# Title: Productivity Measurement & Analysis of Ministry of Industries

Submitted To:
**The Director**
National Productivity Organization
Ministry of Industries
Government of the People Republic of Bangladesh

Submitted By:
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# Letter of Submission

June 12, 2021

**The Director**
National Productivity Organization
Ministry of Industries
Government of the People Republic of Bangladesh
91, Motijheel C/A, Dhaka-1000.

**Reference: 36.10.0000.016.16.002.16/135**

**Subject:** Submission of Research Report.

Dear Sir,

In reference to the above please find the report on the title "Productivity Measurement and Analysis of the Ministry of Industries, Bangladesh. The research primarily attempted to measure the employee productivity based on the scope of the work allocated. However, there were more objectives fulfilled in due course of the research.
It was wonderful journey to work with the ministry for conducting the research. We hope the findings and recommendation will help the ministry to initiate development initiatives in identified areas.

Any required explanations, modification required for the said purpose will be highly appreciated.

Therefore, I will humble request to please accept the research report.

With best regards

**Md. Al Amin**
Chief Consultant
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Department of Marketing,
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# Executive Summary

Employee productivity is a keystone of organizational success. No organization can survive in the agile economy of the fiercely competitive market in absence of employee productivity. The primary thrust of this research is to determine the productivity of the employees serving in the ministry of industries (MoInd) of Bangladesh. A mixed-method approach was executed in the research using structured questionnaires (open and close-ended) from employees and associated organizations. The data collected from 80% of employees in different grades and 12 associated organizations of the Ministry. The research carried through primary data collection in three different sets of questionnaires developed based on empirical research instruments adopting 5-point Likert scales, the Focus Group Discussions (FGD) among three groups, the Key Informant Interviews (KII), observation, and the response from the associated organizations of the ministry of industries. The stakeholder's (Client) response on the extent of services provided by the ministry was assessed through the structured questionnaire developed based on SERVQUAL Model, key informant interview, physical observation, and also the validation of referred supporting documents. The statistical tools such as univariate descriptive statistics, factor analysis, charts used in the research, and the reliability test of indicators items were confirmed by Cronbach's Alpha test using SPSS version 20.0. To understand the related working concepts the tabular explanation of each term is defined and research measurement dimensions were adapted from renowned research on the same field. The key outcome of the study revealed that employee productivity is rated 'Excellent' in most of the dimensions of productivity such as timeliness, taking and performing responsibilities, quality of works, discipline, teamwork, the efficiency of work, client services, the accuracy of work and rated average on innovation, technological use, performance commitment, consistency and training. On the other hand, the factor analysis evident that ten principal factors such as job descriptions, organizational supports, technological facility, supervisory supports, training, teamwork, decision making, self-management, performance management system, job satisfaction out of twelve led to the employee productivity whereas communications, alternative work engagement has no significant influence.

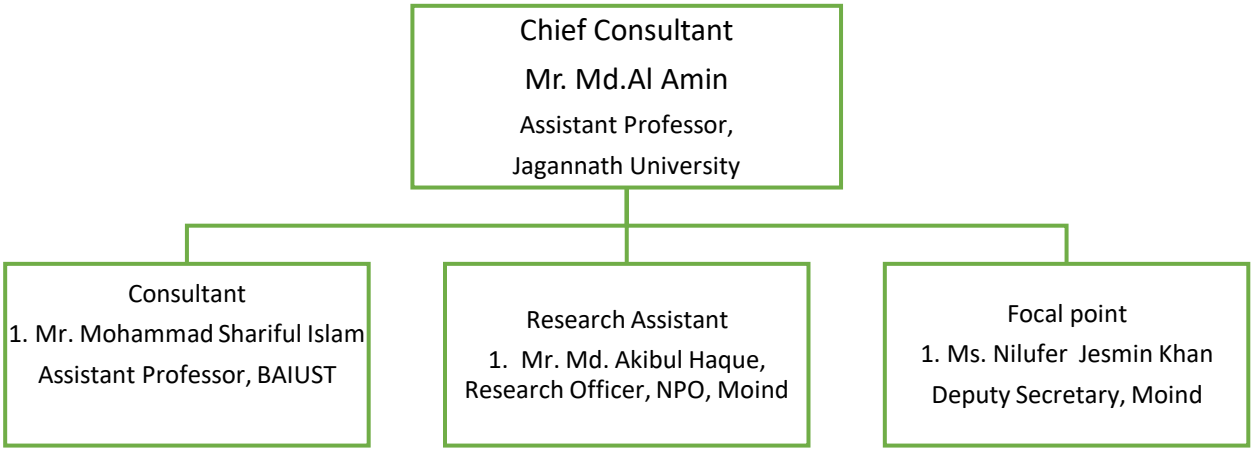
Based on the SERVQUAL analysis the service quality level (3.73 out of 5-point scale) of the ministry to the associated organizations (clients) shows a positive level out of the mean score scale of 3 that called 'good'. But the service quality level of 14 items employed in the model is not evident positive out of the mean score scale of 4 called 'excellent'. Only four items like Professionalism of employees (Responsiveness), IT facilities (Tangibles), Policy formulations

facilities (Tangibles), and follow up of associated organizations (Assurance) whereas the remaining ten items have a negative gap. This revealed the service quality differences between expectation and reality of the clients in the areas of prompt service delivery, on-time decision approval as promised, any other specific follow-up, employees are quicker enough, policy implementation facilities, late response affects the functions, busy hours of bureaucrats, caring demand for file approval, know the approval or rejection of the decision on time, and the process is done on time if rectification is suggested). Looking at future progress of productivity efforts the content of the research has considered the mean score scale out of 4 called "excellent" that may strive towards the relentless effort of improving productivity gradually.

Besides, the recommendation was generated based on an open-ended questionnaire and integration of qualitative data. Finally, this research sets out the key elements required to measure total productivity for the ministry and provides stepwise computation of productivity into multiple key functions and services. The outcome of the research may be a strong implication tool to open the new window of developing and modifying the current work process, employee development initiatives, policy formulations and reviews, future research direction in similar fields for the ministry and associated organizations.

## Formation of Research Team

The formation of research team is given in below diagram



## The Work Scheduling of the Research

| Tasks (2021) | March 03-15 | March 16-30 | April 01-20 | April 21-May 25 | May 26-June 01 | June 02-04 | June 05-10 | June 11-12 |
|---|---|---|---|---|---|---|---|---|
| Research outline design | | | | | | | | |
| Review of Literature | | | | | | | | |
| Meeting with departments | | | | | | | | |
| Submission of questionnaire & Data Collection | | | | | | | | |
| Visit to the Associated organization | | | | | | | | |
| Submission of questionnaire to Associated organization and Key informant interview | | | | | | | | |
| Focus Group Discussion | | | | | | | | |
| Collection of revised questionnaires | | | | | | | | |
| Data Analysis | | | | | | | | |
| Submission of final report | | | | | | | | |

Ref: Work schedule

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# Chapter 1

## Introduction

## 1.1 Introduction

No organization in the world can run without employees. And, employee productivity is the engine of the success of any organization. It has drawn enormous attention as the central focus of the organizations because of the growing importance to proliferate organizational growth and winning competitive advantage in the agile industries. Employees constitute the largest human resources element in the organization (Al-Ahmadi, 2009). In modern days business firms pay special attention to the factors accelerating the positive attitudes of employees and the workplace in an object to optimizing effective productivity (Rubel & Kee, 2013). Many researchers in the fields of human resources management (HRM) have advocated their concentration on productivity and different types of factors associated with the employee the extent of productivity(Biswas & Bhatnagar, 2013; Taboli, 2013). Employee productivity constitutes departmental productivity and the total of departmental productivity constitute ministry productivity. So employee productivity shall be mounted high to confirm their accomplishment of the job(Vanderslice et al., 1987). Empirical research in many contexts contested that employees put fullest concentration and motivation to enhance their productivity when they see firms recognize their contribution, cordial to facilitate employee well-being(Aarabi et al., 2013; Halbesleben & Bowler, 2007). In today's business, organizations have to face fierce competition due to constant change in the work process, efficiency, technology, and other external factors. Besides, not all employees are equally efficient in the same level of the job. For this reason, the role of every organization to take control of employee skill, stability of performance to maximize productivity. Because if the productivity is not moving in the right direction there is a high possibility of falling, struggling survival, losing impression to the stakeholders that finally demotivate potential employees(Beaton et al., 2009; Palvalin et al., 2017). Conversely, a productive culture makes people more engaged with work, adoptive, high motivation, and navigate employee towards the effort, ability, and taking new challenges in the job(Yuan & Woodman, 2010). Thus, employee productivity is an extremely important criterion to stimulate the total organizational outcomes in the short-long term success.

The general understanding of the Ministry delineates a regulatory body that rendered policy services, strategic supports, patronizations, and facilitation of macro-level jobs according to the allocation of business of the government(Ministry of Industries, 2021a). according to the latest data of Asian productivity organization( APO) the total productivity of Bangladesh has

lifted to 10.43 (in thousands of USD) which was 7.06 (in thousands of USD) in the year 2010 (Asian Productivity Organization |, 2021). Similarly, the percentage of national productivity is reported to 3.8 percent which is planned to leverage to 5.6 percent by the year 2030(Habib-Bin, 2021).To keep the consistency of growth the MoInd is one of the prominent and strategically important organs of the people's republic of Bangladesh(Ministry of Finance., 2019). It played a significant role in fostering, developing, and promoting the industrial sectors of the country. Additionally, the MoInd has actively engaged in the achievement of sustainable development goal (G-9), the citizen charter, promoting national productivity connecting with regional productivity organization like APO, implementation of national integrity strategy, annual performance agreement (APA) with the cabinet, and recently launched individual action plan (IAP). To play a more outcome-based role in socio-economic and industrial development, attaining the charter of duties, adopting more state of art changes it is highly important to assess the existing level of productivity. Similarly, measures of public-sector productivity are required: to assess productivity trends within the public sector; to improve accountability for the use of resources; to assist in better allocation of resources among areas of government activity to where they are used most productively, and to provide feedback on policy initiatives to improve public-sector performance. In the long run, productivity measures for the public sector are vital in understanding the success of governments in using their resources to improve living standards and community well-being, giving warning signs to take policy action to improve productivity performance, providing feedback on the effectiveness of productivity-related measures taken, alerting policymakers to the adverse productivity consequences that may result from actions taken in other areas, etc. As a result, the measurement may guide to identify the relevant areas of improvement, recognitions and make the employee be more productive.

Thus, research on employee and organization productivity is a demand-driven area to concentrate on both theoretical and practical. The central problem of the research is if the employees are not performing well the first adverse effect is a declination of departmental productivity and, the departmental productivity will influence the mainstream productivity of the ministry as a whole. As a result, ministry performance may be significantly impacted. The unique contribution of the research is mix set of the methodology, the development of research instrument based on renowned empirical papers in the similar field of service level productivity, the scientific tools of analysis, the findings, recommendations, where no similar research evident in the ministries of Bangladesh till this research has progressed. This research

provides a foundation to better understand the concept and measurement of productivity, factors influencing productivity, client satisfaction, and the total productivity level of the sample ministry.

The research report consists of seven chapters. Chapter one consists of introductions, rational of the study, literature review, working definitions and research objectives. Chapter two consists of conceptual framework and general research framework. Consecutively Chapter three is about the ministry of industries. Research methodology discussed in Chapter four. The data analysis, interpretation, and result of the study discussed in chapter five. Chapter six entails the findings and conclusions. Finally, chapter seven consists of recommendations for further developments.

## 1.2 Rationale of the study

The term productivity is widely used in new era of management. The concept of productivity refers to maximum utilization of resources to produce products or services in order to meet the predetermined goals (Bawa, 2017). Different researchers proved that both financial and non-financial incentives motivate employee to perform more tasks. Therefore, motivation plays a vital role on enhancing employees' productivity. Now a days both public and private organizations concern about productivity because of intense competition. Therefore, an organization will not survive in dynamic business environment without employees' productivity. According to (Bhatti & Qureshi, 2007), Productivity is a performance yardstick encompassing both efficiency and effectiveness. That's why it is important to know who the productive workers are. Highly productive firms apply employee involvement culture. Considering this situation, (Slocum & Woodman, 1998) said that employees are highly motivated to participate in decision-making process, goal setting activities, job specialization which consequently results in higher employee productivity. Encourage a more modern style of participatory management, raise employee productivity and satisfaction, and even lower workers‟ compensation rates. (Madison, Wisconsin, 2000). According to (Bhatti & Qureshi, 2007) job satisfaction increases productivity through bringing high quality motivation and through increasing working capabilities at time of implementation. Therefore, the study on employee's productivity measure and analysis will bring new dimension on improvement of employees' performance.

## 1.3 Literature Review

A good number of extant literatures has been reviewed pertinent to conducting the research. It revealed that rare research is available in the context of the productivity of the government offices to the variables of study in Bangladesh. However, to meet the motivations the literature reviewed from relevant sectors, developed and countries, south Asian region in the similar discipline and field of thoughts.

### 1.3.1 Employee Productivity

The term employee productivity has attempted in many synonymous terms. Previous authors, academic scholars, researchers have employed this in many forms like, work performance (Khtatbeh et al., 2020), job outcome(Van Bogaert et al., 2013), workplace outcome(Wang et al., 2019); job performance(Pilipiec, 2020), job output(Bastenier, 1970), task performance(Van Scotter et al., 2000), etc. Besides the synonymous terms, the empirical research has also shed light on the importance, applications, and factors of employee productivity. Similarly, previous studies have also advocated the role and need of productivity to accelerate the organizational performance. For example, (Campbell, 1990) stated that productivity is a particular behaviour of employees that exposed to the performance. The author further claimed that the total value to an organization is, directly and indirectly, generates from the aggregate job behaviour of employees. And, the job behaviour is increased with relevant and cordial care through the recognition of good productivity. In the same line of thoughts the employee productivity is composed of utilizing knowledge, skills, employee experiences, and abilities, to perform the assigned mission required by the organization(Haenisch, 2012). Thus, the most important purpose is to find the best way of using the efforts, capacity, and human capital at the workplace to ensure the optimum level of productivity. An organization should invest to create-, facilitate-nurture the best way of utilizing human productivity at work(Beaton et al., 2009). Therefore, in order to maximize the productivity of the employees it a prime demand for every organization to assess the key areas of a job. Because, if the indicator of the productivity is fixed against each job, then it is a better way to control and develop. Similarly, the employee productivity is generated through many different dimension which usually depends on job nature, types, nature of the function, nature of business of the organizations(Saini & Budhwar, 2014). Research revealed that an incredible way of keeping optimum productivity there is a need of job descriptions and fixing the responsibilities, making job specification, communicate the job to the employee at the beginning and monitor the performance progress(Abdullah &

Ilham, 2012; Raju & Banerjee, 2017). Following the lead, some studies revealed the effectiveness of productivity and performance. Research has contended that a regular performer does not always have effective productivity and a productive outcome may not always build through absolute efficiency. So, establish a yardstick for the way forward right outcome is a important tool to navigate the workforce performance (Bashook, 2005). But productivity has two main dimensions. One is called qualitative-where people are engaged in services level job and another one is called quantitative-where people are engaged in real production level job. In qualitative types of job, people engaged amorphous job those are not easily quantifiable, lack of job-specific measurement tools, not directly observable sometimes. Whereas, the quantitative job can be easily measured due to the nature of the numerical and numbered output(Condrey, 1994; Joppe & Li, 2016). And that is why few research advocated the timeliness, client services, commitment, confidence, accuracy, quality of job, innovation, disciplines, responsibility, uses of technology is the yardstick of controlling the performance of employees(Beaton et al., 2009; Biswas & Bhatnagar, 2013; Chen et al., 2020; Gitonga et al., 2019; Hall & Hursch, 1982; Hatry, 1978; Lilian Chan, 2004; Oladejo & Oladejo, 2016; Owino, 2019; Palvalin et al., 2017; Pawirosumarto & Iriani, 2018; Plewa et al., 2012; Preston & Brown, 2004; Raju & Banerjee, 2017; Shiva Prasad & Suar, 2010; Sofyani et al., 2018; Taboli, 2013; Vanderslice et al., 1987). On the other hand, the success of every organization is relying on employee job output. One of the prominent reflections of today's human resources management (HRM) functions is to focus the employee job behaviour and to make them holistically outcome-based resources. Following this lead, the productivity in organizations tremendously explored in a spirit of intended value proposition in a very effective and efficient way of doing things(Abdullah & Ilham, 2012; Çalişkan, 2010).

### 1.3.2 Factors of Employee Productivity

Employees are an integral part of the organization. A brand-new machine can be worthless if the operator is not productive enough to run it. Conversely, a piece of poor machinery can be state-of-art if the operator is efficient to handle it. Productivity is like a machine that is explored and exhibited by the professional ownership of employees. It’s a behavior which influenced by the internal and external actors of the employee working environment. Previous research in the relevant field has addressed many factors such as job descriptions, organizational support, teamwork, supervisory support, organizational culture, technological facilities, decision-making capacity, training, alternative work engagement, self-management, performance

management system, job satisfaction, communications are the key drivers among many others stimulators of employee productivity. In the research of (Raju & Banerjee, 2017) mentioned that, job description is the tools of specifying the role of employee that should be shared with them to control performance outcomes. Similarly, the HRM experts claimed that alternative work engagement is a new area of providing flexible working to make employees a positive mindset. For this reason, the organization managing can sometimes consider flexible work plan to enable the employee more productive(Gitonga et al., 2019). In this connection many other researchers advocated the use of technology that is a prime need in the new century. The research further argued that the technological adoption not only give birth of proactive production of routine work but also make people to be more creative and innovations(Plewa et al., 2012). Notably, many research claimed the warrants of teamwork and self-commitment of an employee. Self-commitment originates from the work enthusiasm of the employee and commitment is an inner drive that shows the sincerity and seriousness of accomplishing the target goals. A self-committed employee performing outstanding, a source of inspiration for others. Self-committed employees always a double-decker of doing something beyond, service straight from hearts. Besides the employee who believes in teamwork can spend time for others doing his job, contribute extra mileage for the team(AL-Sinawi et al., 2015; Diamantidis & Chatzoglou, 2019; Rasch & Tosi, 1992). The research in this field was wider when job satisfaction revealed one of the important actors of employee productivity. Generally, a satisfied employee is always a productive employee and reverse. Relevantly, the satisfaction is a wider set of things that mostly composed from the attitude of the organizations and its environment. Previous press of studies shows the impacts of satisfaction on employee productivity. HRM researcher like (Akhter & Yasmin, 2017; Masum et al., 2016). And, organizations that have highly satisfied employees have greater profits than those that do not (Society for Human Resource Management, 2014) and highly engaged employees to experience increased customer satisfaction, profits, and employee productivity(Ahmetoglu et al., 2015). Likewise, the proliferation of existing capacity makes an employee to be better to best, a generalist to become and specialist who produce the highest level of commitment to the job with standardizing quality if work. That is why quality of work has got tremendous attention in individual level of job outcome(Zohurul. M. Islam & Siengthai, 2009). Therefore, in order enhance the quality of productivity there is no alternative of training and development. Because if the employee are not trained enough there is possibility of mistakes, errors and defective outcome in their productivity and total performance of the organizations(Dhar, 2015; Oladejo & Oladejo, 2016). So, employees should be enriched with up-dated knowledge in the

job field and be aware of the mission and goals. Eminent scholar in the field of HRM (Armstrong, 2016)extracted that training is like a lift that upskilled employee and absence of training cause a critical harm sometimes in technical roles. As training aid employees to excel their current level of skills, motivation to work and shows the paths of personal progress in career, create the spirit of work enhance the firms should focus on the same their current skills to a better standard that advance performance(Sharif, 2012). Additionally, some research claimed that employee productivity influenced by the direct, indirect, financial, and non-financial rewards provide by the organizations. For this reason, employee to be given different types of financial and non-financial such as bonuses, merit-based pay, leaves allowances, benefits of retirement, housing and accommodation allowances, base pay, commissions, profit incentive sharing, employee insurance(Ghebregiorgis & Karsten, 2006) . For this reason many researches attested that firms should emphasis the compensation to the employees in return for achieving the assigned goal of the organization (Singh, 2004). Related research construct confirmed that the practices of pay motivate employee to retain the company with high devoted productivity conversely the sense of discontent on compensation result to become unhappy and increase turnover (Rubel & Kee, 2015). Compensation has a substantial link and beneficial impact on employee performance, according to research in the readymade clothes industry (Akter & Husain, 2016; Hameed, 2014). Moreover, few research has shed light the attitudinal features is a strong driver of employee productivity such faster career advancement, working conditions, employee benefits, monetary and non-monetary rewards are the lifeblood of employee productivity and results And these elements determine an employee's general attitude, emotional state, feelings about the job, their working lives, engagement, job involvement, organizational commitment, and intention to stay (Aarabi et al., 2013; Haenisch, 2012, 2012). Employee productivity is influenced by supervisory patterns, the ability to participate in discussion and decision-making, and the encouragement of creativity. And, to attain the goals, the type of leadership that prevails in the organizations exposes these opportunities. As a result, the functional supervisor should oversee and guide an employee to ensure that their functions are carried out smoothly. As a result, according to some research, managing people, giving them control, and allowing them to participate in decision-making is a powerful driver of employee performance(M. Islam et al., 2018; Vanderslice et al., 1987). In pertinent to that argument research in of Bangladesh has also attested to the importance of employee participation, allow them in decision making, recognize their views and opinions, effective supervision accelerate employee productivity in the right direction(Mohammad et al., 2017; Rahman, 2015).

### 1.3.3 Measurement of Employee Productivity

Measurement of employee productivity is a wide area. Productivity metrics can aid in the allocation of resources to government projects in a strategic manner. They can help highlight where budgets could be reset with the least loss of value to the community if they are correctly created. However, the measurement of public-sector productivity is still in infant stages due to given a mixture of remaining conceptual and data-related challenges in relevant areas (Parham(APO), 2019). The scope is generally based on the nature of work performed by the employees such as financial or non-financial outcomes and the nature of business industry such as production-based organizations or service-based organizations. Theoretically, productivity has two broad segments as qualitative and quantitative. More specifically qualitative are the types of services rendered that have not a specific unit to express. The qualitative is linked with many identified and non-identified sub-tasks that directly and indirectly related to the accomplishment of the task(Joppe & Li, 2016). Conversely, the quantitative productivity are scientific, numerically methodical expressed in terms of unit, numbers, scale, cost or any related measures(Pilat & Schreyer, 2001). The Organization for Economic Cooperation's and Development ( OECD) has defined different forms of productivity like single factor (labor, capital, intermediary inputs), multiple factors (combinations of labor, capital, and intermediary inputs), and value-added based productivity(Pilat & Schreyer, 2001; Schreyer, 2001). In all methods, there are specific elements of production where output can be sum up correspondent to the input. Besides many other recognized institutions, bodies suggested the use of base year indexing methods, aggregate methods(Kent, 2019; Weale, 2007). Similarly, APO stated the public sector productivity measurement tools in accordance to the economic productivity(Parham(APO), 2019). According to the measuring criteria of APO, the efficiency of production is the rate at which outputs of goods and services are produced from the inputs. Relevantly, the term productivity is the means of accelerating the efficiency of production where outputs of goods and services are produced from the inputs used. Likewise, the general understanding of measuring productivity is the ratio of input and output for some time like a day, a week, a month, or a year corresponding to the base year.

In case of public sector like ministry the productivity measures is somewhat complex to understand how governments uses resources to the wellbeing of community, improve living standards, rectify the existing productivity level, effectiveness of productivity-related measures taken, and alerting policymakers to the negative productivity consequences of their actions(Hatry, 1978). Public-sector productivity measures can also assist governments in

finding better ways of containing costs, efficiency improvements. In line with the recommendation of global, regional apex bodies such as APO, offices for the national statistics, UK, OECD, Eurostat that the productivity of all public sector cannot be measure based on counting their services. For example the research of APO on the productivity of public sector health and schools advocated the gross output methods whereas the research of the 'Office for National Statistics' (ONS, UK) on public sector health educations, adult social services, children social services, social security administration etc employed using mix methods(Office for National Statistics, 2016; Parham(APO), 2019). Relevantly both of them agreed on the challenges of measuring unidentified, qualitative services. It is because there are many service sectors who provide services collectively, the outcome is value creation to the associates stakeholders, provide social services, securities, serving the national agendas etc. As a result it is difficult to find the value of each unit of services they generate(European Union Statistics, 2021; Office for National Statistics, 2016; Parham(APO), 2019; Pilat & Schreyer, 2001). And, due to that there are still debate on fitting the best or unique methods to measure the qualitative output of the service sector(Parham(APO), 2019). Additionally, this types of measurement is facing the key challenges like data reliability, attributes of data, capturing data on time and validation(Dunleavy, 2017). Optimistically, the scholarly areas of exploring knowledge in this field is rapidly emerging where mix method is providing a comparatively acceptable results(Kent, 2019; Schreyer, 2001).

Thus in order to measure the qualitative nature of productivity there are multiple methods has suggested such as output-standards, integration of quantity and quality indicators, identify the relevant services and grouping the services ( sum total of services grouped together), standard of services delivered etc can be followed(Parham(APO), 2019). In similar line of thoughts the offices for National Statistics UK, the European Union Statistics (Eurostat), Atkinson review has strongly recommended few indicators like accuracy, timeliness, service reliability and failure, responsiveness to client needs ( Client services), client satisfaction, compatibility, consistency, relevance punctuality, efficiency, technology uses(Atkinson, 2006; European Union Statistics, 2021; Hatry, 1972; Office for National Statistics, 2016; Parham(APO), 2019; Weale, 2007).

### 1.3.4 Customer (Client) Satisfaction

The satisfaction of the customer is the ornament that drives towards a service strength. In the present research, the customer services literature is reviewed due to the work nature of the

ministry. The ministry has a good number of associated business organizations that served by the department of the ministries. The satisfaction of the customer or clients in other is a prime area to discover to assess the productivity of the employee as well as the ministry as a whole. Customer satisfaction refers to the comparison between service/ product's perceived performance or outcome and customer expectations(Kotler & Armstrong, 2015) . If customers get more benefits than expectation, they will be delighted. On the other hand, if service providers fail to meet customer expectations, then customers would be dissatisfied (Kotler & Armstrong, 2015). Customer satisfaction works as a key for long-term success of a business. Satisfied customers enhance the revenue of an organization via creating loyal customers(Bolton, 1998; Fornell, 1992). In case of service industry, how well service providers fulfil customer requirement and expectation is termed as quality(Fornell, 1992). (Parasuraman et al., 1988) (Parasuraman et al., 1985)defined service quality as a global judgement or attitude relating to the overall superiority of the service. According to(Cronin & Taylor, 1992; Zeithaml et al., 1996) . SERVQUAL model is an active measure of service quality and customer satisfaction. (Muhammad Butt & Cyril de Run, 2010; Parasuraman et al., 1985) mentioned that there are five dimensions of SERVQUAL model including reliability (RABE); assurance (ASSE); tangibility (TANE); empathy (EMTE); and responsiveness (RESE). From the view point of SERVQUAL developers, service quality is calculated by deducting customer perception from customer expectation scores (Q=P-E). Negative scores represent the less quality service whereas positive scores represent higher service quality (Muhammad Butt & Cyril de Run, 2010; Parasuraman et al., 1985). Therefore, organizations specially service oriented firms should measure their customer/ stakeholders' satisfaction level in order to make them loyal.

### 1.3.5 Organizational Productivity

Organizational productivity is the capacity of an organization, institution, or business to produce desired results with a minimum expenditure of energy, time, money, personnel, material, etc. It is the ratio of growth or decline of economic wealth for some time. The evolutionary concept of organization is the blend of man, machine, materials, and money. And, productivity is termed as the composition of those elements. Later on, the meaning of productivity of the organizations has been revisited. The revised meaning of the productivity is the total of the productivity of the branches, departments, associate business, et(Kent, 2019). The productivity of public sector organizations somewhat a wide and complex areas. It is

because the outcome of the public sector is mostly the services to the society, stakeholder, and nation's interest. Besides the input used for the public service productivity is the compensation, salary, allowances of the manpower that also not fixed based on the real outcome rather designed as per government policy(Dunleavy, 2017). So, the productivity of the public sector organization may not always be adequately assessed due to work nature, neither be neglected due to national interest. Similarly, this type of productivity maybe sometimes the trade-off between input and output that means the public sector delivers the exact services that it is supposed to be. Moving the discussion in the context of a ministry where there are multiple agendas, a charter of duties set by the government in line with the vision of the state. The ministry performs the duties through a complete setup with department, divisions, sub-divisions, and associated organizations.

## 1.4 Working definition of the Key Terms and Dimensions of the Study

The operational definition is the clarity of concepts fitted with the present research. The section consists of the understanding, meaning of the dimensions, key terms used in the research.

| Key Terms/Dimension | Operational Definitions |
|---|---|
| **Productivity** | Generally, denotes the ratio of output and input of an employee from the assigned job for some time. It is the sum-total of employee performance that may or may not have any specific unit, quantity, or numbers. The productivity can be qualitative and quantitative. |
| **Employee** | The workforce is employed for the accomplishment of any task that may or may not be in the organizational setup. The employee is the person who works in exchange for the terms of the condition of the job. The workforce is employed for the accomplishment of any task that may or may not be in an organizational setup. Employee is the individual person work in exchange for the terms of the condition of the job. |
| **Factors** | Elements that are used to effects or to create any sort of influence. It is the driver to stimulate the functions and their accomplishment in a defined or undefined way. |

| | |
|---|---|
| **Stakeholders** | Individual or group of the beneficiary who directly or indirectly related to the organization and its interest. Besides the stakeholders are sometimes delineated as the people, group, community, nations, etc. to whom the organization is obliged to discharge the responsibilities. |
| **Timeliness** | The budgeted or allocated time required to perform a job. It denoted whether the individual can complete the assigned task within the time(Armstrong, 2016; Day & Silverman, 1989). |
| **Client Relation** | Maintain a high degree of relationship with clients, service receivers and gains confidence, respect, and cooperation from them. It enabled the team, individual, work group to ascertain and disseminate the right services and supports(Day & Silverman, 1989) |
| **Responsibilities** | The extent to which performance is carried. It denotes the professional obligation and commitment of discharging the duties assigned to the person's extent to which performance is carried. It denotes the professional obligation and commitment of discharging the duties assigned to the person (Witt, 2000). |
| **Quality of Works** | The value of work produced by the employee may be in the group or as an individual. It expresses the holistic outcome from employee work such as meeting all the predefined requirement of the job (Dhar, 2015) |
| **Innovation** | The exposition of creativity, new ideas, and thoughts at work. It shows the capacity of an individual to translate the creative behavior, develop work process, methods, models into productivity (Yuan & Woodman, 2010). |
| **Technological Use** | Application of relevant technology to make smooth performance. It delineated the capacity of the individual to become familiar, handle and adopt technology to maximize the productivity of work (Plewa et al., 2012). |
| **Discipline** | The code of conduct, rules, and standards of work behavior. It is the standard set of behavior that is set against the job, organizations which composed with reward and punishment (Pawirosumarto & Iriani, 2018). |

| | |
|---|---|
| **Teamwork** | The demonstration of a positive and professional manner in working with a member of the team, group, department, cross functions. It delineated the ability of a person to adapt, flexible, accept, follow and ensure total team spirit of cohesion to perform the task(Day & Silverman, 1989). |
| **Performance Commitment** | Performance commitment denotes the level of enthusiasm of an individual and towards assigned tasks at a workplace. It is the attitude of accomplishing the task to achieve the goals, mission, and vision of the organization aligned to his/her job(Preston & Brown, 2004) |
| **Efficiency of work** | When employees carry out the correct tasks in the right way, with the least waste of time, effort, and resources. It the individual proactive attitude to the assigned task that curved to become more productive as well as output-oriented(Hall & Hursch, 1982). |
| **Accuracy of work** | The ability to accomplish the task without doing mistakes. It denotes the extent of correct work, no mistakes, and being exact that allows an employee to be productive (Afsana et al., 2015). |
| **Job Descriptions** | A document that signifies the duties and responsibilities and specifies skills required to perform a role. This document makes provide conformity and compliance about the organizational expectation to the position(Raju & Banerjee, 2017). |
| **Organizational Supports** | Demonstrates the extent to which organization provides cooperation, recognizes the contribution, to makes the employee productivity. It includes all intrinsic and extrinsic support, logistic support, and every other form of value proposition(Chen et al., 2020). |
| **Technology Facility** | Providing and facilitating adequate technological tools, devices, and types of machinery, allowing access to use the same at work. The adequacy or inadequacy can both positively or negatively influence the output of an individual, team, group, or the department(Bartol & Liu, 2002). |
| **Supervisory Supports** | An approach that expresses the assistance, guidance, and collaboration from the supervisor to the colleagues, subordinates. It a behavioral way of |

| | |
|---|---|
| | leaders that directly influence the level of productivity(Holland et al., 2017) |
| **Training** | The methods, processes employed to enhance the capacity of employees. It is the tools of enriching individual competencies in a smart way to obtain the highest level of productivity (Armstrong, 2016) |
| **Decision Making** | The action or process of making decisions from multiple alternatives. It is the participatory way that enables employee give opinion, shares ideas, suggestions or sometimes the capacity to make decision by himself to do better job outcome(Vanderslice et al., 1987, p. 1). |
| **Alternative Work Engagement** | A kind of flexible working facility instead of being rigid at desk, place, or locations. It is flexibility to make work schedule, place of work and allowing the facility to perform the job from employees convenient place, time, and environment ensuring the required support(Gitonga et al., 2019). |
| **Self-management** | An ability to manage own thoughts, beliefs, work philosophies, actions in a productive way. It controls and navigates the individual way of doing by maximizing the task outcome in a relevant and efficient way(Palvalin et al., 2017). |
| **Performance Management System** | The process, procedures practices by the organization to manage, assess and monitor employee performance. The process allows measuring the extent of productivity of employee according to the given performance criteria and reward(Armstrong, 2016). |
| **Job Satisfaction** | A feeling of fulfillment, enjoyment, liking of employees towards the job. A key motivator of employee productivity in the extent of happiness, positive cognition that generated while or after doing the job(Armstrong, 2016). |
| **Communications** | The process of imparting, exchanging professional information at the workplace. It consists of job instructions, order, carried from one level to another level to accomplish the task (Armstrong, 2016). |

## 1.5 Research Objectives

The core objective of the research is to measure the employee productivity of the Ministry of industries of Bangladesh.

### 1.5.1 Specific Objectives

The specific objectives of the research are as follows:

1. To measure the present level of employee productivity.
2. To identify the factors that affect employee productivity.
3. To assess the client's response on the service level of ministry.
4. To evaluate Ministry productivity aligned with future vision.
5. To provide the recommendations.

# Chapter 2

# Conceptual Framework

## 2.1 Conceptual Framework

The conceptual framework of the research has been designed based on the insights gained from the literature review on the same discipline and underlined theories fitted with relevant empirical studies prevalent to academic concepts and terminologies. Employee productivity is the lifeline of organizational productivity and holistic success. An organization having very well rules and orders but people don't work is worsens than anything. Employee productivity is not merely a concern of the individual way of doing things rather a totality of adopting the best business process as well as orient with each process for enabling assigned functions. Indeed, creativity is what people make can explore by making it more efficient. For this reason, the role of the organization is a key driver to extract the maximum output from the employees. It is because people of the organization will not do the general task always rather also specialist as a professional career.

Thus, A good a number of theories were prevalent to the study such as Social Exchange Theory (SET) provides a conceptual ground to understand the employee productivity and the derived relation -cause of the organizations. The theory advocated that people in the organization works as an exchange of behaviour between the organization and individual(Homans, 1961). It connected the relationship between human behaviour at work in a trade-off between the extent of performance and the behaviour of the organization (Zafirovski, 2005). The exchanges take place by employee through his commitment, hard work, dedication, quality of work and total motivation to the job. Conversely the exchanges take place by the employer through the leadership, work environment, organizational support, incentives and recognitions. Analyst of the theory (Blau, 2017) claimed that every self-initiated effort of performance is the own creation of employee that generated from the acts of organization. Likewise, people have skills but the application of the same at work is always a matters question. similarly, a theory developed by south Asian researcher called Theory of Accountability (Theory A) for organizations of the 21st century. They main focus of the theory is the extraction of various factors that affect the human resource productivity at work place such as (1) Planning, (2) Target setting, (3) Motivation, (4) Work Strategies, (5) Responsibility, (6) Role model, (7) Monitoring & Guiding, and (8) Accountability. According to (Aithal et al., 2018) the productivity is a kind of accountability that explored by employee if they are motivated, inspired, and able to show the talent propositions at work. Therefore, the work environment is a prime factor to make the sense of creativity, commitment and stability of the productive job

outcome. The presumption of the theory encourages every organization's management to devise a strategy for increasing production by requiring employees to meet targets such as responsibility, commitment, and role model-based stimulation, all of which are combined with accountability to improve efficiency. The researcher in the organizational study of the MoInd has attempted to ground the study variables following the prescription of social exchange theory and the theory of accountability. Because the productivity is the stimulator in one side and accountability is another side. And, the role of organization is a propeller to make the best arrangement to establish the right direction in order to make holistic performance outcomes for employee and organization.

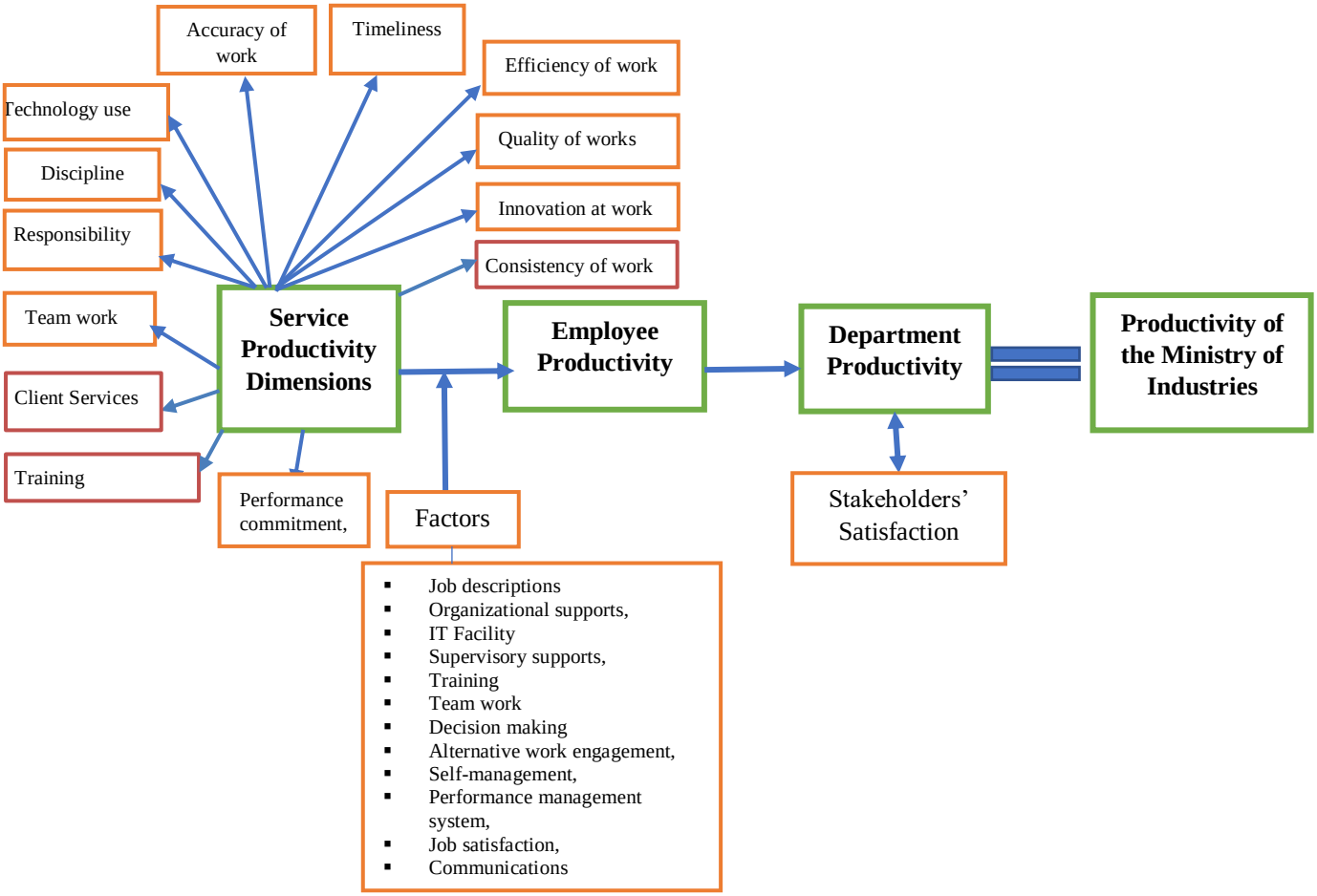



Figure 1: Developed by the Researchers (2021)

## 2.2 The General Outline of the Research

The mixed-method has employed in this study. The qualitative and quantitative method has been used to fulfill the objectives of the study and desired outcome. Three groups of the self-administered structured questionnaire (open and close-ended) and data collected from the 80% of employees in different grade of employees. The research was carried through data collection in developed scales, the focus group discussions of three groups based on job cadres, the key informant interviews from the ministry and associated business organizations, and also responses on the quality of services of the ministry. In brief, the research process is given below:

| | |
|---|---|
| **Stage One** | : Accepting the terms and conditions from the NPO, Ministry of Industries |
| **Stage Two** | : Make the review of extant literatures |
| **Stage Three** | : Discussion with each department of the ministry to know the functional process, manpower's, assigned jobs etc. |
| **Stage Four** | : Development of research framework model and setting objectives. |
| **Stage Five** | : Preparation of the questionnaire |
| **Stage Six** | : Validation of the questionnaire (Pilot survey) by the employees of research unit, NPO and also one professor from the Jagannath University having PhD. |
| **Stage Seven** | : Visiting the associated business organization under the ministry of Industries |
| **Stage Eight** | : Key informant interview with head of business units, head of the departments |
| **Stage Nine** | : Setting focus groups, design the questions & conduct focus group discussion |
| **Stage Ten** | : Recording and analysis of data |
| **Stage Eleven** | : Finalize the report |

Table: Outline of research.

# Chapter 3

## About the Ministry

## 3.1 About the Ministry of Industry

Before the independence of Bangladesh, industry-related activities were conducted in the provincial capital Dhaka through the Department of Commerce and Industry under the Ministry of Industries of the former Central Government of Pakistan. After the independence of Bangladesh, a ministry named the Ministry of Industry and Commerce was formed in 1972. Industry and Commerce later emerged as two separate ministries. later on the Ministry of Jute and Textiles under the purview of the Ministry of Industry, the Board of Investment, the Privatization Commission also separated from the Ministry of Industry(Ministry of Industries, 2021b). At present, there are 4 agencies, 6 departments, and 1 board, 2 foundations working under the Ministry of Industries. Including support functional staff employees at there are 01 Secretary, 05 Additional Secretaries, 15 Joint Secretaries, 01 Joint Chief, 16 Deputy Secretaries, 01 Deputy Chief, 01 System Analyst, 16 Senior Assistant / Assistant Secretaries in the Ministry of Industries. One Senior Assistant Head / Assistant Head, 01 Assistant Programmer, and 01 Accounting Officer are working in the ministry.

## 3.2 Vision, Mission and Functions of the Ministry

The vision, mission, and functions of the Ministry have been elaborated under the heading to preview the general idea about the expected outcome from the ministry. Besides the functions of the ministry has also defined to give a picture to understand the areas of performance productivity allocated among different department and sub-department(Ministry of Industries, 2021c).

### 3.2.1 Vision

Industrially developed middle income country.

### 3.2.2 Mission

Accelerating Industrialization through formulating appropriate Industrial policy, reformulating & renovating state-owned enterprises, developing SME's, micro & cottage industries, protecting standards of products and intellectual property rights and enhancing productivity.

### 3.2.3 Functions

- Formulating, implementing, monitoring and updating of appropriate industrial policy.
- Providing services for registering patent design and trademarks and strengthening activities in protecting intellectual property.
- Developing small, micro & cottage industries.
- Determining and harmonizing national standards in consistent with the international standards of commodities and services.
- Standardization, examination and certification of products.
- Establishing, developing and regulating Eco-friendly and safe industrial infrastructure.
- Keep continuing production of salt, sugar, fertilizer and other commodities.
- Fortifying edible oil with vitamin A.
- Providing policy support and other assistance to the development of ship building and ship recycling industries.
- Enhancing productivity through providing training support to entrepreneurs on industrial management and technical knowhow.
- Generating employment opportunities through accelerating industrialization in public and private sector and joint ventures.
- Inquiring into the reason of non-profitability of state owned enterprises and conduct research on the unsuccessful ventures both in public and private sector.
- Improving overall management of state-owned enterprises.

### 3.2.4 Strategic Objectives of the Ministry

- Promote industrial growth and development.
- Development of Standard with international level.
- Eco- friendly and safe industrialization
- Development of the high priority industrial sector.
- Building entrepreneurship and skilled labor force.
- Initiative to make profitable of non-profitable state -owned enterprises.
- Attain efficiency in fertilizer production, procurement and distribution.
- Stabilize market price with enhanced production of sugar and salt

## 3.3 Name of Department

To expedite the functions of the ministry as per allocation of business(Ministry of Industries, 2021a), the ministry is equipped with following key department and sub wings.

| S/L | Name of the Department | Sub Wings/Areas of Work |
|---|---|---|
| 1 | Jatio Sangshad, Coordination | Jato Sangshad, Cordination and APA, Audit, Citizen Charter |
| 2 | Administration | Administration, General Services, Library, Budget and Accounts, Training (International & Local) and National Productivity Organization (NPO), Disciplines, |
| 3 | Public Corporations | Bangladesh Chemical Industries Corporation (BCIC), Bangladesh Sugar and Food Industries Corporation (BSFIC), Bangladesh Steel and Engineering Corporation (BSEC) |
| 4 | SME and Private Sector | Bangladesh Small Cottage Industries Corporation, SME Foundation, Bangladesh Industrial Technical Assistance Center, Ship Recycling |
| 5 | Policy, Law and International Cooperation | Policy, Law, BIRA, A&S |
| 6 | Standard and Patent Control) | Department of Patent Design and Trademarks (DPDT), Bangladesh Standard and Testing Institute (BSTI), Bangladesh Accreditation Board (BAB), Department of Boilers. |
| 7 | ICT, Policy Research and Global Issues Management | Information and Communication Technology, Management Information System (MIS), System Analyst, Public Relation, Bangladesh Institute of Management (BIM) |
| 8 | Planning | Planning. |

Sources: (Ministry of Industries, 2021d)

Table: Departments of Ministry of Industries.

## 3.4 Number of Active Employees as of April 2021

This section shows approved employees and the actual number of employees till the research on progress.

| Categories | Numbers of approved employees (as per Organigram) | Number of active (actual) employees |
|---|---|---|
| Grade 1 to 9 | 63 | 52 |
| Grade 10 | 57 | 51 |
| Grade 11 to 19 | 54 | 46 |
| Grade 20 | 66 | 57 |
| **Total** | **240** | **206** |

Table: Active manpower of Ministry of Industries.

## 3.5 Name of Associated Organizations

This section shows the list of associated corporations, departments, boards, foundations administered by the strategic supervision and facilitation of the ministry. There are four corporations, six departments, one board, and two foundations.

| S/L | Name of Business Units | Categories |
|---|---|---|
| 1 | Bangladesh Steel and Engineering Corporation (BSEC) | Corporations |
| 2 | Bangladesh Small & Cottage Industries Corporation (BSCIC) | |
| 3 | Bangladesh Chemical Industries Corporation (BCIC) | |
| 4 | Bangladesh Sugar and Food Industries Corporation (BSFIC) | |
| 5 | Bangladesh Standard and Testing Institute (BSTI) | Department /Organizations |
| 6 | Bangladesh Institute of Management (BIM) | |
| 7 | National Productivity Organization (NPO) | |
| 8 | The Department of Patents, Design and Trademarks (DPDT) | |
| 9 | The Department of Boilers (BOILER) | |
| 10 | Bangladesh Industrial Technical Assistance Center (BITAC) | |
| 11 | Bangladesh Accreditation Board (BAB) | Board |
| 12 | SME Foundation | Foundations |
| 13 | Small, Micro, Cottage Industries Foundation (SMCIF) | |

Sources: (Ministry of Industries, 2021b)

Table: Name of business units, MoInd.

# Chapter 4

# Research Methodology

## 4.1 Research Methodology

This section explains the research methodology used in the present research. The research methodology section consists of research design, population and sample size, sampling technique, data collection procedures, an instrument to collect data, the data analysis techniques.

## 4.2 Research Design

The research is a mixed-method in nature. The obtained data are executed in both quantitative and qualitative tools to attain the research objectives. According to the study prescription of (Zohrabi, 2013) there is scope to use mix method for obtaining separate objectives where the variables, respondent, data nature is different. Thus, the primary data used to make quantitative analysis and the observation, focus group discussions (FGD), experience sharing, key informant interview (KII) was used to make the qualitative outcome of the research.

## 4.3 Population, Sample Frame, and Sample size

All employees of the ministry are the populations of the research. The sampling frame describes the list of all population units from which the sample was be selected(Cooper, & Schindler, 2011). Sampling frame is a tool that enables required guidance and ways to select the particular set of samples from the attempted population of research. According to Warnecke (2005) the sampling frame is called a listed ratio or size or proportion of people, a source of required materials from where the sample is chosen (Turner, 2003). The frame can be developed with many reliable sources such as officially approved documents, publicly disclosed documents, reports, published directories, geographical lists, association data, membership data, and every other type of formal printed or electronic database.

According to the approved organogram of the ministry on June 06, 2019, there are 240 employees. The sampling frame has designed on the basis official number of actively serving employees recorded about the organogram. According to Cavana et al.( 2001) there must be the right sample from the relevant population to justify any research findings. Thus, the sampling frame of the study has chosen from the number of employees given in the organogram. In order to determine sample size from the finite number of population the Morgan table stated the minimum number of sample size(Krejcie & Morgan, 1970). The table was used by the many researches in similar fields. According to the table the minimum sample

size for 240 population is 148. Besides (Warnecke, 2005) suggested that well-chosen, samples of about 30-40% of a population can often give good reliable findings. Based on this prescription the minimum sample size is 96 (40% of 240). The actively serving employee reported on April 2021 is 206. Thus, the sample size has been determined in according to the suggestion of Morgan table and respondent selected from all actively serving employees in the ministry correspondent to sampling frame.

## 4.4 Research Instrument

This section will explain the instrumental measures used in the current research. The structured questionnaire (Open and close-ended) consists of consisting of multiple sections. In each case, section A comprised demographic information of the respondents such as age, gender, education, current organization experience, total experience, position, salary, and Section B comprised of the indicators of variables. Whereas, section C consists of open-ended questions. The variable and indicator items were selected from the previous research and adapted with the content and face validity to fit in the research. In questionnaire 1 the variables such as timeliness (explained by two indicators), taking and performing responsibilities (explained by four indicators), quality of works (explained by two indicators), innovation (explained by two indictors), technological use (explained by two indicators), discipline (explained by two indicators), teamwork(explained by three indicators), performance commitment(explained by three indicators), the efficiency of work(explained by four indicators), client services (explained by two indicators), the accuracy of work(explained by three indicators), Training transfer (explained by two indicators), consistency(explained by two indicators). The variables indicators were employed from previous studies of the same field such as (Beaton et al., 2009; Biswas & Bhatnagar, 2013; Chen et al., 2020; Gitonga et al., 2019; Hall & Hursch, 1982; Hatry, 1978; Lilian Chan, 2004; Oladejo & Oladejo, 2016; Owino, 2019; Palvalin et al., 2017; Pawirosumarto & Iriani, 2018; Plewa et al., 2012; Preston & Brown, 2004; Raju & Banerjee, 2017; Shiva Prasad & Suar, 2010; Sofyani et al., 2018; Taboli, 2013; Vanderslice et al., 1987). Besides in questionnaire 2 the variables such as job descriptions (explained by two indicators), organizational supports (has explained by four indicators), Technological facility (explained by four indicators), supervisory supports ( explained by four indicators), Training ( explained by four indicators), Teamwork (explained by three indicators), decision making (explained by three indicators), alternative work engagement (explained by two indicators), self-management (explained by four indicators), performance management system (explained by three

indicators), job satisfaction (explained by three indicators), communications (explained by three indicators). The variables indicators were employed from previous studies of the same field such as(AL-Sinawi et al., 2015; de Bruijn, 2002; Egessa, 2014; Haenisch, 2012; Hatry, 1978; Ma & Ye, 2019; Mutia & Sikalieh, 2014; Plewa et al., 2012). As adopted from the scale, variable's questionnaire will be anchored Likert five-point scales such as strongly agree=5, strongly disagree=1. The previous researcher has used the self-rating and supervisor rating in measuring the productivity and the factors and found a significant correlation between self-rating and supervisor rating in measuring the productivity and the factors (Gagnon & Michael 2004; Harris & Schaubroeck 1988; Rubel & Kee 2013). Based on the evidence of previous research both self-rated and supervisor rated questionnaire items has executed in the present research. Additionally, Mahmud et al. (2019) had also employed the self-rating in the study on telecommunications of Bangladesh. The sampling unit is the mobile telecommunication companies, and the sampling elements are the employees of respective companies. The response of the associated organization's called clients has measured from items developed on the basis of SERVQUAL model.

## 4.5 Data Collection Procedures

The data collection through questionnaires used the drop-off and pick up (DOPU) method. Prior research claimed that the DOPU method is helpful for the respondent to finish at a suitable time, less bias(Qader & Zainuddin, 2011; Rubel, Rimi, et al., 2017), In this research, the respondents are the employees themselves, stakeholders, and supervisors. The fulfilled questionnaire was collected from the employees in person, and by email from the stakeholders. The research team helped the respondent to explain the questionnaire for better understanding, solve the asking by the respondents to make meaningful respond. The collected questionnaire has been coded numerically 1, 2, 3 for better control. The unfinished questions were returned to the respondent for completion. The data tabulated with appropriate coding and order. In the case of questionnaire 1 (filled by the head of the department), a total of 180 was distributed and a total of 156 responses were adequately received. This reflects 83.33% of the sample responses, and questionnaire 2 (filled by the employees) a total of 170 questionnaires distributed, and a total of 125 were adequately received. This reflects the 73.53% (74%) of the sample responses and the questionnaire 3 for associated organizations (stakeholders) response a total of 12 organizations was approached and all the organizations were responded based on their nature of service received. This reflects 100% of sample responses. Previous research on

social science in the context of Bangladesh shows that a minimum of 43.25% of sampled responses is enough to make methodologically fit and to draw a conclusion of the research(Ghosh et al., 2020; Rubel, Kee, et al., 2017).Thus, the sample responses are adequately served the purposes of the present study. Besides, key informant interview has noted, focus group discussion has recorded, personal observation of the researchers, and open-ended questionnaire are coded to draw analysis.

## 4.6 Data Analysis Technique & Measurement of Reliability and Validity

The current research has used scientific analysis to analyze the primary data about productivity and the factors such as the demographic statistics, frequency, descriptive statistics, and factor analysis. Besides the data of key informant interview, the recorded focus group discussion, personal observation, open ended questions also interpreted keeping the key points and objectives of the research. Reliability and validity are an important instrument to navigate the research in right direction, measure the accepted level of consistency and accepting the measurable items (Polit & Hunger, 1985). Validity tests confirms whether the measurement scales of a study are adequately representing the variable or not(Zikmund et al., 2012). In this research, different validity types such as content validity, construct validity has tested. According to Kumar (2010) the purpose of content validity is to confirm that the selected measurement items rightly represent the binding domain of the study, and content validity has assured by obtaining an opinion from one academician from the Jagannath University in the field of Management and one expert view will be taken from human resources professional who is working in the same industry. Construct validity measures the degree of the scale representing the concept being measured, and in this research, construct validity will be tested by statistical interpretations. The internal consistency of data tested with the help of Cronbach's alpha. The value of Cronbach's alpha greater than .70 represents the higher internal consistency of items (Guilford, 1950; Nunnally, 1978). Besides the histogram also used to test whether the data is normally distributed. To test the reliability of the analysis, the pilot survey conducted among 15 respondents of the research wing of national productivity organization (NPO), Moind.

# Chapter 5

## Data Analysis and Result Interpretation of the Study

## 5.1 The Analysis of Data to Fulfill the Objective number One

The data analysis and interpretation of results stated below has accomplished based on the required methodologies designed for the objectives no.1 namely, *the current extent of productivity of the employees*. In the section the results have derived to exhibit the supervisor rating on the current extent of productivity level.

### 5.1.1 Demographic Responses

**5.1.1.1 Gender of Respondents**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Valid** | Male | 121 | 77.6 | 77.6 | 77.6 |
| | Female | 35 | 22.4 | 22.4 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Gender of respondents

**Description:** Total number of respondents is 156 in questionnaire 1 which rated by supervisor. The participation rate of male is 77.6% whereas the female participation rate is 22.4%.

**5.1.1.2 Respondent's Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Valid** | 18-25 | 5 | 3.2 | 3.2 | 3.2 |
| | 26-35 | 61 | 39.1 | 39.1 | 42.3 |
| | 36-45 | 49 | 31.4 | 31.4 | 73.7 |
| | 46-55 | 25 | 16.0 | 16.0 | 89.7 |
| | Greater than 55 | 16 | 10.3 | 10.3 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Age of respondents

**Description:** Out of 156 respondents, only 5 respondent is within 18-25 age category which is 3.2 percent. And 26-35 and 36-45 age category got the highest percentage of 39.1% and 31.4% response respectively, 16% of employees belong in the 46-55 age category whereas 10.3% response goes to greater than 56 age category.

**5.1.1.3 Highest Education Qualification**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Valid** | MPhil/ PhD | 2 | 1.3 | 1.3 | 1.3 |
| | Masters | 81 | 51.9 | 51.9 | 53.2 |
| | Bachelor | 42 | 26.9 | 26.9 | 80.1 |
| | HSC/SSC/Equivalent | 31 | 19.9 | 19.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Education qualification of respondents

**Description:** 51.9% employees have Master's degree where 26.9% employees have at least Bachelor degree. 1.3% respondents have PhD degree. On the other hand, 19.9% employees passed HSC/SSC program.

| 5.1.1.4 Designation | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Additional Secretary | 1 | 0.6 | 0.6 | 0.6 |
| | Joint Secretary | 5 | 3.2 | 3.2 | 3.8 |
| | Deputy Secretary | 17 | 10.9 | 10.9 | 14.7 |
| | Asst/Sr. Assistant Secretary | 13 | 8.3 | 8.3 | 23.1 |
| | AO/SAO/PO/SA/SSA | 39 | 25.0 | 25.0 | 48.1 |
| | MLSS/Steno/Others | 81 | 51.9 | 51.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Designation of respondents

**Description:** The total number of samples is 156 in this survey. Additional Secretary and Joint Secretary got 0.6% and 3.8% response respectively whereas Deputy Secretary and Assistant Secretary/ Senior Assistant Secretary got 10.9% and 8.3% response. Maximum participation came from Steno and others with the same grade which is 51.9% response. AO/SAO/PO/SA/SSA grades are in the second-highest participation with 25% response.

| 5.1.1.5 Experience in Current Organization | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Less than 1 year | 8 | 5.1 | 5.1 | 5.1 |
| | 1 to 5 years | 65 | 41.7 | 41.7 | 46.8 |
| | 6 to 10 years | 25 | 16.0 | 16.0 | 62.8 |
| | 11 to 15 years | 35 | 22.4 | 22.4 | 85.3 |
| | 16 to 20 years | 20 | 12.8 | 12.8 | 98.1 |
| | More than 20 Years | 3 | 1.9 | 1.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Experiences of respondents in the Ministry of Industries.

**Description:** Out of 156 respondents, only 8 respondents have "less than 1 year" experience category which is 5.1 percent. But "1-5 year" experience category got the highest response which is 41.7%. And "5-10 years" and "11-15 years" experience category got 16% and 22.4% response respectively. 1.9% of employees out of 156 respondents have "more than 20 years" experience. Therefore, it is observed that the Ministry has experience of quick transfer among employees.

| 5.1.1.6 Total Experience | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 1 to 5 years | 52 | 33.3 | 33.3 | 33.3 |
| | 6 to 10 years | 21 | 13.5 | 13.5 | 46.8 |
| | 11 to 15 years | 32 | 20.5 | 20.5 | 67.3 |
| | 16 to 20 years | 19 | 12.2 | 12.2 | 79.5 |
| | More than 20 Years | 32 | 20.5 | 20.5 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Total Experiences of respondent.

**Description:** 33.3% respondents have "1 to 5 years" as total working experience whereas 13.5% respondents have 6 to 10 years experience. "11 to 15 years" and "11 to 15 years" total experience got 20.5% and 12.2% response respectively. Interestingly, the Ministry has 20.5 percent employees who has more than 20 years working experience in different organizations whereas maximum respondents (33.3%) has only 1-5 years of experience.

| 5.1.1.7 Nature of Employment | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Permanent | 154 | 98.7 | 98.7 | 98.7 |
| | Temporary/Daily basis | 2 | 1.3 | 1.3 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Nature of employment of respondents.

**Description:** 98.7% respondents are permanent employees whereas only 1.3% respondents are not permanent.

## 5.2 The Analysis of the Data Based on Each Dimensions of Productivity

In this section primary data was interpreted based on each dimension of employee productivity.

### 5.2.1 Timeliness dimension

| Timeliness | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 2 | 2 | 1.3 | 1.3 | 1.3 |
| | 3 | 18 | 11.5 | 11.5 | 12.8 |
| | 4 | 68 | 43.6 | 43.6 | 56.4 |
| | 5 | 68 | 43.6 | 43.6 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Timeliness dimension of productivity.

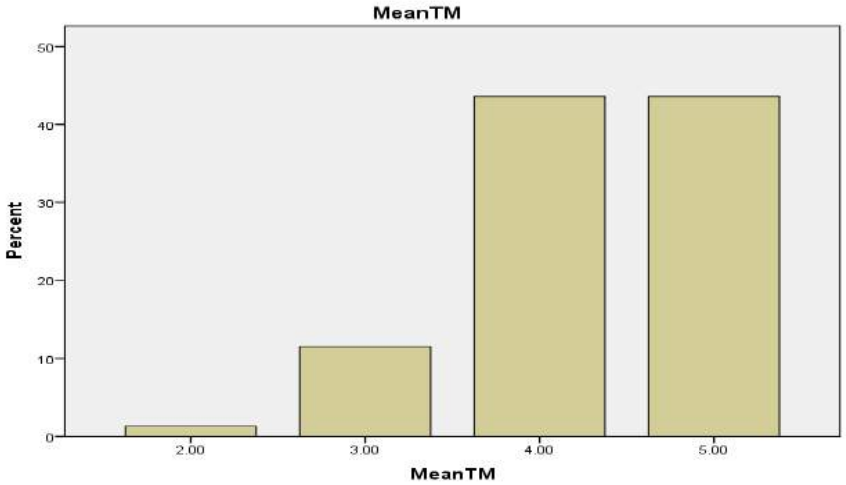



Chart: Timeliness dimension of productivity.

**Description:** The table followed by the bar chart shows that the highest number of employees follows timeliness. 43.6% of employees perform their jobs and accomplish the assigned task within time line. Along with the strongly agreed scale got the same response. The attitude of timeliness represents the highest productivity of the ministry.

### 5.2.2 Responsibility dimension

| Responsibility | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 3 | 1.9 | 1.9 | 1.9 |
| | 3 | 19 | 12.2 | 12.2 | 14.1 |
| | 4 | 90 | 57.7 | 57.7 | 71.8 |
| | 5 | 44 | 28.2 | 28.2 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Responsibility dimension of productivity.

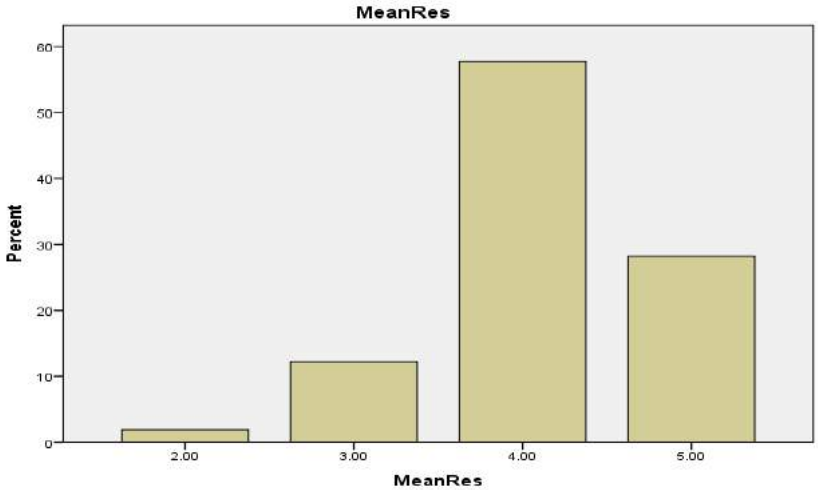



Chart: Responsibility dimension of productivity.

**Description:** From the above table, it is revealed that 57.7 % employees are accepting and discharging responsibilities from their assigned job. Along with, 28.2% employees of the Ministry are strongly committed to take responsibility for their assigned jobs. The sense of responsibility and willingness to accept make the employee a strong bonding to the work and finish the assigned job. This was expected to be an excellent level for the ministry.

### 5.2.3 Client Services dimension

| Client Services | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 2 | 1.3 | 1.3 | 1.3 |
| | 3 | 22 | 14.1 | 14.1 | 15.4 |
| | 4 | 91 | 58.3 | 58.3 | 73.7 |
| | 5 | 41 | 26.3 | 26.3 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Client Services dimension of productivity.

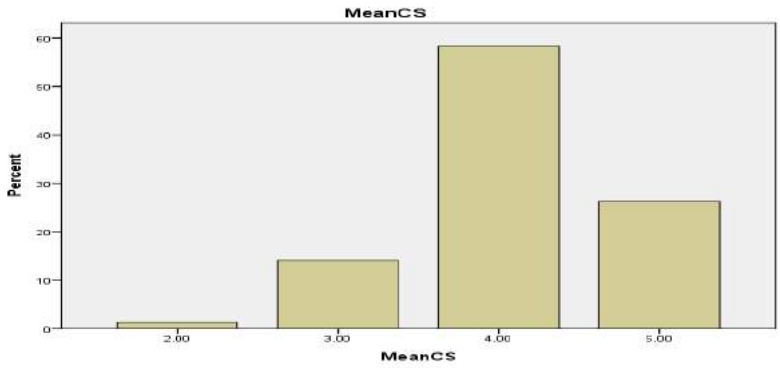



Chart: Client Services dimension of productivity.

**Description:** The above frequency table and bar chart shows that 58.3% employees are committed to provide client services on time. This attitude is effective if the stakeholders get the right services and support from the assigned job. Strongly agree scale got the second highest percentage which is 26.3%. Therefore, it is observed that employees have a positive attitude to stakeholders' services.

### 5.2.4 Quality of Work dimension

| Quality of Work | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 1 | 1 | 0.6 | 0.6 | 0.6 |
| | 2 | 1 | 0.6 | 0.6 | 1.3 |
| | 3 | 20 | 12.8 | 12.8 | 14.1 |
| | 4 | 83 | 53.2 | 53.2 | 67.3 |
| | 5 | 51 | 32.7 | 32.7 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Quality of work dimension of productivity.

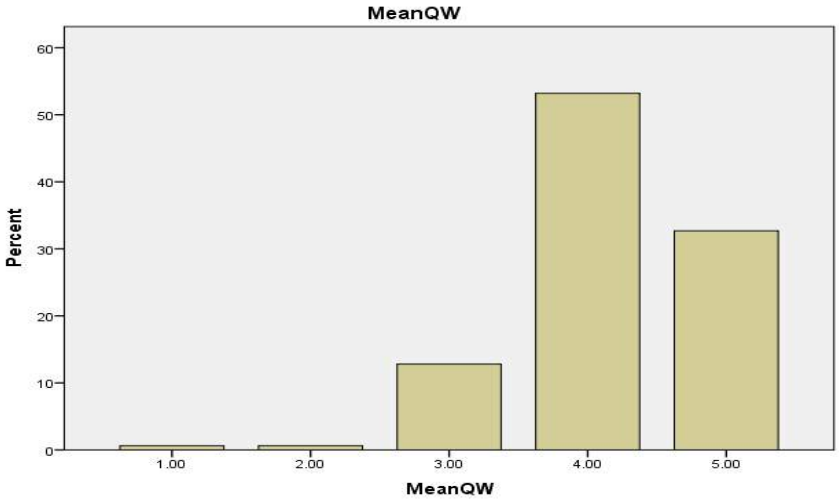



Chart: Quality of work dimension of productivity.

**Description:** The above table shows that 53.2% employees of Moind are productive in terms of quality of work. Majority employees perform well and maintain quality of their assigned work. Therefore, it can be concluded that employees have good command on the quality of work.

### 5.2.5 Innovation dimension

| Innovations | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 1 | 1 | 0.6 | 0.6 | 0.6 |
| | 2 | 5 | 3.2 | 3.2 | 3.8 |
| | 3 | 30 | 19.2 | 19.2 | 23.1 |
| | 4 | 86 | 55.1 | 55.1 | 78.2 |
| | 5 | 34 | 21.8 | 21.8 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Innovation dimension of productivity.

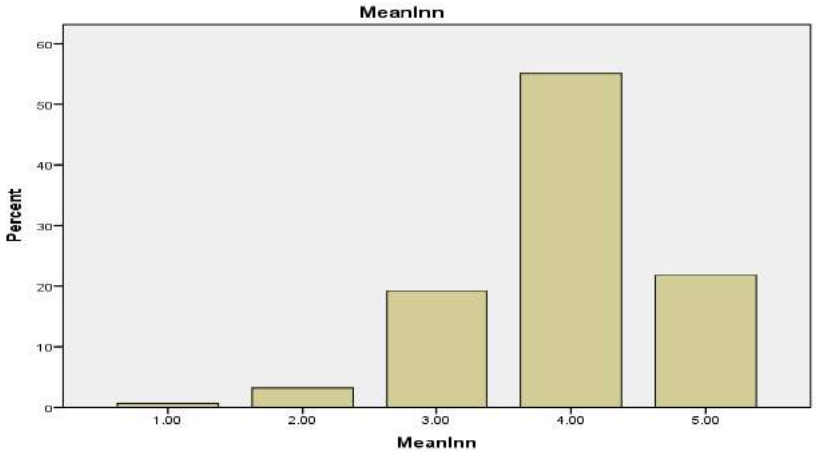



Chart: Innovation dimension of productivity.

**Description:** Strongly agree and agree scale got 21.8% and 55.1% response respectively from the supervisors rating those employees of Moind are innovative to do creative work. The Ministry of Industries always tries to pursue innovative work for the revolution of good industries development. The Ministry develops different laws, policies, rules and regulations for the development of industries. The result shows employee are doing at their level but still scope to be excellent level.

### 5.2.6 Technology use dimension

| Technology use | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 1 | 1 | 0.6 | 0.6 | 0.6 |
| | 2 | 5 | 3.2 | 3.2 | 3.8 |
| | 3 | 40 | 25.6 | 25.6 | 29.5 |
| | 4 | 74 | 47.4 | 47.4 | 76.9 |
| | 5 | 36 | 23.1 | 23.1 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Technology use dimension of productivity.

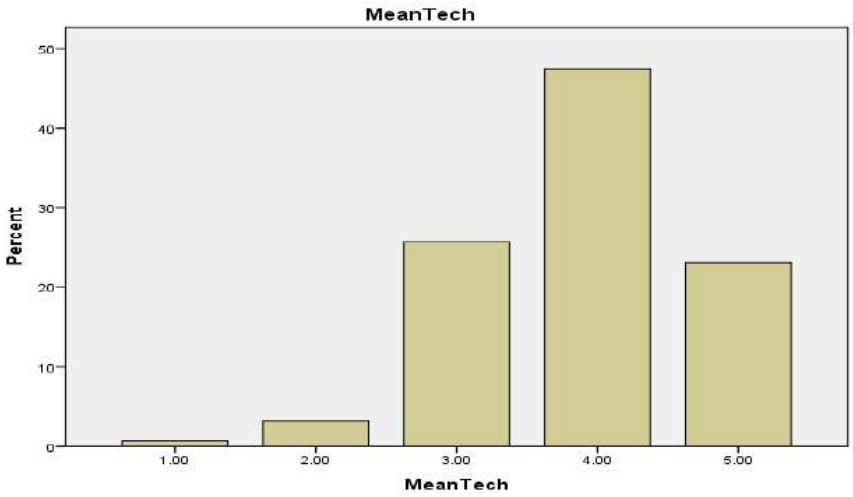



Chart: Technology use dimension of productivity.

**Description:** The table followed by the bar chart shows that the maximum number of employees are familiar with the technology at work because 47.5 percent employees are technologically sound in doing tasks. The shortage of technological skill may hamper the achievement of right productivity. On the other hand, neutral got 25.6% response about the statement. Therefore, the Ministry should invest much capital on improving technological knowledge among its employees.

### 5.2.7 Disciplines dimension

| Disciplines | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 2 | 1.3 | 1.3 | 1.3 |
| | 3 | 17 | 10.9 | 10.9 | 12.2 |
| | 4 | 67 | 42.9 | 42.9 | 55.1 |
| | 5 | 70 | 44.9 | 44.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Discipline dimension of productivity.

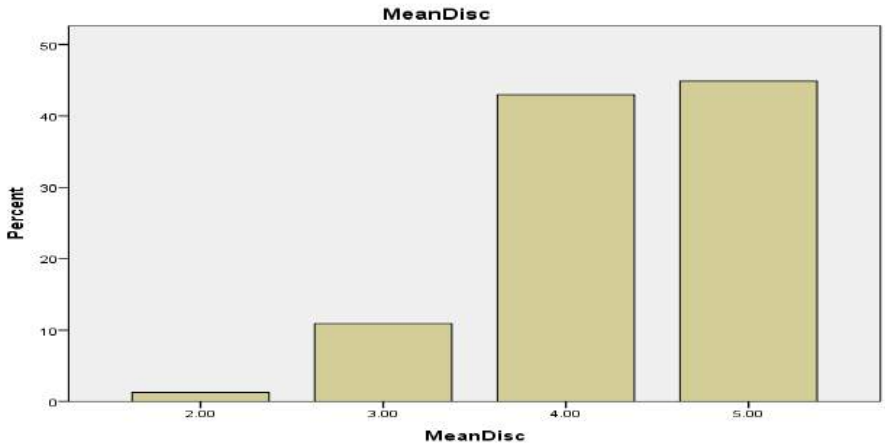



Chart: Discipline dimension of productivity.

**Description:** From the above table, it is revealed that the highest number of employees are disciplined. Here, supervisors rated 44.9% as a strongly agreed scale and 42.9% as agreed scale that employees are disciplined to perform assigned tasks. Alternatively, 10.9% supervisors disagreed that employees are not disciplined. Therefore, the Ministry should find out those employees who are not disciplined.

### 5.2.8 Team Work Dimension

| Team Work | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 3 | 1.9 | 1.9 | 1.9 |
| | 3 | 28 | 17.9 | 17.9 | 19.9 |
| | 4 | 83 | 53.2 | 53.2 | 73.1 |
| | 5 | 42 | 26.9 | 26.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Team work dimension of productivity.

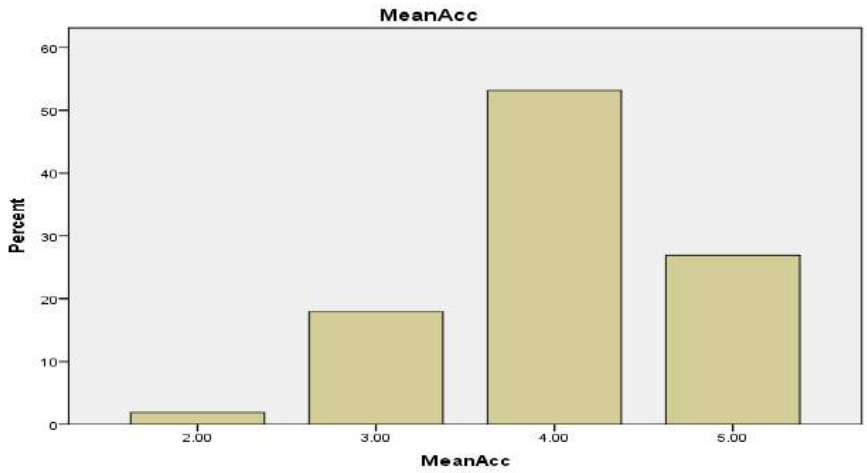



Chart: Team work dimension of productivity.

**Description:** From the above table and bar chart, it is observed that 53.2% employees are sincere regarding the team work. Strongly agree got the second highest percentage (26.9) regarding the statement that employees of the Ministry follow team work to accomplish assigned targets. Alternatively, 17.9% of respondents negatively marked the statement. As a result, this reflects that there is still a need to inspire employees to be more committed to work together.

### 5.2.9 Performance Commitment dimension

| Performance commitment | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 1 | 0.6 | 0.6 | 0.6 |
| | 3 | 45 | 28.8 | 28.8 | 29.5 |
| | 4 | 85 | 54.5 | 54.5 | 84.0 |
| | 5 | 25 | 16.0 | 16.0 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Performance Commitment dimension of productivity.

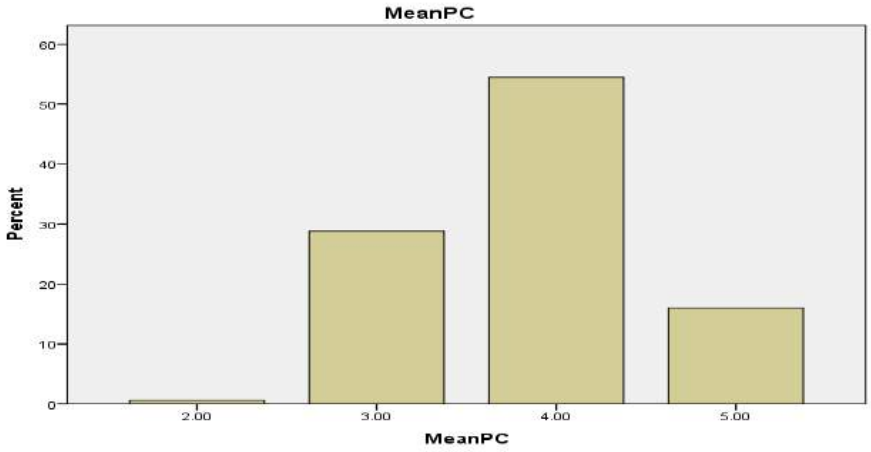



Chart: Performance Commitment dimension of productivity.

**Description:** From the table and bar chart, it is observed that 54.5% employees are committed to performance. On the other hand, 28.8% are not committed to performance. Therefore, it has mixed observations. Therefore, it is observed that there is still a need to inspire employees to be more committed to the work.

### 5.2.10 Efficiency at work dimension

| Efficiency at work | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 1 | 0.6 | 0.6 | 0.6 |
| | 3 | 21 | 13.5 | 13.5 | 14.1 |
| | 4 | 86 | 55.1 | 55.1 | 69.2 |
| | 5 | 48 | 30.8 | 30.8 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Efficiency at work dimension of productivity.

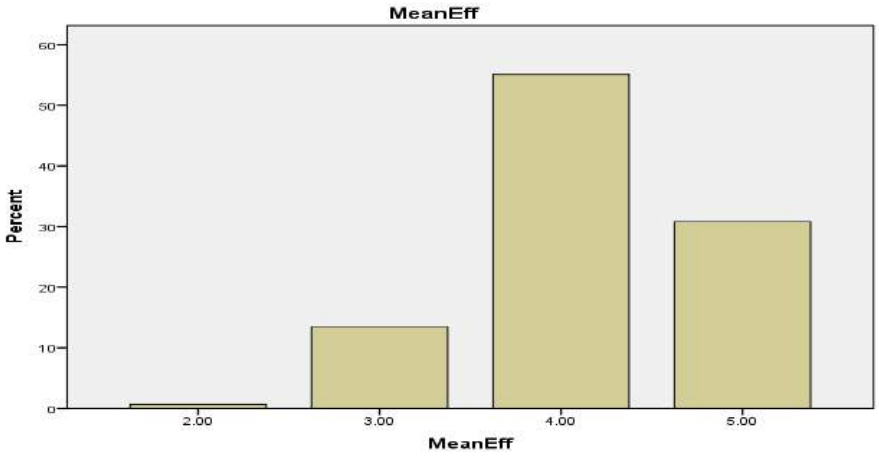



Chart: Efficiency at work dimension of productivity.

**Description:** The table followed by the bar chart shows that 55.1% employees possess efficiency at their assigned work. And, 30.8% employees are strongly found much efficient at performing tasks. Therefore, it is observed that efficiency at work is a must for an organization to become more productive. Organizations can offer many skill development sessions for developing employees more efficiently.

### 5.2.11 Accuracy of work dimension

| Accuracy of Work | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 1 | 1 | 0.6 | 0.6 | 0.6 |
| | 3 | 24 | 15.4 | 15.4 | 16.0 |

| | | | | | |
|---|---|---|---|---|---|
| | 4 | 89 | 57.1 | 57.1 | 73.1 |
| | 5 | 42 | 26.9 | 26.9 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Accuracy of work dimension of productivity.

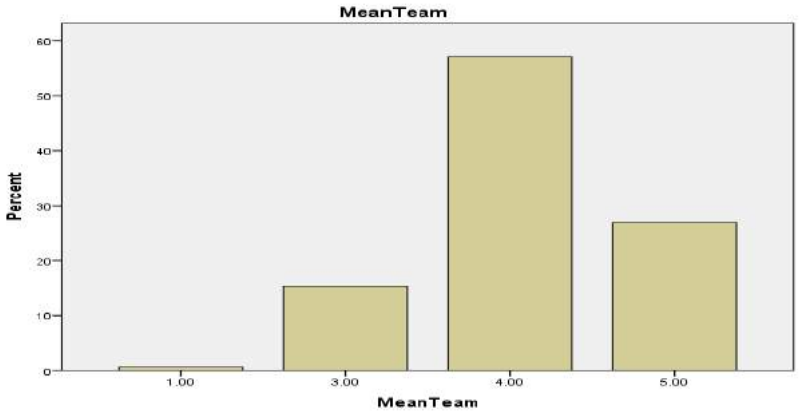



Chart: Accuracy of work dimension of productivity.

**Description:** The table followed by the bar chart shows that the highest number (57.1%) of employees perform work accurately. Supervisors agreed that their subordinates properly maintain work. Along with the strongly agree scale also got a 26.9% response. The attitude toward accuracy of work is assumed to encourage a good work spirit at the Ministry.

### 5.2.12 Training dimension

| Training | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 3 | 1.9 | 1.9 | 1.9 |
| | 3 | 31 | 19.9 | 19.9 | 21.8 |
| | 4 | 87 | 55.8 | 55.8 | 77.6 |
| | 5 | 35 | 22.4 | 22.4 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Training dimension of productivity.

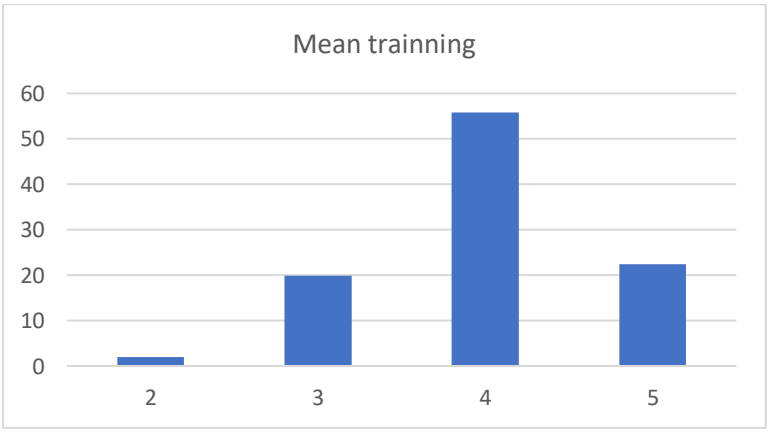



Chart: Training dimension of productivity.

**Description:** The table followed by the bar chart shows that 19.9% employees possess a negative response toward the attitude of attending training events, taking lessons and actions in the post training. This reflects there is still a need to inspire employees to put more emphasis on attending training, apply the learning of the training at work. Alternatively, 55.8% employees have a positive attitude toward the attitude of attending the training. Therefore, it is observed that the Moind should launch new in-house, local and foreign training for employees.

### 5.2.13 Consistency dimension

| Consistency | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 2 | 2 | 1.4 | 1.4 | 1.4 |
| | 3 | 45 | 28.8 | 28.8 | 30.2 |
| | 4 | 79 | 50.6 | 50.6 | 80.8 |
| | 5 | 30 | 19.2 | 19.2 | 100.0 |
| | Total | 156 | 100.0 | 100.0 | |

Table: Consistency dimension of productivity.


Chart: Consistency dimension of productivity.

**Description:** The table followed by the bar chart shows that the average number of employees have the right and required consistency at the extent of the working areas. The consistency involves both top, down and bottom to share and instruct the order and decisions in verbal and nonverbal ways. 50.6% employees are positively consistent with their performance and 28.8% are not consistent in performance. Therefore, the Ministry should motivate employees to be consistent with the performance.

## 5.3 Summary of Internal Consistency, Dimension wise productivity in percentage and Scale Output.

| SL | Name of Dimensions | Internal consistency (α value) | Dimension wise Productivity Level in percentage | | Scale output (Desired level =100%) | | |
|---|---|---|---|---|---|---|---|
| | | | Value of Agree (4) | Value of Strongly Agree (5) | ∑ (4 & 5) | Rating Level | Mean |
| **1** | Timeliness | .84 | 43.6% | 43.6% | 87.2% | Excellent | 4.29 |
| **2** | Performing Responsibilities | .83 | 57.7% | 28.2% | 85.9% | Excellent | 4.12 |
| **3** | Client services | .62 | 58.3% | 26.3% | 84.6% | Excellent | 4.09 |
| **4** | Quality of works | .82 | 53.2% | 32.7% | 85.9% | Excellent | 4.16 |
| **5** | Innovation | .85 | 55.1% | 21.8% | 76.9% | Good | 3.94 |
| **6** | Technological use | .86 | 47.4% | 23.1% | 70.5% | Good | 3.89 |
| **7** | Discipline | .87 | 44.9% | 44.9% | 89.8% | Excellent | 4.31 |
| **8** | Team work | .80 | 53.2% | 26.9% | 80.1% | Excellent | 4.09 |
| **9** | Performance commitment | .68 | 54.5% | 16% | 70.5% | Good | 3.85 |
| **10** | Efficiency of work | .81 | 55.1% | 30.8% | 85.9% | Excellent | 4.16 |
| **11** | Accuracy of work | .87 | 57.1% | 26.9% | 84% | Excellent | 4.05 |
| **12** | Training | .78 | 55.8% | 22.4% | 78.2% | Good | 3.98 |
| **13** | Consistency | .89 | 50.6% | 19.2% | 69.8% | Good | 3.89 |

**Note: 0-40=Poor, 40-60 =Average , 60-80= Good, 80 and Above=Excellent (Nethmini & Ismail, 2019)**

Table: Summary of internal consistency of dimensions of productivity.

**Description:** Cronbach's coefficient (α) for each dimension of the research ranged from 0.62 to 0.89 (typically 0.5 and above is acceptable), which indicates the internal consistency of each indicator employed to define each dimension used for measuring employee productivity (Cronbach, 1951; Malhotra & Jain, 2011). And, the Cronbach's coefficient (α) for all items (34) is .97 result reflect that all the dimensions adequately defined the employee productivity. The dimension wise productivity level is rated in the table that exhibited the percentage and level of percentage such as:

**Timeliness** shows that 87.2 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level employees of the ministry is "Excellent" in terms of maintaining their performance on time, meeting the work deadlines, and sometimes required to work to finish the deadline. The mean scale value shows that the supervisors agree on the level of performance.

**Responsibilities** shows that 85.9 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level employees of the ministry is "Excellent" in terms of accepting the responsibility of the job, decision making, work multiple projects together, assist team members to reduce workload and supervisors. The mean scale value shows that the supervisors agree on the level of performance.

**Client services** show that 84.6 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level employees of the ministry is "Excellent" while maintaining relationships with clients and providing services to the internal and external stakeholders. The mean scale value shows that the supervisors agree on the level of performance.

**Quality of works** shows that 85.9 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level employees of the ministry is "Excellent" in areas of delivering correct, authentic, and flawless works. The mean scale value shows that the supervisors agree on the level of performance.

**Innovation** shows that 86.9 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level employees of the ministry is good in the context of sharing new ideas, showing creativity in work, spent time adopt new techniques, methods, processes. Therefore, it is observed that Ministry needs to facilitate innovative work because still there is an opportunity to be excellent in innovation dimension. The mean scale value shows that the supervisors agree on the level of performance.

**Technological use** shows that 70.5 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Good" in case of welcome technology and its use at work, familiar with workplace technology, the smooth handle of technology. As the percentage is below than excellent level, the Ministry should take more actions to educate employees digital issues. The mean scale value shows that the supervisors are average on the level of performance.

**Discipline** shows 89.8 percent responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Excellent" in maintaining office orders, attendance, and disciplinary compliances. The mean scale value shows that the supervisors agree on the level of performance.

**Teamwork** revealed that 80.1 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Excellent" who love to cooperate with team members, willing to spend time to listen to co-workers' problems and solutions, communicate and escalate the right information and instructions among the team members. The mean scale value also shows that the supervisors agree on the level of performance.

**Performance commitment** shows that 70.5 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Good" in terms of maintaining commitment to meet the formal performance expectation, engage in activity that will directly affect the job evaluations. As the value of performance commitment is less than the "Excellent" level, Ministry may take some initiatives to enhance moral issues among employees to be committed on achieving performance. However, the mean scale value shows that the supervisors reasonably agree on the level of performance.

**The efficiency of work** shows that 85.9 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Excellent" as they possess enough job knowledge, work process, efficiently finish a task, expose a positive attitude to task, maintain professional ethics and sincerity to accomplish the job. The mean scale value shows that the supervisors reasonably agree on the level of performance

**Accuracy of work** shows that 84 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Excellent" to perform error-free work, perform consistently proactive work, take quick action to resolve any mistakes. The mean scale value shows that the supervisors agree on the level of performance

**Training** shows that 78.2 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is good. The employees are self-enthusiastic to attend professional training, attain IAP-related skills, willing to apply the post-training learning at work to developing productivity. As the result of training is close to "Excellent" level, Ministry can organize different types of on-the-job training and off-the-job training in order to develop skilled manpower. The mean scale value shows that the supervisors agree on the level of performance

**Consistency** shows that 69.8 percent of responses were received in connection to reveal the current level of productivity out of 100 percent of desired productivity. It means that the extent of productivity level of employees of the ministry is "Good" in terms of accepting audit observation, inspection reports, use the fullest effort to implement the corrective actions of audit and inspections in a planned way. Therefore, it is observed that still there are many scopes of improvements in maintaining consistency in work. The mean scale value shows that the supervisors agree on the level of performance.

### 5.4 Summary of employee Productivity Level at Moind:

$$\sum\left(\frac{value\ of\ agree(4) and\ \ strognly\ agree(5)\ of\ 13\ dimensions}{13}\right)$$

1047.3/13 = **80.6%**

The above equation represents the aggregated values of employees' productivity. According to the equation, total positive values of strongly agree and agree is divided by total number of dimensions. From the above equation, it is revealed that employees' productivity level of Moind is 80.6% (Excellent level) out of 100 considering above 13 dimensions.

## 5.5 The Analysis of Data to Fulfil the Objectives Number Two

The data analysis and interpretation of results stated below has accomplished based on the required methodologies designed for the objectives no.2 namely, *Factors affecting the productivity of employees*. In the section the results have derived the drivers of employee productivity.

### 5.5.1 Demographic Characteristics of Respondent

| Gender of Respondents | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | Male | 99 | 79.2 | 79.2 | 79.2 |
| | Female | 26 | 20.8 | 20.8 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Table: Gender of respondents

**Description:** Total number of respondents was 125 in questionnaire 2 under self-rating scale. Among them 79.2% is male and 20.8% is female. Therefore, it is observed that Moind has a smaller number of female employees compared to male.

| Respondent's Age | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | 18-25 | 1 | 0.8 | 0.8 | 0.8 |
| | 26-35 | 44 | 35.2 | 35.2 | 36.0 |
| | 36-45 | 42 | 33.6 | 33.6 | 69.6 |
| | 46-55 | 24 | 19.2 | 19.2 | 88.8 |
| | Greater than 56 | 14 | 11.2 | 11.2 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Table: Age of respondents

**Description:** Out of 125 respondents, only 1 respondent is in 18-25 age category which is 0.80 percent. And 26-35 and 36-45 age category got highest percentage of 35.2% and 33.6% response respectively. 19.2% of employees belong in 46-55 age category whereas 11.2% response goes to greater than 56 age category. Therefore, it is observed that the Ministry has a combination of young and experienced workforce.

| Designation | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | Additional Secretary | 5 | 4.0 | 4.0 | 4.0 |
| | Joint Secretary | 3 | 2.4 | 2.4 | 6.4 |
| | Deputy Secretary | 16 | 12.8 | 12.8 | 19.2 |
| | Asst. Secretary/ Senior Asst. Secretary | 11 | 8.8 | 8.8 | 28.0 |
| | AO/Senior AO/PO /System Analyst (SA)/Senior SA | 48 | 38.4 | 38.4 | 66.4 |
| | Steno/Others | 42 | 33.6 | 33.6 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Table: Designation of respondents

**Description:** Total number of samples is 125 where Additional Secretary and Joint Secretary got 4% and 2.4% response respectively whereas Deputy Secretary and Assistant Secretary/ Senior Assistant Secretary got 12.8% and 8.8% response. Maximum participation came from AO/SAO/PO/SA/SSA grade which is 38.4% response. Steno and others with same grade are in second highest participation with 33.6% response.

| Highest Education Qualification | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | MPhil/ PhD | 3 | 2.4 | 2.4 | 2.4 |
| | Masters | 80 | 64.0 | 64.0 | 66.4 |
| | Bachelor | 31 | 24.8 | 24.8 | 91.2 |
| | HSC/SSC/Equivalent | 11 | 8.8 | 8.8 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Table: Education qualification of respondents

**Description:** 64% employees have Master's degree where 24.8% employees has at least Bachelor degree. 2.4% respondent has PhD degree. Only 8.8% employees are HSC or SSC passed.

| Experience in Current Organization | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| **Valid** | Less than 1 year | 7 | 5.6 | 5.6 | 5.6 |
| | 1 to 5 years | 55 | 44.0 | 44.0 | 49.6 |
| | 6 to 10 years | 17 | 13.6 | 13.6 | 63.2 |
| | 11 to 15 years | 23 | 18.4 | 18.4 | 81.6 |
| | 16 to 20 years | 8 | 6.4 | 6.4 | 88.0 |
| | More than 20 Years | 15 | 12.0 | 12.0 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Table: experience of respondents in the Ministry.

**Description:** Out of 125 respondents, only 7 respondent is in "less than 1 year" experience category which is 5.6 percent. But "1-5 year" experience category got highest response which is 44%. And "5-10 years and 11-15 years" experience category got 13.6% and 18.4% response respectively. 12% employees out of 125 respondents have "more than 20 years" experience.

## 5.6 Output of Primary Data and Interpretation

The below section exhibited the reliability test to measure the internal consistency

| Factors | No. of Items | Cronbach's Alpha | Result |
|---|---|---|---|
| Job Descriptions | 2 | .68 | Accepted |
| Organizational Support | 4 | .69 | Accepted |
| Technological Facility | 4 | .78 | Accepted |
| Supervisory Support | 4 | .84 | Accepted |
| Training | 4 | .90 | Accepted |
| Teamwork | 3 | .76 | Accepted |
| Decision Making | 3 | .50 | Accepted |
| Alternative Work Engagement | 2 | .69 | Accepted |
| Self-Management | 4 | .79 | Accepted |
| Performance Management System | 3 | .50 | Accepted |
| Job satisfaction | 3 | .78 | Accepted |
| Communications | 3 | .58 | Accepted |
| Sum of all factors | 39 | .89 | Accepted |

Source: SPSS output

Table: **Reliability Test**

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.820 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 3080.60 |
| | df | 741 |
| | Sig. | 0.000 |

Table: KMO Bartlett test

Cronbach's coefficient (α) for each dimension of the research ranged from 0.50 to 0.90 (typically 0.5 and above is acceptable), which indicates the internal consistency of each dimension (factor) of employee performance (Cronbach, 1951; Malhotra, 2010). And, the Cronbach's coefficient (α) for all items (12) is .89. The KMO value for the overall matrix was 0.84, which indicates that the sample size was statistically significant for factor analysis. Bartlett's test of sphericity was applied to verify the appropriateness of the data for factor analysis (Bartlett, 1950). Bartlett's Test of Sphericity shows that the approximate chi-square value is 3080.606 with 75 percent degree of freedom where significance level (.000) is less than 0.5. This result proves that factors have significant impact on employee productivity of Ministry of Industries. Along with Kaiser-Meyer-Olkin (KMO) test measured the sampling adequacy by 0.820 which is greater than .05.

### 5.6.1 Decision of the Extraction of Actual Loaded Factors

| Extraction Of Actual Loaded Factor With Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 13.001 | 33.335 | 33.335 | 13.001 | 33.335 | 33.335 | 4.972 | 12.749 | 12.749 |
| 2 | 2.286 | 5.862 | 39.197 | 2.286 | 5.862 | 39.197 | 4.357 | 11.173 | 23.922 |
| 3 | 2.152 | 5.519 | 44.716 | 2.152 | 5.519 | 44.716 | 3.359 | 8.612 | 32.535 |
| 4 | 2.039 | 5.228 | 49.944 | 2.039 | 5.228 | 49.944 | 3.225 | 8.268 | 40.802 |
| 5 | 1.807 | 4.634 | 54.578 | 1.807 | 4.634 | 54.578 | 2.704 | 6.933 | 47.735 |
| 6 | 1.489 | 3.818 | 58.395 | 1.489 | 3.818 | 58.395 | 2.482 | 6.365 | 54.100 |
| 7 | 1.461 | 3.747 | 62.142 | 1.461 | 3.747 | 62.142 | 2.128 | 5.456 | 59.556 |
| 8 | 1.326 | 3.401 | 65.543 | 1.326 | 3.401 | 65.543 | 1.624 | 4.164 | 63.720 |
| 9 | 1.104 | 2.832 | 68.375 | 1.104 | 2.832 | 68.375 | 1.603 | 4.111 | 67.831 |
| 10 | 1.028 | 2.636 | 71.012 | 1.028 | 2.636 | 71.012 | 1.241 | 3.181 | **71.012** |
| 11 | 0.930 | 2.386 | 73.397 | | | | | | |
| 12 | 0.869 | 2.228 | 75.625 | | | | | | |
| 13 | 0.816 | 2.093 | 77.718 | | | | | | |
| 14 | 0.765 | 1.962 | 79.680 | | | | | | |
| 15 | 0.695 | 1.781 | 81.461 | | | | | | |
| 16 | 0.677 | 1.736 | 83.197 | | | | | | |
| 17 | 0.624 | 1.600 | 84.797 | | | | | | |
| 18 | 0.524 | 1.345 | 86.142 | | | | | | |
| 19 | 0.502 | 1.287 | 87.429 | | | | | | |
| 20 | 0.489 | 1.255 | 88.684 | | | | | | |
| 21 | 0.464 | 1.189 | 89.873 | | | | | | |
| 22 | 0.405 | 1.038 | 90.911 | | | | | | |
| 23 | 0.386 | 0.991 | 91.902 | | | | | | |
| 24 | 0.371 | 0.951 | 92.853 | | | | | | |
| 25 | 0.335 | 0.859 | 93.712 | | | | | | |
| 26 | 0.317 | 0.813 | 94.525 | | | | | | |
| 27 | 0.297 | 0.760 | 95.285 | | | | | | |
| 28 | 0.252 | 0.646 | 95.931 | | | | | | |
| 29 | 0.226 | 0.580 | 96.512 | | | | | | |
| 30 | 0.209 | 0.537 | 97.049 | | | | | | |
| 31 | 0.193 | 0.494 | 97.543 | | | | | | |
| 32 | 0.176 | 0.451 | 97.994 | | | | | | |
| 33 | 0.168 | 0.431 | 98.425 | | | | | | |
| 34 | 0.154 | 0.396 | 98.821 | | | | | | |
| 35 | 0.120 | 0.308 | 99.129 | | | | | | |
| 36 | 0.116 | 0.298 | 99.427 | | | | | | |
| 37 | 0.095 | 0.244 | 99.671 | | | | | | |
| 38 | 0.066 | 0.169 | 99.841 | | | | | | |
| 39 | 0.062 | 0.159 | 100.000 | | | | | | |

| |
|---|
| Extraction Method: Principal Component Analysis.<br>Source: SPSS Output |

Table: Decision of the Extraction of Actual Loaded Factors

Total variance has been utilized in order to identify number of factors influencing employee productivity. Cumulative percentage of Rotation Sums of Squared Loadings must be greater than 60 percent and Initial Eigenvalues values should be greater than one (1). Total variance table indicates that cumulative percentage of rotation sums of squared loading is 71.01% and initial eigenvalues also identified ten (10) components.

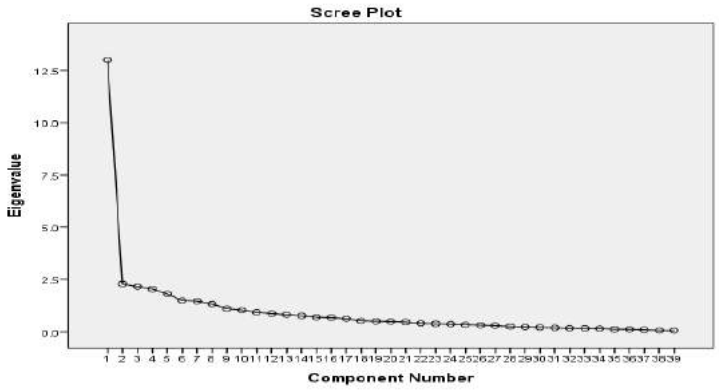



Chart: Scree Plot

**Description:** The decision on the extracted actual factor affecting employee productivity has revealed in the table 4 and scree plot Chart 1. In the Table 4 it has evident that there are total ten components herein called the factors has significant association to stimulate the employee productivity. The total ten items have explained the 71.01% of variance that means all the ten factors can explain 71.01% percent of influence on the employee productivity out of 100%. According to (Malhotra, & Dash, 2015) two factors namely alternative work engagement, communication has not considered in final results due to the poor loading (less than .50) and cross loaded with multiple factors.

Chart1 represents the accepted factors based on Eigenvalue (EV) such as Organizational Support (Factor #1: EV= 4.97), Training (Factor #2, EV=4.35), Job Satisfaction (Factor #3: EV=3.36,), Self-Management (Factor #4: EV=3.22), Technology Facility (Factor #5: EV=2.20), Organizational Support (Factor #6: EV=2.48), Job Description (Factor #7: EV=, 2.12), Decision Making (Factor #8: EV=1.62), Team work (Factor #9: EV= 1.60), Performance Management System (Factor #10: EV= 1.24).

The summery of factor analysis exhibited in table 5 where the varimax rotation was employed to identify the most influential factors of employee productivity at the ministry. The table

shows item/indicators loading values, Cronbach's alpha and Eigenvalues. The variable indicator loading value of close to 0.50 is considered a significant variable(Preacher & MacCallum, 2002) Ten factors extracted together explained 71.01% of the total variance.

The extracted first factor is **supervisory supports**. This factor is represented by four indicators items ($SS_1$…..$SS_4$) to delineate employee productivity which accounted for 12.74% of the variance. The factor loadings of the variables range from 0.44 to 0.74. The four items anchored with the keyword such as difficulty and scope of my job, supervisory positivity, recognition for good work, physical visit of supervisor.

The extracted second factor is the **training system**. This factor is represented by four variables ($T_1$….$T_4$) which accounted for 11.17% of the variance. The factor indicator loadings of the variables ranged from 0.64 to 0.76. The four items anchored with the keyword such as: internal training, external training, and training for new joiners, transferred, training needs.

The extracted third factor **is job satisfaction.** This factor is represented by three variables items ($JS_1$..$JS_3$) to explain employee productivity, which accounted for 8.61% of the variance. The factor indicator loadings of the variables range from 0.66 to 0.79. The three items anchored with the keyword such as compensation and benefit, promotion, current job nature and productivity.

The fourth extracted factor is **self-management.** This factor is represented by three variables ($SM_1$...$SM_3$) in regards to employee performance, which accounted for 8.26% of the variance. The factor loadings of the variables ranged from 0.72 to 0.82. The three items anchored with the keyword such as control daily work, cross check pending work, implement the observation, inspection report.

The fifth extracted factor is **technological facility.** This factor is represented by four variables ($T_1$..$T_4$) related to employee performance and accounted for 6.93% of the variance. The factor loadings of the variables range from 0.64 to 0.74. The four items anchored with the keyword such as: IT system, updated website, and IT system leverage, check the e-filing system.

The extracted sixth factor is **organizational support**. This factor is represented by four items ($OS_1$..$OS_4$) of employee productivity, which accounted for 6.36% of the variance. The factor

loadings of the variables ranged from 0.46 to 0.64. The four items anchored with the keyword such as fullest support, caring of difficulties, access to all resources, awareness of the policies and procedures.

The extracted seventh factor is **job description**. This factor is represented by two items ($JD_1$..$JD_2$) of employee productivity, which accounted for 5.45% of the variance. The factor loadings of the variables ranged from 0.68 to 0.79. The two items anchored with the keyword such as: written JD, support of JD.

The extracted eight factor is **decision making.** This factor is represented by three items ($DM_1$..$DM_3$) of employee productivity, which accounted for 4.16% of the variance. The factor loadings of the variables ranged from 0.45to 0.55. The three items anchored with the keyword such as: autonomy, lack of autonomy, adopting of creative methods.

The extracted ninth factor is **team work**. This factor is represented by three items ($TW_1$..$TW_3$) of employee productivity, which accounted for 4.11% of the variance. The factor loadings of the variables ranged from 0.40 to 0.48. The items no.2 is not considered in final result due to less than threshold loading value (.35). The three items anchored with the keyword such as team cohesion, cordiality, and team leadership

The extracted tenth factor is **performance appraisal and management system**. This factor is represented by three items ($PMS_1$..$PMS_3$) of employee productivity, which accounted for 3.18% of the variance. The factor loadings of the variables ranged from 0.57to 0.68. The items no.1 is not considered in final result due to less than threshold loading value (.35). The three items anchored with the keyword such as yearend assessment, achievement APA, failure of non-achievement.

### 5.6.2 Summary of Rotated Component Matrix, Cronbach's alpha, Variance and Eigen Values

| Factor | Variable Items/Indicators | Items/Indicator Loading | % of Variance [Cumulative] | Cronbach alpha Coefficient | Eigen Value |
|---|---|---|---|---|---|
| **Supervisory Support** | $SS_1$ | 0.746 | 12.74 (12.74) | .69 | 4.97 |
| | $SS_2$ | 0.784 | | | |
| | $SS_3$ | 0.740 | | | |

| | | | | | |
|---|---|---|---|---|---|
| | $SS_4$ | 0.446 | | | |
| **Training** | $T_1$ | 0.641 | 11.17 (23.92) | .90 | 4.35 |
| | $T_2$ | 0.795 | | | |
| | $T_3$ | 0.793 | | | |
| | $T_4$ | 0.765 | | | |
| **Job satisfaction** | $JS_1$ | 0.673 | 8.61 (32.53) | .78 | 3.35 |
| | $JS_2$ | 0.794 | | | |
| | $JS_3$ | 0.661 | | | |
| **Self-Management** | $SM_1$ | 0.821 | 8.26 (40.80) | .79 | 3.22 |
| | $SM_2$ | 0.788 | | | |
| | $SM_3$ | 0.716 | | | |
| **Technology Facility** | $IT_1$ | 0.740 | 6.93 (47.73) | .78 | 2.70 |
| | $IT_2$ | 0.700 | | | |
| | $IT_3$ | 0.639 | | | |
| | $IT_4$ | 0.196 | | | |
| **Organizational Support** | $OS_1$ | 0.500 | 6.365 (54.10) | .69 | 2.48 |
| | $OS_2$ | 0.648 | | | |
| | $OS_3$ | 0.383 | | | |
| | $OS_4$ | 0.462 | | | |
| **Job description** | $JD_1$ | 0.792 | 5.45 (59.55) | .68 | 2.12 |
| | $JD_2$ | 0.684 | | | |
| **Decision making** | $DM_1$ | 0.551 | 4.16 (63.72) | .50 | 1.62 |
| | $DM_2$ | 0.624 | | | |
| | $DM_3$ | 0.451 | | | |
| **Team work** | $TW_1$ | 0.402 | 4.11 (67.83) | .76 | 1.603 |
| | $TW_2$ | 0.351 | | | |
| | $TW_3$ | 0.483 | | | |
| **Performance management system** | $PMS_1$ | 0.387 | 3.18 (71.01) | .50 | 1.24 |
| | $PMS_2$ | 0.575 | | | |
| | $PMS_3$ | 0.686 | | | |

Source: SPSS output

Table: Rotated Component Matrix, Cronbach's alpha, Variance and Eigen Values

## 5.7 The Analysis of Data to Fulfil the Objective number Three.

The data analysis and interpretation of results stated below has accomplished based on the required methodologies designed for the objectives no.3 namely, the responses on the *satisfaction level of the associated organizations or the clients*. In the section the results have derived the extent of services provided by the department of the ministry to the direct stakeholders. There are thirteen associated organizations of the ministry where 12 organizations have responded in the research. There are fifty questionnaires received to assess the level of satisfaction of the associated organizations of the ministry.

### 5.7.1 Analysis of the service level satisfaction of the associated organizations

| SERVQUAL Dimensions | Items | Perceptions (P) | | | Expectation (E) | | (P-E) | |
|---|---|---|---|---|---|---|---|---|
| | | Cronbach Alpha | Items to total correlations | Mean | Mean 3=Good 4=Excellent | | Mean Gap Score (Based on 3) | Mean Gap Score (Based on 4) |
| **Reliability** | Prompt service delivery. | .77 | .69 | 3.72 | 3.0 | 4.0 | 0.72 | -0.28 |
| | On time decision approval as promised. | | .72 | 3.58 | 3.0 | 4.0 | 0.58 | -0.42 |
| | Preform specific follow-up. | | .43 | 3.64 | 3.0 | 4.0 | 0.64 | -0.36 |
| | **Total Reliability** | | | **3.64** | 3.0 | 4.0 | **0.64** | **-0.36** |
| **Responsiveness** | Professionalism of employees | .78 | .64 | 4.05 | 3.0 | 4.0 | 1.05 | 0.05 |
| | Employees are faster, quicker enough | | .64 | 3.58 | 3.0 | 4.0 | 0.58 | -0.42 |
| | **Total Responsiveness** | | | **3.82** | 3.0 | 4.0 | **0.82** | **-0.18** |
| **Tangibles** | IT facilities | .86 | .66 | 4.10 | 3.0 | 4.0 | 1.1 | 0.10 |
| | Policy formulations facilities. | | .75 | 4.05 | 3.0 | 4.0 | 1.05 | 0.05 |
| | Policy implementation facilities | | .79 | 3.56 | 3.0 | 4.0 | 0.56 | -0.44 |
| | **Total Tangibles** | | | **3.90** | 3.0 | 4.0 | **0.9** | **-0.1** |
| **Assurance** | Follow up. | .59 | .48 | 4.20 | 3.0 | 4.0 | 1.2 | 0.20 |
| | Late response affects the functions | | .55 | 3.42 | 3.0 | 4.0 | 0.42 | -0.58 |
| | Busy hours of bureaucrats | | .57 | 3.50 | 3.0 | 4.0 | 0.5 | -0.5 |
| | **Total Assurance** | | | **3.71** | | | **0.71** | **-0.29** |
| **Empathy** | Caring demand for file approval. | .76 | .46 | 3.61 | 3.0 | 4.0 | 0.61 | -0.39 |
| | Know the approval or rejection of the decision. | | .68 | 3.64 | 3.0 | 4.0 | 0.64 | -0.36 |
| | The process done on time if rectification is suggested. | | .65 | 3.55 | 3.0 | 4.0 | 0.55 | -0.45 |
| | **Total Empathy** | | | **3.60** | 3.0 | 4.0 | **0.6** | **-0.4** |
| **Overall service quality** | | | | **3.73** | 3.0 | 4.0 | **0.73** | **-0.27** |

Table: Analysis of the service level satisfaction of the associated organizations

*Here, 3 = Good & 4 = Excellent as per questionnaire rating value. Here, the expectation mean means assumed services and perception denotes the actual service received. Thus, expectation is pre and perception is post.

**Description:** The above table shows the mean score of service quality perception by 12 stakeholders (BCIC, BSFIC, BSEC, BSCIC, BSTI, BITAC, BIM, DPDT, NPO, BOILER, BAB, SME Foundation) of the Ministry of Industries, quality expectations, and the service quality gap scores. The mean score of the service quality expectations was assumed 3 as "good" rating scale and 4 as "Excellent" rating scale.

The mean score of the service quality perceptions ranged from 3.42 for (item: Late response affects the functions) to 4.20 (item: Follow up by Ministry). The total mean score of stakeholders' service quality perceptions was 3.73. Among the five dimensions, the highest perceptions related to the tangibles dimension (mean score = 3.90) and the lowest perceptions related to the empathy dimension (mean score = 3.60). Furthermore, the four items with the highest perceptions score, two items related to the tangibles dimension (i.e. IT facilities and Policy development by Ministry), one item related to the assurance dimension (i.e. Ministry takes regular follow up.) and one item from the Responsiveness dimension (i.e. Professionalism of employees). Among the four items with the lowest perceptions score, 2 items related to the assurance dimension (i.e. Late response affects the functions, and do you think the busy hours of bureaucrats sometimes make the process delay?). Next, one item is related to the empathy dimension (i.e. If any review, rectification, modification is suggested, the process done on time). Finally, another item with the lowest score is related to the responsiveness dimension (i.e. Employees are faster, quicker enough).

The gap score for each item and dimension was computed by subtracting the expectation score from the perception score (P-E). The results show that the differences between perceptions and expectation for all the 14 items and five dimensions are statistically significant because the value of Cronbach Alpha is (59% to 86%) for each dimension. The results of the study show that the total gap means a score of stakeholders' overall service quality was 0.73 (positive) for expectation mean 3 (good) and -0.27 for expectation mean 4 (Excellent). The highest gap of the service quality is related to the empathy dimension (gap mean score = -4.0) and the lowest gap of the service quality is related to the tangibles dimension (gap mean score = -.10) in case of an excellent score. Based on the formula of measuring service quality the deviation between perception and the expectation. The overview of gap among 14 selected items computed

according to the two scales. Former one is out of mean score 3 scale called 'good' and later one is mean score 4 scale called 'excellent'. Therefore, according to 3 scale the overall service quality productivity of the ministry is ranked as 'good'. On the other hand, according to 4 scale for the overall service quality productivity of the ministry is ranked as 'excellent' under four items such as Professionalism of employees (Responsiveness), IT facilities (Tangibles), Policy formulations facilities (Tangibles), and follow up of associated organizations (Assurance). But the rest of ten items has negative gap. This revealed the service quality differences between expectation and reality of the clients in the areas of prompt service delivery, on time decision approval as promised, any other specific follow-up, employees are quicker enough, policy implementation facilities, late response affects the functions, busy hours of bureaucrats, caring demand for file approval, know the approval or rejection of the decision on time, and the process done on time if rectification is suggested. Looking the future progression of total productivity of the ministry the researcher considered the mean score 4 scale called "excellent".

## 5.8 The Analysis of Data to Fulfil the Objectives Number Four.

The data analysis and interpretation of results stated below has organized based on the methodologies set for the objectives no.4 namely, *The Ministry productivity aligned with future vision*. The objective covers future vision called "Vision of 2041". The analysis covers two broad areas in this regard such as a) General perception, expectation and awareness of the employees based on open discussions and b) The productivity of Ministry correspondent to base year.

### 5.8 (a) General perception, expectation and awareness of the employees based on open discussions:

#### 5.8.1 I am aware of the vision of the ministry.

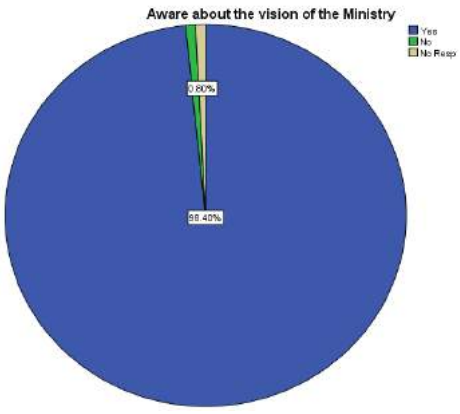



Chart: Awareness about the vision of the Ministry.

The chart exhibits that 98.40% of the employees are aware about the vision of the ministry and only .80% are not aware of the same. It is a satisfactory result to promote the productivity concept among the employees. Theoretically, an ownership of task is more excelled if an employee aware of the vision of the organization.

### 5.8.2 I am aware of APA

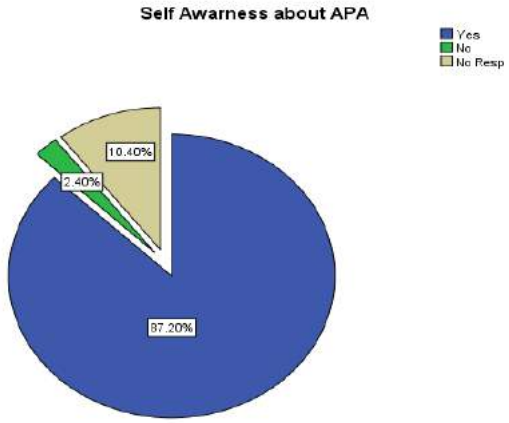



Chart: Awareness about APA.

The chart shows that 87.20% of employees of the ministry are aware of the APA of the ministry. Where 10.40% has no responses considered that they are not aware of besides the rest 2.40 has outrightly expressed their ignorance. APA is one of the prime ingredients to set yardstick of employee productivity. Therefore, if the employee is aware about the indicator, they will be more enthusiastic to perform.

### 5.8.3 I am aware of Individual Action Plan (IAP).

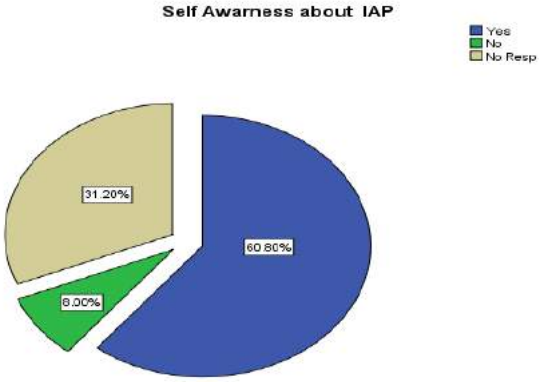



Chart: Awareness about IAP.

The chart revealed that 60.80% of employees are aware of the individual action plan. Where 31.20 percent didn't reply and 8% outright replied their ignorance. This can happen because of inadequate awareness among employees. Besides the 31.20% employees ignore about this. In order to explore the employee productivity in consistent growth there should be a good percentage of awareness on IAP.

### 5.8.4 Received Productivity Awards.

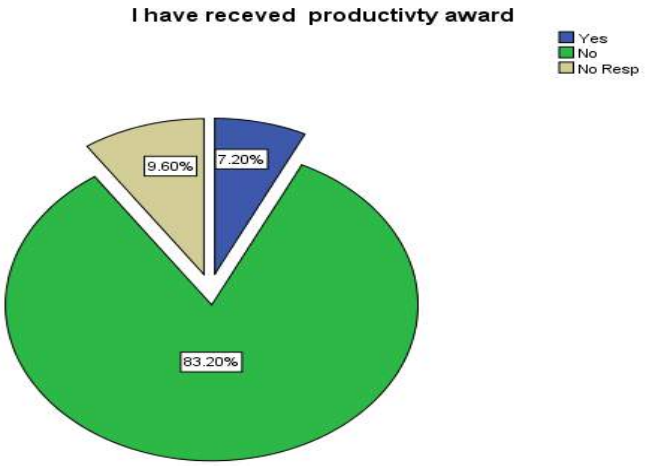



Chart: Received different awards from the Ministry.

The data chart shows that 83.20% employees didn't receive any awards and 7.20 has received awards. This may happen that the awards are based on some criteria and selected numbers. However, the data shows the presence of the award system.

### 5.8.5 My job is related to financial outcome.

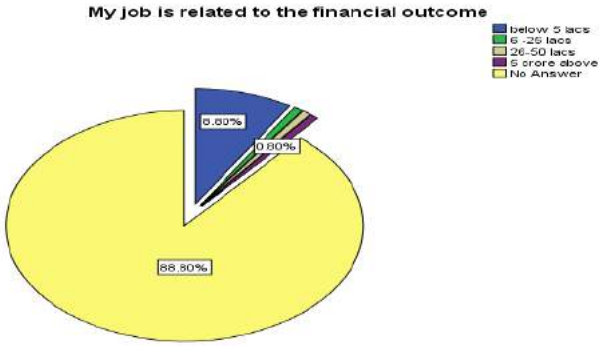



Chart: Awareness about financial outcome of the Ministry.

The data in the chart shows that employees are not aware of the financial outcome (88.80%). This can happen due to the nature of work of the ministry. As strategic support role the employee of the ministry is not involved any direct financial outcome to show in their performance. However, employee may know about the financial outcome if their work even indirectly related to the performance outcome.

**5.8.6 My job is related to non-financial outcome.**

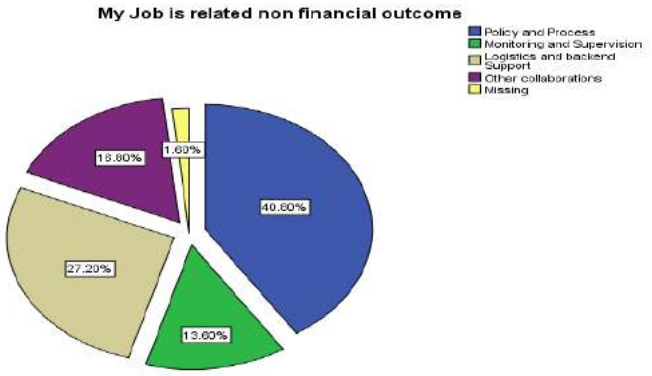



Chart: Awareness about non-financial outcome of the Ministry.

This chart reflected a good number 40.80% of employees are involved in policy and process. 13.60% is monitoring and supervision and 27.20% are logistics and supports where 16.80% are other types of collaborative functions. This is in line with the core work of the ministry where employee is involved in the four common types of activities.

**5.8.7 What Situation, Directive, Policy, Operating Procedure, or other factors most limits your ability to perform the most productive work.**

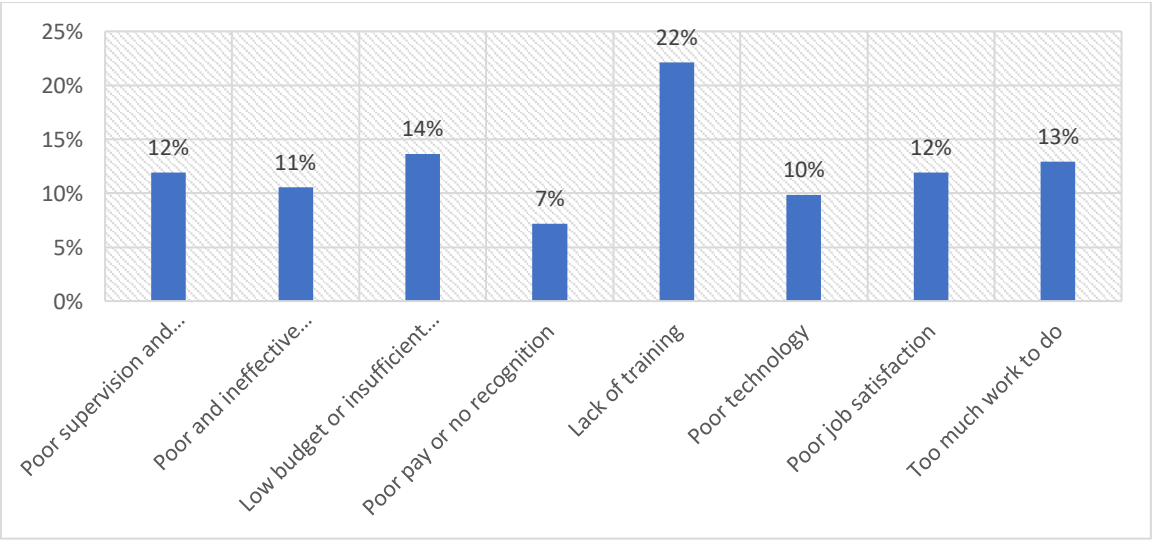



Chart: Factors most limits your ability to perform the most productive work.

The respondents were asked opinion about the most limiting factors of their productivity and revealed that lack of training reach in the top (22%) and low budget or in sufficient staff (14%) ranked as second factor and too much work load (13%) ranked in to the third factors.

### 5.8.8 What are the best aspects of your job or work responsibilities?

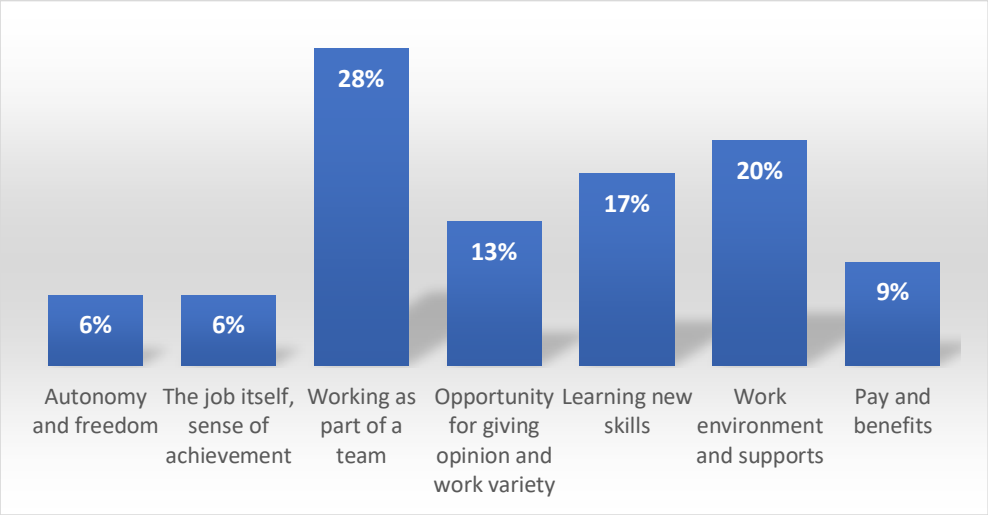



Chart: The best aspects of your job or work responsibilities

The respondents were asked opinion about the best aspects of their job and revealed that teamwork is one of the most fascinating for them to become more productive (28%) and work environment-support (20%) shows the second most factors that help them to enhance productivity.

### 5.8.9 What bothers or irritates you most about your work area, your duties, the work environment, or your job in general?

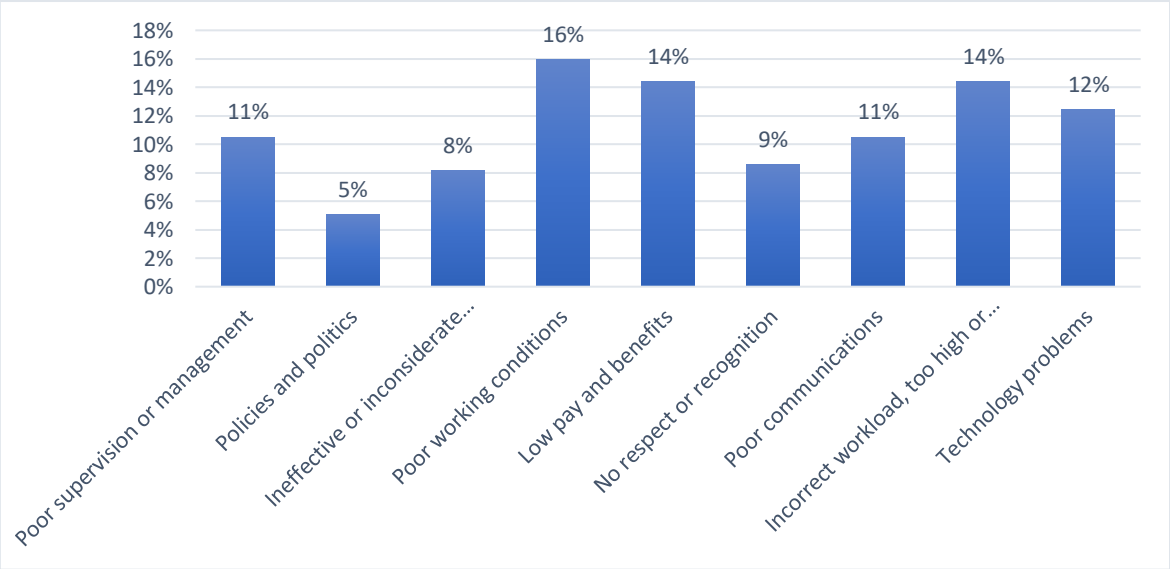
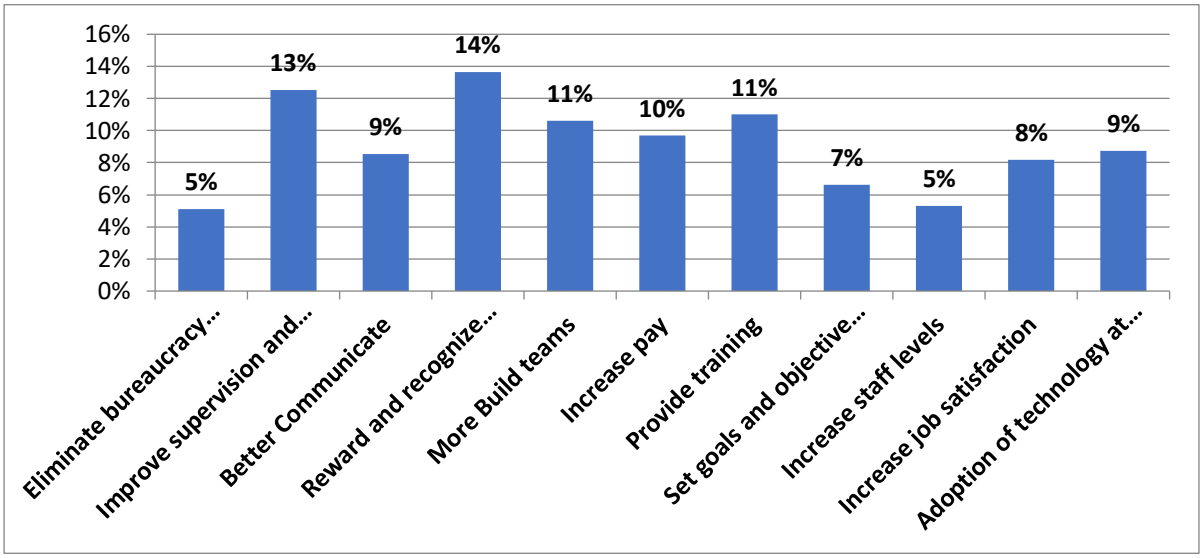



Chart: Factors that irritates to productivity.

The respondents were asked about the most irritating factors of their productivity and revealed that poor working condition (16%) is the main cause behind lack of productivity. And low pay and benefits, high workloads are in the second order of extremely disturbing for productivity (14%).

### 5.8.10 Responses to "If You Were in Charge of Everything, What Changes Would You Make to Improve the Overall Productivity, Quality, and Employee Performance in the Ministry of Industries?




The respondents were asked about the proactive future changed in the ministry to make them productive. The responses reflects that the first they will change the culture of recognize and reward of performance (14%) and improving the supervisor and management style (13%) in the ministry. However, the team building and training arrangement also got equal importance (11%).

## 5.9 The Productivity of the Ministry correspondent to base year

The fourth objective of the research was to evaluate the productivity of the Ministry. In order to determine the productivity of the ministry the multi functions of the department was considered in the research. Therefore, the index method employed in the analysis where the comparison is calculated correspondent to base year. There is total nine dimension like manpower index, training index, audit index, citizen charter, law and policy formulations index, RADP achievement index, grievance index, dispute settlement, APA index considered to exhibit the productivity of the ministry given below:

### 5.9.1 Manpower Index

| | Employed | | | | |
|---|---|---|---|---|---|
| **Year** | Male | Female | Total | Organogram | Vacant Post |
| **2017-18** | 161 | | 161 | 236 | 75 |
| **2018-19** | 141 | 37 | 178 | 240 | 62 |
| **2019-20** | 168 | 41 | 209 | 240 | 31 |

Source: Annual report of Ministry of Industries: 2017-18, 2018-19, & 2019-20.

Description: The above table revealed that the number of employees lifted from 2017-2018 to 2019-2020. Besides the vacant position has reduced by fulfilling through selection. The leverage manpower shows the government efforts to execute the planned activity with help of adequate manpower.

### 5.9.2 Training Index

| Year | Grade | In-house Training | Local Training | Foreign Training | Total Program | Productivity Index (2016-17=100) |
|---|---|---|---|---|---|---|
| | | Program (QTY) | Program (QTY) | Program (QTY) | | |
| 2016-17 | All grade | 25 | | 135 | 160 | **100** |
| 2017-18 | All grade | 108 | | 112 | 220 | **138** |
| 2018-19 | All grade | 144 | 37 | 189 | 370 | **231** |
| 2019-20 | All grade | 144 | | 96 | 240 | **150** |

Source: Annual report of Ministry of Industries: 2016-17, 2017-18, 2018-19, & 2019-20.

**Description:** The Ministry of Industries conducts the training programs under three different categories namely in-house training, local training and foreign training. Compared to the base year 2016-2017 the number of training programs gradually increased, lifted to more than double in 2018-19. But the training program slightly skewed in the year 2019-20.

### 5.9.3 Audit Index

| Year | Receipt QTY (In the particular year | Audit resolution | Productivity Index (2016-17=100) |
|---|---|---|---|
| **2016-17** | 648 | 420 | **100** |
| **2017-18** | 668 | 282 | **237** |
| **2018-19** | 499 | 352 | **142** |
| **2019-20** | 455 | 578 | **79** |

Source: Annual report of Ministry of Industries: 2016-17, 2017-18, 2018-19, & 2019-20.

**Description:** The Ministry conducts different types of audits for associated organizations. The table clearly revealed that the number of audit settlement has increased in 2017-18 from the year of 2016-17. After that, the productivity in settlement of audit has declined in the year 2018-19 and 2019-20 compared to previous fiscal year.

### 5.9.4. Citizen Charter (Ship Recycling) Index

| Year | Application receipt for NOC | NOC Disbursement (Within 2 days) | Productivity Index (2016-17=100) |
|---|---|---|---|
| **2016-17** | 193 | 193 | **100** |
| **2017-18** | 218 | 218 | **113** |
| **2018-19** | 257 | 257 | **133** |
| **2019-20** | 143 | 143 | **74** |
| | | | |
| Year | Application receipt for Ship inspection | Disbursement of approval letter within Citizen Charter | Productivity Index (2016-17=100) |
| **2016-17** | 193 | 193 | **100** |
| **2017-18** | 218 | 218 | **113** |
| **2018-19** | 257 | 257 | **133** |
| **2019-20** | 143 | 143 | **74** |
| | | | |
| Year | Application receipt for Ship Bitching | Disbursement of approval letter within Citizen Charter | Productivity Index (2016-17=100) |
| **2016-17** | 193 | 193 | **100** |
| **2017-18** | 218 | 218 | **113** |
| **2018-19** | 257 | 257 | **133** |
| **2019-20** | 143 | 143 | **74** |

Source: Annual report of Ministry of Industries: 2016-17, 2017-18, 2018-19, & 2019-20.

**Description:** The above table shows that the productivity of ship recycling from the fiscal year 2016-2017 to 2018-19 was an upward trend in case of disbursement of NOC, approval letter for ship inspection and bitching. It is revealed that the Ministry is in good position for the development of ship recycling industry in Bangladesh. Number of applications for NOC, ship inspection and bitching were declined in the year 2019-20. Therefore, productivity index of ship recycling for the fiscal year 2019-20 shows downward trend.

### 5.9.5 Law and Policy Formulation Index

| Year | Law | Policy | PI of Law (2016-17=100) | PI of Policy (2017-18=100) |
|---|---|---|---|---|
| 2016-17 | 1 | 0 | 100 | - |
| 2017-18 | 3 | 2 | 300 | 100 |
| 2018-19 | 6 | 2 | 600 | 100 |
| 2019-20 | 1 | 3 | 100 | 150 |

Source: Annual report of Ministry of Industries: 2016-17, 2017-18, 2018-19, & 2019-20.

**Description:** The above table shows the law and policy developed by the Ministry of Industries from the year 2016-17 to 2019-20. From the table, it is revealed that the productivity of Ministry in terms of formulation of new law shows a positive upwards year 2016-17 to 2018-19. The upward trend of formulation of new law dropped in the year 2019-20. Along with formulation of new law the Ministry has also high productivity index for formulation of policy from the fiscal year 2017-18 to 2019-20. But there was no formulation of policy in the year of 2016-17.

### 5.9.6 RADP Achievement Index

| Year | RADP Achievement | Productivity Index (2016-17=100) |
|---|---|---|
| **2016-17** | 20% | 100 |
| **2017-18** | 19% | 95 |
| **2018-19** | 24% | 120 |
| **2019-20** | 24% | 120 |

Source: Annual report of Ministry of Industries: 2019-20.

**Description:** From the above RADP achievement table, it is observed that the productivity RADP achievement shows upward trend from the fiscal year of 2016-17 to 2019-20. There were few fluctuations in RADP productivity in the year of 2017-18.

### 5.9.7 Grievance handling Index

| Year | Pending from Previous year | Current Year | Total | Grievance resolution | Pending for next year | Productivity Index (2018-19=100) |
|---|---|---|---|---|---|---|
| 2018-19 | 0 | 23 | 23 | 9 | 14 | **100** |
| 2019-20 | 13 | 41 | 54 | 37 | 17 | **411** |

Source: Annual report of Ministry of Industries: 2018-19, & 2019-20.

**Description:** The above table shows the productivity index for grievance handling of the Ministry. The productivity of grievance handling from the fiscal year 2018-19 to 2019-20 shows the upward trend. Therefore, it is observed that the Ministry is in good position for grievance handling.

### 5.9.8 Dispute Resolution Index

| Year | Previous | Current Year | Total | Resolution | Pending | Productivity Index (2018-19=100) |
|---|---|---|---|---|---|---|
| 2018-19 | 12 | 12 | 24 | 12 | 12 | **100** |
| 2019-20 | 0 | 2 | 2 | 2 | 0 | **17** |

Source: Annual report of Ministry of Industries: 2018-19, & 2019-20.

**Description:** From the table, it is revealed that the productivity of dispute resolution of the Ministry from the year 2018-19 to 2019-20 was downward trend. Because the particular fiscal year for dispute resolution was not adequately take place.

### 5.9.9 APA Index

| Year | APA Achievement | Productivity Index (2018-19=100) |
|---|---|---|
| 2018-19 | 106.83 | 100 |
| 2019-20 | 100.02 | 94 |

Source: Annual report of Ministry of Industries: 2018-19, & 2019-20.
* APA Calculation= Sum of all individual APA indicators/ total number of indicators.

**Description:** Annual Performance Agreement (APA) is key indicator of productivity. From the above table, the base year data revealed that the productivity level of Ministry according to Annual Performance Agreement (APA) from the fiscal year 2018-19 is 106.83 percent. But this got declined in next year 2019-20. the Ministry achieved 100 percent of their target according to APA calculation formula. Therefore, it is concluded that the Moind is in good position in order to achieve APA target every year.

## 5.10 Outcome summary of each objective

The summary shows the outcome of each objective based on analysis.

| Objectives | Achievement |
|---|---|
| 1. To measure the present level of employee productivity. | Average level of productivity is 80.6% out of 100%: Excellent level. |
| 2. To identify the factors that affect employee productivity | 10 factors (Organizational Support, Training, Job Satisfaction, Self-Management, Technology Facility, Organizational Support, Job Description, Decision Making, Team Work, Performance Management System) have positive impact on employee productivity. But two factors (Communication & Alternative Work Engagement) have no remarkable impact on employee productivity. |
| 3. To assess the client's response on the service level of ministry. | Overall service quality of 14 items is 3.73.<br>*3 scale means "Good" and 4 scale means "Excellent"<br>All (14) items got "Good" scale but only 4 items got "Excellent". |
| 4. To evaluate Ministry productivity aligned with future vision. | Categorial analysis result in section of 5.8 and 5.9 of report. |
| 5. To provide the recommendations. | Detailed in chapter 7. |

## 5.11 Discussions

In the study, the required statics has been used to determine the result. The productivity level of the employees exhibited 80.6% out of 100 by the dimension developed for the study. The factor analysis revealed the most ten factors out of twelve factors affects employee productivity level. The primary data result of the productivity and factors has average consistency with the observation and the discussion of the research concern. Though few relevant issues arise by the focus group discussion and observation to be attempted in the study. On the other hand, the associated organization's response based on service quality has some sort of modified outcome compared to the focus group discussions and the key informant interview.

According to the primary data, the current extent of employee productivity needs much attention in case of innovation, technology uses, performance commitment, consistency and training issues. It is because in order to lift the ministry in the aggregately "excellent" rating of productivity. The employee should be more careful to do innovative work and proper use of

technology. Besides the fourth industrial revolution has influx the technology everywhere. The government of Bangladesh has also attempted the digitalization slogan to make people adaptive to the technological platform. Similarly, commitment at performance is one of the important issues to make employees more productive. Converse, the lack of commitment toward performance create complication and turned employee backward. Though the consistency showed an acceptable result still this may an important area for the employee. Because without performance consistency there can be fluctuation of productivity. Along with, training helps employees to be more skilful. Employees can't adapt with dynamic work environment without proper training facilities. Therefore, it is highly recommended to ensure more training facilities to create productive employees.

The factors analysis shows that the two factors communication and alternative work engagement has no significant influence on the productivity of the ministry employees. This may happen that most communications are happening are directional through different modes and methods, systems. The alternative work engagement like flexible work hours has no effect on productivity that may happen that due to covid pandemic employees are allowed to work flexible hours, limited arrangement from home offices, but this is not a regular practice However previous research shows in a different context that communication; Alternative working engagement is not a significant factor for the organizations mostly due to the work nature(Gitonga et al., 2019; Wiemann, 1977).

The analysis of the SERVQUAL model revealed the deviation between perception and the expectation of the service receiver. The overview of the gap among 14 selected items computed according to the two scales. The former one is out of the mean score 3 scales called 'good' and later one is mean score 4 scales called 'excellent'.

Therefore, according to the 3 scales the overall service quality productivity of the ministry is ranked as 'good'. On the other hand, according to 4 scales for the overall service quality productivity of the ministry is ranked as 'excellent' under four items such as Professionalism of employees (Responsiveness), IT facilities (Tangibles), Policy formulations facilities (Tangibles), and follow up of associated organizations (Assurance). But the rest of the ten items has a negative gap. This revealed the service quality differences between expectation and reality of the clients in the areas of prompt service delivery, on-time decision approval as promised, any other specific follow-up, employees are quicker enough, policy implementation facilities, late response affects the functions, busy hours of bureaucrats, caring demand for file approval, know the approval or rejection of the decision on time, and the process is done on

time if rectification is suggested. Looking at the future progression of the total productivity of the ministry the researcher considered the mean score 4 scales called “excellent”.

The extracted result of objectives four shows that majority of employees are aware of the vision of the ministry which is satisfactory for the ministry to achieve future goals. Because if the employee is aware of vision is always a positive driver of success. The awareness about APA is also shown satisfactory which is positive for the ministry. Besides the IAP has introduced 1.5 years back but the awareness is still average though more initiatives to be taken so that employees are aware. There is an existence of rewards system in the ministry. But still, knowledge can be explored among the people. The financial outcome of the job is still a matter of organizational education among employees. However due to work, not all departments eventually most of the department are not have any financial outcome and few others have an indirect outcome as they support the stakeholders. Besides the non-financial outcome is satisfactory with the mainstream functions of the ministry. According to the responses the of training, low budget and insufficient staff are remarkable hindrances of employees’ productivity. Teamwork and working environment are string driver to stimulate the productivity or reverse. Same also repeated in cross-validated where the results shows that poor working condition is annoying that demotivates and low pay and benefits, high workloads are also a matter of concern. Because the ministry has set salary packages so maybe the overtime and extra hours allowances corresponding to the work are not entertained. The employees feel the influx of motivational culture such as recognize and reward of performance, improving the supervisor, and management style practices in the ministry. However, the team building and training arrangement also got equal importance.

On the other hand, the productivity of the Ministry from the base year 2016-17 revealed a liner growth. But due to COVID-19 affect the growth has fluctuated and skewed recently. The Ministry productivity is measured on some important categories and indicators. Despite some data were not revealed from the base year probably because of changes of the indicators.

# Chapter 6

## Findings & Conclusions

# 6.1 Findings

The findings of the research have been compiled from the mixed-method analysis such as primary data analysis, focus group discussion, experience sharing, key informant interview, an inspection of the documents, and the observation of the researcher. According to the compilation and summation of the result the findings are stated below:

## 6.1.1 Key Findings

The extracted key findings of the research are given below:

The result of the study evident that **employee productivity** is 80.6% at the Ministry of Industries based on 13 dimensions used here for measuring productivity level. Innovation, technology uses, performance commitment, consistency and training dimensions are legged behind the expected productivity level of 100%. The obtained value of these dimensions is Good not Excellent. However, to make the organization holistically productive the identified dimension can be a strong driver to keep the strength of productivity.

The **driver of productivity** is another important focus of the research. The factors analysis result based on multiple driver's shows that the communication and alternative work engagement was not evident a strong influential factor. The remaining factors show a significant influence on employee productivity. However, the open question revealed the visibility of the two tactors.

The **service quality level** of the ministry to the associated organizations (clients) shows a positive stage in the scale 3 called 'good'. But the service quality level of all items employed in the model is not evident positive on the scale of 4 called 'excellent'. Only four items like Professionalism of employees (Responsiveness), IT facilities (Tangibles), Policy formulations facilities (Tangibles), and follow up of associated organizations (Assurance) have positive results whereas the remaining ten items have a negative gap. This revealed the service quality differences between expectation and reality of the clients in the areas of prompt service delivery, on-time decision approval as promised, any other specific follow-up, employees are quicker enough, policy implementation facilities, late response affects the functions, busy hours of bureaucrats, caring demand for file approval, know the approval or rejection of the decision on time, and the process is done on time if rectification is suggested. The content of the research has validated the scale 4 called "excellent" to keep the relentless effort of improving productivity gradually.

The analysis is based on **the Ministry productivity aligned to the achievement of vision 2041**. It revealed that employees are aware of the vision of the ministry, the APA, the IAP in respected levels and grades of work. But the awareness about the financial impacts of job outcomes is not remarkably evident. This is one of the key pillars to translate employee productivity into a numerical output to make a control and development of productivity. Besides employees are more aware of the policy and process-related services though the other functions like logistics support, backend cooperation's to the associate organizations is one of the key functions of the ministry. So, ignorance may hamper the productivity level. Similarly, the key limiting factors of employee ability measured using the multiple answer questions and shows that lack of training is one of the prime issues of productivity. These questions further advocated that low budget, insufficient staff, and workloads of the employees are other crucial matters to be taken care of to maintain consistency of productivity. Moreover, an employee feels that teamwork is one of the foremost aspects of their job and acts as a strong wave of their motivation of productivity though the working environment is also important matters to drive their job. Conversely, the respondent was asked about the most irritating factors of productivity and evidence that poor working conditions, low pay, and benefits, high workloads severely disturbed them to keep a stable level of productivity. In this connection the respondent replied the prime changes to be addressed such as the culture of the organizations, the recognition of good work, the improving level of supervisory capacity and team building, training may be emphasized. The annual productivity indicators is not consistent rather changes quickly.

### 6.1.2 Other Findings

There are some other findings generated from the research:

- **Job transfer:** For a long time, there are practices of transferring the cadre officials. Due to this consistency of a planned task is massively hampered sometimes even not finished. The associated organizations also suffer due to the frequent changes. According to them, if one officer is ready to work, sudden changes make new officials in the role who need a reasonable time to get ready again. The quick transfer of secretary-level hinders the consistency of productivity within the office and for the service receivers.
- **Inadequate service level:** There is the absence of adequate service level among the client level particularly processing file, using e-filling, provide the response on time even if the decision required any corrections and rectifications. The stakeholders perceive that

bureaucracy hampers the timely performance such as follow-up e-files and communication decisions within the client organizations.

- **The efficient level of the staff:** There is an absence of quality human resources at the middle level. This shows the secretaries are relying on the administrative officer for most of the paper-based functions. Majority of the documentation, files process, drafting, compiling jobs to be done by the bottom level. Therefore, the level of output, efficiency, and task delivery fluctuated due to the nature of the job and priority of the job. The skilled level of the administrative officer is one of the prime tools to get the work done in the ministry.
- **Absence of organizational education**: Organizational educations mean the awareness of people about the job skills, knowledge, and the attitude of sharing the knowledge among the fellows to make them ready for work effectively. Moreover, people should be clear enough about the policy, process, benefits, code of conducts, etiquettes, official norms, required job skills, policy, process, overtime payment, and meeting decisions.
- **Coordination with the associate organizations**: One of the key roles of the ministry is to provide collaborative support to the organizations under its supervision. Coordination is highly important to make this effort successful. It revealed that there is an absence of adequate coordination like induction of the new joiners with them, asking for a document in multiple modes like email, hardcopy, e-filling. Moreover, sometimes the same document is demanded several times. According to the respondent, the queries of any particular file, proposal document seems redundant to them.
- **Lack of awareness:** employees are not fully aware of the job description, their action plan, and the departmental meeting actions. This mostly happens in the down the line other than secretary level. Open-book management is a strong tool of employee productivity and for that reason, the lack of awareness may hinder productivity.
- **Absence skill:** There is still an absence of technical skills like computer literacy, software handling like IBAS+ in the mid and lower level of employees. There is also an absence of the common soft skills like English communication. Though in some cases, the high officials are sending for overseas training.
- **The relationship gap between the associated organizations and ministry**: It appears that the meeting between the ministry and associated organizations is sometimes not effective due to follow-up of implementations. The frequency of the meeting minimum once in a month is not always maintained.

- **Absence of on-the-job induction process:** The new joiners and transferred employees are not properly completed induction and orientation process with respective department work process and cross functions. As a result, there is a lack of proper understanding of the job and executions that hinder productivity.
- **Working environment and supports:** working environment and supports is one of the strong drivers of productivity. The premier studies in the field of productivity developed by Hawthorne studies. The working environment of the ministry is not adequately balanced for all levels like space, air-condition system, the neatness and cleanliness of office desk, unavailability of computers, and scanners. This may happen due to level and official allocation.
- **Leadership:** Inadequate practices and knowledge of leadership such as team motivation, recognition of good works varies from person to person in the Ministry.
- **Professional grooming:** Absence of professional grooming, employee engagement, and work inspiration among the employees.
- **Absence of recognition of good works:** The absence of recognizing good works like thank notes, gestures, incentives, additional hours work allowances at lower levels are evident. However, the ministry has an employee awards system, integrity allowances to recognize the best employees.
- **Lack of competency mapping:** There is a lack of competency mapping for government officials. Starting from cadre officer to the lower level is a must. The skill mapping may rightly direct the specific areas of productivity.
- **Locational challenges for associate organizations:** The locational distant between associate organization and ministry is one of the important challenges of communication, follow-up, and physical interactions.
- **Day-care facilities:** The day-care facilities for women are government decisions. But this is not established at the ministry premise. It helps to motivate female employees at work and make them productive.
- **Employee benefits:** There is an overtime system in the employment nature. It has evident that the employee at the entitled level does not receive any overtime allowances for their additional work after office hours not even on the weekdays of holidays (if required). Besides, employees have a strong feeling that, overtime is paid in a biased way to the selected level of department, offices or there are positional influences. Moreover, employees are using mobile call for their assigned job but there are no minimum allowances for them.

## 6.2 Conclusion and Directions for Future Research

Employee productivity is like the engine of a train. Imagine, the train may be well equipped with many systems, commuters to carry large passengers. But if the engine is not working well or featured defectively the failure of the train is a must. This research tried to shed light on the present state of productivity, the drivers of productivity, and the response of the associated organization, and the perception of the employees in line with the vision of the ministry in a systematic way. The analysis revealed the existence of a dimension of employee productivity and twelve drivers that stimulate employee productivity in the ministry of industries of Bangladesh. Besides, among twelve factors ten principal factors stimulate the work philosophy and individual behaviour towards the organization such as high-low-medium level of productivity? However, rest two factors like communication, alternative work engagement cannot be ignored in the future. The satisfaction level on service quality is one of the important actors of ministry productivity that warrants the right setup, understandability, and practices among all parties involved. Based on the analysis the research explored few productivity variables to address immediately.

The research carried in this field is absolutely for the first time for the ministry. The dimension of productivity employed in the study is based on and validated by the content. However, there are some other types of dimensions like leadership approach, green culture on productivity that can be used in the future. In the present research the employee response, frequency of physical visits also hampered due to COVID-19 lockdown. Similarly, the job description is not weight-based in all positions to get the actual data and the time frame could be more for future research in a similar field. Additionally, this type of research is warrants for every associated organization under ministry to make the ministry holistically productive.

# Chapter 7

## Recommendations

# 7.1 Recommendations

## 7.1.1 Major Recommendations

Following major recommendation established by the researcher based on the objective orientated outcomes:

**Productivity at employee level:** At the employee level the identified dimensions like innovation, technology uses, performance commitment, consistency and training dimensions should be address immediately so that employee can be a better shape of their productivity in those areas. Besides, all other dimensions like should be keep appropriate attention to excel the total productivity in to an excellent stage. Initially the ministry may can arrange the knowledge session among the employees through in-house arrangement, motivate them about the importance of innovative works, uses of technology, performance commitment and consistency at work towards the rules and law of the government. A productive employee is always be a complaint employee. So, there may be internal branding, involvement of the supervisors, top levels to facilitate all required support, technology, motivation, investment for skill development, finding corrective action plan, and promoting the importance of productivity at all levels of employees. In order to do that the Ministry may develop work plan at least in each quarter of the year. There needs to develop a process of periodic review of progress.

**Factor of productivity:** The identified factors in this research are communication and alternative work engagement. In fact, the alternative work engagement like flexible hours, work from home is situational arrangement due to Covid 19 effect. Though the communication did not reveal a significant impact but still communication can be a good tool to disseminate the right directions at all levels. The other factors identified in the study such as job descriptions, organizational supports, technological facility, supervisory supports, training, team work, decision making, self-management, performance management system, job satisfaction should be taken special care from every context and aspects so that there is a positive growth and move of productivity. It is something that warrants a consistent growth. Thus, keeping right attention is a must. In that case the ministry may can arrange regular sessions, seminar about the employee educations in periodic nature. Besides, there can be a team in the ministry who will follow and monitor the extent productivity indicators in all areas even suggest some new areas of productivity based on competition, innovation and changes.

**Service level of the ministry:** The analysis of the research rated the service level as ‘good’ out of 3-point scale. But the rating of services out of 4-point scale called ‘excellent’ is not positive

in ten categories like prompt service delivery, on time decision approval as promised, any other specific follow-up, employees are quicker enough, policy implementation facilities, late response affects the functions, busy hours of bureaucrats, caring demand for file approval, know the approval or rejection of the decision on time, and the process done on time if rectification is suggested. So, the service level to the clients should be keep special focus like regular meeting, follow up, addressing specific points, walking around, visiting physically to the associated organization can help to mitigate the gap of service level. The e-filling should be regularly checked and action to be suggested even sometime should not be waited to 72 hours. In case of any files, proposal of the associated organization, required ratified, corrections or rejection that should be also within the stipulated time and comment. There should not be any delay of decisions and filling process.

**The general perception of the employees**: It is evident that the general perception of the employee is good. But they need to educate, aware some issues like financial outcome, process outcome, the IAP at their level. Knowledge of productivity at all level is a must. In that case the productivity agenda can be placed in APA as well. E-filling to be checked on time, flow less and give immediate feedback. Besides some critical issues like training, team work, working environment, work load distribution, employee recognition can be immediately address to achieve the vision 2041 of the employees. Similar, the technology is a heart of future works. In order to make employee equipped with technology a good number of in-house, external and technical training can be take place. Knowledge of productivity at all level is a must. In that case the productivity agenda can be placed in APA as well.

**Coordination between ministry and associated organizations:** The coordination is a heart of work between head quarter and associated units. In order make the ministry more productive to the associated organization there should be regular coordination. The coordination may take place through periodic regular meeting, checklist-based follow of agendas, take corrective action plans. The meeting may take place in every 15 days instead of 30 days. Besides, there can be management by walking around called physical visit such as some meeting may arrange at associated organizations. Additionally, the technology based on-line platform can be uses in days ahead. The ministry has the right to justify, check, validate any relevant files documents. But there has to be reciprocal understanding between the parties the areas of responsibility so that each party are clear about the scope and to avoid complains.

**The Complete Implementation of IAP:** IAP underscores the individual performance actions. The Ministry should implement individual action plan (IAP) as soon as possible in order to focus the individual productivity that aligned with Ministry performance.

**The performance yardstick of Ministry:** Currently the performance is measured against many indicators under APA. However, target performance should be specific in numbers, quantity as the case applicable. A SMART (Specific, Measurable, Achievable, Realistic, Timely) target of productivity to be set at the beginning of the fiscal year correspond to the APA.

## 7.2 Additional Recommendation

**Quick transfer**: The quick transfer of the cadre officer or other rank of officer should be discouraging immediately. Though the transfer is sometime required but there should be minimum time frame for each role which may be not less than 3 years.

**Employee induction:** The new employee who is assigned for respective associated organization, department should be given proper orientation about the job, work process. Besides the employee should be physically introduce with all respective department, employee of the client organizations.

**Monitoring the e-file progress:** The top official may can monitor the progress of e-filling and number of files released, executed by the respected employees. As a result, there may be moral obligation doing the job on time.

**Organizational education:** In order to make a holistic productive there is no alternative of organizational education. It includes employee should share the work ideas, values as corporate citizenship behaviour. Employees will be informed every issues other than highly confidential. Similarly, employees will be guided to know the policies, procedures, common norms through internal arrangement. Periodic meeting with all of them to know their issues, grievances. Organizational education of policy, procedures, and circulars should be clear and confirmed.

**Leadership attitude:** One of the most important aspects of boosting productivity is the attitude of leadership. In the ministry there should be culture leadership to make employee motivated, directed towards their individual goal. Only operations-based order will not work anymore as people need motivation and value propositions. The ministry can also arrange leadership development program with the help professional bodies, institution or the trainers.

**Post training follow up and evaluations:** After providing training the ministry can arrange post training follow up and evaluation of the participant employees. This may arrange based on the fulfilment of need assessment of the training, whether training is rightly serving purpose of the employee and whether the employee can utilize the new skills in the work.

**Introduce a recognition culture of good work**: Recognition at work excel employee motivation. It enhances their productivity from this inspirational feeling of recognition. At the Ministry more employees apply such motivational culture such as thanks note, letter of appreciations, wish, good work celebrations etc.

**Initiative to improve working environment:** The working environment like physical set of office space, availability of office equipment such as PC, scanner, copier, mobile phones for common contact, health and hygiene, ventilation, air conditioning, common facilities can be arranged.

**Reducing the work load:** There should be an effective initiative to reduce work load. In that case roster, flexible hours, leave can be encouraged.

**Introducing overtime allowance:** The overtime work allowance should be implemented properly if the employees' overtime work is justified. There should be equal footing of policy in every department and section of the Ministry.

**Sharing common messages to all:** The policy and written orders should be equal to all employees. As a part of open book management system this practice increases employee ownership, bonding to the organization and work better. Every circular, notices, policy, directions related to the common interest of all employees should be posted, communicated and discussed.

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