ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF PIECE RATE SYSTEM ON MOTIVATION AND EMPLOYEES PRODUCTIVITY: THE CASE OF FERRIC BELT METAL PROCESSING AND ENGINEERING FACTORY

BY

BINYAM TEKLU

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APPROVED BY BOARD OF EXAMINERS

Dean, graduated studies	Signature
Advisor	Signature
External Examiner	Signature
Internal Examiner	Signature

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of TIRUNEH LEGESSE (ASSISTANT PROFESSOR). All sources of material sourced for the thesis have been duly acknowledged. I further confirm that thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Binyam Teklu

Name

Signature

St. Mary's University, Addis Ababa June, 2021

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate studies for examination with my approval as a university advisor.

TIRUNEH LEGESSE (ASSISTANT PROFESSOR)

Advisor _____ Signature _____

St. Mary's University College, Addis Ababa May, 2021

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Acronyms and Abbreviations

IT – Information Technology

CSA –Central Statics Agency

NPC – National Planning Commission

MIS- Management Information System

Abstract

Ethiopian manufacturing labor productivity is one of the lowest in the world. The main reason for this is low employee motivation and discipline (FDRE Policy Studies Institute, 2020). *One method mainly used to increase motivation and productivity of frontline workers is incentivizing them based on their performance. This study titled "assessment of piece rate system on motivation and employees productivity" focuses on the experience of Ferric-Belt metal engineering and processing factory, who implemented piece rate incentive system four years ago. Our main objective for conducting this research is to expand piece rate system as industrial labor productivity improvement tool across small and medium sized manufacturing enterprises. The company under study has four distinct production sections and they designed the system as group or individual bases, according to the nature of operation. The paper tries to study the impact of incentivizing employees over a four year period by gathering and analyzing qualitative and quantitative data which is collected from direct laborers and managers. Manager's perception is recorded by conducting interviews while direct laborers are approached with questionnaires. The outcome of their insight is further validated quantitatively from four years of historical production data to get a clear picture on effectiveness of the system. Even if general employee productivity has shown great promise, there are identified lessons to be learnt from their experience. Finally, the study indicates general steps and expected challenges along the process of implementing of piece rate incentive system in another factory setting.*

Key Words:- *Ethiopian manufacturing, organizational performance, financial incentives, motivation, Piece rate, productivity, manufacturing information system, sustainability*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Historically, the Ethiopian manufacturing sector had been progressive from the imperial period until the overthrow of the regime in 1974. During the following Dreg regime, the private sector was discouraged because of nationalization of companies and the ceiling imposed on the amount of capital the private sector could invest. The economy was governed by a central command system which left limited space for market forces to operate. This results in slower progress in most sectors of the economy and economic growth was at its bare minimum. In the meantime the government of Ethiopia liberalized the economy since 1991 and the government has designed and adopted agricultural development led industrialization strategy to enhance economic growth.

Since the 2000s, Ethiopia has emerged as one of the fastest-growing economies in Africa and manufacturing has been strategic economic pillar for Ethiopia ever since. Employment in the manufacturing sector increased at an annual average rate of 6.7% between 2000/01 and 2010/11 (CSA, 2019). Even if, the tremendous efforts made and the economic growth achieved, the Ethiopian economy remains beleaguered by structural problems and the manufacturing sector is still in infancy and have full of problems. With manufacturing productivity growth rate stood at 1.8% (CSA, 2019), the manufacturing sector plays a marginal role in employment generation, exports, import substitution, and inter-sectorial linkages. This low productivity growth rate led to a rise in unit labor cost, an indicator of competitiveness, indicating a disappointing performance of the manufacturing sector in terms of labor cost competitiveness for Ethiopian economy (Oqubay, 2018). One system that can be implemented, to motivate employees to increase their productivity, is a financial incentive System tied to performance of employees'.

This paper is aimed at studying the effect of financial incentive system has on the performance of an organization and the role of information system in sustaining results. For the purpose of this study, organizational performance is measured in terms of employee motivation and productivity, taking Ferric Belt Metal Processing and Engineering Factory as a case study. The expected outcome of this study is to indicate the pros and cons of such schemes has on the Factory and help in expanding the use financial incentive system as a competitive motivational strategy across small and medium sized manufacturing industries.

1.1.1. Background of the Organization

Ferric Belt Metal Processing and Engineering Factory located in Oromia especial economic zone of Sebeta town. It is founded twelve years ago by a family conglomerate with a capital of 15 million birr to manufacture metallic ornaments, guard rails and structural works. As of December 2019, the company has 140 employees out of which 103 are direct labors. The internal organization structure of the company is shown on figure 1 below

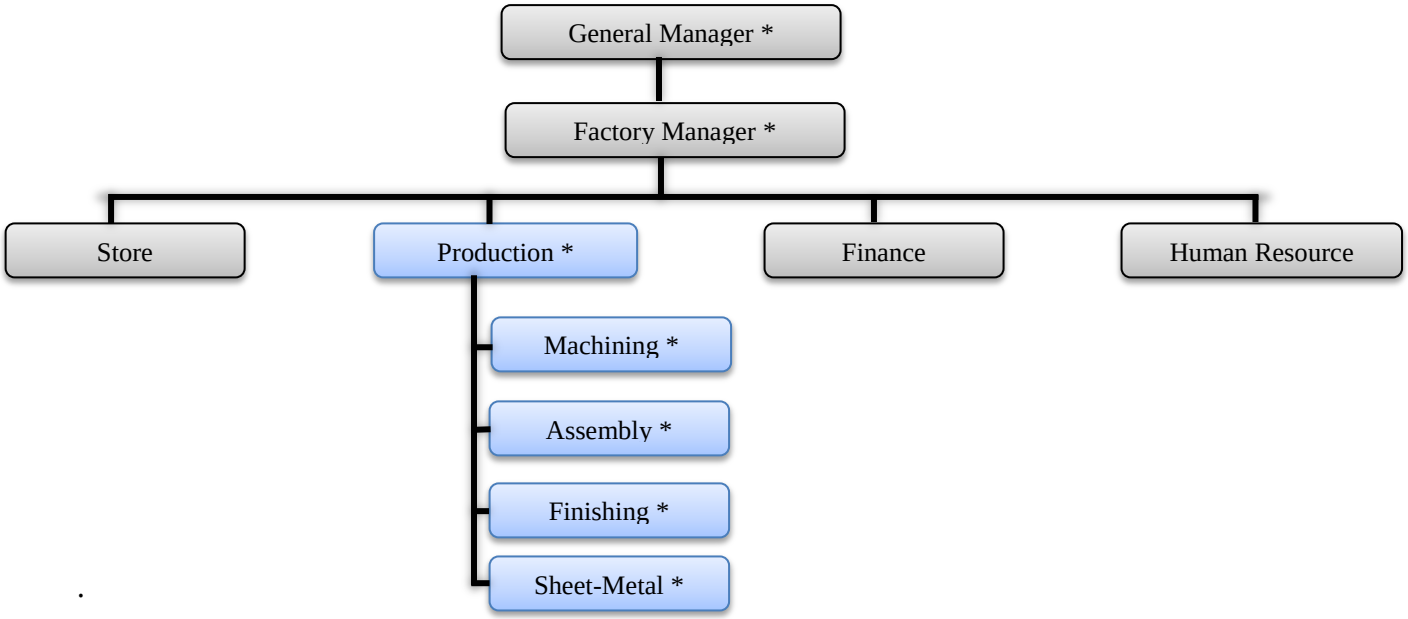

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Figure 1 Organizational Structure of Ferric Belt Metal Processing and Engineering Factory

As Ferric Belt Metal Processing and Engineering Factory is an industry whose production is characterized by multi operation production system. Mass production applies to machining section where components of ornaments are produced in mass for both internal and external consumption. The works of assembly and finishing section is generally batch customization according to each client's requirements and for service section, they work in a generic sheet metal machines for external customers according to each clients' drawings like a service provider.

1.2 Statement of the Problem

According to (Oqubay, 2018) Ethiopia's manufacturing sector is still far from being an engine of growth and structural change because of skilled man power, problems in infrastructure and financial constraints. A report by (NPC, 2018) stated that Ethiopian manufacturing companies are tied by different internal and external constraints that hold them from utilizing their full potential. But the one thing that factories can do to be competitive on the market place is to focus

on internal factors that hider growth. Apart from some studies conducted by government institutions, there have been no efforts to study the causes of low productivity in Ethiopian manufacturing industries and the role of motivated employees have in elevating the performance of the sector in particular. Based on the findings of (CSA, 2019) both labor productivity and average labor compensation of the manufacturing sector grew for the period 2000/01 up-to 2010/11, but the latter grew faster than the former hampering the overall outlook of productivity for Ethiopian manufacturing industries. On the latest report by (FDRE Policy Studies Institute, 2020); indicate that Ethiopian workers have trainable technical skill but lack attitude and discipline in their work. One way to improve attitude and discipline of workers is to motivate employees by integrating incentive scheme based on their day to day performance.

For the first eight years of operation, Ferric Belt Metal Processing and Engineering Factory production rate hover around 400 meters of products per month. Top management of the company realized the chronic low level of productivity and conducted assessment on the causes giving emphasis on internal factors. As per the findings, one reason that stood above all is the previous annual pay rise calculated as a fixed percentage rise of salary where the percentage is decided by top management of the factory in a non-transparent process. The proposed change was to redesign the work flow in production section and tie it financially to performance of employees. This strategy led to a designing of computerized Piece Rate system to follow labor productivity and abolish the previous fixed rate rises. There are different variations in calculating output and cost but for this study piece rate is calculated by multiplying monthly outputs measured in meter (m) or piece (pc) by pre-determined standard rate that is related with difficulty and risk of jobs.

In June 2016, a project launched to implement an integrated piece rate system into Ferric Belt Metal Processing and Engineering Factory. The owners came and introduced the program to employees and soon started a swift overhaul inside the factory. These changes encompasses different tools such as reassignment of job characteristics, increasing job enrichment of selected functional areas, development of new formats and designing of new piece rate rules for fair and transparent process. New software is developed to facilitate manufacturing information system across the organization with the purpose of integrating, monitoring and controlling the activities of different functions. The system also keeps track of detail performance data and provides latest

information for decision makers thus sustaining productivity. Finally, financial incentive is associated with the management system changes.

This study aims to measure the changes that realized after the implementation of piece rate incentive system. The changes realized in motivation and productivity of direct labors for the past four years. It wants to pinpoint the effects of piece rate incentive system as an employee motivational tool in terms of quantity of products produced. This study also wants to analyze the connection between management information system and sustainability in motivation and productivity of employers as a means of improving organizational performance.

1.3 Research Questions

These four questions are what the study aims to cover in the course of time

1. What is the relationship between piece rate incentive and motivation of employees?
2. What is the relationship between piece rate incentive system and the rate of output in Ferric Belt Metal Processing and Engineering Factory?
3. What is the relationship between motivation of employees and the rate of output in Ferric Belt Metal Processing and Engineering Factory?

1.4 Research Objective

1.4.1. General Objective

Globally, manufacturing constitute significant number of employees in every economy and countries formulate different development strategies to support this sub-sector. The general objective of this study is to identify and evaluate major consequences of implementing a piece rate incentive system has on a manufacturing industry taking Ferric Belt Metal Processing and Engineering Factory as a case study and recommending a way of action in expanding the system into other industries for increasing their productivity.

1.4.2. Specific Objectives

The specific objectives of the study is to

1. Understand the relationship between piece rate systems on motivation of employees in Ethiopian manufacturing context.
2. Understand the relationship between changes in productivity and incentives; if there is any relationship
3. Understand the relationship between motivation of direct labor to changes in productivity as seen by internal stakeholders in terms of quality and quantity.

1.5 Significance of the Study

The human capital is the most important and largely underutilized asset in most organizations. The performance reward system could affect employee's motivation that can be directly reflected on the financial health of the organization. Piece rate pay and employee's motivation could be the solution for optimum employee's performance and reduction of inefficiencies; hence this study becomes very apt. It would be logical to look at piece rate pay and employee performance to unravel the mystery bedeviling organizational growth and sustainability. From previous studies conducted, we can understand that an efficiently designed piece rate system has much significance. Some of them are:

For the sector and country

As it is known that motivated employees have huge potential to change the destiny their organization, we can generally say that it is a life and death decision for businesses. Successful piece rate system can be iterated to other sectors which generally increases the disposable income of the workers to stimulate economic activity and macroeconomic structure of Ethiopia leading to prosperous nation and citizens

For Management

An effective piece rate incentive realizes fair sharing of responsibilities by employees across the organization and eases the burden on the company's management for results. As an incentive promotes self-managed teams, which makes management of the company free from micro

managing of activities and focus on major decisions. In general the firm can handle larger quantity of orders, increases the firm's financial strength and gives the capacity to attract highly qualified workers which will have a synergetic effect.

For Employees

As most previous studies indicate, a properly designed piece rate system increases the productivity of the firm. Higher productivity means lowering of unit cost of production, increasing market competitiveness. A competitive firm can increase the wages of its employees as it wants to retain its labor force. When employees get higher income, they will be motivated to do their job efficiently and effectively.

1.6 Scope of the Study

The study is conducted only in Ethiopian manufacturing industry environment, more specifically on Ferric Belt Metal Processing and Engineering Factory. This study analyzed the effects of piece rate system realized within 4 years of implementing it in the factory considering only labor productivity as indicators of organizational performance. The target audience of the study rests only on direct laborers found on the shop floor and management staff found directly above production in the organizational structure. While using IT in any organization has many potential benefits, this study focuses on sustainability impact such MIS have with regard to piece rate system.

1.7 Organization of the Study

This study is comprised of five chapters. The first chapter will be the Introduction part and it consists of background of the study, statement of the problem, objective of the study, significance and rational of the study, scope and limitation of the study, and organizing of the paper. The second chapter addresses definitions and theoretical and empirical review of related literature of the study. The third chapter provides information and arguments about sampling, data gathering and analysis methodology's used in the study. Chapter four deals with results of the data gathered and discuss the meaning of the results. Finally chapter five concludes on the findings of the research and put recommendations for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature

Employees occupy a core and strategically sensitive position in any organization. They are responsible for the conversion of inputs into outputs in a competitive and efficient manner. Since labor is responsible for utilization and management of other factors of production, outmost attention is given for researches on productivity. According to (Tangen, 2002), productivity is the output of an industrial concern in relation to the materials, labor, etc., employed. It is simply the measure of how well an operation system functions or a measure of how effective all the factors of production have been put into use. One major factor that can significantly influence the productivity of a company is the motivation of direct laborers who are actually involved in value addition process.

This part provides what the core concepts of competitiveness starting with business performance and productivity. Then, review of some of the literature regarding Piece Rate incentive system and motivation are summarized. A review of the meaning of each variables are defined targeting manufacturing environment and then look at the basics of manufacturing information management. Finally, research concept note is established.

2.2 Business Performance and Productivity

As the complexity of the business environment increased for each decade, more criteria's were included into business performance term. Business performance is an indicator which measures how well an organization accomplishes its objectives (Hunsaker, 2001). A number of studies on the productivity-performance link have considered both productivity and business performance as a multidimensional factor (Tseng, 2010). Accordingly, we define productivity as a measure of how well subsystems of business units work by embracing total systems thinking to indicate the extent of actual accomplishment in relation to the attainable level in a given external environment. In the modern competitive world, productivity is a fundamental concept in assessing economic performance of organizations.

Traditionally, productivity measures have been categorized as either partial productivity measures or total productivity measures. Partial productivity measures represent the ratio of

output to one input or some portion of inputs. The most common example of a partial productivity measure is labor productivity, which is a measure of total output to total labor utilized. It gives meaning when it is compared to productivity measured in prior periods or is measured from comparable facilities producing similar outputs (Banker, Datar, & Kaplan, 1989).Total productivity measures; on the other hand, compares all outputs with all inputs. Such a measure is relatively easier to implement at the firm or workgroup level than at more aggregated levels, such as national or sectorial levels (Sink, 1985). Whatever measures of productivity we implement; many researchers believe that productivity means quality as well as quantity of output (Amusan Lekan, 2013). The two major signs of employee productivity are:

A. **Quality** is the observance of the procedure, discipline and dedication. Productivity in terms of quality is an attitude of the mind. It is the mentality of progress and constant improvement of that which exists. It is the certainty of being able to change that which exists and be able to do better today than yesterday. Quality work is measured by employee perceptions about quality of work produced and the perfection of the task against the skills and abilities of employees. Many articles claiming to be discussing quality are actually looking at the more general issue of business performance which in its broadest sense means meeting or exceeding customer expectations (Prakash, 2011). The famous scientist (Deming, 1981) considers quality as a specific dimension of productivity and the role quality plays in business performance and productivity is huge. Quality has been consistently listed as one of top competitive priorities and has become a prerequisite for success in the global marketplace (Forker, 1996).
B. **Quantity** is the amount produced expressed in terms such as the number of units produced or number of cycles an activity completes. Productivity as quantity is the constant adaptations of economic conditions. Labor as a production factor affects both production quantity and cost, impacting business performance. In this sense, increasing labor productivity may lead to higher production quantity and lower unit production cost (Tilton, 2001). As (Billikopf, 2003) highlights, Labor productivity are the result of worker ability and motivation. It is the continued effort to apply new techniques and put faith in human capabilities.

Productivity improvement, in the words of (Prokopenko, 1992) “is not just doing things better but it is doing the right things better” and productivity improvement has become a key objective for industries. Theoretically, quality should increase productivity so as to enhance business

performance (Lee, 2001). Higher productivity is not the outcome of lowered specifications of products manufactured or services rendered but as many researchers have elucidated, improved quality reduces waste and increases productivity affecting business performance. So to improve productivity, managers have to motivate their employees by using different methods.

2.3 Piece-Rate Incentive System

Pay systems are a vehicle for rewarding employees for their contribution to the organization. Compensation is a significant factor that affects work relationships, which in turn, can impact the overall performance of an organization (Hur, Lee-Yoon, & Whillans, 2018). The level and distribution of pay can have a significant effect on the morale, efficiency and productivity of a workforce in any organization. (Olatunji A., 2016) Defines an incentive system as a payment made on the basis of past performance in order to reinforce and enhance future performance. By relating compensation to output, an employer is attempting to induce workers to turn out a greater volume of work thereby lowering the cost of producing a single unit of output. Therefore, it is vital for organizations to develop pay systems that are valued by both organization and employees and that reward employees fairly for their work effort.

Though incentive may be in different format, well-designed staff incentive schemes can have positive and powerful effects on the productivity, efficiency and quality of company operations. Conversely, poorly developed schemes can have serious detrimental effects. A good reward system is that focuses on rewarding employees and their teams will serve as a driving force for employees to have a higher performance, hence end up accomplishing the organizational goals and objectives (Njanja, 2013). Another researcher (Mathis L. , 2010) Underscore the need for companies to develop a reward system that satisfies employee expectations so as to remain competitive in the marketplace. These rewards can be monetary and non-monetary incentives that are tied to the performance of employees. In general, (Caruth, Middlebrook, & Frank, 1982) iterates that the general purpose of incentive schemes is to increase productivity in an organization.

These are the two ways of designing an incentive system. One based on the performance of the group as a whole and another based on the performance of an individual. According to (ACAS, 2005) piecework is the simplest method of performance based pay characterized by getting paid at a specific rate for each ‘piece’ of output produced. This means that the system is simple, straightforward and easy to operate and understand. Piece rate schemes are easily managed and

are applicable to both individual and group-based methods of manufacturing. The purpose of these two designs is different, as one is to foster team work while the other is to maximize individual effort. But the general rule of thumb is, incentive schemes must be transparent so that staff members affected should easily understand the mechanics of the calculation (Wiley, 1997).

Individual incentive is often seen as a strong motivational factor than compensation on a group level. It is also often claimed that individual evaluation and rewards creates healthy competition at workplace. With individual rewards that employees will get a feeling that the reward is fairer and that they can affect the size of the reward and therefore it will become motivating (Nilsson & Ryman, 2005). Individual programs have shown to be effective in improving individuals' performances. On the other hand, this can reduce the will from individuals in the organization to cooperate; it also tends to focus individuals on the results that they are rewarded for and not the total result for the organization (Wolf, 1999). Based on the concept from equity theory, an individual performance is related to the idea of fairness that this specific individual has (Rutte, 2003). One big disadvantage with individual reward systems is that it can cause an unpleasant environment at the workplace if they feel they are not treated fairly.

The most obvious reason for organizations to use group based rewards is to increase and motivate cooperation and help between employees. To make the correct decision one often needs thoughts and ideas from others; this is called synergism and is seen as a great advantage when working with group instead of individually (Dimmich, 1999). One of the problems that arise from group rewards is it has shown a limited effect with improving individual employees' performance. Another problem is that group rewards do not differentiate individuals who are performing well to those who are not (Ahlegren, Anderson, & Skold, 2007).

Despite the potentially positive productivity effects, piece rate incentive may not always increase productivity. In case of teamwork, individual performance is difficult to measure; hence there is an incentive to free-ride. In such a case, group-based incentive schemes may have little effect on individual productivity. Additionally, perverse incentives may arise in case of multitasking. When employees are required to perform several tasks, they will focus only on those activities being rewarded highly and neglecting other activities. Therefore it is not always clear that the introduction of a piece rate incentive scheme will indeed increase productivity.

2.4 Motivation

Employee motivation forms the foundation that enables the organization to raise the confidence, to unify for working more aggressively, to help staff identify and capitalize on individual strengths, match training emphasis to practical needs of the organization, and cultivate lines of communication with fresh ideas and innovation (Alexander, 2002). According to (Armstrong, 2009), Motivation is initiated by the conscious or unconscious recognition of unsatisfied needs. These needs create wants, which are desires to achieve goals or obtain something. Goals are then established which will satisfy these needs and wants and a behavior path is selected in which it is expected and will facilitate the achievement of the goal. For this article, (Baron, 1991) definition is preferred as a working definition. He defined motivation as the internal processes that activates, guides and maintains behavior especially goal directed behavior. It is assumed that if the goal is achieved the need will be satisfied and the behavior is likely to be repeated, next time a similar need emerges. If the goal is not achieved the same action is less likely to be repeated.

Motivation and productivity are twin concepts in an organizational development. There is no doubt that productivity heavily relies on motivation as best technique to reach productivity. Moreover, motivation works as the means toward attaining productivity as an end. Employee motivation and productivity can be enhanced by creating a work environment that maximizes the influence of factors that can positively affect performance. When workers are ensured of highly optimum working condition, it will lead them to optimum productivity. If motivation is structured and implemented well, an organization realizes great profits from the improvement, (Weiner, 2002).

From a manager's perspective, a person who is motivated works hard is self-directed towards goals and able to sustain the pace of work. When a person's performance is unsatisfactory, low motivation is often considered to be the problem that could affect that person's level of productivity. The underlying concept of motivation is some driving force within individuals by which they attempt to achieve goals in order to fulfill some needs or expectations. Base on the different literatures, if organizations desire to keep productivity high, management must be able to grasp the key theories and strategies of motivation and successfully apply in their human resource. This section reviews some of the different theories about motivation to understand what areas need to be addressed for any system to have an effect on motivation.

2.4.1 Theories of Motivations

During of the 1960s and 1970s, a large number of individuals came to organizational behavior from other disciplines, a particularly fertile ground for theory generation and thus creating new combinations of knowledge. Perhaps more important than any other consideration is that organizational behavior theorists tend to keep revising and developing their theories once they get started. Most of the theories discussed below are theories proposed before 1990s' as it takes years of practice on each theory to accumulate, so as to permit adequate evaluation.

The main theories of motivation can be grouped into two main categories which are Content Theories and Process Theories (Mitchell, 1982). Content Theories try to explain specific issues that motivate employee at work by identifying needs and related strengths, as well as the objectives they attempt to achieve in order for satisfying their needs. Process theories study how personal needs collaborate and affect each other to produce behaviors and try to indicate the relationship within the dynamic variables; those create motivation.

According to (WIKIPEDIA, Caragory: Motivational Theories, 2012) there are more than 40 theories of motivation proposed by different scholars and researchers that have gained some form of traction along the 20th century. These theories reduced to six for the scope of this research paper. From content theory, we selected Herzberg's motivational hygiene theory, Achievement Motivation and job characteristics theory. From Process Theories, we selected expectancy, equity and goal setting theories. The selection is made based on their importance to the topic and by their ability to provide stability and usefulness in practice.

2.4.1.1 Motivation-Hygiene Theory:

Frederick Herzberg developed the hypothesis that a similar discontinuity exists in the field of job satisfaction (Freedrick, 1976). Subsequent research produced a list of factors that contribute to satisfaction at work (motivation factors), and another separate list of factors that contribute to dissatisfaction (hygiene factors). Thus, the theory is an amalgam of deductive and inductive components so closely intertwined with the early research that the two cannot be separated effectively (Herzberg F. M., 1959). Out of this theoretical framework came a concept of job enrichment that proved to be particularly attractive to management

2.4.1.2 Achievement Motivation Theory:

The domain of achievement motivation theory is much more limited than that of Lewin's theory. It focuses on three motives and relates them to behavior that appears to have relevance for organizations. In McClelland's view, all motives are learned, becoming arranged in a hierarchy of potential for influencing behavior that varies from individual to individual. As people develop, they learn to associate positive and negative feelings with certain things that happen to and around them. Thus, achievement situations such as a challenging task may elicit feelings of pleasure, and ultimately a person may be characterized by strong achievement motivation.

Maturity stage	Motivational pattern	Effect on management
I	Desire to influence others is low; in this sense power motivation is low	Generally not assertive enough to manage well
II	Power motivation expressed in ways having little to do with others	Not related to managing
III (early)	High power motivation coupled with low inhibition and low affiliation motivation	The conquistador pattern of the feudal lord
III (late)	High power motivation coupled with high inhibition and low affiliation motivation	The imperial pattern; personalized power shades into socialized power
IV	High power motivation of an altruistic type coupled with high inhibition and low affiliation motivation	Selfless leadership and efficient organizational management

Table 1: Development of the Power Motive and Managerial Performance Source: Adapted from **(McClleland, 1975)**.

2.4.1.3 Job Characteristics Theory:

Job characteristics theory arose out of a context in the School of Industrial Administration at Yale, which was strongly disposed toward theory and research dealing with personality variables. Lawler brought to this effort a strong predilection for, and research background in, expectancy theory coming from his doctoral studies in psychology at Berkeley (Lawler E. E., 1969). Hackman had done research and written on the ways in which different types of tasks and task characteristics influence behavioral outcome (Hackman J. R., 1968).

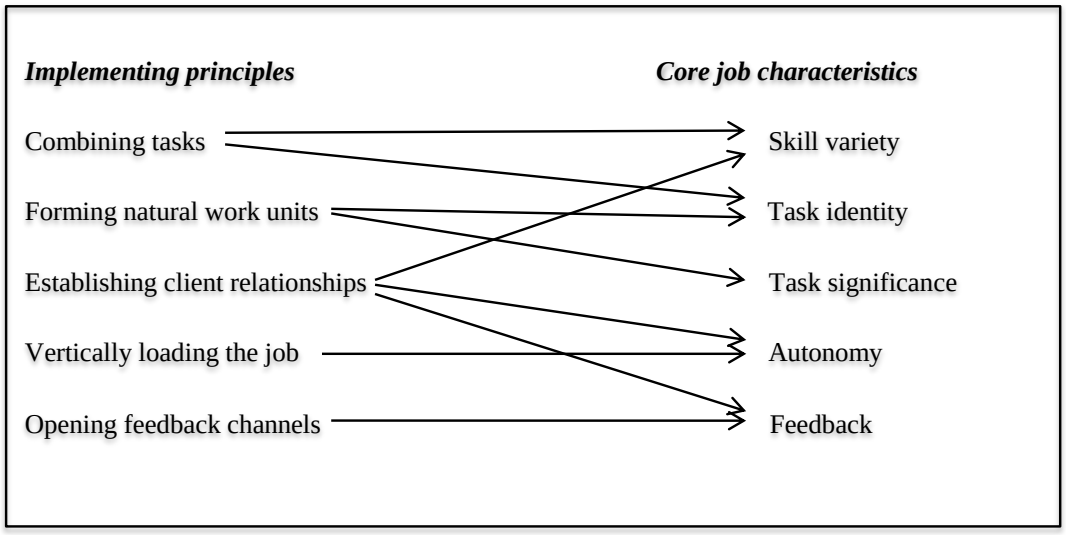


Figure 2 Links between the Implementing Principles and the Core Job Characteristics Source: (Hackman J. R., 1980). Copyright © 1980 Pearson Education, Inc.

2.4.1.4 Expectancy Theories:

During the 1960s, a number of variants on expectancy theory were proposed. The first such research within organizational behavior was conducted by (Georgopoulos, 1957) as part of a research program of the Survey Research Center at the University of Michigan. Several years later (Lawler & Porter, 1968), collaborating initially at the University of California at Berkeley, expanded and extended these statements. These two versions of expectancy theory have stood the test of time and historical scrutiny, and they are generally recognized as representing the major contributions.

Vroom's Theory of Work and Motivation

Vroom's theory starts with the idea that people tend to prefer certain goals or outcomes over others. They thus anticipate experiencing feelings of satisfaction should such a preferred outcome be achieved. The term valence is applied to this feeling about specific outcomes. If there is positive valence, having the outcome is preferred to having it. If negative valence exists, not having the outcome is preferred. (Vroom, 1964)

The Porter-Lawler Model

(Lawler & Porter, 1968) Present a model that draws heavily on Vroom but goes beyond the limited concept of motivational force to performance as a whole. The variables of the theory are as follows:

1. Value of reward—how attractive or desirable an outcome is (valence).
2. Effort–reward probability—a perception of whether differential rewards are based on differential effort.
3. Effort—the energy expended to perform a task (force).
4. Abilities and traits—the long-term characteristics of a person.
5. Role perceptions—the types of effort a person considers necessary for effective job performance.
6. Performance—a person's accomplishment on tasks that comprise the job.
7. Rewards—desirable states of affairs received from either once own thinking or the actions of others (intrinsic and extrinsic outcomes).
8. Perceived equitable rewards—the quantity of rewards a person considers fair.
9. Satisfaction—the extent to which rewards received meet or exceed the perceived equitable level

2.4.1.5 Equity Theory:

Although the term equity is usually used to describe the theory, it is at least as appropriate to describe it as inequity theory. The major motivating force considered is a striving for equity, but some degree of inequity must be perceived before this force can be mobilized. Theories of this kind, basically, are concerned with exchange relationships among individuals and groups, and the motivating effects of a perceived imbalance in the exchange. Applications of this type of theory were extended beyond the organizational relationships that are of primary interest here to other areas, notably exploitative relationships, helping relationships, and intimate relationships (Walster, Elaine, & Ellen, 1973).

Inequity is said to exist when the ratio of an individual's outcomes to inputs departs to a significant degree from the ratio perceived for the reference source. Thus, people may feel that they are under-rewarded in terms of what they put into a job in comparison with what other workers are getting for their contributions. This might happen when people consider themselves much harder workers than other employees, but are paid the same as everyone else. The theory is not limited to inequities that are unfavorable to the individual. Equity, balance, or reciprocity exists when outcome–input ratios for the individual and the reference source are equal, and the motivating force of inequity can arise when there is a departure either way from this steady state.

2.4.1.6 Goal-Setting Theory:

The theory basically states that as far as the motivational mechanism of commitment is concerned, the differences among the various methods of setting goals are negligible (it does not matter). If goals set in a situation are not within the ability level of the person they will not be attained, irrespective of other considerations. The same is true if situational constraints block goal attainment. Essentially these are factors that set boundaries on the domain of goal-setting theory. Complex tasks introduce demands that are expected to mute goal-setting effects to a degree and thus reduce the extent of the goal–performance relationship; thus performance will be less effective on complex tasks than simple tasks given the same goal input.

In their book, (Locke & Latham, 1990)) note a number of applications of goal setting in human resource management. It may be used in job analysis to get people to contribute their knowledge of the work. It may be used to develop interview formats in connection with the situational interview approach or; it may be used as part of performance appraisal when feedback on performance is combined with setting specific improvement goals. Through goal setting managers may facilitate the operation of a superordinate goal to guide those who work for them (Latham, 2003).

Overall, goal-setting procedures appear to have considerable motivational potential with the right people under the right circumstances. Difficulty, specificity, and acceptance of goals are important. Goal setting within the context of a comprehensive management by objective program is a more uncertain matter, especially over the long term. The ideal approach seems to be to train individual supervisors of relatively independent jobs in the techniques of goal setting, as well as when to use them.

2.5 Manufacturing Information System

Information is an important driver that is considered as a resource, companies uses it to become more efficient, support production process, increasing market competitiveness and become more responsive. Information is considered ‘live’ as it is required to be updated all the time and is renewable for it continues to be useful. It is characterized as being substitutable and transportable and can be made to travel across all levels. The all-round exponential growth of information makes it necessary that information is collected, stored, and retrieved in various fields so that it

could be exploited usefully as and when needed (HASAN, 2011). Information is an important driver that companies have used to become both more efficient, support production process, increasing market competitiveness and become more responsive. In order to successfully and profitably operate in rapidly changing markets, we need to integrate different information systems in a company.

Information management system is used to check and plan available capacity for accepting customer order. It is used to transfer customer orders in a transparent manner making distribution of daily tasks and job order to relevant teams easier. This would help manager's understand customer needs and company's opportunities all along the value chain. Additionally, the production process is tracked across different operations in quantitative and qualitative manner. By using this system, customer's orders will be monitored until the finalized product is sent to finished goods store and this will help in monitoring of comprehensive data to bring accountability and transparency in the workplace, which are essential. The management information system is also tasked with calculating incentive amount for every person involved on the job based on registered data.

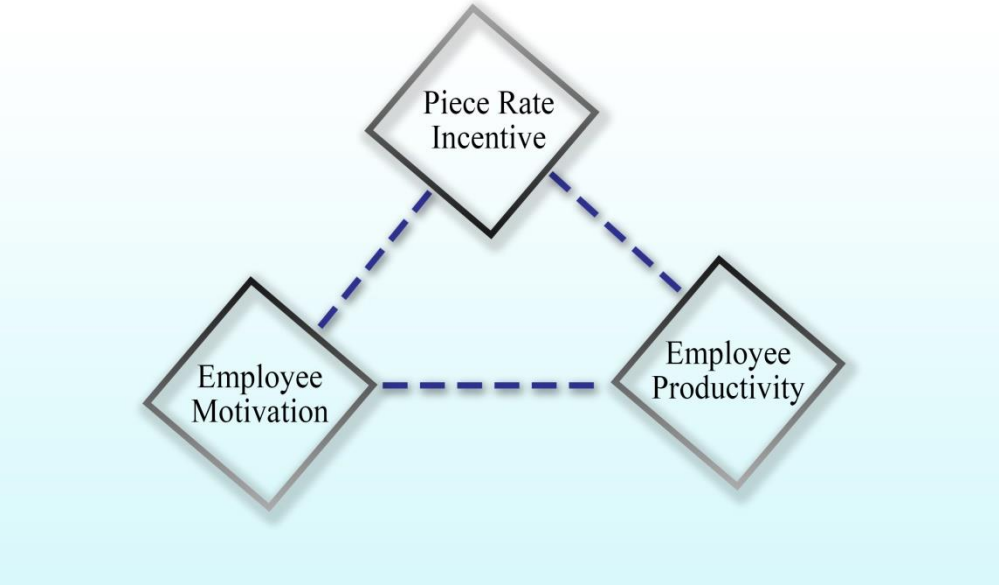
For any company that produces and supplies products or services using some sort of IT infrastructure as a supporting tool is critical. Implementing information system is not an easy task; it has its own steps and challenges and not all businesses become successful in benefiting from IT. The major barriers which negatively influence the implementation process include (Wiechetek, 2015): employees' resistance, the risk of additional costs arising during the implementation process, frequent changes of requirements made by industry, employees' insufficient motivation to take on extra duties connected with implementing a new system and organizational, infrastructural or technical barriers. The main reasons why the implementation process often fails is technical rather than human factors (Amid, 2012). Provided it was implemented correctly, an information system, which was integrated into business processes of an enterprise, is one of the major factors that increase business performance (Pabedinskaitė, 2009).

2.6 Conceptual Framework

It's a fact that business performance is directly linked with productivity of employees. The available literature also supports the idea that there would be significant and positive relationship between productivity of employees and business performance. Accordingly there are many motivation theories that pinpoint different factors affecting the motivation and performance of workers. One of the ways to change motivation and productivity of employees is using performance based financial incentive and linking it with different motivational triggers to maximize effect. In general, financial incentives are designed to encourage the performance of individuals as an individual and as a member of a team.

The use of incentive schemes as a means of employee compensation is not a new concept. For many years incentive schemes have been widely used in developed countries to motivate employees, to increase effort and job performance. According to (Carolina, 2010), inventive schemes are expected to improve interpersonal relationships, job satisfaction, customer satisfaction, internal processes and the organization's improvement activities. All of which should produce lasting effect on company performance. The most common method of incentive scheme used in a manufacturing environment is piece rate system. Even though there are many studies conducted internationally on the relationship between incentives, motivation and productivity, there are gaps on analyzing their bonds in Ethiopian industrial labor context.

Figure 3 Conceptual Framework of the Research



CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter discusses the methods adopted in this study to examine the relationship between piece rate incentive system and organizational performance measured in terms of employee motivation and productivity, as well as assessing the impact of manufacturing information system in sustaining performance results. In view of that, the discussion in this chapter focused on the following major points: (i) Research Design, (ii) Target Population and Sample Size, (iii) Data Source, (iv) Data Collection Methods, (v) Data Analysis Procedures, (vi) Validity and Reliability and (vii) Ethical Considerations.

3.1 Research Design

For the scope of the study and because the study aims to summarize events that happened in Ferric-Belt, we use descriptive research design. It is an approach that is used when researchers want to know regarding events, who were involved, what happened, and where did things take place. It's very useful when the researcher aim is to identify and accurately describe the characteristics and correlation between piece rate incentives and motivation and productivity of employees. Our study aims to correlate the relationship between these variables at a time and extend the relationship to describe a larger phenomenon.

3.2 Population and Sampling Design

Because incentive system only applied to direct labors found in production department, we have narrowed down our study to this department and to superiors found along the chain of command. For this reasons our sampling design requires to focus on area where piece rate system applied namely production department. In the production department there are four sections namely machining, assembly, finishing and service sections. All 103 employees working in production department are categorized into four sections; machining =25, assembly =45, finishing =23 and sheet metal =10 employees. Along managers of production department, there are four section supervisors, one middle (production) manager and two top level managers (factory manager and general manager); which makes a total of seven managers working at different levels.

Because our aim is to study the impact of piece rate incentive on performance of organization, we have chosen purposive sampling technique. Normally, it is impractical to include the entire population in research, but in this case it is, and the inclusion of the entire population provides

more reliability to the findings of the research. Purposive sampling design is also in line with the nature, requirement and objective of the research. We have categorized our sample population into two groups; one for front line workers who are actually benefited from the system and are actually doing the work and the second for management staffs that are found along the organizational hierarchy and directly linked with production. The researcher gathers data from the whole direct labor in the factory (n=103) and management staff directly linked with production (n=7).

3.3 Types of Data to be Collected and Used

This study used Mixed Methods approach as data collection and analysis technique. Mixed Methods approach is the general term used when both quantitative and qualitative data collection techniques and analysis procedures are included in research design. Both primary data and secondary data are used for the purpose of conducting this study. This means that we take both types of data and convert it into narrative that can be analyzed qualitatively and quantitatively. This is possible as the company under study has a system for measuring output in standard formats along the value chain and the availability historical data makes it easy for analysis.

Qualitative data is collected by administrating tests in the form of interviews and semi structured questionnaires. They give us important insight into attitude and motivation of employees about the incentive system and perceived changes in performance and motivation.

Quantitative data is collected from each operation's historical data for the last four accounting years. As a source of historical data, we have used daily production report and attendance of employees to look for any patterns or correlation. The purpose of these data is to measure output as it relates to performance and link it with the general intention of starting the system.

3.4 Methods of Data Collection

Although the main focus of this study was to determine the impact of piece rate incentives as a means of motivating employee effort, the analysis of qualitative and quantitative data is equally important in portraying accurate characteristics of the situation.

Primary data is collected through projective study, consisting of distributing questionnaire for studying the concept from the entire direct labor of Ferric Belt Metal Processing and Engineering Factory. The questionnaire has two parts. The first part includes closed ended questions aiming

at understanding the perception of employees toward piece rate system. The second part constructed with structured questions with the aim of understanding the effect of different motivational factors.

Another form of primary data we gather is by using depth interviews. Depth interviews are designed to discover underlying motives and to explore needs, desires and feelings of respondents. In other words, they aim to elicit unconscious motives relating to personality dynamics and motivations (Kothari, 2004). The depth interview process makes use of the purposive sampling method by including only functional managers (n=5) and top level managers (n=2) for capturing their perception about the new system and the changes they see for the last four years.

Secondary data means data that are already available, which have already been collected and/or analyzed by someone else. For secondary data, daily report on production and annual human resource reports that has been collected for the past four years are analyzed to compare changes as a result of piece rate incentive.

3.5 Data Analysis Methods

In general after minor editing and coding, qualitative analysis method is done on data collected. Editing of data is a process of examining the collected raw data to detect errors and omissions and to correct these when possible (Sekaran & BougieR., 2016). According to (Zigmund, 2009) coding refers to the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes. Such classes should be appropriate to the research problem under consideration. Coding is necessary for efficient analysis and through it the several replies may be reduced to a small number of classes which contain the critical information required for analysis.

As the raw data for this study is large in volume, classification of data is necessary. Data can be classified by its attributes, especially qualitative data. Classification on attributes is based on common characteristics which cannot be measured quantitatively; only their presence or absence in an individual item can be noticed. The other classification criterion is based on the numerical characteristics referring to quantitative phenomenon which we get from some statistical units like in daily production report of Ferric Belt Metal Processing and Engineering Factory.

After classification of data, tabulation is followed. Tabulation is the process of summarizing raw data and displaying in the form of statistical tables for further analysis. We use hierarchy, typology and cross tabulation of qualitative data as a strategy to understand the relationship among concepts and to enable reasonable interpretation. Hierarchy is one strategy designed to describe data and seek relationships. This is accomplished by a system of superordinate and subordinate concepts that fall in nested ranks. The idea in typology is to create an arrangement for data reduction that helps us to understand complex events or constructs. Finally cross tabulation of qualitative data means tabling the occurrences of categories and examining their connections. Quantitative secondary data is interpreted by using descriptive statistical methods but interpreted in a qualitative manner.

3.6 Validity

Sound research needs sound measurement which must meet the tests of validity and reliability. Validity refers to the extent to which a test measures what we actually wish to measure. Reliability has to do with the accuracy and precision of a measurement procedure (Kothari, 2004).

Validity can be assessed by using three key validity types

I. Transferability emphasizes the generalization of the research findings. The major intent of the qualitative part in this study is to explain the findings on the quantitative result. Generalization in qualitative research is more problematic due to the small samples often used in qualitative studies (M.Saunders, Lewis, & A.Thornhill, 2009) but it can be enhanced by involving participants that can contribute well for the scope of the study. As participants are composed of different sections having different goals, perspective, incentive design and interest, it enhances transferability.
II. Credibility emphasizes the extent to which the observations and measurement represent the social reality. In this study, the researcher examines carefully the inferences drawn from the qualitative data by adopting the thematic analysis to guide the discussion of results and unexpected concepts and controversial issues from one interview session are discussed with other interview participants to increase credibility
III. Conformity emphasizes the correct operational measures for the concepts in both quantitative and qualitative studies. In a qualitative study, the researcher's subjectivity and bias existing in the data analysis process pose a significant threat to the construct

validity but the researcher rechecked the inferences drawn from the interviewees' opinion and audit the collected data including connecting the result to existing literatures to increase conformity.

3.7 Reliability

Reliability can be addressed by providing a rich description of the research procedures and by computing Crombach's alpha coefficient. For this study to ensure reliability

- The data collection and analysis procedures are discussed clearly
- The profile of participants are defined and explained clearly
- Questions used to collect data are clearly prepared and attached at annex part
- By the consent of some of the participants, detail note of each interview is written and recorded for future scrutiny. Cross checked the accuracy of the data by discussing the points taken on the note with other participants and getting their feedbacks
- Rival explanations are explored to asses skeptical view on substantive rival explanations

Table 2 Reliability test for questioner answers

	Crombach's alpha coefficient σ
Goal Setting	0.882
Motivation - Hygiene	0.898
Job characteristics	0.926
Expectation	0.847
Equity	0.906
Achievement	0.756

Source: Own Survey, 2021

3.8 Ethical Considerations

The study has attempted all the necessary precautions to protect the study participants from such sort of problematic encounters by applying certain measures. Throughout data collection operation, willingness of each participant is asked for recording their answers in audio and their decision is respected. Accordingly, the respondents were notified not to mention their identity, particularly their names while filling questionnaire. Moreover, they have been assured that no meaningful damage would be inflicted on them because of their participation in this particular study by boldly explaining to them the apparent purpose of the study (which is actually for academic purpose) and ensuring the confidentiality of their identity and whole part of the information they provided for the purpose of undertaking this study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Findings of the study

In this chapter, we reveal and discuss results from data collected by categorizing into three parts. First we discuss the results of closed ended questions administered to employees and then evaluate their motivational performance from the six motivational theories. On the second part, we focused on the insight of managers starting from designing the system, implementation and the changes they realized after execution. In the discussion part, we analyze the results and interlink one another so as to understand the dynamics of incentive system. We use the data to scrutinize the effectiveness and sustainability of incentive system by objectively in a way that gives meaning to the readers.

4.1.1 Employees Perception

As the target population of the study includes 103 people, all of them were approached by questionnaire . From 103 questionnaires distributed, 95 were returned and out of which six has been eliminated because of incomplete/ improper data. The remaining 89 questionnaires (86.4%) results are summarized in tables below. Demographically, the respondents were dominated by men (96.6%) aged below 26 years (63%). With a majority (86.5%) of them having an educational background of under grade 12 or a certificate holders. 76.4% of respondents have below 5 years experience and 79.8% of them are working below assistant operator level.

Table 3 Demographical Data of Respondents

Gender		Male	Female			
	Frequency	86 (96.6%)	3 (3.4%)			
Age Of Respondents		Less Than 20Yrs	20 – 26Yrs	27 – 32Yrs	33 – 40Yrs	More Than 40Yrs
	Frequency	3 (3.4%)	53 (59.6%)	20 (22.5%)	13 (14.6%)	0 (0%)
Marital Status		Single	Married	Divorced	Other	
	Frequency	49 (55.1%)	28 (31.4%)	4 (4.5%)	8 (9%)	
Educational Qualification		< 12th Grade	Certificate	Diploma	Degree	>Degree
	Frequency	58 (65.2%)	19 (21.3%)	9 (10.1%)	3 (3.4%)	0 (0%)
Experience In Factory		< 1 Yr.	1 - 3 Yr.	3 - 5 Yr.	5 - 7 Yr.	> 7Yr
	Frequency	11 (12.4%)	31 (34.8%)	26 (29.2%)	13 (14.6%)	8 (9%)
Job Category		Labor	Assistant Operator	Operator	Assistant Supervisor	
	Frequency	42 (47.2%)	29 (32.6%)	13 (14.6%)	5 (5.6%)	

Source: Own Survey, 2021

The first part of the questionnaire tries to recall the opinion of front line workers towards piece rate system starting from the first time they hear about it and up to current perception on piece rate incentive system. This helps us understand their first impression and their maturation in accepting the new system. It also expands the understanding on how employees are adapted through time in relation with the demands expected of them.

Table 4 Opinion toward piece rate system		Yes	No
1	Did you understand the system that was introduced	63 (71%)	26 (29%)
2	When the company introduced the trial on the piece rates you though it was just a trick so that the company could abolish annual salary increments	73 (82%)	16 (18%)
3	Do you support the idea of business performance measurement as output of all workers efforts?	49 (55%)	40 (45%)
4	Do you believe employees attitude and commitment relates with company's overall performance.	35 (39%)	54 (61%)
5	Do you believe piece rate should be calculated on individual basis	78 (88%)	11 (12%)
6	The existing incentive scheme program has influenced your work rate	65 (73%)	24 (27%)
7	Did performance based incentive schemes has encouraged you to exert more effort and improve your productivity.	61 (69%)	28 (31%)
8	Do you believe employees performance has improved after introduction of piece rate system	54 (61%)	35 (39%)
9	Do you prefer to work collectively towards a common goal and be incentivized for archiving group target	12 (13%)	77 (87%)
10	In measuring performance, Do you believe employees adherence to key quality standards is a better indicator than quantity of products produced	35 (39%)	54 (61%)
11	Did you believe superior's regular comment and feedback has positive influence on your performance	36 (40%)	53 (60%)
12	Did you believe The way your superior manage the relationship with you has an effect on your level of performance	69 (78%)	20 (22%)
13	You would prefer to work overtime rather than piece rate systems	34 (38%)	55 (62%)
14	If the company introduced another financial incentive mechanism abolishing piece rates, would you like take part	22 (25%)	67 (75%)

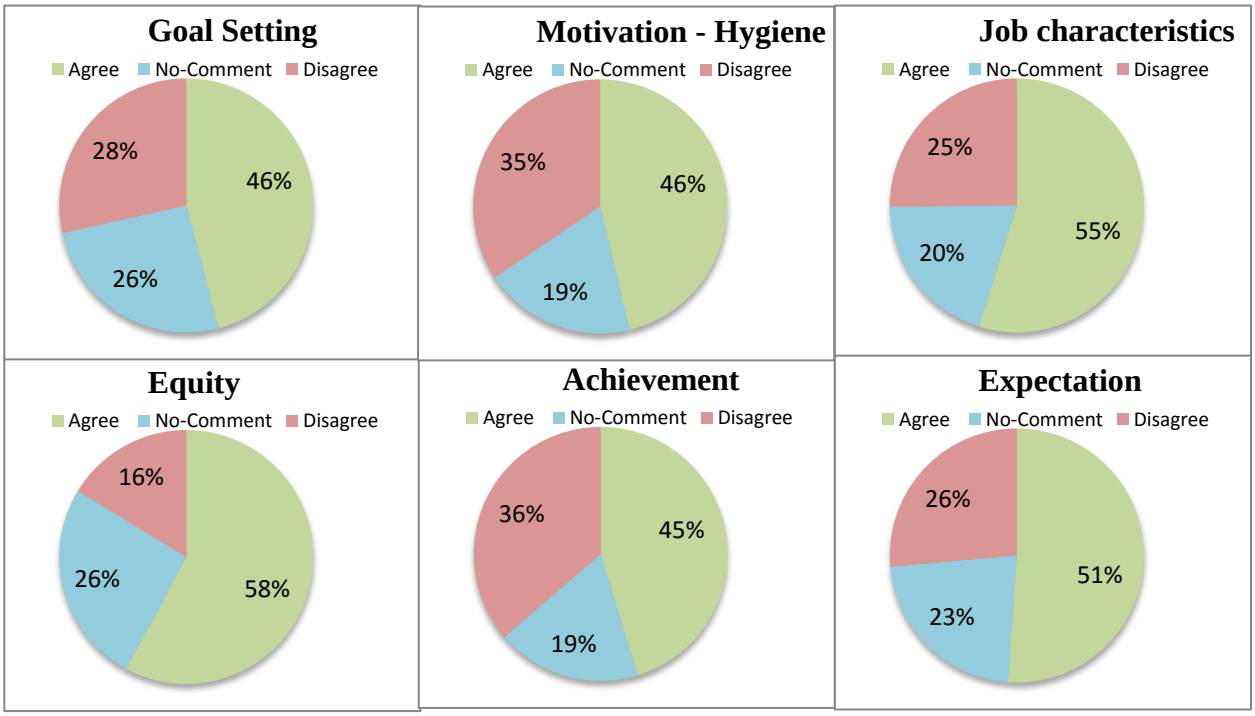
Source: Own Survey, 2021

Form the table above we can clearly see that almost 2/3rd of employees believe they have understood what piece rate system is. While a majority of them (73%) disagreed on the intention of introducing the system at the first instant, that has changed dramatically now with 67% of them acknowledging they want to keep the current system to continue and 62% prefer incentives than working overtime. Regarding the notion of business performance and workers effort, only

31% believe that these two variables are affected by attitude and commitment of workers. With majority (88%) of respondents prefer piece rates system to be calculated on individual basis. Only 69% believe it has affected their motivation productivity as a whole. Regarding the relationship between labor and supervisors, a whopping78% rates the relationship as an important factor for their performance but only 40% of them expect feedback.

On the second part of the questionnaire, we tried to understand the motivation of employees affected by incentive system through different motivational theories. The survey questions are designed to assess the degree of motivation through different questions that aim at exposing the power behind the six theories explained in literature. The questionnaires contain carefully designed questions with contrasting approach at the end for assessing the true feelings of respondents. These also help us examine rival explanations and assure that the responses we get are genuine. The result of analysis is given below on fig 4.

Figure 4 summery of findings on motivational impact of incentive system on employees



Source: Own Survey, 2021

4.1.2 Managers perception

All three levels of management (section supervisors, department manager and high level managers) are approached for structured interview to gain their intention in designing, implementation process and the result they have achieved during the entire processes. The data we get from managers enable us to gain insight in to their view.

We use two top level managers, owner and General Manager, for the first part of interview as they are the ones who first thought the idea of incentivizing workers based on the amount of piece of work they do. During regular management meetings, they have raised the issue so as to gather ideas from fellow divisional managers on how to address low level of productivity and ideas started to come from all angles. They have prepared an incentive plan and device rules on how to use it. The incentive system is designed considering the nature of work and the method they use in the factory. For machining section, because the processing of ornamental metal is done in a group, the incentive system is designed to utilize group synergy. For assembly and service sections, working on a specific job order can be done by individual employees with the help of daily laborer. For finishing section, it is a team effort so the output is designed to count products after it passes through all the required steps in the finishing process. On this regard machining and finishing sections are group based while assembly and service sections are individual based. For group based incentives, distribution of incentive is done by accounting attendance rate to discourage absenteeism. To integrate the whole process, top management has hired an IT technician and builds a software system that can keep track of products and incentives while securing it from human manipulation. Because they have designed the system in house and computerized the management process, they have confidence in their master plan. During the course of time, they have noted some advantages and disadvantages to the system. A major advantage mentioned is the transparency and accountability of production process. A major disadvantage mentioned by top managers being challenges in setting up new product designs as employees want to negotiate a new rate. This creates fear in the eyes of managers that employees will change their focus from customer satisfaction to that of financial gain.

A production (midlevel) manager with 5 years work experience in the factory is used for the second part of interview. He assumes he is a bridge that is found at the core of the business. Before the new system becomes reality, breakdowns in internal communication hindered the

effectiveness of his work. His decisions are misinterpreted in some occasions by supervisors and his messages' to other mid-level managers and top management interpreted out of context and lands him in hot water in more than one occasion. He acknowledges that he is more interested by the IT system than performance based incentive system at the start, but once the incentive system hits the ground, he became an active promoter. His involvement in the process began when the issue is raised by top management in a meeting. At that time he was responsible for designing the incentive system along with top managers and for the compilations of the rules necessary in a transparent process. All ideas compiled by the manager are now integrated in IT system. After implementation, through the course of time, he has seen major shift in attitude of workers and supervisors alike. Employees became more aware to the work they do, motivated to learn on how to work on challenging designs as they hold highest rate of incentives. Supervisors get freedom from day to day repetitive tasks and now their responsibility lies in quality management. Their role is changed from supervising employees to engage in the work to controlling quality and performance rate of each employee. As with top managers, he believes the system is suitable for the organization because they have adapted it to their working methods and technology in use. He is now satisfied on what has been achieved so far with a major advantage being able to make decisions objectively and sharing of responsibility and the stability of employees on their job. One major disadvantage mentioned by midlevel manager is potential legal liability because of unchanged labor agreement accompanying in role and system changes. He is more satisfied on how things turnout but notes this only propels him to dream more and capitalize on potential.

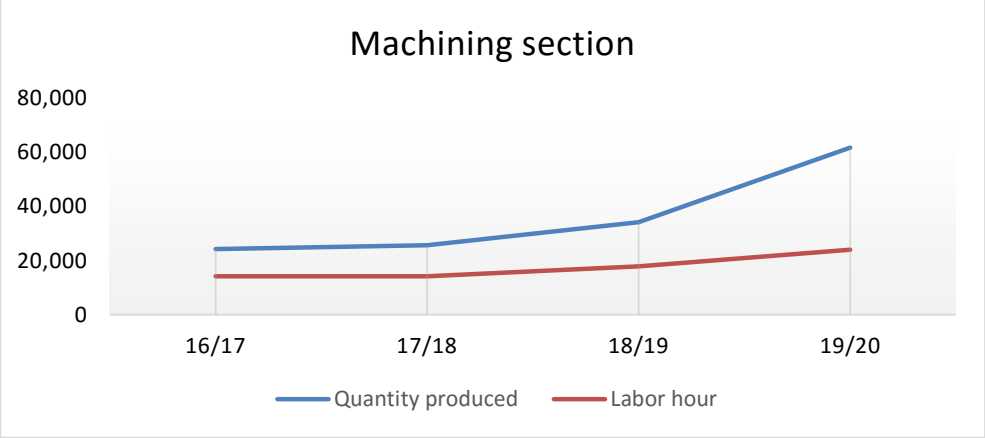
Lastly, interview is administered to four lower level managers or supervisors that have a minimum work experience of six years working in Ferric-Belt. They first heard about the new system when the production manager has asked for their input in designing the system. Previously, they describe their job as 'herding' employees to work that way or this way without clear performance target. Internal communication breakdown was also the culprit in the challenges they faced. Other than suggesting some common attributes to their work and rules to ease their burden, they have no input in the designing of the new system. After implementation, they have seen their roles changing from that of controlling to that of supervising and quality assuring. With a unique major advantage being the facilitation of works that would require two persons became a one person job driven by lower unit rates and the idea of sharing with helpers with a predetermined rate. A major disadvantage they faced in this time is stubbornness from

frontline workers to integrate urgent works inside current job. The main reason for these conflicts stood at a rule that states ‘unfinished works counted as noting’. Another problem mentioned by finishing section supervisor is the infighting between management and employees on the rule promoting distribution of incentive based on attendance rate. Employees want equal sharing of incentives. Employees’ main reason is the nature of work requires them to do some minor adjustments on site that makes them absent from the factory and that would translate to financial loss. Overall they have agreed their satisfaction on the process.

4.1.3 Performance of the organization in numbers

Production performance of the factory starting from 2016/2017 budget year is analyzed in detail to be used as a mirror on evaluating the findings from questionnaire and interviews regarding the changes that come along with the new system. The findings are put in a graphical form for each section with regard to quantity of products produced and amount of total labor hour used during the corresponding budget year. For machining and service sections quantity of products are in number of pieces and for assembly and finishing section is in meter of products processed. Labor hour is specified as the amount of hours spent working in their respective section within a year.

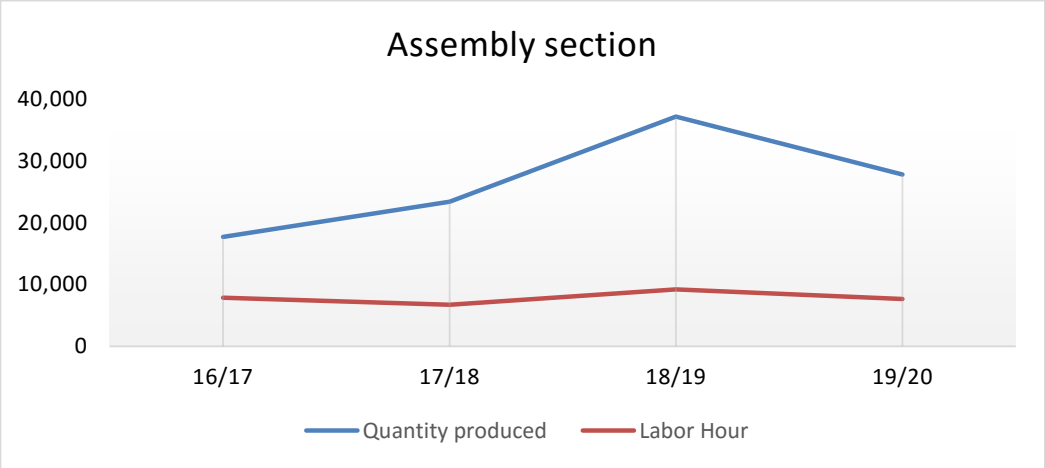
Figure 5 Machining section performances



Source: from company Production data

On figure 5 for machining section we can see that both produced quantity and labor hour spent in a year are increasing at increasing rate peaking at 61,500 pieces with 24,000 annual labor hours in 2019/20. This is attributed to the desire of workers to work longer hours and the synergistic effect of piece rate system. The section has utilized the power of synergy for 54% productivity improvement.

Figure 6 Assembly section performances

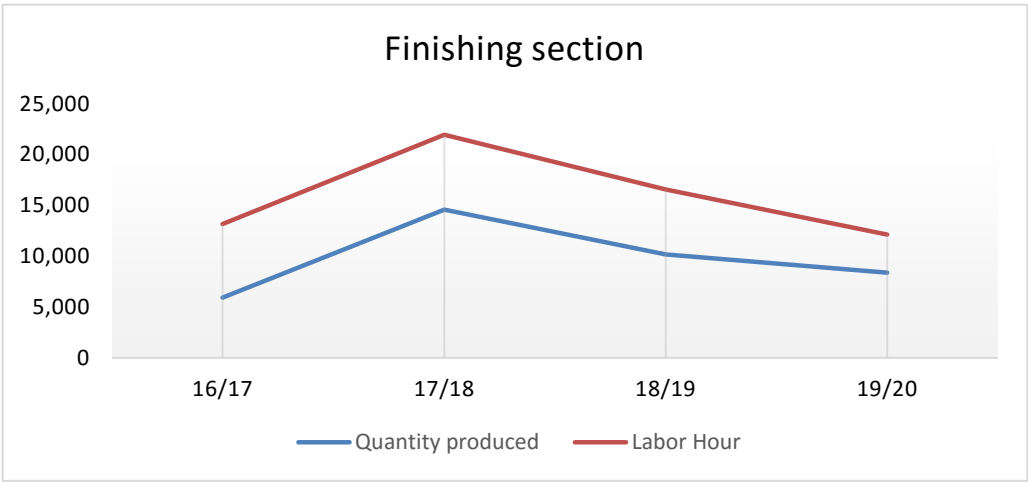


Source: from company Production data

For assembly section on fig 6, the production quantity peaked in 2018/19 hitting an all-time high of above 35,000 meters while labor hour is peaked at more than 9,000 hours. But in general, the production quantity increased from below 18,000 meters in 2016/17 to slight shy of 28,000 meters in 2019/20, indicating an impressive 57.3% leap in production quantity.

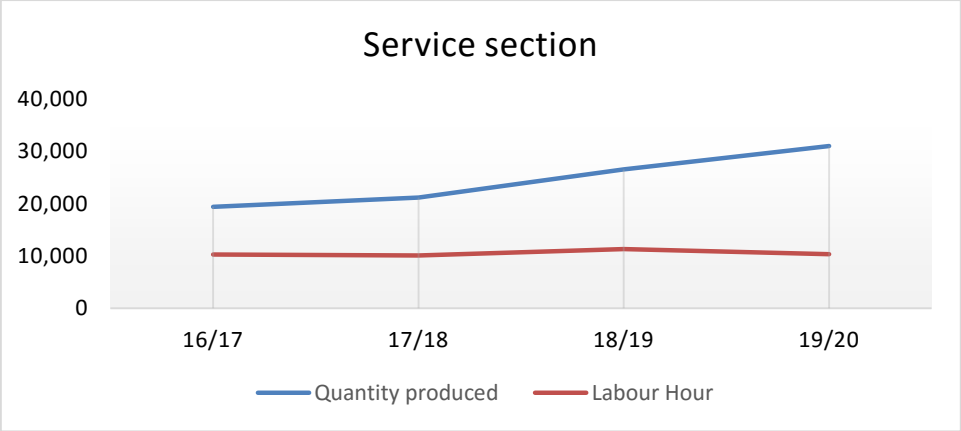
For finishing section, on figure 7, indicates that the quantity processed during the 2017-18 budget years was their maximum at nearly 22,000 meters. After which, it shows a declining trend both in terms of labor hour and quantity produced but still achieved 41% production growth comparing 2016/17 with 2019/20.

Figure 7 finishing section performances



Source: from company Production data

Figure 8 Service section performances



Source: from company Production data

Lastly for service section, the data indicates that amount of quantity processed is increasing at increasing rate while the labor hour remains relatively the same for the study period peaking at 2018/19 at 11,000 hours. The quantity produced is increasing continuously for the last four years starting from 19,300 in 2016/17 up to 30,900 in 2019/20. This can be explained by growth in service providing capacity only by addressing idle time.

4.2 Discussion

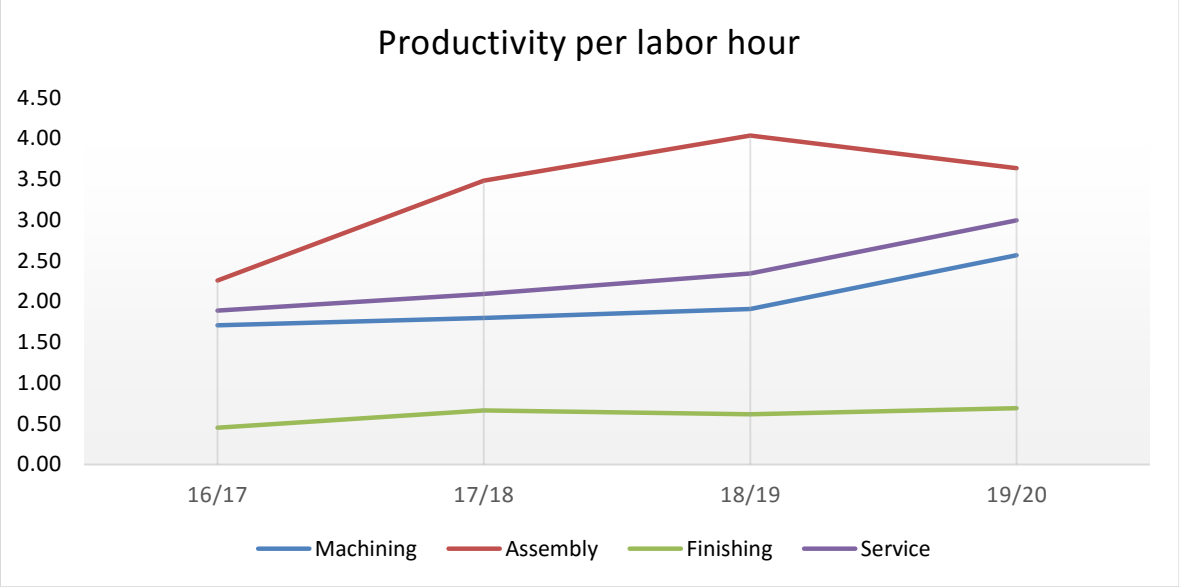
The first part of the research objective is to analyze the relationship between piece rate incentive and motivation of workers. Initially (82%) employees are worried that the new system was designed to skip annual salary increment but once it gets operational, the dissatisfaction rate drops to 25%. In another part of the questions, current dissatisfaction rate stood at 22% indicating employee's attitude toward piece rate incentive changes to a positive direction. The data indicates that the new system acquire high support because of financial gain expected (58%) and allocation of more responsibility (55%). Analyzing rival explanations, we can see that 67% of employees acknowledged that they like working here and 82% of respondents care about achieving their performance target. The data indicates as the time goes by hesitation of employees has also evaporated making the way for sustainability. To benefit from new system we have to win the heart and mind of majority stakeholders leading to boost in satisfaction by current piece rate design and work methods.

From managers' side, they acknowledged that workers motivation has improved as indicated by lower turnover rate and increased initiation to work difficult tasks. This is also backed up

quantitatively by findings from production floor. They have seen sustainability in labor hour indicating determination to work hence motivation. On this regard, we can say that piece rate incentive has a positive and significant relationship with motivation. In simple terms, employees' value the additional responsibility given by the new system and the recognition in terms of finance for their performance which boosts their motivation and engagement in their work. This can also profoundly help the organizations in its business performance.

Secondly, the relationship between piece rate system and productivity can be seen from two angles. First, by assessing the relationship between incentives and productivity quantitatively for four years, we can clearly see that productivity per labor hour has increased as shown in fig 9.

Figure 9 Productivity trend in each department



Source: from company Production data

In machining section it grows from 1.17 products per hour of labor in 2016/17 to 2.57 in 2019/20. While productivity increases from 1.89 in 2016/17 to 3.00 in 2019/20 for service section. For assembly section, even though the productivity per labor hour has shown huge leap during the course of time starting from 2.26 products per labor hour in 2016/17 to 3.64 in 2019/20. But the maximum rate is registered in 2018/19 with 4.04 products per labor hour and dip in performance in 2019/20. For finishing section, it shows marginal increment on the first year and stagnates for the next three years. It was 0.45 meters per labor hour in 2016/17 and jumps to 0.66 in 2017/18, then stagnating at 0.61 and 0.69 for the 2018/19 and 2019/20 period.

Generally, in all four cases, incentives had increased productivity played a role in increasing productivity between 2016/17 and 2019/20.

Secondly, from qualitative data findings we can clearly see that managers perceive the changes in the work place starting from the effort by employees to produce higher value products to reduction of turnover rate. While most employees believe their individual and business overall performance has increased after implementation of piece rate system with only 19% of employees disagreeing. All this indicates that there is a positive relationship among piece rate incentive system and productivity of employees. From these results we can say that financial incentives tied to performance have double benefits in terms of effect on productivity. First it pushes workers to exert more effort on their work which increases in quantity produced and second, it motivates them to do more complex works that has higher value. In both cases leap in productivity has direct impact on organizational competitiveness in the market.

From the above two scenarios, we saw that financial incentives has an impact on both motivation and productivity of employees, on this part we try to analyze the link between motivation and productivity. (Sabir, 2017), pointed four points on effect of motivation on performance of workforce

- Motivated employees are compelled to complete task in allotted time which increases productivity
- Motivating employees on continuous basses can induce them to work hard and accomplish challenges, thereby improving the morale levels among them
- The more motivated employees are the more they become loyal to their work and the organization
- A motivated workforce tends to work freely and more passionately on the tasks assigned.

To understand the relationship between these two, we take a deeper look on what has happened on each section. On finishing section, because of disagreement between management and employees, both labor hour and quantity of products produced are decreasing indicating a link between motivation and productivity. In the other side, there is also the case of machining section where employees are working overtime to utilize the system for their financial advantage. This can be explained by satisfaction of workers on the new system which drives them to utilize for their financial advantage. As acknowledged by their manager, assembly section workers are

motivated to work more difficult and high rewards jobs than before. From these findings we can say that motivation and productivity has a positive relationship. The company under study has utilized these relationships to their advantage and it's like a vortex where the more productive you are and compensated for your effort, the more motivated you are to exert more effort and increase your compensation and vise-versa.

From the perception of employees, the link between motivation and productivity can be clearly seen from figure 4 where lowest rate of agreement is given for for goal setting (46%) and achievement motivation (45%). But the magnitude of the link need to be studied in detail as the achievement of production target has one of the lowest agreement rate among other motivators and explanations given by top management indicating workers focus shifting from customer satisfaction to that of financial incentive which might affect productivity on the long term. This idea also supported by the highest agreement rate for equity (58%) and achievement motivation (55%). By large, we can say that motivation and productivity are directly related increases in Motivation will increase productivity and decrease in motivation decreases productivity. These relationships have a profound effect on overall company performance; nurture them and you will be prosperous and misuse them and you will be incompetent to serve the market.

Lastly, the role of IT in sustaining the changes in productivity of employees can be evaluated objectively and subjectively. Objectively, the mere presence of detail past performance data because of the simple decision to build software indicates the power of IT. The effect on sustainability in the workplace can be analyzed by lower turnover rate. These features can easily be attributed as indicator of sustainability power of the system. From employees' perspective, their confidence on the piece rate system increased because of the reliability created by consistency in implementing rewards. This reliability wouldn't have been realized with human error which makes the software indispensable. Considering how far the system evolves and evaluating the effectiveness of the organization on sustaining results, we can confidently say that the MIS they developed has enabled them to keep what they have achieved.

Subjectively, what managers have said about the advantages of the system and the reliability and accuracy of the system form human error makes it stand in its own ground. But on the perspective of middle and lower level managers, major dissatisfaction rages regarding the flexibility of the system as they see it interfering in their ability to manage according to urgency and priority of work orders. They have especial reservations about the changes in employees'

attitude who they say now ‘are driving the production floor’. However, their view is disputed by top level management. They indicate a major advantage of the system being clearly defining the responsibility boundaries for each person and its ability to incentivize performance according to the rules and ability to traceback errors if they happen. Because of the reliability of the system, employees’ perception about the piece rate incentives improved. In general, we can say that utilization of IT to handle manufacturing operation has a positive effect on sustaining the results in terms of rate of output, employee motivation and accountability for their work.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

On this chapter we summarized the findings of the research paper and put recommendations for further study. Ferric-belt is a well know metal processing and in 2016/17, they implemented performance based incentive system to replace annual fixed salary increment as the old system is an agent of dissatisfaction among workers causing high turnover and low productivity. On this study we aim at studying the perception of employees before the incentive system implemented and how that has changed through the last four years. We try to assess the impact of the new system on productivity and the role information system plays in sustaining results.

We used qualitative research design with the objective of assessing the impact of incentive system on overall organizational performance in depth. Our aim is to recommend a way of action in designing performance based incentive system for other manufacturing companies. Because the initial incentive system targeted frontline workers, sample population is selected purposefully on employees found in production department. Based on the objectives of the study, managers that are directly linked with production department are selected as target population. Data is collected by using structured interviews for managers and questionnaires for employees with closed ended and multiple choice questions. To grasp the reality on the ground and quantify changes, secondary data is analyzed, obtained from preinstalled information management system. Finally, we bring together the pieces and give meaning on intention and attitude of workers/ managers and results achieved as a result of piece rate system.

5.1 Conclusion

Management intention for introducing piece rate incentive is to address the chronic productivity and employee motivation problems that were prevalent at that time. Initially there was distrust among employees as overwhelming number of employees (82%) thought the idea was introduced to abolish annual salary increment. There were challenges from middle and lower level management staff's about the design and rules of engagement. But fast forward four years, they have majority (62%) support for the system and management staff have noticed behavioral changes in employee attitude and somehow contributed to stability in turnover rate. According to new system, employees increase their share of responsibility, which they like as confirmed by 55% agreement for characteristics attributed to new job design. Quantitatively, most sections saw

increase in employee effort by increasing total annual labor hours and production quantity. For this reasons we can say that the introduction of financial incentive has an effect on the motivation of employees for Ferric-Belt metal processing and Engineering factory.

With relation between financial incentives and productivity, we can see that labor productivity (output per labor hour) has increased on average 17.5% and output increased on average 27.9% every year. This increment can solely be attributed to the mere presence of financial incentives tied to performance. From the result of questionnaire the highest rating (58% agreement rate) given by employees for the idea of financial gain based on their performance and 62% of them prioritizing piece rate than working overtime to gain more finance indicates the power of incentives had on Ferric-Belt. The designing of piece rate incentives have also contributed to this increase as it considers the nature of processing and desires of subordinates. Because of the above facts we can say that introduction of piece rate has affected the rate of output positively in the study period.

To relate motivation and performance, we have to compare machining and finishing sections side by side. Machining section has 25 employees and finishing section has 23, which is relatively equal. The nature of processing for two sections is somehow similar. Machining section employees cannot produce each ornament from start to finish individually because processing requires different skillset and longer hour for setting up; there is also limitation in machine availability for each 25 workers. For finishing section, as the name indicates, it is a compilation of different steps with many customizable options according to customer preference; which makes uneconomical for solely working one customer at a time. In designing the incentive system both are prearranged on group level and attendance is used to divide among group members. Considering this much similarity, we have expected same kind of performance for the past four years but the results bet to differ. Machining section became one of the top performers in the company while finishing section stagnated in terms of productivity rate. The main reason for this difference is the disagreement between management and finishing section workers on the perspective use of attendance to differentiate among employees. This scenario shows us that motivation has a great role in performance of employees and also it indicates that there is a relationship between the motivation level of employees and productivity.

Finally, when management of an organization promises to financially reward employees based on performance, it is subjecting the reputation of himself on the line and whether it became successful or not will have an implication on the organization performance at large. As we have seen during the course of our research, there is large amount of data generated associated with production follow up and identifying participants for each work; which might be complex considering the quantity of orders, number of employees and total working days. Because employees expect to be rewarded for their performance according to the rules and as promised by management, delivering as expected in accurate and consistent manner matters most. If the organization is able to do that, employees confidence on the intention to bring the piece rate incentive on the first place grows as can be seen from questionnaire result. On this regard, the use of IT for accurately monitoring and controlling of activities has made the system trustworthy for all sides. These coupled with mere reality of the presence of piece rate system for more than four years indicates the power of IT in sustaining.

5.2 Limitation

While the study is focused only in one organization, it tries to determine the effect of financial incentives have on quantity and quality products ignoring other variables such as raw material availability and technological changes during the study period. There are also differences that arise in procuring from different suppliers. This study assumes that there are not be any significant changes in management style and/or working methods. The study also ignores other factors of motivation on internal and external environment that can have an influence on the output. There is also limitation regarding the methodology used to gather data and analyze results. Studying more than one case is a helpful solution to improve generalization in qualitative research.

5.3 Recommendation

Based on the above conclusions, the following recommendations are recommended;

The result from qualitative and quantitative analysis indicates that for effective piece rate implementation, factories have to consider variables across divisions and along the organizational hierarchy. Even if there is rejection at first glance, if the top management is committed enough and willing to adjust for fair demands in inclusive manner, piece rate system would bring positive changes to the workplace.

This study shows that there are many ways to increase productivity; we can use performance related incentives, attack idle time, motivate employees to exert more effort or keep experienced employees by putting achievement targets than money. In general, manufacturing companies should study the root cause of their current productivity bottleneck and work aggressively to address internal issues first. We have seen that, when we address causes, we improve productivity which leads to improved organizational performance.

As can be seen clearly from the case, implementing an incentive system is not a one-time approach rather it is a way of operation needing continuous attention. Starting from its birth to maturation, the system will improve some aspects of organizational performance while creating many questions to be answered that previously seem non-existent. Companies who want to implement this system have to analyze the nature of their production system and device a way of measuring output. Based on the analysis, they have to layout ground rules to incorporate with incentives. Once it gets operational, this cycle needs to be constantly monitored and improved.

Companies who want to use piece rate system should also consider the utilization of IT. As the study highlights, the designing of piece rate system requires accurate data registration and processing capability. This data is helpful in many ways; it can be used to keep track of performance, to calculate total amount of rewards or can also be used to troubleshoot managerial problems. But these huge amount of data needs to be stored and retrieved in a quick and accurate manner. When there is an IT system to handle this large amount of data properly, trust in the system grows. Trust is the bond that will hold the organization to focus on its priorities and for that matter we strongly recommend developing an IT system to increase organizational performance while using piece rate system.

Finally, to analyze the larger pattern, we recommend expanding the research in terms of scope, time period and number of organizations for inclusive results. Other researches could also address the effect of piece rate system according to demographic, including companywide incentive system and effect of environmental forces on effectiveness piece rate system.

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APPENDIX A, EMPLOYEE QUESTIONNAIRE

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Dear Respondent,

I am a postgraduate student studying Masters of Business Administration at ST. MARY'S UNIVERSITY. I am currently conducting a research in the area of competitive piece rate system. The topic of my research is 'IMPACT OF PIECE RATE SYSTEM ON MOTIVATION AND PRODUCTIVITY OF EMPLOYEES'. It aims to learn about level and effect of piece rate system on motivation of workers. The purpose of this letter is to request you to respond to the attached questionnaire. You don't have to mention your name and the information you give will be treated in strict confidence and will be used for academic purposes only.

Yours Sincerely,

Binyam Teklu

Email: bbenj143@gmail.com

Part I: Personal Data

1. Gender:

1. Male 2. Female

2. Age:

1. Below 20 2. 20 - 26 3. 27 - 32 4. 33 - 40 5. Above 40

3. Marital Status:

1. Single 2. Married 3. Divorced 4. Other

4. Educational Qualification

1. Less than 12th grade 2. Certificate 3. Diploma 4. First Degree

5. Years of Service in your current company

1. Below 1 years 2. 1 - 3 yrs. 3. 3 -5 yrs. 4. 5 - 7 yrs. 5. More than 7 yrs.

6. Job Category

1. Daily labor 2. Assistant operator 3. Operator 4. Assistant Supervisor

***Part-II*: Close Ended questions**

This survey is about your understanding of piece rate system implemented in your factory. There is no right or wrong answers. You just have to read the statement and say "yes" if you agree with the statement or "no" if you don't.

Statement	YES	NO
Did you understand the system that was introduced		
When the company introduced the trial on the piece rates you though it was just a trick so that the company could abolish annual salary increments		
Do you support the idea of business performance measurement as output of all workers efforts?		
Do you believe employees attitude and commitment relates with company's overall performance.		
Do you believe piece rate should be calculated on individual basis		
The existing incentive scheme program has influenced your work rate		
Did performance based incentive schemes has encouraged you to exert more effort and improve your productivity.		
Do you believe employees performance has improved after introduction of piece rate system		
Do you prefer to work collectively towards a common goal and be incentivized for archiving group target		
In measuring performance, Do you believe employees adherence to key quality standards is a better indicator than quantity of products produced		
Did you believe superior's regular comment and feedback has positive influence on your performance		
Did you believe The way your superior manage the relationship with you has an effect on your level of performance		
You would prefer to work overtime rather than piece rate systems		
If the company introduced another financial incentive mechanism abolishing piece rates, would you like take part		

Part-III: **Multiple choice questions**

The major factors that affect performance of employee's motivation are listed below. Please indicate the degree to which these factors are affecting your performance. After you read each of the factors, evaluate them in relation to your perception about the effect they have on your motivation and then put a tick mark (√) under the choices below.

Where, 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree and 1= strongly disagree

	5	4	3	2	1
Goal Setting					
The overall process taken by the factory to determine daily production target is fair					
The procedures used to set production target for calculating piece scale is fair					
The new job actually provides clues on how well I am doing my work more accurately.					
I am more committed to achieving my daily production target					
After I finish my job, I certainly know whether or not I have performed well without supervisor's feedback					
I am willing to put forth a great deal of effort beyond what I'd normally do to achieve the daily production target					
There are negative consequences if I fail to meet my daily production target					
Piece rate systems improve the overall performance of the company					
*Quite frankly, I don't care if I achieve the daily production target or not					

	5	4	3	2	1
Motivation- Hygiene					
Piece rates are a good idea for employees					
Piece rates motivate employees to produce more					
Segregating task activities are difficult because supervisor's role is limited by the system					
Piece rate systems prevent the company from employing more people					
The idea of being able to earn more money without working overtime is a good one					
The amount of compensation is not enough to make a change in output					
I could lose my job if I fail to meet my daily production target regularly					
Job characteristics					
The new job involves doing specific and identifiable piece of work with an obvious beginning and an end.					
The new job requires me to employ more skills and talents.					
The supervisor's role on the new system becomes more critical					
My new role gives me considerable opportunity for independence and freedom in how I do the work.					
My current task significance is so high that a lot of workers can be affected by how well the work gets done.					
The leadership role of supervisor is degraded by the new system					

	5	4	3	2	1
Expectation					
I am more satisfied with my current income					
Financially, I'm better off with the new system					
The work activity that I want is the one with the highest rate					
I am satisfied with piece rate pay scale					
Group piece rate systems allow the lazy worker to do less and receive the same pay as the ones who work the hardest					
Equity					
The monthly payment that I receive for my services has increased because of piece rate system					
The new system gives more responsibility to workers on how to do their job order than previously.					
I believe, the majority of employees are at their maximum productivity level and can't go any higher					
Achievement					
The feedback from my supervisor is helpful to improve my performance					
The current method of payment is the best and the company should continue to use it					
The most important thing about current system is the financial compensation					
In general, I like working here more now					

APPENDIX B, Managers Interview Questions

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Part I: Interview questions

On this part the target audience is only LOW, MIDDLE and TOP LEVEL MANAGERS of the factory. The purposes of the questions are to understand the perception of decision makers of the factory regarding the new system and their view on the sustainability of activities beyond this period.

1. What is your title in the company?
2. For how long have you been working in the company?
3. What wakes you up every day related with your job?
4. Does the business have a strategic plan to guide you in decision making?
5. Before starting using the system, are you satisfied with your level of operational efficiency? describe
6. Before starting using the system, do you think the internal communication channel was effective to properly manage the firm?
7. What pressing problems you crave the system would address?
8. How is the system designed?
9. Do you base your reward system on any existing theories? If yes, what is it?
10. On which grounds have you chosen to use individual rewards, group rewards or both?
11. Have you seen any changes in your firm after implementing the system?
12. Are there any changes in division or duties of management staff emanating from the system?
13. Why do you think that this system is suitable for your company?
14. Are you satisfied with result you achieved because of the system? Why?
15. Do you see any advantages or disadvantages with your current reward system? Please explain thoroughly
16. How do you evaluate your job satisfaction levels at the moment?

APPENDIX C, Company Performance data

Major works of assembly section,

For the ease of analyzing the production data, we use a correction factor for different kinds of work. For example to build one meter of balcony, it takes a meter of balcony, it takes 2.6 meters of balcony

	R/door	Main gate	Stair	Balcony	Spiral	Window	Arc	Structure	Mesh	Bed	Fence	S/metal
correction factor	2.6	2.1	1.1	1	2.5	1.9	1.3	1.6	1.6	1.6	1.6	.75

Compiled four years data of the factory

Machining section			Productivity per labor hour	Processing capacity trend	Productivity trend
	Quantity produced in Pc	Total Labor			
16/17	24,258	14,200	1.71		
17/18	25,575	14,208	1.80	5.4%	5.4%
18/19	34,121	17,880	1.91	33.4%	6.0%
19/20	61,594	23,968	2.57	80.5%	34.7%
Four Year processing quantity change			153.9%		

Assembly section			Productivity per labor hour	Processing capacity trend	Productivity trend
	Quantity produced in meter	Total Labor			
16/17	17,692	7,840	2.26		
17/18	23,401	6,720	3.48	32.3%	54.3%
18/19	37,229	9,224	4.04	59.1%	15.9%
19/20	27,831	7,656	3.64	-25.2%	-9.9%
Four Year processing quantity change			57.3%		

Finishing section			Productivity per labor hour	Processing capacity trend	Productivity trend
	Quantity produced in meter	Total Labor			
16/17	5,922	13,144	0.45		
17/18	14,564	21,916	0.66	145.9%	47.5%
18/19	10,160	16,544	0.61	-30.2%	-7.6%
19/20	8,375	12,096	0.69	-17.6%	12.7%
Four Year processing quantity change			41.4%		

Service section			Productivity per labor hour	Processing capacity trend	Productivity trend
	Quantity Produced in Pc	Total Labor			
16/17	19,348	10,240	1.89		
17/18	21,127	10,104	2.09	9.2%	10.7%
18/19	26,503	11,304	2.34	25.4%	12.1%
19/20	30,937	10,320	3.00	16.7%	27.9%
Four Year processing quantity change			59.9%		

APPENDIX D, Result of employee questionnaire

	Goal Setting	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	The overall process taken by the factory to determine daily production target is fair	11 (12%)	29 (33%)	27 (30%)	9 (10%)	13 (15%)
2	The procedures used to set production target for calculating piece scale is fair	5 (6%)	15 (17%)	24 (27%)	29(33%)	16 (18%)
3	The new job actually provides clues on how well I am doing my work more accurately.	14 (16%)	31 (35%)	20 (22%)	14 (16%)	10 (11%)
4	I am more committed to achieving my daily production target	11 (12%)	37 (42%)	13 (15%)	21 (24%)	7 (8%)
5	After I finish my job, I certainly know whether or not I have performed well without supervisor's feedback	12 (13%)	31 (35%)	18 (20%)	16 (18%)	12 (13%)
6	I am willing to put forth a great deal of effort beyond what I'd normally do to achieve the daily production target	10 (11%)	34 (38%)	20 (22%)	14 (16%)	11 (12%)
7	There are negative consequences if I fail to meet my daily production target	24 (27%)	20 (22%)	31 (35%)	10 (11%)	4 (4%)
8	Piece rate systems improve the overall performance of the company	12 (13%)	31 (35%)	29 (33%)	7 (8%)	10 (11%)
9	*Quite frankly, I don't care if I achieve the daily production target or not	5 (6%)	11 (12%)	52 (58%)	18 (20%)	3 (3%)

	Motivation - Hygiene	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	Piece rates are a good idea for employees	20 (22%)	28 (31%)	9 (10%)	18 (20%)	14 (16%)
2	Piece rates motivate employees to produce more	9 (10%)	32 (36%)	21 (24%)	16 (18%)	11 (12%)
3	Segregating task activities are difficult because supervisor's role is limited by the system	11 (12%)	20 (22%)	29 (33%)	15 (17%)	14 (16%)
4	Piece rate systems prevent the company from employing more people	12 (13%)	15 (17%)	22 (25%)	23 (26%)	17 (19%)
5	The idea of being able to earn more money without working overtime is a good one	16 (18%)	52 (58%)	10 (11%)	8 (9%)	3 (3%)
6	The amount of compensation is not enough to make a change in output	8 (9%)	24 (27%)	12 (13%)	34 (38%)	11 (12%)
7	I could lose my job if I fail to meet my daily production target regularly	6 (7%)	10 (11%)	49 (55%)	12 (13%)	12 (13%)

	Job characteristics	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	The new job involves doing specific and identifiable piece of work with an obvious beginning and an end.	14 (16%)	28 (31%)	20 (22%)	19 (21%)	8 (9%)
2	The new job requires me to employ more skills and talents.	17 (19%)	32 (36%)	19 (21%)	10 (11%)	11 (12%)
3	The supervisor's role on the new system becomes more critical	16 (18%)	28 (31%)	26 (29%)	10 (11%)	9 (10%)
4	My new role gives me considerable opportunity for independence and freedom in how I do the work.	20 (22%)	35 (39%)	11 (12%)	8 (9%)	15 (17%)
5	My current task significance is so high that a lot of workers can be affected by how well the work gets done.	17 (19%)	37 (42%)	13 (15%)	9 (10%)	13 (15%)
6	The leadership role of supervisor is degraded by the new system	7 (8%)	12 (13%)	15 (17%)	21 (24%)	34 (38%)

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	Expectation	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	I am more satisfied with my current income	14 (16%)	38 (43%)	12 (13%)	12 (13%)	13 (15%)
2	Financially, I'm better off with the new system	15 (17%)	32 (36%)	24 (27%)	13 (15%)	5 (6%)
3	The work activity that I want is the one with the highest rate	19 (21%)	30 (34%)	21 (24%)	12 (13%)	7 (8%)
4	I am satisfied with piece rate pay scale	15 (17%)	19 (21%)	23 (26%)	18 (20%)	14 (16%)
5	Group piece rate systems allow the lazy worker to do less and receive the same pay as the ones who work the hardest	16 (18%)	11 (12%)	26 (29%)	17 (19%)	19 (21%)

	Equity	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	The monthly payment that I receive for my services has increased because of piece rate system	23 (26%)	34 (38%)	17 (19%)	9 (10%)	6 (7%)
2	The new system gives more responsibility to workers on how to do their job order than previously.	20 (22%)	26 (29%)	29 (33%)	9 (10%)	5 (6%)
3	I believe, the majority of employees are at their maximum productivity level and can't go any higher	12 (13%)	24 (27%)	19 (21%)	21 (24%)	13 (15%)

	Achievement	Strongly Agree	Agree	undecided	Dis-agree	Strongly Disagree
1	The feedback from my supervisor is helpful to improve my performance	19 (21%)	22 (25%)	13 (15%)	20 (22%)	15 (17%)
2	The current method of payment is the best and the company should continue to use it	14 (16%)	35 (39%)	16 (18%)	15 (17%)	9 (10%)
3	The most important thing about current system is the financial compensation	13 (15%)	18 (20%)	20 (22%)	28 (31%)	10 (11%)
4	In general, I don't like working here now	15 (17%)	14 (16%)	17 (19%)	35 (39%)	8 (9%)

Source: from own research finding

APPENDIX E, EMPLOYEE QUESTIONNAIRE IN AMHARIC

ቅድስተ ማርያም ዩኒቨርስቲ

የድህረምረቃ ትምህርት ክፍል

ለጥናቱ ተሳታፊዎች

እኔ፣ የዚህ መጠይቅ አዘጋጅ የቅድስተማርያም ዩኒቨርስቲ በድህረምረቃ ትምህርት ክፍል በማስተርስ ደረጃ የስራ አመራር እያጠናሁ እገኛለሁ። አሁን ለትምህርት ዝግጅቱ አስፈላጊ ወደሆነው የጥናት እና ምርምር ላይ እየሰራሁ ሲሆን የጥናቴም ርዕስ በሥራ አፈፃፀም መሰረት የሚደረግን ሽልማት በሰራተኛው የስራ ተነሳሽነት እና የስራ አፈፃፀም ላይ የሚያሳድረውን ተፅዕኖ ማጥናት ይመለከታል። በዚህም ጥናት በሚሰጠው የስራ አፈፃፀምን መሰረት ባደረገ ማበረታቻ የሰራተኛውን አመለካከት ለመረዳት እና ለወደፊት በሚኖረው የስራ አፈፃፀም ላይ ያለውን ተፅዕኖ ለመረዳት እንጠቀምበታለን። በዚህ መጠይቅ ላይ ማንነቶን መግለፅ የማይጠበቅቦት ሲሆን የሚሰጡትም መልስ ለትምህርትና ጥናት ስራ ብቻ እንደሚውል ልናረጋግጥ እንወዳለን።

ከምስጋና ጋር

ቢኒያም ተክሉ

Email: bbenj143@gmail.com

ክፍል 1፡ ግላዊ መረጃ

1. ፆታ:

1. ወንድ ☐ 2. ሴት ☐

2. እድሜ:

1. ከ 20 በታች ☐ 2. ከ 20 - 26 ☐ 3. ከ 27 - 32 ☐ 4. ከ 33 - 40 ☐

5. ከ 40 በላይ ☐

3. የጋብቻ ሁኔታ:

1. ያላገባ ☐ 2. ያገባ ☐ 3. የተፋታ ☐ 4. ሌላ ☐

4. የትምህርት ደረጃ

1. ከ 12ተኛ ክፍል በታች ☐ 2. ሰርተፊኬት ☐ 3. ዲፕሎማ ☐ 4. ዲግሪ ☐

5. በድርጅ ውስጥ ያገለገሉበት ዓመት ብዛት

1. ከ1 ዓመት በታች ☐ 2. ከ1 እስከ 3 ዓመት ☐ 3. ከ 3 እስከ 5 ዓመት ☐

4. ከ 5 እስከ 7 ዓመት ☐ 5. ከ 7 ዓመት በላይ ☐

6. የስራ መደብ

1. የቀን ስራ ☐ 2. ረዳት ኦፕሬተር ☐ 3. ኦፕሬተር ☐ 4. ምክትል ሱፐርቫይዘር ☐

ከክፍል 2፡ አዎ ወይም አይደለም ጥያቄዎች

በዚህ ክፍል የሰራተኛውን በስራ አፈፃፀም መሰረት ባደረገው ሽልማት አረዳድ ይለካል

ከታች ቀጥሎ ለሚነሱት እያንዳንዱ ዓረፍተነገር አዎ ወይም አይደለም በማለት መልሱ

ዓረፍተ ነገር	አዎ	አይደለም
በድርጅቱ ውስጥ የተተገበረውን የሽልማት አሰጣጥ ተረድተሀዋል		
ድርጅቱ ይህን የሽልማት አሰጣጥ ሲተገብር ከዚህ በፊት ይሰጥ የነበረውን ዓመታዊ ደሞዝ ጭማሪ ለማስቀረት አስቦ ነው		
የሰራተኛው የጋራ ስራ አፈፃፀም ለድርጅቱ የጠቅላላ የስራ አፈፃፀም ቀጥተኛ ግንኙነት አለው ብለህ ታምናለህ		
ሰራተኛው በስራ ቦታው ላይ ያለው አመለካከት እና ቁርጠኝነት ከጠቅላላው የድርጅቱ ስራ አፈፃፀም ጋር ግንኙነት አለው ብለህ ታምናለህ		
የሰስራ አፈፃፀም በግላዊ ደረጃ ብቻ መለካት ብለህ ታምናለህ		
አሁን ያለው የሽልማት አሰጣጥ በስራ ትጋቴ ላይ ተፅኖ አሳድሯል ብለህ ታምናለህ		
ሽልማት ከስራ አፈፃፀም ጋር መያያዙ የስራ ትጋትህንና ምርተማነትህ ላይ ተፅዕኖ አሳድሯል		
የሰራተኛው የስራ አፈፃፀም ይሄ የሽልማት ፕሮግራም ከመጣ በኋላ ተሸሽላል ብለህ ታምናለህ		
ሰራተኛው በሙሉ በጋራ በመተባበር ቢሰራ እና ሽልማቱም በጋራ ቢሆን ትመርጣለህ		
የሰራተኛውን የስራ አፈፃፀም ለመለካት ከብዛት ይልቅ የስራ ጥራት ላይ ቢተኮር የተሸለ ውጤት ያመጣል ብለህ ታስባለህ		
የበላይ አለቆች ጊዜውን የጠበቀ አስታየት እና ግብረመልስ በስራ አፈፃፀምህ ላይ በጎ ተፅዕኖ አሳድሯል ብለህ ታምናለህ		
የበላይ አለቃዎ ስራውንና ካንተ ጋር ያለውን ግንኙነት የሚይዝበት መንገድ በእርስዎ የስራ አፈፃፀም ላይ ተፅዕኖ አለው		
ተጨማሪ ብር ለማግኘት በአፈፃፀሜ ከምገመገም ይልቅ ተጨማሪ ሰዓት ብሰራ ይሻለኛል		
ድርጅቱ አሁን የሚጠቀምበትን ዘዴ በመተው አዲስ አይነት የሽልማት ዘዴ ቢያመጣ ለመሳተፍ ፍቃደኛ ነኝ		

ክፍል 3፡ ምርጫ

በዋናነት የሰራተኞችን የስራ ተነሳሽነጽ ላይ ተፅዕኖ ያሳድራሉ ተብለው የሚገመቱ ሃሳቦች ከታች ተዘርዝረዋል። እባክዎን ከነዚህ ሀሳቦች ጋር የእርሶን የሰራ አፈጻፀም ላይ ተፅዕኖ የሚያሳድሩትን ምልክት ያድርጉ። ጥያቄዎቹን በሚገባ ካነበቡ በኋላ በእርሶ አመለካከት መሰረት አረፍተነገሮቹ ጋር ምንያህል እንደሚስማሙ ካጠገቡ ባሉት ክፍት ቦታዎች ምልክት ያድርጉ።

5፤ በጣም እስማማለሁ 4፤ እንማማለሁ 3፤ የለፈኝ 2፤አልስማማም እና 1፤ በጣም አልስማማም

	5	4	3	2	1
Goal Setting					
የኔን የስራ ዕቅድ ለማውጣት ድርጅቱ የሚሄድበት መንገድ አሳማኝ ነው					
የሰምሰራውን ስራ የሽልማት መጠን ለማውጣት ድርጅቱ የሚከተለው መንገድ አሳማኝ ነው					
አዲሱ የስራ መንገድ ስራዬን እንዴት እየፈፀምኩ እንደሆነ አቅጣጫ ይሰጠኛል					
አሁን ከሌላው ጊዜ በተሸለ መጠን የስራ ዕቅዴን እንዳሳካ ሆኛለሁ					
ስራዬን ከጨረስኩ በኋላ በምን የአፈፃፀም ብቃት እንደሰራሁ ያለ ቅርብ አለቃ ግብረመልስ አውቃለሁ					
የሰስራ ዕቅዴን እንዳሳካ አሁን ከሌላው ጊዜ የተሻለ ተነሳሽነት አለኝ					
ስራዬን በሚገባ ፍጥነት ካልጨረስኩ አሉታዊ ግብረመልስ ይጠብቀኛል					
ስራ አፈፃፀምን መሰረት ያደረገ ሽልማት በመኖሩ አሁን የድርጅቱ የመስራት ብቃት ተሸሽሏል					
*እውነቱን ለመናገር በስራዬ ዕቅዴን ባሳካም ባላሳካም ግድ የለኝም					

	5	4	3	2	1
Motivation- Hygiene					
በስራ መጠን ለሰራተኛው ሽልማት መስጠት ለሰራተኛው ይጠቅማል					
በሰሩት መጠን መሸለም የሰራተኛውን የስራ ተነሳሽነት ይጨምራል					
የስራ ክፍፍልን መፍጠር በአለቆች የስራ መደብ መሻሻል ምክንያት ከባድ ሁኗል					
አዲሱ አሰራር ምክንያት ድርጅቱ ተጨማሪ ሰራተኛ ከመቅጠር ተርፏል					
ተጨማሪ ሰዓት ሳልሰራ ተጨማሪ ብር ማገኝበት ዘዴ መቀየሱ ጥሩ ታሳብ ነው					
የሽልማቱ መጠን በስራዬ ላይ ተጨማሪ ጥረት ለማድረግ በቂ አይደለም					
*በተደጋጋሚ የስራ ግቤን ባላሳካ ስራዬን የማጣበት ሁኔታ አለ					
Job characteristics					
አዲስ የስራ ዘዴ የተመጠኑ እና ቅድሚያ የተለዩ ስራዎችን እንድሰራ እንዲሁም ስራዎቹ መጀመሪያ እና መጨረሻ እንዲኖራቸው አድርጓል					
አዲሱ የስራ ዘዴ በስራዬ ላይ አዳዲስ ብቃት እና ችሎታዎቼን እንዳሳይ ረድቶኛል					
በአዲሱ የስራ ዘዴ መሰረት የቅርብ አለቃዬ ስራ በጣም ወሳኝ ሆኗል					
አዲሱ የስራ ዘዴ በስራዬ ጥገኛ እንዳልሆንና ነፃነት እንዳገኝ ረድቶኛል					
በአዲሱ ስራዬ መሰረት እኔ የምሰራው ስራ ለሌሎች የስራ ክፍሎች ያለ ወሳኝነት ጨምሯል					
*አዲስ የስራ ዘዴው የቅርብ አለቃዬን የስራ ድርሻ ወሳኝነት ቀንሶታል					

	5	4	3	2	1
Expectation					
አሀን በስራዬ በማገኘው ገቢ በጣም ደስተኛ ነኝ					
በማገኘው ብር መጠን አሁን የተሸለ ሁኗል					
አሀሁን መስራት የምፈልገው ከፍተኛ መጠን ያለውን ብር የሚከፍለኝን ነው					
አሁን ለእያንዳንዱ ስራ በሚከፈለኝ የብር መጠን ደስተኛ ነኝ					
*በጋራ ለተሰራ ስራ በጋራ መክፈል ሰነፍ ሰራተኛን የበለጠ እንዲሰንፍና ግን ከሌላው እኩል እንዲያገኝ እያደረገ ነው					
Equity					
በአዲሱ የስራ ዘዴ መጠቀማችን አሁን በወር ውስጥ የማገኘውን የብር መጠን አሳድጎልኛል					
አዲሱ የአሰራር ዘዴ በስራዬ ተጨማሪ የስራ ሃላፊነቶችን እንድሸከም አድርጎኛል					
*እንደኔ አመለካከት አሁን በድርጅቱ ውስጥ ያሉ ሰራተኞች ከፍተኛውን የማምረት አቅም እየሰጡ እንደሁነ እና ከዚበላይ ሊያድግ እንደማይችል ሆኖ ይሰማኛል					
Achievement					
የቅርብ አለቃዬ ግብረመልስ ለስራዬ መሻሻል ከፍተኛ አስተዋዕፆ አለው					
አሁን ያለው የስራ አከፋፈል መጠን ከሌላው ጊዜየተሸለ እና ድርጅቱም በዙሁ ሊቀጥል ይገባል					
አሁን ባለው አሰራር ምክንያት ለኔ የማገኘው የብር መጠን ዋናውና ወሳኙ ነገር ነው					
በአጠቃላይ አሁን በዚህ ድርጅት ውስጥ እየሰራሁ በመሆኔ የተሸለ ደስተኛ ነኝ					