace and the effects it has on worker productivity. The study used a descriptive and quantitative methodology because the respondents provided first-hand information. The target sample for the study consisted of 147 business centers registered on the University of Benin's Ugbowo campus, and questionnaires on a 5-point Likert scale were used. SPSS software was used to obtain, purify, and analyze the data. To accomplish the research goals, the data were examined using frequency counts and displayed in tables and percentages, along with an advanced analysis that included the regression t-test.

Every company looked for a better employee one who would be very productive. The impact of the workplace on employee productivity would be made clear to every company and worker in Nigeria and around the world. The study, however, only included small enterprises that were registered with the University of Benin. According to the study, the workplace has an impact on employee productivity. On a more direct note, it is commonly believed that the productivity of workers in business centers on the University of Benin Ugbowo campus, in Benin City, is largely correlated with their work environment, workload, and supervisor assistance. Additionally, this proposes that the environment, workload, and supervisor's assistance are effective indicators of employee productivity in organizations.

A survey by Shazad, et al., (2018) included 2000 personnel from different organizations and industries who were classified at various levels. It was found that nine out of ten workers thought that the environment at work had effect on their attitudes and productivity. Employees who are actively involved are typically more productive than those who are not. Additionally, Bassit, Hermina, and Kautsar (2018) examined how the workplace environment and internal motivation affect employees' productivity. They found that workplace conditions had an impact on employees' altitudes of internal motivation. Highlighting the fact that an employee's spirit and ethos impact his productivity.

Adam and Nurdin (2019) established a similar conclusion to that of Bassit, Hermina, and Kautsar (2018), namely that the level of productivity of employees in each organization was significantly influenced by the combination of individual, organizational, and work environment factors. Talukder and Galang (2021) looked

into how support from supervisors affected workers' productivity. Their findings showed that Work-Life Balance (WLB) and organizational commitment were the only significant mediators between supervisor support and employee performance.

2.3.3 Human Capital and Labour Productivity

Ngugi (2019) examined the factors affecting labor productivity in Kenyan manufacturing enterprises using firm-level data. To analyze the model, the author used the OLS method. The results showed that key factors influencing labor productivity included worker education, foreign ownership, company location; firm size, number of managers hired, and export status. Hesmati and Rashidghalam (2018) examined both manufacturing businesses from the World Bank's 2013 enterprises in their analysis. To make the data comparable across the global economy, the study used established methods. It was made up of 670 businesses that were observed in Kenya's manufacturing sector. The findings showed that educational attainment and training were favorable, and their connections to labor productivity were considerable.

A study by Aggrey, et al., (2010) examined how human capital affected worker productivity in East African manufacturing businesses. To estimate the human capital model, the study used Generalized Least Squares (GLS) using longitudinal data from Kenya, Tanzania, and Uganda. According to the results, training, the percentage of skilled workers and management education in Tanzania, the percentage of skilled workers and average education in Kenya, and the percentage of skilled workers and average education in Uganda were all positively correlated with labor productivity.

Using panel time series data, Samargandi (2018) found that capital stock has a large and beneficial impact on labor productivity in manufacturing companies in the Middle East and North Africa (MENA) countries. The physical infrastructure reduces the effort and time needed to produce goods and services, increasing labor productivity. This study also identified the effects of oil, trade openness, and financial development on worker productivity. Organizations' innovation activity generally tends to increase labor productivity in addition to the level of human capital. On the other hand, compensation and the size of the workforce had a negative effect on labor productivity.

These outcomes concede with those of other perspectives, which contend that economies of scale cause small enterprises to be less productive than bigger ones and that higher worker compensation raises production costs, which in turn reduces productivity.

2.4 Research Gap

Numerous factors have been mentioned to affect worker productivity in manufacturing enterprises in various nations from the extensive literature research on the topic. The most frequently suggested ones are the level of education, training, business size, pay, and salary. Other characteristics considered include location, experience, and capital intensity. Despite earlier research on the subject, its conclusions cannot be applied generally to Tanzania. Due to the scarcity of studies and the use of outdated data in those that are accessible, this study will evaluate the socioeconomic factors that influence labor productivity in the manufacturing sector.

2.5 Conceptual Framework

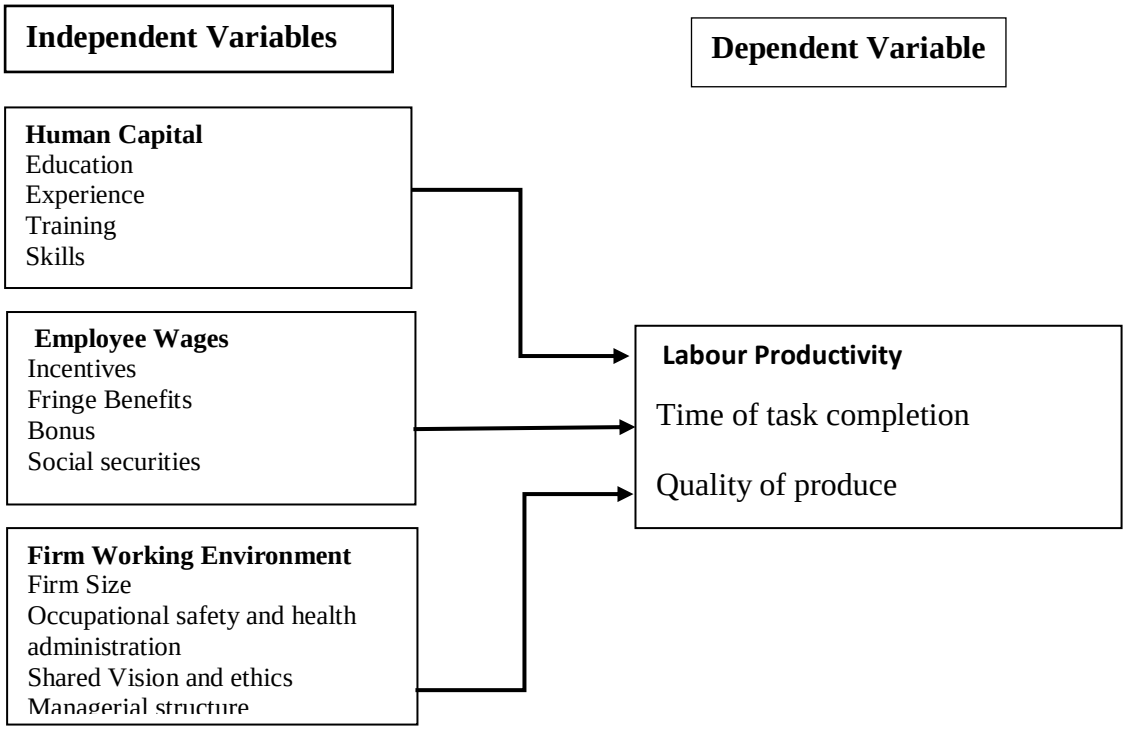


Figure 2.1: Conceptual Framework
Source: Study Conceptualization (2022).

2.5.1 Labour Productivity

According to the study, Labor productivity was the dependent variable which is measured as the ratio of output per hour. Labour productivity is determined by human capital, wages, and firm size which will either increase or decrease labor productivity in the firms.

2.5.2 Human Capital

According to (Schultz, 1961) human capital is a crucial component that enhances a company's assets and aids workers in increasing productivity o maintain a competitive advantage. Education, training and other professional initiatives that raise an employee's level of knowledge ,skills, abilities, values, experiences, potential, capacity and social assets improve not only the satisfaction and

productivity of the employee but also the performance of a company as a whole (Marimuth et al., 2009). Proper utilization leads to a positive performance on company's performance. Production techniques are more quickly adopted by educated people. Therefore education, skills, and training are expected to have a positive correlation with labor productivity.

2.5.3 Wage

According to the Shirking model (Stiglitz & Shapiro, 1984) as wage levels increase labor force will be motivated to keep their jobs, and therefore the level of production will be expected to increase to avoid being sacked (Griliches, 1986)and the gift exchange model assumes that high wages change a relationship between employer and employee, an employee will be more attached to the employer and then lead to increase his productivity (Muhlau & Lindenberg, 2002). Therefore, according to the efficiency wage theory wage is expected to correlate positively with labor productivity.

2.5.4 Firm Working Environment

Productivity of the employee is significantly influenced by the workplace. According to (Chandrasekar2001), the working environment has a significant impact on employee's productivity, either negatively or positively. Most people spend 50% of their life indoors which has a positive impact on their mental health, behavior, talents and productivity (Dorgan, 1994). A better working place atmosphere usually leads to more productivity and greater results. The offices physical environment encourages workers which increases productivity. It is anticipated that stable working environment will lead to positive impacts on labour productivity.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter presents the research techniques and processes that have been used to conduct this study. The chapter covers research design, study area, sampling methods and sample size, data collection method, data analysis, ethical consideration and the study's validity and liability.

3.1 Research Philosophy

The research philosophy is a belief on how data concerning a certain phenomenon are collected, analyzed, and used. A research paradigm is a worldview based on philosophical presumptions about the nature of social reality modes, ethical and value systems (Omary, 2011).In the Western tradition of science, there are two main research ideologies namely positivist (scientific) which is based on scientific and systematic verification and employs a quantitative research paradigm while the interpretivist (anti-positivist) is based on the subjects interpretation and intervention in reality and uses a qualitative research paradigm (Patton, 2002).

The positivist philosophy which employs the quantitative research paradigm was used in this study since it enhances the assessment and validation of what has been reported concerning the phenomena and hence provides accurate and valid presentation of variables related to the hypothesis.

3.2 Research Approach

The two main research approaches are known as inductive and deductive approach. Research approach presents a general plan and methods for conducting research. The

inductive approach generalizes the study from specific to general objective for the purpose of developing conceptual framework and explores the phenomena while the deductive approach generalizes the study from general to specific in evaluating proportions or hypothesis to an existing theory. This study employs an inductive approach which relies on qualitative research mentors moreover it allows a use both quantitative and qualitative methods of data collection (Mugenda & Mugenda, 2003).

3.3 Research design

According to the nature of this study, the researcher used a descriptive survey design, which in describing the distribution of phenomena in a population and in establishing facts since the data was contextual, depth, and rich in details, where a single social unit will be investigated as the representative of other remaining society in Tanzania. Ogula (2005) describes a research design as a plan, structure, and strategy of investigation to obtain answers to research questions and control variance. As noted in Mugenda & Mugenda (2003) this type of design is applied where the problem is well defined, there exists information about the phenomenon, and the researcher can be involved in a survey by going to the target population for the respondents to explain certain features about the problem under study. The design has several advantages such as time-saving, and efficiency in obtaining current factual information from the respondents (Orodho, 2009).

3.4 Area of the Study

Study area explains the fields of research relating to geographical, cultural studies, history, literature, and other related fields. The study was conducted in the coastal

region which has seven districts. The region is located in the idle Eastern side of Tanzania mainland, between latitudes 6^0 and 8^0 south of the equator and longitudes 37^0 $30^{'}$ and 40^0 east of Greenwich. It borders Dar es Salaam region and Indian Ocean in the East Tanga region in the North, Lindi in the South and Morogoro in the West. Agricultural allied activities contributes about 60% of the regional income is the region. Other activities include fishing, mining, and tourism. In the region, 1192 industrial enterprises were already established in 2019 whereby, 701 were micro-enterprises, 350 small-scale enterprises, 86 medium scale and 55 large-scale enterprises in operation (PRIG, 2019).

3.5 Target Population

According to Singh (2007), a population refers to a group of individuals, items or objects where samples are taken for measurement. The purpose of the study is socio-economic factors influencing labor productivity for the manufacturing sector in the coastal region; therefore, the study unit of analysis were laborers employed to work in different sections of operation involving sales officers, logistic officers, production managers, technical managers ,food technologists, packers, machine operators, system analysts, drivers, administration departments, processing engineers, quality control technicians, from food processing manufacturing industries in the Coastal region

3.6 Sampling Technique and Sample Size

3.6.1 Sampling Technique

Ogula (2005) describes population as a group of institutions, people, or objects that have common characteristics. (Mugenda & Mugenda, 2003) describe the target

population as a complete set of individual cases or objects with some common characteristics to which the researchers want to generalize the results of the study. The study adopted both purposive and stratified sampling techniques basing on the nature of the analysis. As discussed by silver (2012), the stratified sampling technique provides for the chance of inclusion of all employees or individuals with heterogeneous characteristics. Cross-sectional data were used for the analysis of the socioeconomic factors determining labor productivity using a sample of 384 target employees.

3.6.2 Sample Size

Since the number of employees from food processing industries in the Coastal region was unknown, the sample size is obtained by using the table adopted by (Krejcie & Morga1970) and quoted by Payne and Payne (2004, p. 203) in key concepts in research which helps determine sample size from a given population. The size of the sample must be suitable for it to create strong statistical power for the generalization of the results (Reswell & Hirose, (2019), Hair et al, 2021). For various reasons obtaining the right sample size was important since a large sample size was more accurate representative of the population. This study applied a multiple regression and therefore the sample sized used must conform to this method.

Due to unknown number of the study population; it was then assumed that, population of Labours from industries in the Coastal region was approximately above 100,000; therefore according to sample size (appendix B), the sample size for this population is 384.According to Gill, Johnson, and Clarks, (2010) for a study

with a population of more than 500,000 units a desired accuracy with a confidence level of 95% and variance of the population p=50%, its sample size will be 384 units of which will be the sample size in this study.

The larger the sample size the lower the likelihood of random variation skewing the results, making conclusion robust and help generalize to a broader population with higher statistical power of the analysis towards research outcome (Hair, et al., 2021). According to the Coastal Region data, (PRIG, 2019) there were 1192 industrial enterprises 701 micro,350 small scale, 86 medium and 55 large scale industries where by among these there were a total of 167 food processing industries 10 Large, 14 Medium, 40 small and 103 micro industries.

Thus study adopts the (Smith, 2009) formula to calculate sample size for food processing industries.

$$n = \frac{N\sigma}{\sigma + (N-1)} \qquad \text{..} (1)$$

Where: $\mathrm{n} = \text{the desired number of manufacturing and service industries}$

$Z = \text{the standard normal deviation, which is 1.96 set at a 95\% confidence level}$

$\sigma = 96.4$

A total of 384 Labour from 100 food processing industries of the Coastal region were investigated. The following table presents sampled industries' distribution based on the food processing industry size.

Table 3.1: Sample Distribution among Industry Sizes

Industry Size	Number of Food Processing Industries (N)	Industry Sample Size Industry Ratio (n)	Labour Sample Size
Micro	103	50 0.500426	192
Small	40	28 0.284764	109
Medium	14	12 0.123354	47
Large	10	9 0.914542	35
Total	**167**	**100**	**384**

Source: Research data, (2023).

3.7 Data Collection Method

Structured questionnaire was administered through online data collection method where respondents were able to respond to the questions through a link shared by the researcher and submit it. This method was suitable since it is time saving, cost effective technology driven, user friendly and it enables data to be collected in a wide area.

3.8 Data Processing and Analysis

The study used the descriptive approach that enables analysis of data in statistical form, thus, the data was presented in frequency distribution tables and charts that facilitated the inferential analysis, description and explanation of the study findings.

3.8.2 General Econometric Model

The general estimation the Multiple Linear Regression model is presented in equation 3.

$Y = f(HC, WE, EW)$…….. (2)

Where $Y = \frac{Time\ index + Quality\ index}{2}$

$$Y_g = \beta_0 + \beta_1 HC + \beta_2 WE + \beta_3 EW + \ldots\ldots\mu_1 \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where, HC=Human capital

WE=Firm Working Environment

EW=Employees Wage

3.9 Estimation Technique

In this study the Ordinary Least Square (OLS) technique was used to assess the factors influencing labour productivity since the model is linear in parameters. This approach was more suitable since it is simple to apply and offers better estimates than other estimation techniques provided that the OLS assumptions are met according to Gauss Markov Theorem (Gujarat, 2004). The researcher used the assumption of Ordinary Least Square (OLS) to achieve the analysis goals. These presumptions include normality, multicollinearity, heteroscedasticity and linearity which show variations that indicates the level of biasness, high or low confident interval (CI), and significance test (Young, 2018; Shim, *et al.*, 2019).

3.11 Ethical Consideration

Ethics is the study of norms of conduct in the field of philosophy, theology, law, psychology and sociology. Ethics is defined as a method, procedure or perspective for deciding how to act and for evaluating complex problems and situations. Th respondents were guaranteed that the data they gave would remain private and anonymous throughout data collection, analysis and reporting .Respondents were not required to provide their names when completing surveys and the researcher made it clear that the man goal of the research was for academic purposes.

3.12 Validity and Reliability of the Study

3.12.1 Validity of the Study

Validity is the most important measure which shows the extent an instrument measures what it intended to measure (Kothari, 2004).Kaiser-Mayer Olkin (KMO) calculates the percentage of variance in the variables that could be caused by underlying causes. KMO was used to assess validity in this study. A high value (close to 1.0) denotes the possibility of using factor analysis to analyze the study's data. According to (Choi & Geistfeld, 2013), validity is the accurate measurement where the independent to dependent variable is to be of truthful for the results. If research was high in validity it means that it produces results that correspond to real properties, characteristics, and variations in the physical or social world (Smith, J. &Flowers, P., 2009)**.** In order to ensure validity and reliability, sample adequacy was tested in explanatory factor analysis whereby the Kaiser-Meyer-Olkin (KMO) is used to examine sample adequacy.

For the KMO statistics Kaiser (1974) recommends a bare minimum of 0.5 and that values between 0.5 and 0.7 are good, values between 0.7and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb. Table 3.2 Indicates that, the KMO measure of sampling adequacy was 0.78 which is good for further process of analysis.

Table 3.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.786**
Bartlett's Test of Sphericity	Approx. Chi-Square	150.782
	Df	6
	Sig.	.000

Source: Data Analysis (2023).

3.11.2 Scale Reliability

A Cronbach's alpha test was applied to test the internal consistency of the measuring instrument (Likert scale). Cronbach's Alpha is a tool for assessing reliability scale which will be used for testing social economic factors and labor productivity. Cronbach's alpha reliability coefficient normally ranged between 0 and 1. The coefficients closer to 1.0, imply the greater internal consistency of the items variables in the scale as argued by According to George and Mallery (2003), the coefficients that are closer to 1.0 indicate that the scale's item variables have a higher degree of internal consistency. Furthermore, it should be noted that a high value for Cronbach's Alpha indicates a good internal consistency of the items in the scale.

Table 3.3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.919	.918	22

Source: Data Analysis (2023).

Alpha values above 0.7 are generally considered acceptable and satisfactory, above 0.8 and are usually considered very-good, and above 0.9 are considered to reflect exceptional internal consistency (Cronbach, 1951). In the social sciences, the acceptable range of alpha value is from 0.7 to 0.8 (Vakili, 2018). The Table 3.4 Indicates that, the Cronbach's Alfa for this study tool is 0.91 based on standardized items, which is acceptable rate of consistence of the measuring instrument. Therefore, the study data was good for further procedures.

As a result, the study Analysis of Variance (ANOVA) along with Tukey's Test for non-additivity to identify the presence of factor-factor relationship. The results are

summarized from Table 3.4. The P-values for the ANOVA test, which reflect the significance internal consistency at the 95 percent confidence intervals where P- which also indicate that ANOVA test had P-Values (0.000) of both between people within people and between items within item; which is very small less than 0.05 indicating significance internal consistency of the tool at 95 confidence intervals. Therefore, data collected was statistically significant for further analysis procedures and interpretation.

Table 3.4: ANOVA with Tukey's Test for Non-additivity

			Sum of Squares	df	Mean Square	F	Sig
Between People			2453.184	383	6.405		
Within People	Between Items		23050.856	21	1097.660	2110.330	.000
	Residual	Non-additivity	625.896[a]	1	625.896	1414.861	.000
		Balance	3557.563	8042	.442		
		Total	4183.459	8043	.520		
	Total		27234.315	8064	3.377		
Total			29687.498	8447	3.515		

Grand Mean = 3.3987

a. Tukey's estimate of power to which observations must be raised to achieve additivity = -.039.

Source: Data Analysis (2023).

3.11.3 Intraclass Correlation Coefficient

Another reliability measurement employed by the study was Intraclass Correlation Coefficient (ICC) that describes the reliability of information organized in group within the study (Creswell & Poth, 2016). Table 3.5 show result of ICC in two-way effects have significant level less than P-values of 0.05 which is 0.000; this indicated that the ICC is statistically significant at 95% confident intervals.

Table 3.5: Intraclass Correlation Coefficient

	Intraclass Correlation[b]	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.451[a]	.382	.529	15.775	105	1785	.000
Average Measures	.937[c]	.918	.953	15.775	105	1785	.000

Source: Data Analysis (2023).

3.11.4 Variables and their Measurement

The study employed five Likert scale questions for each proxy measures from each given variable; which then were transformed by the aid of SPSS software to form continuous variables. This computation was done so as to transform raw data from categorical data to continuous data for multiple linear regression analysis procedures to persist.

Table 3.6 Variables and their Measurement

Objective	**Variables**	**Variable indicators**	**Collection tool and unit measurement**
Assess wage contribution, firm size, and human capital influencing labor productivity for the manufacturing sector	Labour productivity	>Time of task completion >Quality of produce	Questionnaire *Index calculation*
Analyze the contribution of wages in influencing labor productivity	Employee Wage	Incentives Fringe Benefits Bonus Social securities	Questionnaire *Likert scale*
Examine how the firm working environment influences labor productivity in the manufacturing sector	Firm Working Environment	Firm Size occupational safety and health administration Shared Vision and ethics Managerial structure	Questionnaire *Likert scale*
Evaluate the contribution of Human capital to improving labor productivity	Human Capital	Education Experience Training Skills	Questionnaire *Likert scale*

Source: Data Analysis (2023).

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Chapter Overview

This chapter presents details of discussions on the results obtained for the study. The purpose of the discussion is to answer research hypothesis on the socio economic factors affecting labour productivity in manufacturing sector. The chapter presents demographic results, Diagnostic tests, proceeds to a brief discussion of the descriptive statistics where the features of the study variables are explored. Further, the study discusses on the correlation results among variables and the regression results obtained from the study.

4.1 Respondents' Demographic Features

4.1.1 Distribution of the Respondents by Gender

Gender results shows that males were 164(42.7%) while female were 220 (57.3%) among the surveyed employees from the industries as indicated in table 4.1.Majority of the respondents were female which has been influenced by technological advancement due to creation of new opportunities for women in manufacturing industries. women have been involved in production process from the start to finish. Women operate machines, manage production lines and also work in various areas such as planning, production, quality control etc.

4.1.2 Distribution of the Respondents by Age

Results in Table 4.1 indicate that 6(1.6%) had the age of 18-25 years old, 94(24.5%) had the age between 26-35,178 (46.4%) had the age ranging 36-45 and 106(27.6%) had the age of 46 and above. Most of the employees had the age between 26-35

which is the active working age.

4.1.3 Distribution of the Respondents by Education

Findings shows that 49(12.8%) respondents were uneducated, 166(43.2%) had primary level education, 155(40.4%) had secondary level education and 14(3.6%) had certificate and above level of education as indicated in table 4.1. Majority of the employee's education was primary school education holders since activities in the industries require both skilled and non-skilled laborers.

4.1.4 Distribution of the Respondents by Kind of Employment

Results in table 4.1 indicate that, Day workers were 15(3.9%), contractual or part time employees were 245(63.8%) and full time employees were 124(32.3%). Most employers to hire part tie employs since it is cost effective and increases productivity.

4.1.5 Distribution of the Respondents by Working Experience

Results from Table 4.1 shows that, 38(9.9%) had less than a year experience, 139(36.2%) had 1-5 years of experience, 165(43%) 6-15 years of experience and 42(10.9%) had 16 and above years of experience.

4.1.6 Distribution of the Respondents by Income Level

Findings indicate that 9(2.3%) earned 5000 and below 52(13.5%) earn between 50001-50000, 51(13.3%) income level is between 500001-300000 and 272(70.8%) of the respondents earned between 3000001 and above.

Table 4.1: Respondents Distribution Characteristics

		Frequency	Percent
Gender	Male	164	42.7
	Female	220	57.3
Age	18-25	6	1.6
	26-35	94	24.5
	36-45	178	46.4
	46 and above	106	27.6
Education	uneducated	49	12.8
	primary	166	43.2
	secondary	155	40.4
	certificate and above	14	3.6
Kind of Employment	Day worker	15	3.9
	contractual/part-time employee	245	63.8
	Full time	124	32.3
Working Experience	Less than a Year	38	9.9
	1-5 years	139	36.2
	6-15 years	165	43
	16 and above	42	10.9
Income Level	5000 and below	9	2.3
	50001-50000	52	13.5
	50001-300000	51	13.3
	300001 and above	272	70.8

Source: Data Analysis (2023)

4.2 Correlation Analysis between Variables

Table 4.2 shows Correlation analysis was conducted between Human capital, Employee wage, firm working environment and Labour productivity. Results revealed that all variables had positive association with Labour productivity. Employee wage has a strong relationship with Labour productivity (r=.817, P<0.01) while Human capital was the least strong with (r= .637, P<0.01).

Table 4.2: Correlation Matrix

		LP	HC	EW	WE
LP	Pearson Correlation	1	.637**	.817**	.791**
	Sig. (2-tailed)		.000	.000	.000
	N	384	384	384	384
HC	Pearson Correlation	.637**	1	.565**	.479**
	Sig. (2-tailed)	.000		.000	.000
	N	384	384	384	384
EW	Pearson Correlation	.817**	.565**	1	.732**
	Sig. (2-tailed)	.000	.000		.000
	N	384	384	384	384
WE	Pearson Correlation	.791**	.479**	.732**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	384	384	384	384

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

Source: Data Analysis (2023).

4.3 Diagnostic Test

4.3.1 Normality

In a typical Q-Q plot, the diagonal is closely followed by the line that represents the actual data distribution .Figure 4.1 shows the results of the independent variables normality test, which showed skewness and suggests a normal distribution (Bayer & Cribari, 2017). According to Baran (2022), the observed value for each score is plotted against the expected value from the normal distribution, where a decent straight line shows normal distribution. This is known as the Q-Q plot, or the normal probability plot.

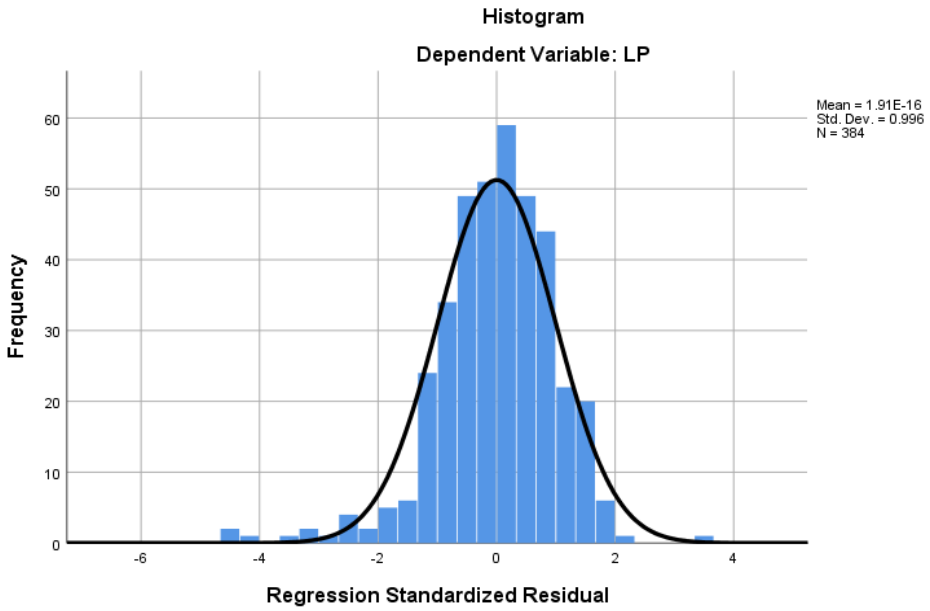


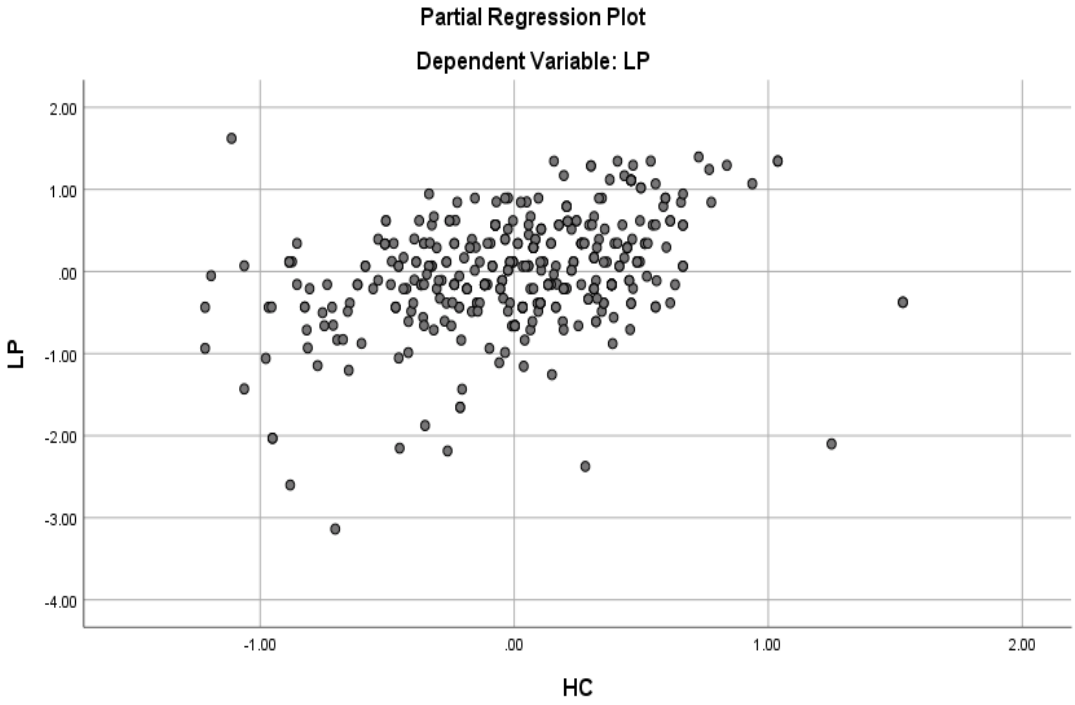
Figure 4.1: Normality

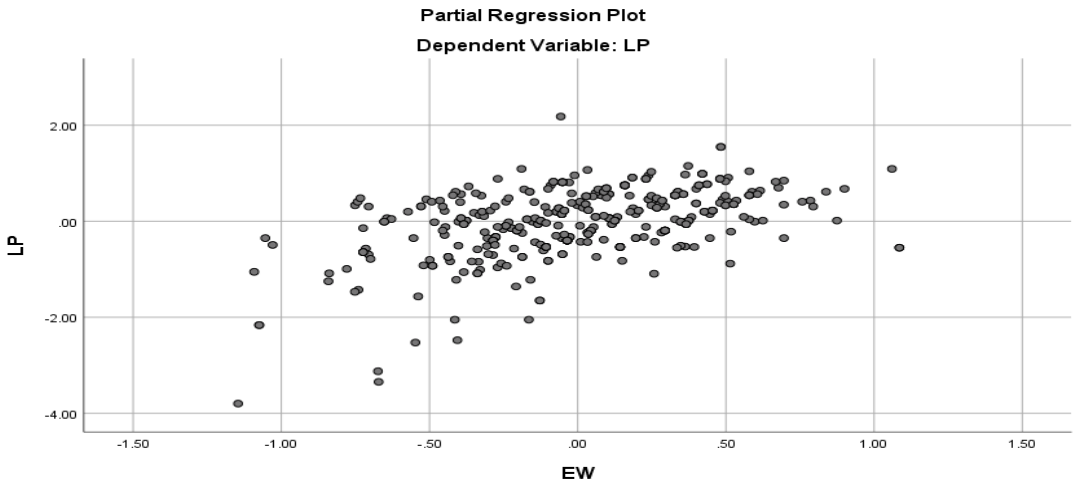
Source: Data Analysis (2023)

4.3.2 Homoscedasticity

This assumption states that the variances of error terms are similar across the values of the independent variables. A plot of standardized residuals (Scatter Plots) versus the predicted values has to show whether points are equally distributed rectangular

across all variables. An important assumption in testing Homoscedasticity is that the variance in the residuals has to be heteroscedasticity and Homoscedasticity or constant. The scatter plots (Figure 4.2) are distributed across the rectangle. Therefore, the overall, findings suggest that Homoscedasticity was not violated for both criterion variables (Creswell & Poth, 2016).





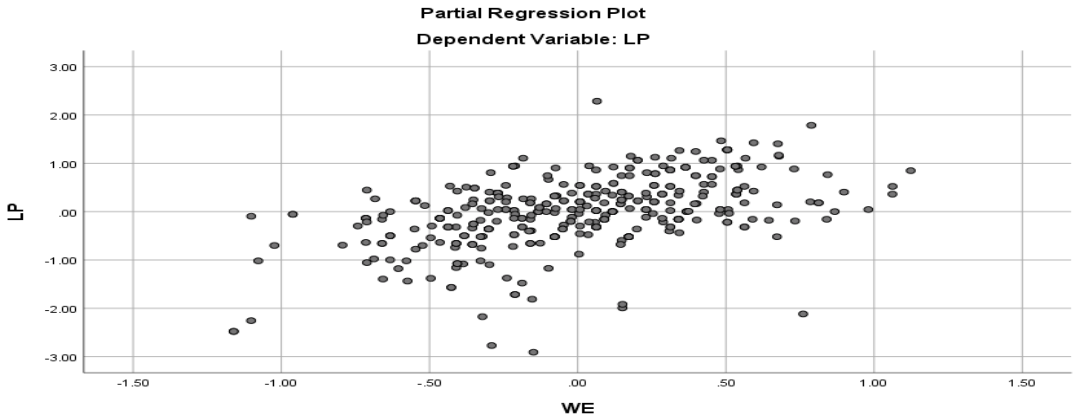


Figure 4.2: Homoscedasticity
Source: Data Analysis (2023)

4.3.3 Multicollinearity

Multicollinearity is resulted from the circumstances where two or several variables are so highly correlated in such a way, they both essentially represent the same underlying construct, that is; what appear to be separate variables actually measure similar constructs, (Hair & Sarstedt, 2021). Table 4.3 indicates that the variance inflation factor (VIF) had values less than 5 and Tolerant values (1/VIF) are more than 0.2 indicating that the problem of multicollinearity among the independent variables does not exist. The authors suggest that the VIF values greater than 5 and Tolerant values less than 0.2 indicates that there was no multicollinearity among the independent variables included in the model (Saunders, Sim, Waterfield, & Kingstone, 2018).

Table 4.3: Collinearity Statistics

	Tolerance	**VIF**
HC	.672	1.488
EW	.404	2.474
WE	.458	2.186

Source: Data Analysis (2023).

4.3.4 Linearity

Figure 4.3 shows the tested linearity assumption of data obtained through the examination of scatter plots ,it reveals no significant deviation from linearity and the scatter plots for the argued components plus residuals were linear in nature because all point variables linearly followed the diagonal regression line (Hair & Sarstedt, 2021), argued that the linearity of data is often assumed for variables in multivariate analysis and if left unattended, a non-linear data can seriously undermine any statistical inference.

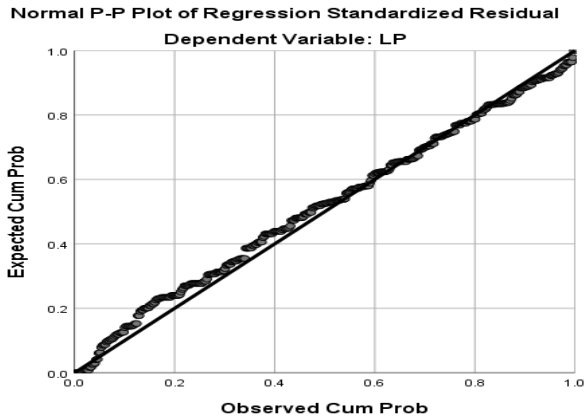


Figure 4.3: Linearity

Source: Data Analysis (2023)

4.4 Model Output

4.4.1 Model Summary

The influence of employee wage, Human capital and firm working environment on labour productivity was analyzed using multiple regression analysis. The regression model summary in table 4.4 explains the proportion of variance on labour productivity whereby R square is 0.781 which implies that 78.1% of the proportion of labour productivity is explained by employee wage, Human capital and firm

working environment. Further, the findings shows that R value = 0.884 which indicates that the predictor variables that is employee wage, Human capital and firm working environment are effective by 88.4% in influencing labour productivity.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.884[a]	.781	.779	.62451	.781	451.284	3	380	.000	1.846

a. Predictors: (Constant), WE, HC, EW

b. Dependent Variable: LP

Source: Data Analysis (2023)

4.4.2 ANOVA with F-Test

Results indicate that Human capital, employee wage and firm working environment have significant effect on Labour productivity because the signifance level obtained after statistical F test was 0.000 which is less than 5% level of significance and also the F value 0f 451.284 is greater than the sample size of 384.

Table 4.5: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	528.019	3	176.006	451.284	.000[b]
	Residual	148.205	380	.390		
	Total	676.224	383			

a. Dependent Variable: LP

b. Predictors: (Constant), WE, HC, EW

Source: Data Analysis (2023)

4.4.3 Regression Estimates for Labour productivity

The main objective of the study was to assess how employees wage contribution, firm working environment, and human capital influence labor productivity for the manufacturing sector in the coastal region. Thus from the background of the study it was hypothesized that Human capital, Firm working environment and employee wage has a positive influence on Labour productivity. Table 4.6 analyses multiple linear regression for Labour productivity.

Table 4.6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.078	.189		5.713	.000
	HC	.548	.073	.221	7.540	.000
	EW	.884	.081	.412	10.897	.000
	WE	.833	.077	.384	10.811	.000

a. Dependent Variable: LP

Source: Data Analysis (2023)

The mathematical model showing contribution for human capital, employee wage and firm working environment on labour productivity from equation 2 was derived as follows

LP = $Y_g = \beta_0 + \beta_1 HC + \beta_2 WE + \beta_3 EW + \ldots\ldots\mu_1 \ldots$

Thus the relationship between the variables is expressed as follows

LP = 0.221HC + 0.384WE + 0.412EW

4.4.3.1 Relationship of Human capital and Labour Productivity

Holding other factors constant a 1% increase in human capital will lead to significant increase in Labour productivity by 0.22% .Human capital had a positive relationship and a significant impact on labour productivity at 95% confidence interval where p

value was 0.000 which is less than 5%.Therefore the null hypothesis that human capital has no effect on labour productivity is rejected.

Furthermore, the proxy measure results from descriptive analysis as shown in Table 4.7 shows results that working skills yield a high mean of M=3.40, SD=.76 followed by work training M=3.3, SD=.82, work experience M=2.5, SD=.81 then education was the least with M=2.3, SD=.74. The higher the mean value the higher the impression on Labour productivity.

Table 4.7: Descriptive Analysis for Human Capital

Human Capital	**Descriptive statistics**		**Pearson Chi-Square Test**	
	Mean	Std. Deviation	Value	Sig (2-sided)
A-What is your highest-grade level of education that you have completed?	2.3490	.74616	641.536	.000
A-For how long have you been working here?	2.5495	.81606	266.778	.000
A-At my work place we frequently receive on work training to improve our productivity (Frequently is at least once in three months)	3.3594	.82773	226.359	.000
A-I utilize my working skills efficiently in production process	3.4036	.76208	176.661	.000
Valid N (listwise)				

Source: Data Analysis (2023).

4.3.3.2 Relationship between Employee wage and Labour Productivity

Holding other factors constant a 1% increase in employee wage will lead to a significant increase in labour productivity by 0.41%. Employee wage had a positive and a significant relationship on labour productivity at a 95% confidence interval where p value is 0.000 which is less than 5%. Hence the Null hypothesis that employee wage has no effect on labour productivity is rejected.

Furthermore, the proxy measure results from descriptive analysis as shown in table 4.8 shows that incentives yield a high mean value of M=3.25, SD=.88 followed by

Fringe benefits M=2.8, SD=.78. Also results further show that Bonus yield mean M=2.7, SD=.80 and social security's yield a Mean value of M=2.6, SD=.82

Table 4.8: Descriptive Analysis for Employee Wage

Employee wage	**Descriptive statistics**		**Pearson Test**	**Chi-Square**
	Mean	Std. Deviation	Value	Sig (2-sided)
B-To what extent are you satisfied on incentives	3.2578	.88131	242.264	.000
B-To what extent are you satisfied on Fringe Benefits	2.8073	.78121	429.942	.000
B-To what extent are you satisfied on Bonus	2.7734	.80028	482.540	.000
B-To what extent are you satisfied on Social securities	2.6224	.82114	513.024	.000
Valid N (listwise)				

Source: Data Analysis (2023).

4.4.3.3 Relationship between Firm Working Environment and Labour Productivity

Holding other factors constant a 1% increase in firm working environment will lead to a significant increase in labour productivity by 0.38%. Firm working environment had a positive and a significant relationship on labour productivity at a 95% convince interval where p value is 0.000 which is less than 5%.The null hypothesis that firm working environment has no labour productivity is rejected. Furthermore, the proxy measure results from descriptive analysis as shown in table 4.9 Indicate that, shared vision and ethics have a greater influence on firm working environment with mean of M=2.9, SD=1.04 followed by occupational safety and health administration M=2.7, SD= .81 managerial structure with M=2.4, SD=.77 and firm size has the least influence with M=1,65and SD=.98

Table 4.9 Descriptive Analysis for Working Environment

Working Environment	**Descriptive statistics**		**Pearson Test**	**Chi-Square**
	Mean	Std. Deviation	Value	Sig (2-sided)
C-At my working place occupational safety and health administration are fully observed	2.7318	.81014	513.936	.000
C-At my working place we share vision and ethics towards organizational production goals	2.9323	1.04998	361.879	.000
C-Firm Size	1.6510	.98187	238.997	.000
C-Managerial structure of my organization is interactive and supportive to all levels and departments.	2.4583	.77043	765.104	.000
Valid N (listwise)				

Source: Data Analysis (2023).

4.6 Discussion of Findings

This study aimed at assessing socio economic factors influencing labour productivity in manufacturing firms in coastal Region. The study tested the following hypothesis, human capital; employee wage and working environment have no influence on labour productivity in manufacturing sector. In Consistent with the findings from the study by Buba (2022), Rukumnuaykit & Pholphirul (2015) which shows that human capital has significant contribution to Labour productivity of a firm. Further, studies show that, years of education, attainment of skilled workers, in-service training, has a positive and statistical significant effect in increasing labour productivity.

Studies by Heshmati & Rashidghalam (2018) conclude that capital intensity and wage have a significant and positive impact on labour productivity. Also Mawejje & Okumu (2018), research shows that, wages reflect labour productivity and workers skills. The study showed that firm working environment had positive relationship with labour positivity which is consistent with Shahidul & Shazali (2011) found that favorable working environment is positively associated with Labour productivity and

Gustavo, Quiroz & Javier (2017) results show that environmental management has a positive impact on labour productivity for firms with low capital intensity and negative impact for firms with high capital intensity.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Chapter Overview

This chapter summarizes findings of the study on the factors influencing labour productivity in Tanzania, a case of coastal Region in manufacturing sector and makes some conclusions. It also draws some policy implications based on the findings and points out potential areas for further research.

5. 2 Conclusion of the Study

The increase in global competition had led to the need of developing and developed countries to understand factors and policies that influence labour productivity for the purpose of ensuring firms survive. Firm's growth, competitiveness and profitability largely depend on labour productivity. The main objective of the study was to assess socio economic factors that influence labour productivity Tanzania where data was collected from the manufacturing firm's employees by the use of questionnaires. A linear multiple regression model was analysed by the use of Ordinary Least square technique (OLS).In this study the dependant variable was labour productivity and the independent variables were Human capital, employee wage and firm working environment. According to findings, human capital, employee wage and working environment had positive and significant effect on labour productivity.

The main objective of the study was to assess socio economic factors influencing labour productivity in Tanzania. From the study, results showed that Human capital, employee wage and firm working environment were positive and significantly influenced labour productivity in the manufacturing sector in Tanzania. Therefore,

the government and manufacturing firms should adopt policies that aim at promoting human capital, increasing employee wage and creating conducive working environment which will boost labour productivity and eventually lead to profitability, competitiveness and progress in the manufacturing sector.

5.1 Recommendations

This study makes the following recommendations to promote labour productivity in the manufacturing sector in Tanzania. The study recommends that, there is a need for the government to encourage technical training, mentoring technology transfer, and employers should hire educated workers since they have high chance of increasing labour productivity. More educational institutions such as primary and secondary schools, colleges, universities should be established and young people should be motivated to join. This is due to the reason that, educated workers with required knowledge and skills are more innovative which leads to increased labour productivity.

The study results show that Employee wage increase leads to increase in labour productivity. Managers from manufacturing firms should at a time increase wages for employees as a way to show their appreciation and acknowledgment to the employees and also provide bonuses and incentives to top performing employees to motivate them to continue working with the firm which will promote labour productivity and lead to firm growth.

Managers and business should create a conducive and safe working environment and further provide work aided equipment for the purpose of encouraging employees to

give their best in achieving firms or enterprises goals. Occupational safety and health administration, Shared Vision and ethics should be encouraged by firm management so as to promote labour productivity.

5.2 Areas for Further Study

The study assessed the socio economic factors influencing labour productivity in manufacturing sector. The study only focused on manufacturing sector. Further studies can be conducted to assess labour productivity in service sectors and other specific subsectors such as education, health, transportation and finance. Also, other categories such as management and environment should be included in further studies. Other variables such as research and development, payment, market development, Corruption, access to finance should also be considered in further research study.

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APPENDICES

Appendix A; QUESTIONNAIRE TO EMPLOYEES

Greetings! My name is Winniemary Mfugale, I am a Master's student from the Open University of Tanzania pursuing a Master of Science in Economics; I am currently surveying to learn more about the socioeconomic factors influencing labor productivity for the manufacturing sector in the Coastal region. Although we will ask for information about this phenomenon and your experience, we will never use personal information in our documentation and will not report sensitive information to anyone.

If you have any questions in the future, you can contact the person who gives you this questionnaire

Are you willing to proceed with the interview?

- Yes …. >>>
- No …. >>>*(If no, terminate the survey)*

Administrative Information

Response number			
Date of interview:	DD MM YY		
Time of interview: (*24-hour clock*)	Start HH MM	Stop HH MM	
Name of interviewer:			
Place of interview:			
Name of a manufacturing firm			
Number of visits *(max. of 3)*			
Reason for call back	Number of visits		
	1	2	3
Refused to be interviewed		1	1
The target respondent was not found		2	2
The target respondent requested a callback		3	3
Respondent not able to be interviewed due to medical reasons (very sick, dumb, etc.)		4	4
Language barrier		6	6
Not applicable		99	99
The outcome of the final visit	Successful	Incomplete	Replaced

Thank you for agreeing to take this survey. To start, I would like to ask you a few questions about your working background and production. Kindly tick to the respective answer; however, use the following level of agreement to select your answers SD=strongly disagree, D= disagree, A= agree, and SA= strongly agree.

A. Human Capital

S/N	Human Capital	Response options/units			
A1	What is the respondent's gender?	Male		Male	
A2	What is your age (Years)	18-25	26-35	36-45	46 and above
A3	What is the highest-grade level of education that you have completed?	• Uneducated • Primary • Secondary • Certificate and above			
A5	Which kind of employment are you in with the current organization	• Dayworker • Volunteer/intern • Contractual/Part-time employee • Full-time employee			
A6	For how long have you been working here?	Less than a year 1-5 years 6-15 years 16 and above			
A7	What is your wage level	5,000 and below 5,001-50,000 50,001-300,000 300,001- and above			
	At my workplace, we frequently receive on-work training to improve our productivity *(Frequently at least once in three months)*	SD	D	A	SA
	I utilize my working skills efficiently in the production process	SD	D	A	SA

B. Wages

To what extent are you satisfied with the following issues at your workplace? 1=Not satisfied, 2= Low satisfies, 3= Satisfied, 4= A great deal		1	2	3	4
	Incentives				
	Fringe Benefits				
	Bonus				
	Social securities				

C. Firm Working Environment

What is the level of agreement on the following working environmental statements		SD	D	A	SA
	At my working place, occupational safety and health administration are fully observed				
	At my working place, we share vision and ethics toward organizational production goals				
	The managerial structure of my organization is interactive and supportive of all levels and departments.				

D. Measuring Labour Productivity (Time and Quality)

TIME; In the table below, please indicate the time of completion of your task by ticking its corresponding time completion index obtained.*(Alternatively, you may provide the figures in the formula below)*

$$Time\ of\ Task\ Complition = \frac{Planned\ task\ Time}{Actual\ implementation\ Time}$$

Time	Completed behind schedule					Completed as planned	Completed ahead schedule				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5 and above
Please Put a Tick											

QUALITY; in the table below, please indicate the quality of the selectedproduct by ticking its corresponding quality margin obtained. Please note that quality margin is in your estimation, the extent to which the quality of the product deviated from what was expected.

Quality	Completed below quality					Completed as planned	Completed with high quality				
Index	0.5 and below	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5 and above
Please Put a Tick											

Appendix B

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

Appendix C: Research Clearance Letter

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/ PG202000335 **19th December, 2022**

Regional Administrative Secretary,
Coast Region,
P.O Box 30153,
DAR ES SALAAM.

Dear Regional Administrative Secretary,

RE: RESEARCH CLEARANCE FOR MS WINNIEMARY E. MFUGALE REG NO: PG202000335

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief

background, the purpose of this letter is to introduce to you **Ms. Winniemary E. Mfugale, Reg. No: PG202000335)** pursuing **Master of Science in Economics (MSc)**. We here by grant this clearance to conduct a research titled **"Socioeconomic factors influencing labour productivity in manufacturing sector in coast region, Tanzania"**. She will collect her data as indicated in Appendix 1 from 19th December to 15th February 2023.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof. Magreth S.Bushesha

For: VICE CHANCELLOR

Appendix 1

DATA COLLECTION INSTITUTIONS/ORGANIZATIONS TO BE VISITED.

SN	INSTITUTION /ORGANIZATION NAME
1	Regional Trade Officer