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DEPARTMENT OF MEDICAL LABORATORY SCIENCES



Assessment of the Impact of Training and Development programs among Public Hospital Medical Laboratory Professionals Performance in Addis Ababa city, Ethiopia

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ABSTRACT

Background: *The core of every service providing firms function relies on an organization's greatest asset; its human resources. Training strategies ensure; staffs are competent and retained since they are satisfied, and that motivation and commitment are enhanced through promotion opportunities for all employees over the longer term through educational opportunities. But in developing countries public service organization, there are still challenging gaps especially in sub Saharan countries like Ethiopia due to various factors.*

Objective: *The purpose of this study was to identify the role of training and development programs on Medical Laboratory professionals (MLTs) working in public hospitals in Addis Ababa city.*

Methods: *Was used a descriptive cross-sectional study design conducted from March 02, 2021 to April 28, 2021. Purposive sampling technique for the selection of the sample respondents was employed (sample size=104). Data was collected through semi-structured questionnaire from 14 public hospital laboratories at Addis Ababa city. The research also followed a descriptive exploratory evaluation approach. Statistical analysis for the data set follow correlation analysis to understand the relationship between variables and statistical tools like SPSS version 20 was employed.*

Results: *Findings of the study showed that more than half of medical laboratory professionals (56.7%, n = 59) believe training and development programs enhances their job satisfaction, motivation, engagement and job performance. In contrast, considerable numbers of respondents (= 40%) either disagrees or remain neutral in compliance with lack of training and development programs available to respondents. Furthermore, multiple regression analysis indicated that except in the case of job satisfaction, training and development through mediation of job satisfaction and engagement of employees have significant predicting power of medical laboratory professional's performance.*

Conclusion: *The outcomes of the current research are generalizable only to medical laboratory professionals in public hospitals in Addis Ababa (From March 02, 2021 to April 28, 2021) due to lack of formal documentation and uniform patterns of training and development programs.*

Recommendation: *policy makers and HRM personnel need to make their training and development procedures available to their line supervisors and researchers in order to enhance transparency and accountability of their human resource development function. Finally, the study has discussed the limitations, implications and future research area.*

Key words: *Training and Development, Employee, Job satisfaction, Motivation, Engagement, Performance.*

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LIST OF ABBREVIATION

CPD- continuous professional development

DFID- Department for international development

HR- Human resource

HRD- Human resource development

HRH- Human resource for health

HRM- Human resource management

HSRC- Health system resource center

HSTP- Health sector transformation plan

MLTs - Medical Laboratory Technologists

NHS- National health service

QS- Quality service

T & D- Training and development

TNA- Training needs assessment

VIF- Variance inflation factor

WHO- World health organization

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1 INTRODUCTION

1.1 Background

Human Resource is an asset for any organization. There is an increasing focus on improving healthcare in order to ensure higher quality, greater safety issue and better value for internal and external customer satisfaction in recent years. Training programmes have been developed to teach health professionals and students formal quality improvement methods (1). In this context it is a critical issue for medical laboratory personnel and firms to assure a quality service provision because of its complex nature.

For this reason, Training & development has played a significant role in the development of personnel towards their better performance through enhancing their knowledge, skills and attitudes (1). Globally it has been acknowledged that training is a major tool of empowering and transforming employees to become useful members of the organization. There are different ways of defining the term training; as a systematic development of the knowledge, skills and ability/behavior required by employees to do their described task/ job in line with standards (2). Training has also been defined as a planned process to modify attitude, knowledge, skill and behavior through learning experience to achieve effective performance in an activity or range of activities (3)

Training can take place in various ways like on the job, off the job, in the organization or outside organization. It is also the process of acquiring new knowledge that helps to manage both current and future situations; in an ever rapidly changing business environment; a need for a lifelong learning as an essential coping strategy. It is also believed that training leads to job satisfaction among employees in addition their commitment and motivation towards their better performance (4). The term “satisfaction” is a complex concept because it involves not only the personal experience and expectations, individual and social values but also related behaviors, such as motivation, faithfulness, professional fulfillment, etc. and contains different meanings for each individual. In spite of this multi-lateral and complex structure, it is vital to ensure the satisfaction of the employees in the health care sector, where intense, often long term, and emotionally charged labor, frequent technology change and innovation take place; thus, measurement of this vague variable worth (5)

The importance of training is to add a value for employees who need a training so as to the organization goal achievement as a tool to intervene the gaps of stability, flexibility, capacity among the employees (6). As a benefit, accidents, scrap and damage to machinery and equipment as well as unwanted turn over costs can be avoided/ minimized through training (6).

In case of medical laboratory firms; training and development of laboratory personnel is crucial to accomplish the quality management system since these resources are the first and most valuable assets of those firms who are responsible to use the rest of other resources properly towards the organizational goal achievement.

In general, plenty of studies demonstrate the benefit of training to enhance employee performance in different sectors such as banking, telecom, financial and business (1, 3, 6, 9). The effect of training to increase employee performance in the health sector is not exception to this fact. For instance, Kathy S. Small (6) and Amber Rose Phipps (7) have conducted a study in United Kingdom & United States respectively on health laboratory personnel retention strategy; recommend that management commitment for career development of its employee to insure the need for appropriate laboratory service provision; especially laboratory personnel training and development needs (7).

To this end, different hospitals organize training programs in Ethiopia including Addis Ababa. However, as far as the researchers' knowledge is concerned, there are no studies that showed to what extent these trainings enhance employee performance in case of Ethiopian hospitals and medical laboratories. The fact that training enhances employee performance elsewhere in the world does not mean it has effect in the case of Ethiopia since we have different social, cultural and economic context. Thus, assessment of the impact of training on employee performance with the approach (employee job satisfaction, motivation and engagement) among medical laboratory professionals in public hospital laboratories of Addis Ababa city worth further investigation.

1.2 Statement of the Problem

The success or failure of any organization or firm depends on its employee performance (8). These days, quality laboratory service provision becomes a mandatory focus area as a health service delivery program. Laboratory personnel have a valuable role for the delivery of this service in accordance legal requirements and standards. These professionals pass through many processes and procedures to produce accurate, reliable and timely customer result from the actual task duty which is dependent on their competency and initiative. In addition to these facts, according to (8) conduct her research abroad argue that today's laboratory service users have become aware of good laboratory services due to their social development and awareness about quality. This is also relatively true in Addis Ababa city as a capital of Ethiopia.

On the other hand, Amber Rose Phipps argued that, laboratory personnel in this competitive world have become experts searching for other opportunities or companies to acquire better career development if they are dissatisfied at their current place. Besides, lack of engagement and motivation in workplaces leads to turnover that might further result in a gap between need and demand for the provision of the service. For this reason, training and developmental programs are the main promotional strategy to increase employee performance through the enhancement of their job satisfaction, motivation and engagement as it is universally acknowledged and explained above in the background section. Training enhances commitment, job satisfaction, motivation and engagement among employees as they develop knowledge, skill and ability which help to their better performance (9).

However, most of the time the management does not realized the importance of investing in training and development (9). In addition, there are gaps in reviewing the effectiveness of exiting training programs to improve employee performance and to achieve firm goals and productivity that brings competitive long-standing advantage in many cases through their employee satisfaction, engagement and retention strategy(9). Moreover, less attention is given for internal taskforce development in developing countries like Ethiopia rather than the general HRM or routine HR administrative tasks in the public health sector including for health laboratory; involve in hiring and firing. There is no policy specific to human resource development for health and no proper mechanism to manage the existing health workforce in Ethiopia. As the knowledge of the researcher there is no well-defined trainings strategy as intervention

tool in the case of Ethiopian health laboratories and lack of specified studies how training and development enhances these professionals' satisfaction and work motivation & engagement as well as chance of minimizing turnover.

Thus, training is not visible despite the benefit of training as a strategic human resource development program, there is no empirical evidence on the effect of training and laboratory professional's performance in the public health laboratories of Addis Ababa including its effect and outcomes didn't well- identified towards health laboratories employee performance (Samuel Girma et al., 2007).

1.3 Significance of the Study

This research has aimed at assessing the effect of training in the case of public hospital medical laboratory professional's performance through enhancing their job-satisfaction, motivation and engagement in Addis Ababa city.

Since Addis Ababa is the capital of Ethiopia; seat of national and international community, assessing the pulse of those employees' current perceived value is much more as well as there is no clear previous studies specially in this area.

In general information from this study might help to manage financial flow, quality improvement, understanding direction of organizational standing, gives hints of weakness and opportunity for improvement profiles in addition of their strength for future strategic intervention planning to minimize the cost of turnover, hiring and training of new employees as well as loss of resource with non-feasible productivity.

The outcome of the current study will be available to policy makers, professionals and other stakeholders in the public healthcare system through publication and these stakeholders might initiate comprehensive evaluation on the training and development programs available. This might enable them to design strategic and effective training and development programs that might be able to facilitate transparency and accountability of the HRM departments in the healthcare system of the country. In Ethiopia, studies related to the influence of training and development on employees' job performance resulted from job satisfaction; motivation and engagement of employees are scarce. Particularly, studies on the factors that influence the job performance healthcare professionals are almost non-existent; therefore, the current study might provide additional information to the scarce literature. Moreover, the output of the study might be utilized as reference to professionals and researchers in conducting further empirical studies.

2 LITERATURE REVIEW

2.1 Introduction

This section discusses the influence of training and development on job performance in relation with job satisfaction, motivation and engagement of employees. It has four major subsections including: needs and concepts of training and development; relationship of training and development with factors such as job satisfaction, motivation and engagement of employees; and the influence training and development on job performance of employees respectively. Finally, the chapter ends with demonstration of the conceptual framework of the study.

2.2 Needs for Training and Development and its Concept

2.2.1 Concepts and Definitions of Training and Development

Technological developments, atomization, mechanization, changing environment and organizational change have gradually led some employers to the realization that success relies on the skills and abilities of their employees, and this means considerable and continuous investment in training and development is very crucial. Training and development is an important activity that increases the performance of employee in an organization and is a building block which enhances the growth and success of an organization. Training and development are the processes of investing in people so that they are equipped with the required capabilities to perform well and are part of an overall human resource management approach that hopefully will result in people being motivated to perform (9). Furthermore, Armstrong argued that organizations invest on employee training and development programs as a strategy for attraction and identification of employees with the firm that might impose employees to exert themselves more on its behalf and to remain with the organization (10).

To understand and conceptualize the term training and development in the context of current situation, it is important to define and analyze what it comprises and to discuss it in relation with performance of employees. Training is an activity or range of activities provided to employees focusing on an individual's job and evaluated against job requirements. According to Armstrong training refers to planned and systematic modification of behavior through learning events, programs and instructions that helps an employee to attain the level of knowledge, skills and competence to carryout job tasks

effectively (10). Briefly, training is a way of bridging the gap between the current performance of employee and the desired performance standard of specific job (11). Whereas, development is refers to “capacity and capability building continuous process on an employee and thus as of whole organization to meet the standard performance level” of current and future challenges (12). Development is more abstract concept that encompasses several activities an organization might practice including employees in their current and future job role, but difficult to evaluate. According to Armstrong Development consists of formal education, job experiences, relationships and assessments of personality and abilities that help employees prepare for the future personal and organizational role assignment.

Therefore, training and development is an educational and personal development process that involves the sharpening of skills, concepts, changing of attitude and gaining of more knowledge to enhance the performance of employees. Human resource management regards training and development as a function concerned with organizational activity aimed at bettering the job performance of individuals and groups in organizational settings. It is an attempt to improve current or future employee performance by increasing an employee's ability to perform through learning, usually changing the employee's attitude and behaviors or increasing his or her skills and knowledge. Employee performance depends on many factors like job satisfaction, knowledge and management but there is a relationship between training and performance (13). This shows that employee performance is important for the performance of the organization and training and development is beneficial for the employee to improve.

2.2.2 Training and Development Needs of Medical Laboratory Professionals

The ability of a country to meet its health goals depends largely on the knowledge, skills, motivation and deployment of the people responsible for organizing and delivering health services. The acquisition, development, motivation and maintenance of the needed human resource which are the 'most valued assets' in any organization whether public or private have been seen by most experts as major ingredients in ensuring the achievement of all organizational goals and objectives (14). Organizations, including medical health facilities, need people with high and appropriate levels of knowledge, skills and abilities. Steps taken to meet this need are to enhance the organizational goals, but firms also need to

consider the personal needs of employees for development and growth and this makes fulfilling and therefore attractive place to work (14).

Several studies show evidence of a direct and positive link between training and health workers performance. With scientific advancements in the field of medicine, the volume of laboratory testing continues to increase, and quality laboratory results are expected by the health care staff and patients. Information's from laboratory testing accounts up to 70% of the objectives data in the medical record for patients (15). However, there is a lack of public visibility of professions within laboratory medicine as well as limited opportunities for advancement for those who currently work in the profession due to capital budget cut, lower wage etc. (16). Fried and Fottler stated that there is no longer the employees' commitment to their job and no longer an employer commitment to employees. Among other things, limitations in areas such personal and lifestyle factors, financial considerations, working conditions, management styles, professional advancement opportunities, geographical location, and workplace safety are the factors that lead to inefficient medical laboratory services (17).

Laboratory quality standards and health related higher educational institutions fulfill accreditation requirements giving less focus the contribution of staff training and development programs in their plans, but without providing details about training and development needs of laboratory experts who work in these centers. Several studies indicate that Sub Saharan Africa health sector officials are making several efforts to modernize medical laboratory harmonization and standardization using funds from several global initiatives. However, the main challenge for quality improvement at any level of the health care system is human capacity development, which continues to be a gap in implementing health programs (18-22). Shortage of trained healthcare personnel is widely addressed in numerous programs (23- 24), but often without integrating this training into human resources management at the health facility level (25-26).

. According to Mohana, Oviya and Swami Nathan, in medical laboratory-based healthcare organization, it is important to assess the performance of all levels of staff at the beginning and to continue the assessment routinely at periodic time interval (27). The main task of the HRM involves job analysis, man power requirement, and organization of workforce, measurement as well as appraisal of performance, reward implementation, professional development and constant maintenance of workforce.

HRM in every organization is essential for efficient delivery system, effective medical services to achieve patient satisfaction. Many studies done in the past on HRM stresses the importance of HRM to achieve the goal of healthcare organization and emphasize the importance of training and development for all levels of staff at periodic intervals to improve the quality of healthcare services. Well-motivated and highly trained medical professionals are critical for the success of national healthcare forum. If the existing practices associated with HRM are not adequate, alternate approaches for practicing HRM should be designed and put to use for better outcome. All senior level managers should chalk out new innovations and strategies to achieve better outcome in HRM (28).

Studies have shown that in hospitals, HRM has achieved better performance among its staff if incentives and motivation to work, bonuses based on performance rated competency of individuals make a significant difference in the overall improvement of the organization. For a better management of HRM, it is important to work out the size, composition and proper management and distribution of health care workforce, training based on the need of economic development, socio-demographic and cultural factors (29). Previous studies found out that investing on employees' training and professional development was as organizations' life blood and it needs continuous development to respond the contemporary scientific advancements. Human Capital Investment should be based on sound knowledgeable work force, skilled on occupational tasks with flexible altitude and HRM plays a crucial role to provide optimum quantity and quality services (27- 30)

Qualified, motivated and satisfied human resources are essential for adequate health service provision, but this issue reached critical levels in many resource-poor countries due to lack of clear strategies to improving performance level of the existing workforce as performance is considered as a combination of staff availability (retained and present) and which are competent, productive and responsive (31). In addition of these, they argue that developmental approaches should be evidence-based which will inform policy-makers and managers as to which interventions are successful, under which circumstances, and for what groups of staff describing (31). According to different previous studies, employee performance is influenced by many factors like company's overall policies, working conditions, training and development of employees, relations between employee and employer or work relations and their performance can be enhanced by various ways. According to *Jeffery Bodimer* effective training

motivates the Employee towards better performance and this is achieved through effective need assessment of the employee for their current and long-term training and development needs (32).

Therefore, comprehensive training and development are essential for equipping employees with up-to-date knowledge, skills, and competencies. Such activities enhance employees' flexibility and increase their loyalty and commitment to the organization (33). Furthermore, providing promotion opportunities strengthens employees' emotional attachment to and identification with the organization. They signal to employees that the employer is concerned about their development and is prepared to invest in their progression as employees (34). Job security reduces employees' fear of losing their jobs. This will allow them to contribute freely to enhanced productivity and act with the long term in mind (34). *Performance* related pay will provide employees with the feeling of being fairly rewarded. This is more likely to increase employees' commitment to the organization and induce them to contribute more (34).

2.3 Benefits of Training and Development Programs

Training and development activities are pillars for competitive advantages both for individuals & the organization or firm. And nowadays, one of the key strategies to attain competitive advantage is to invest in these programs properly which helps to achieve organizational objectives and to improve employees and company productivity (35). Employees can induce company productivity and performance through training (36). Training effectiveness is regarded as essential element since employee's knowledge is critical for organizational success (37). Allio found that private and public company could produce effective employee through training (38). Effective training is a method which employee gain multiple skill and knowledge that improve effectiveness (39). Indeed, effective training even though expensive it is however benefit the organization since employee development and performance is improved that lead to company productivity (40). As Well-trained employees are essential for all company survival in this competitive advantage in all industries as they are irreplaceable since they are unique. Therefore, it is essential for an organization to invest in human capital in improving employee productivity and produce competence workforce beside appropriate and systematic approaches to training (41).

2.4 Relationship of Training and Development with Satisfaction, Motivation and Engagement of Employees

The following subsection discusses the role training and development programs on job satisfaction, motivation and engagement of employees respectively.

2.4.1 Relationship between Training and Development and Job Satisfaction of Employees

According to Judge, Weiss, Kammeyer-Mueller and Hulin, job satisfaction refers to as pleasing emotional state of employee's that results from an individual's evaluation of his/her job in achieving one's job values (42). Studies show that job satisfaction is the most studied topic in human resources management fields such as management, organizational psychology and others due to that job satisfaction because of its positive impact on employee performance and enable organizations to retain their employees (43). Training and development comprises of mixture of intrinsic and extrinsic job factors that lead to employee job satisfaction. Job satisfaction is a multifaceted construct that includes both intrinsic and extrinsic job factors. These factors are associated with ability utilization, achievement, authority, responsibility (intrinsic factors) and extrinsic factors such as compensation, advancement, workplace relationships etc. (43).

Not only do organizations need their employees to help them be successful, employees need to feel like they are making a difference in reaching business goals (44). Companies utilizing employee development programs are experiencing higher employee satisfaction with lower turnover rates (45). A study found that employee satisfaction and retention are high when a company is willing to train its workers (45). **Wagner** reported that the top three reasons employees leave companies are, "perceived lack of financial rewards, recognition, and career development. Satisfied employees lead to satisfied customers, which is definitely a financial benefit to organizations (46).

According to Wagner, training builds company loyalty because employees know the organization is investing in their futures. Company loyalty cannot necessarily be quantified, but it is significant to the intrinsic rewards that employees feel. When people feel as though they are helping a company's bottom line, they feel good and want to stay there to continue making contributions (46). People enjoy feeling that their work has a purpose and their activities are significant to the company. Top performers do not

generally leave a job over money. It is often because their job does not tie into their goals and the things that make them happy (relationships and work activities). Although salary and benefits play a role in recruiting and retaining employees, people are also looking for opportunities to learn new things, the challenge of new responsibilities, and the prospect of personal and professional growth (45-47). When a company communicates to their employees that they are marketable outside the organization, yet still invests in their training and development, it makes a strong statement to workers that they are valued, and many are compelled to offer a high level of commitment (47). Satisfying these intrinsic needs helps build trust, morale, loyalty, and overall satisfaction in employees (48)

According to Sunny Steadman, a recruiter for Management Recruiters of Boston, the primary reason people change jobs is to seek out new challenges and opportunities for development. Companies can utilize the career planning process to become more adept in this area. **Sears** has found that supporting employees through career planning and development has made their work force more motivated and invested in the company meeting its business goals (48).

Researches show that satisfied individuals are likely to be more engaged at work resulting in increased organizational outcomes. In the human resource management and development literature, engaged employees are described as energetic, proactive, produce quality work, effectively handle difficult job situations and are less likely to leave the firm (49). According to Gitinji Job satisfaction can come from feeling comfortable within the organization, job proficiency and the knowledge that an employee can work hard and get promoted. A job satisfaction for an individual considers as a degree of satisfaction and it depends on the job. It is a vital indicator of how an individual feel regarding their task job and defines how much they are satisfied with their job/like or dislike.

A study conducted on seven countries of Sub-Saharan Africa showed that training and professional development was rated the highest 90% (195/224) for positively influencing job satisfaction of medical laboratory professionals. The other factors that influence job satisfaction of the professionals were working environment/working conditions, benefits, appreciation and recognition from the management and/or hospital administration and vacation with rates of 42%, 38%, 28% and 4% respectively in their decreasing order (50). Another study on health professionals in Jimma hospital, Ethiopia showed that; 46.2% (N =145) of the respondents were dissatisfied with their job and the major reasons for their

dissatisfaction in their job were lack of motivation using providing housing, incentives using top up, and free health care, bureaucratic constraint in relation to further education, and lack of promotion with rates of 49.3%, 59.7%, 59.7%, 49.3% and 7.8% respectively (51).

2.4.2 Relationship between Training and Development and Motivation of Employees

Armstrong (2014) defines motivation as “*the strength and direction of behavior and the factors that influence people to behave in certain ways*”. People are motivated when they expect that a course of action is likely to lead to the attainment of a goal and a valued reward - one that satisfies their needs and wants (51). Organizations expect that the knowledge and skills gained from training will be transferred to employees and results in improved job performance. However, training transfer only occurs when a variety of individual and environmental factors come together and interact with one another (52). Of these factors, motivation plays a critical role on employees’ performance in their job (52).

Despite, several theories that describe how employees get motivated to perform in their job, mostly motivation source from internal and external factors this means, employees can be motivated through two sources namely: intrinsic and extrinsic motivators. Intrinsic motivation takes place when people feel that their work is important, interesting and challenging and that it provides them with a reasonable degree of freedom to act, opportunities to achieve and advance, and scope to use and develop their skills and abilities. The intrinsic motivators, which are concerned with the ‘quality of working life such as recognition and work itself, leadership style and organizational mission are likely to have a deeper and longer-term effect because they are inherent in individuals and the work they do and not imposed from outside in such forms as performance-related pay (52).

Several studies indicate that motivation positively influence employees in their job performance, if they receive appropriate training and development opportunities (54). Empirical study on bank employees showed that employees provided with training and development opportunities have increased their performance and motivation levels. So, it will also result in the maximized performance which helps to achieve the institutional goals effectively. If employees are given training and development programs they feel some betterment in their own motivation and performance, so work harder to achieve personal and institutional goals. Training and development programs have helped them grow the business and

improve customer service by providing employees with the knowledge and skills they need (54). Similarly, a study by Isaac, on higher education instructors revealed that there is a significant relationship between training and motivation of lecturers in higher educational institutions. The study also revealed that there is a significant statistical positive relationship between training and employees' work performance in the presence of motivation as significant mediating factor (55).

Another study in Ethiopia on employees of All Africa Leprosy, Tuberculosis, Rehabilitation, and Training Center (ALERT) indicated that more than half ($n = 60$) of the respondents agreed that the training and development they have taken in ALERT gave them the necessary skills to work in tasks in a motivated manner, whereas, 25.6% of the employees were neutral and the rest 22.2% disagreed on the influence of training and development in their motivation (56).

In contrast, other studies have reported that training is not a meaningful predictor of employees' motivation and firm performance because training and development program frequently irritates employees, resulting in unintended dysfunctional outcomes that cancel out potential benefits (57). Ployhart, Call, and McFarland noted that training and development investment often helps improve employee performance but simultaneously leads to negative consequences, such as increased job mobility, bargaining power, and turnover (58). Aragon-Sánchez, Barba-Aragon, and Sanz-Valle revealed that training can even hinder employees' task involvement and firm profitability (59). A study on Ghana port authority employees showed that majority of respondents (74.55%) don't feel motivated by the training activities of the organization and more than 96% of participants responded that they did not expect development opportunity from the firm due to that the program is unplanned and unsystematic (60). A study by Sung, and Choi, showed a unique understanding on influence of training and development on employees' motivation and performance, in which only voluntary participation of employees and an appropriate evaluation of training and development programs leads to the positive effect (61).

All these organizational, methodological and socio-geographical variations indicate that influence of training and development programs on motivation of employees varies with several contextual factors. That is why, the relationship between training and development and motivation is assessed in the current study.

2.4.3 Relationship between Training and Development and Engagement of Employees

Engagement occurs if employees are committed to their work and the organization and usually are highly motivated to achieve optimum levels of performance (61). Though it is unknown when the term engagement was introduced to HRM field, Schaufeli, claimed that Gallup Organization is credited for coining the term engagement in work related fields during the 1990s (62). Then after, the term engagement has substituted terms such as job satisfaction, motivation and commitment because it appears to have more descriptive force and face validity (63). Organizations and managers appreciate the engagement as a concept because they want to have engaged workers and resent to have disengaged employees (64). Several scholars have provided several definitions of the term engagement. For example, Kahn, defined employee engagement as *'the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances* (65); Based on this definition, Alfes et al, saw engagement as having three core facets: intellectual engagement – thinking hard about the job and how to do it better; affective engagement – feeling positively about doing a good job; and social engagement – actively taking opportunities to discuss work-related improvements with others at work (66).

As mentioned in the definition above, employee engagement is multidimensional that engaged employees are emotionally, physically, and cognitively engaged in their daily work as well the term is related to the psychological experiences of people who shape their work process and behavior (67). Though, organizations have the responsibility to provide for the needs of employees by providing proper training and development programs, building a meaningful workplace environment and employees have the responsibility to provide a meaningful contribution to the organization and its mission. Organizations understand the importance of employee engagement; however, the issue of how to increase the level of employee engagement is not warranted (68).

Several studies indicate that employees' engagement is influenced by several factors such as co-worker relationship, leadership, work environment, compensation, organizational policies, workplace wellbeing, training and career development opportunities...etc. (69-73). Training and career development is one of these main dimensions which are considered in the process of engaging employees since it helps the employees to concentrate on a focused work dimension. Training improves service accuracy and thereby

impacts service performance and employee engagement (74). Training and career development allow the employee to increase his or her confidence in the job and provide more engagement with his or her job. Training provides the employee with opportunities for growth and development, which helps with career advancement and commitment (75).

Training and Development is another influential factor that has effect on employee engagement; this factor has line with the job scope resource as suggested in Job Demands-Resources framework (75). It brings bilateral importance to talent employees. This kind of driver can be classified as a genuine stimulus which that supports employees' development and build individual development through achieving major human skills and qualifications (76). Empirical studies indicate that training is considered as one of the most universal methods of improving the productivity and performance levels of employees in an organization. It is also an important administrative function of human resource management (HRM). Considering the dual importance of training and development for the benefit of employees and organizations, for example, USA invested about 164.2 billion USD on training and development programs in 2012 (77).

Studies show that HRM of organizations focus on developing employees' attitude and capabilities through effective training and development programs, so they are more engaged in their job and organization to positively and significantly contribute to achieve organizational objectives while growing personally at the same time (78). For instance, studies conducted in the banking industry indicated that a strong relationship between training and engagement as through these trainings the employees felt valued when nominated for the training and understood their own meaningfulness and importance for the organization hence engaging more with the company (79). Another research conducted in a classroom setting by giving a survey to students ($n = 150$) from several companies of Taiwan, the outcome concluded that training and development of employee work as a platform for providing a sense of success and progress in employees and also work as a powerful tool to shape the attitude and motivation of employees towards work hence improving employee engagement level in process (80). research on employee engagement in banking sector of Bangladesh revealed that most of the respondents were regular participants in training programs organized by their respective employer banks- Most of these trained employees think that the trainings provided to them make them more engaged, satisfied and motivated to work in their respective banks and it has proved the hypothesis of

the study that job trainings in banking sector has very strong and positive relation with employee engagement (81).

In healthcare sectors, Graban, Contends that improved employee engagement, through the Kaizen style of training and development, can lead to better safety and outcomes, patient satisfaction, and lower cost in direct and indirect ways (82). For example, higher employee engagement can reduce voluntary turnover rates, which can improve quality while reducing the cost of hiring and on-boarding new staff. Improved patient satisfaction and quality can lead to more patients choosing the health system, which can improve the bottom line. Reducing costs can allow a health system to offer lower prices, which can lead to higher volumes as, for example, American employers start to steer employees to get training and development centers that have higher quality and lower cost (82).

Fleming and McConnell, in their book “HRM in Healthcare, argued that factors that motivate employees are found primarily in the nature of work. Among the strongest motivating factors are the opportunity to do interesting and challenging work and the opportunity to learn and grow. Better performing employees usually are so motivated and they are also the individuals who are most likely to leave in search of more interesting and challenging work and greater overall opportunities (83). One way for department managers to increase the chances of retaining their better employees is through visible support for training and development. However, as important as training and development are to every health care organization claims that in many instances they receive minimal attention from upper managers (83). Simply reminding department managers that they have a responsibility for employee development is insufficient. Managers should be encouraged to view training and development as important because it keeps maximizes employee engagement and they become valuable employees interested and challenged (83).

A cross-sectional study within the National Health Service (NHS) Hospital in the UK, work engagement has three dimensions: vigor, dedication, and absorption and total score were compared with control score from test manual. The outcome of the study showed that score for vigor and dedication is significantly lower than comparison group and that of absorption was significantly higher than comparison group (all at $P < 0.0001$), however, total score is not significantly different. In conclusion, the study showed that work engagement level was below average within the NHS employees and the

investigators recommended an urgent need for explore effective HRM strategies to improve work engagement (84).

On the other hand, a study when tested a somewhat similar relationship between training and employee satisfaction and performance with the mediating role of employee engagement, the result came out to be positive. Basically, the paper shows the mediating role of employee engagement which occurs due to training and development of employees and significantly influence the performance level of both that is organization and individual (84). The research was conducted using evidences from the health sector of Uganda by distributing questionnaire to 150 workers in hospitals founded by catholic organizations. Correlation analysis of the variables indicated a very positive relationship between training and employee performance through employee engagement. In elaborated way, it is concluded in the study that training positively affects the employee performance when employee engagement mediates between the two variables (85).

2.5 Influence of Training and Development on Performance of Employees

Human capital is an important asset for organizations under intense competition. All organizations are under an obligation to their stakeholders to perform well. To do this they depend on the quality, dedication, enthusiasm, expertise and skill of employees at every level. Training and development function enables human capital to unleash their dexterity. A profound training program acts as a vehicle to enhance employee skills and enable them to perform better in their job. Training and development is indispensable strategic tool for enhancing performance of employees and organizations. It aims to improve employee's skills by making them learn new techniques and direction of doing work. Thus, it helps updating their knowledge of doing work which results in increasing their efficiency and hence, results in increasing productivity of an organization. Organizations can develop and enhance the quality of the current employees by providing comprehensive training and development opportunities. The general benefits received from employee training are: increased job satisfaction and morale, increased motivation, increased efficiencies in processes, resulting in financial gain, increased capacity to adopt new technologies and methods, increased innovation in strategies and products/services and reduced employee turnover (86).

Senior managers in most healthcare departments can be counted on to support and praise the value of continuing education. Unfortunately, many managers drop training and development when budgets get tight and expenses must be reduced. This is partly because of the difficulty of pinpointing cost savings that can be attributed to continuing education. Most individuals in management level believe or know intuitively that education ultimately saves money. The problem is that it is more difficult to measure the results of education in terms of costs versus benefits than it is to measure cost savings in most other areas of organizational activity. As a result, money spent on education is often viewed as resources that are expended with few tangible results (87)

However, studies examined the impact of various training programs on the business and financial results showed that in most cases a well-designed training program can be linked to improvements in business results and that return on investment in training programs was very high (87). Birdi *et al.*, in their longitudinal study of 308 companies found that extensive training produced a gain of nearly 6% in value added per employee. Aragon and Valle's, assessment into the impact of training on the performance of managers established that firms that train their managers obtain better results than those that do not, and that the intensive training contributes to improved performance (88).

As important as training and development are to every health care organization, in many instances they receive minimal attention from upper managers. Simply reminding department managers that they have a responsibility for employee development is insufficient (88). Managers should be encouraged to view training and development as important because it keeps valuable employees interested and challenged (84). Factors that motivate employees are found primarily in the nature of work (89). Among the motivating factors are the opportunity to do interesting and challenging work and the opportunity to learn and grow (89).

Niles, argues that regardless of their roles, healthcare employees who underperform could risk the lives of their patients. Researches on high-performing healthcare organizations reveal that employees are motivated to perform well by the quality of the work environment. A quality work environment includes employee empowerment and engagement, training and career development, pay for performance, management transparency and support, and work-life balance (90). It is the responsibility of managers, in collaboration with human resources (HR), to motivate their employees. These employee activities

should reduce turnover in the workforce and increase employee satisfaction, which, in turn, increases employee performance (90).

Several empirical studies on various industries showed that training and development programs have direct influence on performance of employees and organizations (91,-92). However, World Bank study in sub-Saharan Africa indicates that laboratories have constituted one of the weakest areas in health systems and they have suffered from: inadequate infrastructure, limited funding, and lack of qualified human resources. These deficiencies hinder the performance of laboratory health workers and public health laboratories. In turn, these impediments impede governments' ability to manage the spread of drug resistance, respond to disease outbreaks, and scale up critical programs. Lack of access to accurate laboratory services can result in misdiagnosis, which in turn leads to compromised patient care, higher costs, and continual transmission of communicable diseases. Government policies and strategies to structure the laboratory profession and to develop a clear career path and promotional opportunities for laboratory workers have been generally inadequate. In African countries, where information is available, job descriptions are not well structured or standardized; expansion of degree programs is progressing slowly; clear pathways for career development are lacking; there are inconsistencies between qualifications and salary structures; and performance review processes are not systematically applied to laboratory workers (93).

Currently, many medical laboratories in Ethiopia are going through the implementation of quality management system to improve the quality of service delivery using the available resources. Among these resources it is known that competent and motivated laboratory personnel are the most important primary assets. Therefore, the current study assesses the existing training and development opportunities available for medical and clinical laboratory professionals and its influence on performance of employees in relation with satisfaction, motivation and engagement of these employees in public hospitals in Addis Ababa.

2.6 Conceptual Framework of the study

The conceptual framework is developed to study the effect of training and development through job satisfaction, motivation and engagement of employees on their performance. The framework relates the independent and dependent variables as depicted in Figure-1 below. The independent variables is training and development first measured through its effect on job satisfaction, motivation and engagement of employees and respondents are inquired how training and development programs influence their job performance (dependent variable). Then after, the relationships between the independent variable training and development influence variables are correlated against the performance of employees (dependent variable).

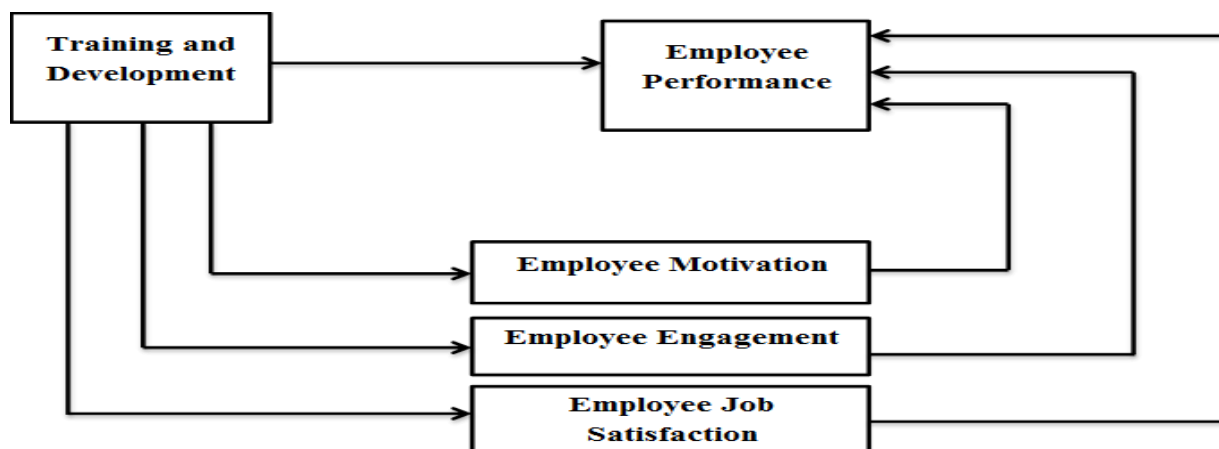


Figure-1: Conceptual frame work of the study, from March 02, 2021 to April 28, 2021, Addis Ababa

3 OBJECTIVE

3.1 General Objective

The main objective of this research was to assess the role of training and development programs on employee performance among Medical Laboratory professionals working in public hospitals in Addis Ababa, Ethiopia from March 02, 2021 to April 28, 2021

3.2 Specific Objective

In order to achieve the general objective, the following specific objectives were attained as a strategy:

- To evaluate the influence of training and development on job satisfaction of medical laboratory Professionals.
- To evaluate the influence of training and development programs on engagement of medical laboratory Professionals.
- To evaluate the influence of training and development programs on motivation of medical laboratory Professionals.
- To explore the effects of the current training and development programs on performance of medical laboratory Professionals.
- To assess job satisfaction, motivation and engagement factors effect to wards performance of medical laboratory Professionals.

4 METHODS AND MATERIALS

4.1 Study Area

This study was conducted in Addis Ababa city. The study was conducted in 14 public hospitals in Addis Ababa city. Addis Ababa is the capital city of Ethiopia, seat of African Union and Economic Commission. It is located in the geographic center of the country and covers a landmass of 540 sq. km. It is administratively sub-divided into 10 sub cities and 116 woredas with total population of 3.6 million. The city has 14 public hospitals; six under Addis Ababa Health Bureau (AHB), six under Federal Ministry of Health (FMO), and two under Ministry of defense providing teaching, specialized, and referral services. From 14 government hospitals, 1 hospital was excluded from the final study which is used for pre testing of questioners and the others 13(thirteen) were included in the study (*Annex I*). Hospitals in Addis Ababa are not only limited to providing services for the people residing in the city, but also to significant number of population in the surrounding areas outside of the city and other regional states. As the city is the center of the country in many socio-economic aspects of peoples' life and due to the expectations of better health services from those hospitals become overcrowded.

4.2 Study Design and Period

This study was employed a cross-sectional survey design. The current study has been conducted from March 02, 2021 to April 28, 2021. The survey data used in the current study also has been collected during this period.

4.3 Population of the Study

4.3.1 Source Population

The source population of study in this research was all the 14 public hospital laboratories in Addis Ababa city.

4.3.2 Study Population

A study population in this research was medical laboratory professionals from those government hospital laboratories who meet the inclusion criteria.

4.4 Inclusion and Exclusion Criteria

4.4.1 Inclusion Criteria

Medical laboratory professional with in the public hospital laboratories and to be participated in the study, should be employee of the public hospitals in Addis Ababa with full time recruitment agreement with work experience above 6 months.

4.4.2 Exclusion Criteria

Private hospitals and those employees did not include in this study. Moreover contract employees of the public hospitals medical laboratory professionals and those on the temporary were excluded from this study.

4.5 Study Variables

4.5.1 Dependent Variable

The dependent variable in this research is Employee performance

4.5.2 Independent Variables

The independent variables are training & development with the mediator variables of job- satisfaction, motivation and engagement of employees resulted from training and development programs which will ultimately lead to better employee performance.

4.6 Sample Size Determination and Sampling Techniques

4.6.1 Sample Size Determination

According to Blanche, Durrheim and Painter, a *rule of thumb* sample size determination technique states that, if the populations of a study are less than 1000, a sample size of 30% of the population is sufficient to represent the whole population (94). This sample size determination technique is appropriate for this research due to the target population size <1000 (i.e. 345). The total number of medical laboratory professional in public hospitals in Addis Ababa is 345. Accordingly, 30% of the total population equals:

$30/100 \times 345 = 103.5$ and the sample size of the study is 104 medical laboratory professionals (Refer to Annex I).

4.6.2 Sampling Technique

The sampling design of this research is random sampling technique. All the public hospitals in Addis Ababa city are the source population of the study from which the study sample units are selected using lottery random sampling technique. First, the 30% of respondents from each hospital were calculated. Then after, based on the preliminary concept about this population the researcher has selected respondents randomly based on each laboratory management document with list of medical laboratory professionals available as a sampling frame (Annex I).

4.6.3 Data Collection Procedure

Since this research approach is quantitative study in nature with a cross-sectional survey design data from public hospitals medical laboratory professionals were collected by administering the questionnaires as a drop and pick strategy. The data collection questionnaire was adapted from standardized instruments used in previous studies that were developed by different researchers in the area of employee Engagement, satisfaction, motivation, commitment, retention and performance. Prior to collecting the data of the study, pilot-test has been conducted on limited participants ($n = 31$ out of 104) which means the 30% of the final 30% sample population (104 out of 345) to check the reliability and validity of the adapted questionnaire. Data management was followed in the way on time communication, data handling, data editing and data entry...etc.

4.6.4 Data Collection Instrument

The data collection instrument of this study was structured and semi-structured (for the purpose of further categorization) questionnaire. The semi-structured questionnaire has four sections. Parts of the questionnaire include: demographic information, training & development related items, and the structured questionnaire about employee job satisfaction, Employee motivation, employee engagement and performance in relation T & D respectively. The demographic information measures the background of participants such as gender, age, marital status, educational level, management level, work

experience, training participation, educational opportunity and so on. The rest three parts of the questionnaire are Likert scale items with five-point scale that begins with strongly disagrees, disagree, neutral, agree and strongly agree respectively, that measure the relationship between training and development and employee motivation, employee job satisfaction and employee engagement and performance.

4.7 Data Quality Assurance

The consistency of the items (readability) and whether the items are measuring the variables they are supposed to measure (validity) were tested (95). To achieve the purpose of this research, validity and reliability of the data gathered through the questionnaire were tested. Reliability of the data was checked using Cronbach alpha coefficient, as Creswell and Creswell (2018) has suggested the reliability coefficient of a scale with optimal values ranging between 0.70 and 0.90 or statistically significant coefficient value at level $p \leq 0.05$ (96).

While, content validity of the questionnaire was checked during the pilot-test through feedback from the pilot respondents and panel discussion with expert on the content of the questionnaire prior to collecting the final data. The content and construct validity of the scales that measure each variable was tested by a group of three panel experts and their rating was analyzed using correlation test and Kuder Richardson consistency test (97). The internal validity of the questionnaire was tested by measuring the inter-correlation of major variables among each other (98). Therefore, pilot data was collected to test the reliability and validity of the data collection instrument and the outcome of the pilot test are reported in the following subsection.

4.7.1 Pilot Test

Creswell and Creswell (2018) argue that pilot testing is important to establish the content validity of scores on an instrument; to provide an initial evaluation of the internal consistency of the items; and to improve questions, format, and instructions. It also provides an opportunity to assess how long the study might take and to identify potential concerns of respondents.

The pilot test participants ($n = 31$, 32%) were medical laboratory professionals from one of those public hospitals selected based on lottery method. And the data collection questionnaire was revised to incorporate pilot participants' comments and included final instrument revision prior to beginning of data collection. Pilot test respondents were 61.3% male and their management level include Front Line Service Providers, section supervisors, Lab Managers and Store Manager with rates of 64.5%, 25.8%, 6.5% and 3.2% respectively. Pilot test participants' educational background distributed along diploma ($n = 5$), Bachelor degree ($n = 18$) and Master's degree ($n = 8$) holders. The participants who have got training and educational opportunities were 41.9% ($n = 13$) and 45.2% ($n = 14$) respectively.

4.7.2 Reliability Analysis

Internal consistency of questionnaire items has been measured using Cronbach Alpha reliability test. The internal consistency coefficient r , of the sub-variables are within the acceptable correlation strength range which vary from 0.70 to 0.89 and internal consistency of the main variables that is, Employees' motivation and job satisfaction have 12 items each while engagement and performance of employees have 9 and 3 items each respectively. Produced correlation coefficients of $r = 0.89$, $r = 0.88$ $r = 0.88$ and $r = 0.82$ respectively, while the overall internal consistency showed excellent strength of correlation coefficient, $r = 0.95$, all at significance level of $p < 0.01$.

4.7.3 Validity Analysis

According to Kothari (2004), "content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study" Whereas, a measure is said to possess construct validity to the degree that it confirms to predicted correlations with other theoretical propositions or correlations among major variables of the instrument (98). First, the questionnaire items were revised based on feedback acquired from pilot study participants. Secondly, since the objective of the current study is to assess role of training and development on performance of medical laboratory technologists in public hospitals in Addis Ababa, a group of three panel experts have revised the scale items ($n = 48$) and rated each item using a dichotomous yes and no (1, 0) values. If a rater agrees on an item provides a score of 1 for yes and if an item requires revision the rater gives a value of 0. Then after, the experts discuss on the items that they disagreed and the items have been revised accordingly. The outcome of the three panel

experts was analyzed using Kuder-Richardson reliability test that provided strong correlation coefficient $r = 0.92$. The correlation coefficient among the three experts has produced statistically significant values that vary from 0.70 to 0.92 with $p < 0.01$. This indicates content validity is good due to the instrument contains a representative sample of items that can assess the relationship between training and development and employee performance in through employees' job satisfaction, motivation and engagement (98).

To measure the constructive validity of the instrument, the three major variables job satisfaction, motivation and engagement of employees as a result of training and development were correlated each other and the output indicated that the three variables have statistically significant correlation coefficients, $r = 0.61, 0.66$ and 0.89 with $p < 0.01$. The significant correlation coefficient shows that the instrument has good construct or internal validity.

4.8 Data Analysis and Presentation

The collected data was analyzed using a computer program known as Statistical Package for Social Science (SPSS) version 20 and several data analysis techniques that were employed as per the research questions and objectives of the study. Descriptive data analysis was used to describe the demographic information, availability of training and development programs and the major variables using techniques such as frequency distribution, mean, standard deviation....and presents in table, graph and exploration in accordance. Correlation analysis technique was utilized to measure the relationships between employees' performance and major variables (job satisfaction, motivation and engagement of employees in relation to training and development programs). Multiple regression analysis technique is utilized to test the effect of training on employees' performance.

Prior to conducting any multiple linear regression analysis, certain basic assumptions of multiple linear regressions have been checked. These basic assumptions include: linear relationship between the two variables, no significant outliers, independence of observations, non-multi-collinearity, homoscedasticity and approximately normal distribution of the graph of residuals (errors) of the regression. In order to check the assumptions, all independent variables have been entered as one block in the regression and performance of employees as dependent variable. The outputs of the analysis have been checked for

fulfillment of preconditions of the multiple linear regressions. Homoscedasticity is that regression standardized residuals do not vary systematically with the predicted values by plotting the residuals against the values predicted by the regression model, the scatter plot between residuals and predicted values varies randomly, not systematically (Refer Annex II).

Normality – the residuals should be normally whereas, linearity – the residuals should have fairly straight-line relationship with predicted DV scores—employee performance. Besides, these set of assumptions can be examined to a fairly satisfactory extent simply by plotting scatterplots of the relationship between each explanatory variable and the outcome variable (Annex II).

Multiple linear regression analysis are expected mainly to conduct Collinearity diagnostics, which enables to detect inflated linear relationship that give two values—Tolerance and VIF (variance inflation factor) and both are related to each other in the way that tolerance is just the reciprocal of VIF. Tolerance, which is simply $1 - R^2$, very low values of tolerance (0.1 or less) indicate a problem. Very high values of VIF (10 or more, although some would say 5) indicate a problem.

According to Gaur and Gaur, once multi-collinearity is detected in the model, the regression coefficients are likely to be meaningless. One may consider removing some independent variables, which are highly correlated to reduce multi-collinearity or standardizing/transforming the predictor variables (99). A value of VIF higher than five (or Tolerance less than 0.2) indicates the presence of multi-collinearity while in social sciences research, a VIF value as high as 10 is considered to be acceptable (99). Therefore, in the current analysis, the test results of collinearity values of minimum and maximum of each tolerance and VIF (0.23 to 0.51 and 1.97 to 4.41) respectively, indicate no problem of multi-collinearity. Another simplest way to ascertain whether or not our explanatory variables are highly correlated with each other is to examine a correlation matrix. If correlations are $r \geq 0.80$ then we may have a problem, but no such strong relationship among the explanatory variables have been detected.

4.9 Ethical Consideration

First the ethical clearance was issued from the college and consequently from the concerning organizations like Addis Ababa health bureau. Ethical issues like willingness, confidentiality, fairness and culture were fully assured. The contents in the questionnaire are made easy and arranged with in the

culture of employees' and organization for the sake of fairness of the questions including to do not lead wrong answer so as to avoid abuse of the participant organization and this was communicated with participants and informed consent form was provided to the public hospitals. In this research context, respondents of the questionnaire were asked for their willingness to take part in the study with the understanding of the purpose of the research and confidentiality of the information they provide and their identity was secured through using anonymous coding etc.

4.10 Operational Definition of Terms

- i. **Employees:** refer to civil servants who worked in public health laboratory on the bases of permanent salary payment and are used interchangeably with medical laboratory professionals, or MLTs or personnel.
- ii. **Public Hospitals:** refer to the hospitals that are run by the Federal Government and Addis Ababa City Administration. That means private owned hospitals are not included in this study.
- iii. **Job satisfaction:** Perceived belief of medical laboratory professionals towards their coworkers, pay and promotion, opportunity to use their skill and the work activity.
- iv. **Motivation:** Medical laboratory professional's perception of the motivating factors like recognition, organizational mission, leadership and the importance of the work.
- v. **Engagement:** Medical laboratory professional's commitment towards a change process, innovation, excitement to go work daily.
- vi. **Performance:** The measure employees perceived level activities.

5 RESULTS AND INTERPRETATION

5.1 Socio-demographic Information of the Study Participants

The total number of respondents was 104 and participants of the study were medical laboratory professionals (MLTs) from 13 public hospitals in Addis Ababa city, Ethiopia.

Regarding sex of the participants, the number of male and female participants have almost equivalent frequency of $n = 53$, 51% and $n = 51$, 49% respectively. The mean age of the participant is $M = 32.00$ with $SD = 6.42$. Participants' marital status distribution of the study participants indicates that single ($n = 54$, 52%) and married ($n = 47$, 45%). The majority of respondents ($n = 47$, 45.20%) have a work experience in medical laboratory profession ranges from five to eight years, while about a third (33.65%) of the participants have total work experience of nine or more years of job experience. On the contrary, the work experience in current public hospital frequency shows that more than half of the participants (51%) have worked from one up to four years followed by 45% from 5-8 years. Educationally, 69.2% of the participants are bachelor degree holder, the management level frequency indicates that 60.6% of the respondents are front line service providers (refer Table-1).

Table-1: Socio-demographic information of participants (N = 104), from March 02, 2021 to April 28, 2021, Addis Ababa

Sex	n	%
Male	53	51.0
Female	51	49.0
Age	Mean	SD
	32.00	6.42
Marital Status	n	%
Single	54	51.9
Married	47	45.2
Separate	1	1.0
Divorced	2	1.9
Educational Background		
Diploma	14	13.5
Bachelor	72	69.2
Master's Degree	17	16.3
PhD Degree	1	1.0
Total Work Experience	n	%
1-4 Years	22	21.15
5-8 Years	47	45.20
9-12 Years	17	16.34
Above 12 Years	18	17.31
Current Job Exp.	n	%
1-4 Years	53	51.00
5-8 Years	47	45.20
9-12 Years	17	16.34
Above 12 Years	6	5.76
Management Level	n	%
Front line service provider	63	60.6
Section supervisor	20	19.2
Other	20	19.2

5.2 Availability of Training and Development Opportunities

As indicated in table-2 and respective graph, (n = 90, 86.5%) of the participants have been at least once exposed to on job training program. In contrast, the number of participants who have got the

opportunity of higher educational development is lower (20.2%, n = 21) in comparison to on the job training opportunities. Of those who have got educational opportunities, 12 participant were trained on Microbiology (11.5%) and the rest have learned on Hematology (n=2, 1.9%) Lab management (n=1, 1.0%), Chemistry (n=1, 1.0%) and other field (n=2.9%) in their respective order.

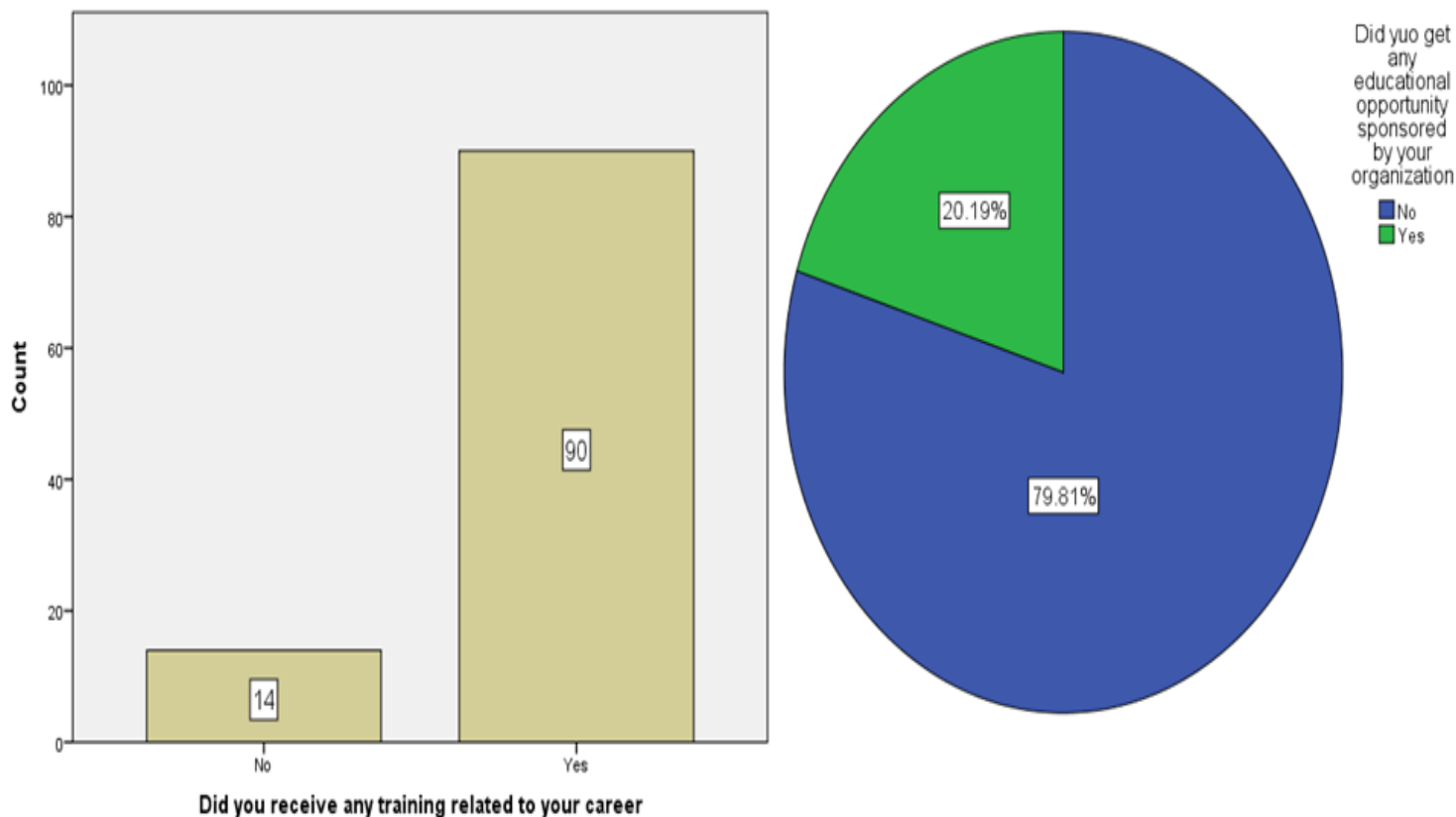


Figure-2: Training and Development opportunities availability for medical laboratory professionals from March 02, 2021 to April 28, 2021, Addis Ababa

The number of trainings provided to medical laboratory professionals shows that those individuals who took twice and three times on job training have equal rates (i.e. 17.3%, n = 18). Those respondents who have got once, four, five and more than five times on job training opportunities have frequencies of 15, 14, 9 and 16 respectively (refer Figure-3 below).

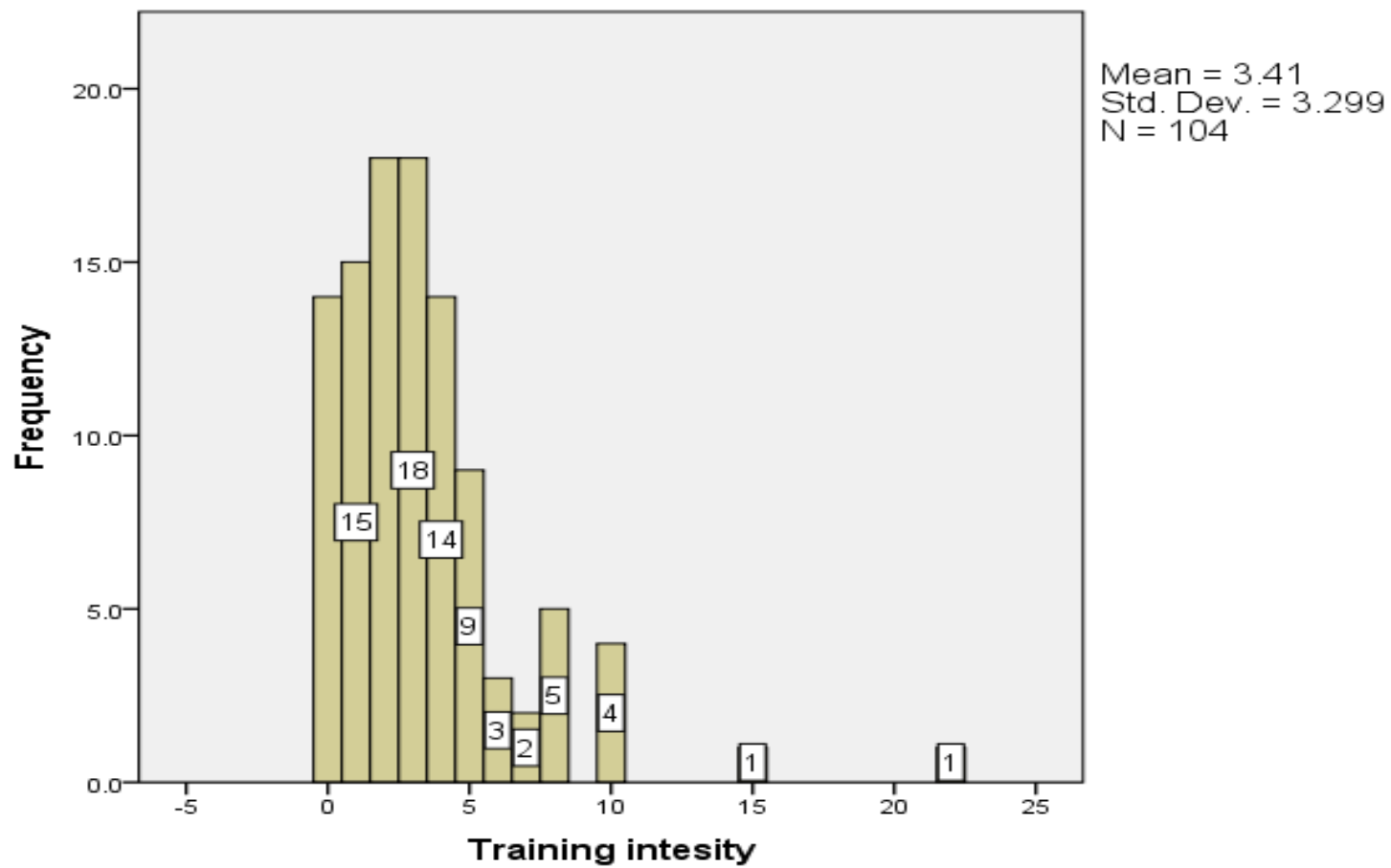


Figure-3: On job training intensity of medical laboratory professionals' from March 02, 2021 to April 28, 2021, Addis Ababa

With regards recent on job training exposure, it indicates that 35 (33.7%), 32 (30.8%) and 22 (21.2%) respondents have taken on job training in the last 12 months, in the last Two years and in the last 3 years respectively (refer Figure-4).

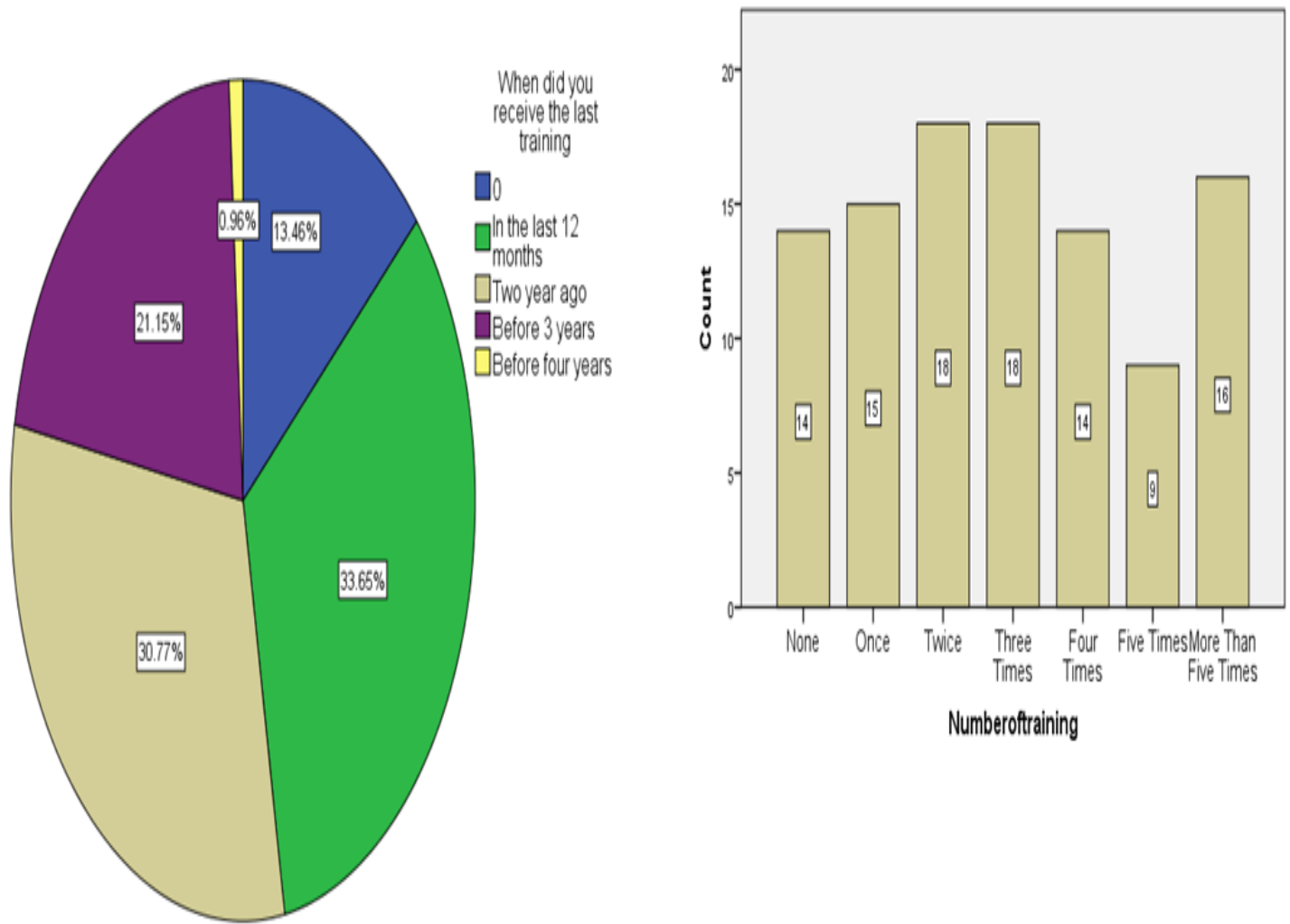


Figure-4: Recent on job training update opportunity and Frequency from March 02, 2021 to April 28, 2021, Addis Ababa

Table-2: Description of Training and Development programs in public hospitals, (N = 104), from March 02, 2021 to April 28, 2021, Addis Ababa

Training Opportunity	n	%
No	14	13.5
Yes	90	86.5
Educational Opportunity	n	%
No	83	79.8
Yes	21	20.2
Field of Study	n	%
Microbiology	12	11.5
Hematology	2	1.9
Lab management	1	1.0
Chemistry	1	1.0
Other	3	2.9
None	85	81.7
No. of Training taken	n	%
None	14	13.5
Once	15	14.4
Twice	18	17.3
Three Times	18	17.3
Four Times	14	13.5
Five Times	9	8.7
More Than Five Times	16	15.4
Latest Training Period	n	%
None	14	13.5
In the last 12 months	35	33.7
In the last Two years	32	30.8
In the last 3 years	22	21.2
In the last four years	1	1.0

5.3 Influence of Training and Development on Satisfaction, Engagement and Motivation of Employee

5.3.1 Role of Training and Development on Job Satisfaction of Employees

Medical laboratory professionals were asked to respond on 12 items with four sub-dimensions of job satisfaction (i.e. work relationship, using own initiative and skills, pay and promotional potential and work activities) to assess the role of training and development on their job satisfaction. As displayed in table-3, more than half of the participants on average ($M = 3.47$) have agreed that they are satisfied on their relationships with coworkers, immediate supervisors and clients due to the training and development programs received in their respective public hospitals. Missed values for the items were in consideration and calculated accordingly.

Of the four sub dimensions of job satisfaction measures, participants' responses show that averagely 63% ($n = 65$) of medical lab professionals have agreed that training and development programs influence their satisfaction in using their own initiative and skills in the workplace. Regarding respondents' satisfaction with pay and promotional potential, 41.4% ($n = 43$) of respondents satisfied, 30.8% ($n = 32$) dissatisfied and 26.9% ($n = 28$) neutral on the influence of training and development on the salary they receive. However, 53.9% ($n = 56$) and 57.7 ($n = 59$) of the respondents believe that on job training helps employees to get recognition and promotion successively.

The most prevalent reported item on the influence of training and development on respondents' satisfaction was that 68.3% of ($n = 71$, $M = 3.75$) respondents agreed their satisfaction with opportunity to learn new skills. Moreover, more than half ($n = 59$) of the respondents have reported that training and development programs have positive effect on their satisfaction with work activities. Whereas, 15 participants disagree and 30 individuals were neutral on the positive impact of training and development with their satisfaction of work activities.

Table-3: Descriptive analysis of training and development in relation with Employees Job Satisfaction, (N = 104), from March 02, 2021 to April 28, 2021, Addis Ababa

Employee Job Satisfaction Items	Disagree n (%)	Neutral n (%)	Agree n (%)	Mean
Satisfaction with work relationship				3.47
Satisfaction with relationship with coworkers	18(17.3)	25(24.0)	59(56.7)	3.50
Satisfaction with immediate supervisor	19(18.3)	26(25.0)	58(57.8)	3.41
Satisfaction with organization customer	19(18.3)	23(22.1)	59(56.7)	3.51
Satisfaction with scope of using own initiative and skills				3.67
Satisfaction related to using skill and talent better	16(15.4)	24(23.1)	64(61.6)	3.66
Satisfaction with opportunity to learn new skills	13(12.5)	19(18.3)	71(68.3)	3.75
Increased desire for additional training and learning	20(19.2)	21(20.2)	61(58.7)	3.61
Satisfaction with pay and promotional potential				3.34
Employee trainings at the laboratory leads to better salaries	32(30.8)	28(26.9)	43(41.4)	3.03
Employee trainings offer opportunities for staff promotions	17(16.3)	26(25.0)	59(57.7)	3.56
My work at the laboratory are now reorganized due to	17(16.3)	29(27.9)	56(53.9)	3.42
Satisfaction with work Activities				3.51
Satisfaction with opportunity of assigned in variety	14(13.4)	34(32.7)	56(53.8)	3.43
Satisfaction with opportunities that empower staff to	14(13.5)	28(26.9)	62(59.6)	3.59
Satisfaction with opportunities for periodic change in duties	16(15.4)	28(26.9)	60(57.6)	3.51

5.3.2 Influence of Training and Development on Motivation of Employees

Table-4 demonstrates the descriptive analysis of employee responses on influence of training and development on motivation of employees. More than 50% of study participants have agreed that training and development programs in their workplace enhances their motivation due to recognition their activities through assignment in important tasks, accomplish tasks thoroughly and become more responsible in their job tasks. Around a quarter of participants were neutral on their response and less than 15% of the respondents have disagreed that training and development in their workplace do not make them to get recognition that motivates them to perform.

Furthermore 70% of the respondents have reported that training and development motivates them to align with the mission of the public hospitals that enables them to contribute to the organizational goals, improve their skills on future thinking and contribute to the vision health services. Besides, this sub

dimension of motivation is the most prevalent rate that respondents agreed on the influence of job training on motivation of employees and only 30% which shared equally by the disagree and neutral responses. In responding on the contribution of training and development programs on motivation through leadership style, 43.3% (n= 45) participants agreed that their supervisors have adequate training to treat their subordinates and they focus more on the strength rather than weakness of employee during appraisal. Similarly, 45.2% (n =47) of the respondents witnessed that their supervisors have adequate training to accept suggestions from their subordinates. In contrast, more than a quarter of the respondents do not believe that their supervisors appropriate to training to treat, positively evaluate or accept suggestions of subordinate employees.

In relation with employees' motivation, more than half of the participants reported that existing training and development programs in public hospitals have helped them to become interested and passionate on their job tasks, carry out their job duties comfortably and accomplish their tasks timely. However, over a quarter of the respondents reported that training programs neither motivate employees to their work-related activities nor accomplish their tasks on time (see Table-4) in consideration of the missed value.

Table-4: Descriptive Analysis of training and development in relation to employee motivation, (N = 104), from March 02, 2021 to April 28, 2021, Addis Ababa

Training and Development and Employee	Disagree	Neutral n	Agree	Mean
Motivation through recognition				3.45
After undergoing career related learning, now I can	14(13.5)	31(29.8)	58(55.7)	3.45
My training within the organization now gives me the	20(19.2)	29(27.9)	54(51.9)	3.36
I now take personal responsibility for my job outcomes	16(15.4)	23(22.1)	64(61.5)	3.57
Motivation by organization mission				3.72
Training and development opportunities enabled me to	16(15.4)	16(15.4)	70(67.3)	3.64
Developmental activities at this work place improves	16(15.3)	14(13.5)	71(68.3)	3.68
Training motivates staff to fulfill organizational vision	11(10.6)	18(17.3)	73(70.2)	3.83
Motivation through leadership style				3.18
My line supervisors have been trained on how to treat	25(24.0)	28(26.9)	45(43.3)	3.20
The organization leaders are sufficiently trained on how	26(25.0)	29(27.9)	45(43.3)	3.13
The organization leadership are well trained on how to	28(26.9)	26(25.0)	47(45.2)	3.21
Motivation through work itself				3.52
Now find my work more interesting and passionate due	11(10.6)	29(27.9)	61(58.7)	3.54
Training has empowered me to carry out my duties	14(13.4)	32(30.8)	55(52.9)	3.47
I can now complete my tasks in time after taking related	16(15.3)	24(23.1)	62(59.6)	3.56

5.3.3 Influence of Training and Development on Engagement of Employees

The influence of training and development on engagement of employees has been measured using three sub dimensions including engagement during change, innovation, and employee enthusiasm, which comprised of three items each. Above half of respondents (58%, n = 60) of the study reported that training and development programs in the public hospitals direct impact on employees' engagement during change committing themselves to accept changes, new task and cooperate with coworkers. Conversely, about 20% of the respondents do not believe training and development have positive impact on employees' engagement during change and equivalent numbers of respondents remain neutral. Engagement of employees during innovation has been measured using three items that impacts employees to proactively identify future challenges and opportunities; to become empowered when things gone tough; and to adapt in difficult situations. Missed values for the items were in consideration and calculated accordingly.

Comparable number of respondents (57%) also agrees that training and development has positive influence on engagement of employees during innovative process in medical laboratories of public hospitals. Whereas, around 17% disagree benefits of training and development in engaging employees during innovation and about a quarter of the professionals oppose to take either side. In responding to the items that state if training and development enhances enthusiasm of employees to engage in their work related activities, significant number of the MLTs have agreed to the three items that makes employees more excited about going to work, become more involved and inspired to their goals at job tasks with 52.9% (n = 55) for the two former items and 56.8% (n = 59) to the latter respectively. In contrary, less than a half of the respondents have either disagreed or remained neutral equivalently, to accept that training and development enriches staff enthusiasm to engage in their job tasks (refer table-5 below).

Table-5: Descriptive analysis of training and development in relation to Employees Engagement, (N = 104), from March 02, 2021 to- April 28, 2021, Addis Ababa

Employee Engagement Items	Disagree	Neutral	Agree	Mean
Training and employee engagement in change				3.45
Personal development has improved my willingness to	20(19.2)	23(22.1)	61(58.7)	3.43
More willing to take new task due training and	19(18.45)	25(24.27)	59(57.28)	3.44
Staff training enhances my commitment to help others	20(19.42)	23(22.33)	60(58.25)	3.47
Training and employee engagement in innovation				3.48
personnel training at this facility allow employees to	17(16.3)	27(26.0)	59(57.25)	3.49
Training and development at the facility empowers	17(16.3)	26(25.0)	59(57.27)	3.51
In this laboratory employees adapt to difficult	19(18.3)	22(21.2)	61(59.22)	3.43
Training and employee enthusiasm				3.33
I get more excited about going to work daily due to	25(24.0)	24(23.1)	55(52.9)	3.30
staff training and development activities at this	22(21.2)	27(26.0)	55(52.9)	3.31
I'm more inspired to my goals at work due to staff	22(21.2)	23(22.1)	59(56.8)	3.38

5.4 Influence of Training and Development on Employee Performance

5.4.1 Description of Employee Performance

Table-6 demonstrates response of MLTs from public hospitals related with the influence of training and development on performance of employees using three items inquiring participants if training and development positively impacts to provide more focus and best effort on their work tasks as well as accomplish their job tasks on time. Generally, 57.7% (n = 60) of the participants reported that they believe that the training and development programs in healthcare facilities enhances employees to provide better performance in their work tasks. In contrast, equivalent number of the respondents (21%, n = 22) either disagreed or undecided to approve training and development facilities positively impact performance of medical laboratory employees.

Table-6: Descriptive analysis of Training and Development in relation to Performance of Employees (N=104), from March 02, 2021 to April 28, 2021, Addis Ababa

Training and Development and Employee	Disagree	Neutral	Agree		
Currently I am completely focused on my work	23(22.1)	23(22.1)	57(54.8)	3.38	1.09
Training opportunity in this facility has made me give the	23(22.1)	19(18.3)	61(58.7)	3.38	1.06
Learning opportunities in this organization make me more	19(18.3)	22(21.2)	62(59.6)	3.49	1.06

5.4.2 Relationship between Variables resulted from Training and Development and Employee Performance

In order to assess influence of training and development on performance of employee, first, it is important to understand the relationship between the variables resulted from training and development and employee performance reported by MLTs. As indicated in Table-9 below, all of the three variables resulted from training and development (job satisfaction, motivation and engagement of employees) have statistically significant correlation with employee performance with correlation coefficients, $r = 0.62, 0.77$ and 0.79 at $p < 0.01$. This means that these training and development factor variables can be used to predict the influence of training and development on performance of employees.

Table-7: Correlation between Training and Development Influences and Performance of Employees, from March 02, 2021 to April 28, 2021, Addis Ababa

Variables resulted from Training and Development		<i>p</i>
Job Satisfaction from Training and Dev.	0.62	<i>0.001</i>
Motivation from Training and Development	0.77	<i>0.001</i>
Engagement from Training and Development	0.79	<i>0.001</i>

5.4.3 Influence of Training and Development on Performance of Employees

Once the assumptions and necessary preconditions checked, the multiple regression analysis training and development influenced variables as predictor variable and performance of employees as criterion/dependent variable. As indicated on table-8 below, the multiple regression output of the

ANOVA section shows that the F-ratio value of the model $F(3,103) = 66.26$ at $p < 0.001$, which indicates that the regression model fitness acceptable because it gives statistically significant values greater than its respective F-ratio much more less than the standard 0.05 p-values.

Table-8: Multiple Regressions of training and development Influences versus Employee Performance from March 02, 2021 to April 28, 2021, Addis Ababa

Predictor Variables	Better Employee Performance						
	<i>F</i>	<i>R</i>	<i>R</i> ²	<i>Correlation</i>	β	<i>t</i>	Tolerance VIF
	66.26**	0.82**	0.67**				
-job-satisfaction				0.62**	0.115	1.42	0.51 1.97
-Motivation				0.77**	0.279	2.30*	0.23 4.41
-Engagement				0.79**	0.478	4.15**	0.25 3.97

Note: **. Significant at $p < 0.01$ and *. **Significant** at $p < 0.05$ (both 2-tailed).

Therefore, these statistically significant values of F-ratio give us an assurance that the regression models can be used to predict the employee performance in MLTs using the training and development factor variables such job satisfaction, motivation and engagement of employees. Consequently, the model demonstrated correlation coefficient value of $R = 0.82$ and coefficient of determination, $R^2 = 0.67$, $p < 0.01$ tells us that the collective contribution of training and development factor variables - job satisfaction, motivation and engagement of employees - to the regression model accounts 67.0%. This means that the these variables have joint 67.0% contribution to the model, meaning one way or another, predict performance of MLTs in public hospitals in Addis Ababa. In order to retain the regression coefficients (β) of each predictor variables we take those coefficients (β) with statistically significant t-test values with $p \leq 0.5$. Accordingly, motivation and engagement resulted from training and development that have statistically significant values with $\beta = 0.279$, at $t = 2.30$, $p < 0.05$ and $\beta = 0.478$, at $t = 4.15$, $p < 0.01$ respectively. However, employee job satisfaction due to training and development did not show statistically significant predicting power of performance of employees (refer Table-8 above). This means that motivation and engagement resulted from training and development have direct influence on performance of employees and can be used as predictors of employee performance

6 DISCUSSION

The findings of the study showed that training and development programs in public hospitals have direct and statistically significant influence on satisfaction, engagement and consequently on job performance of employees. Previous studies indicate that strategic and effective training and development programs have significant positive influence on employees' motivation, satisfaction, engagement and job performance (87-88). For example, two studies examined the impact of various training programs on the business and financial results showed that in most cases a well-designed training program can be linked to improvements in business results and extensive training produced a gain of nearly 6% in value added per employee (87).

Influence of Training and Development on Job Satisfaction of Employees

Regarding to medical lab professionals' job satisfaction due to training and development assessment based on four sub dimensions such as autonomy to use their own initiative and skills, pleasure with work activities, relationships in workplace, pay and promotional potential shows significant agreement rates in their decreasing order respectively. A study conducted on seven countries of Sub-Saharan Africa showed that training and professional development was rated the highest 90% (195/224) for positively influencing job satisfaction of medical laboratory professionals (50). Similarly, other studies found out those facets such as: training, promotion, pay job safety and security, working conditions, job autonomy, relationships with co-workers and supervisors and nature of work have direct impact on job satisfaction and performance of employees (36; 103). Others also claim Job satisfaction has a multifaceted construct that includes both intrinsic (ability utilization, achievement, authority, responsibility) and extrinsic (compensation, advancement, workplace relationships etc.) job factors (36). However, the rate of agreement on the satisfaction dimension related with pay and promotional potential (n = 52, 50.6%) in general, on an item that of training and development leads to better salaries (n = 43, 41.4%) in particular are lower than the other sub-dimensions. Similarly, a study on health professionals in Jimma hospital, Ethiopia showed that 46.2% (N =145) of the respondents were dissatisfied with their job due to extrinsic factors of job satisfaction such as housing, incentives using top up, and free health care, bureaucratic constraint in relation to further education, and lack of promotion (51).

Influence of Training and Development on Motivation of Employees

Descriptive analysis of training and development and four dimensions of motivation through organizational mission, work itself, recognition and leadership style shows that more than half of MLTs' agree to the impact of training and development on their motivation successively in their decreasing order. Several studies indicate that motivation positively influence employees in their job performance, if they receive appropriate training and development opportunities (54-55). For example, a study on employees of ALERT, Addis Ababa, Ethiopia indicated that more than half (n = 60) of the respondents agreed that the training and development they have taken in ALERT gave them the necessary skills to work in tasks in a motivated manner, whereas, 25.6% of the employees were neutral and the rest 22.2% disagreed on the influence of training and development in their motivation (56). In contrary, other studies have reported that training is not a meaningful predictor of employees' motivation and firm performance; similar to the lowest rate (n = 45, 44.2%) observed in this study training and development influence on motivation through leadership style (57 & 58).

Influence of Training and Development on Engagement of Employees

Investigation of training and development influence on engagement during change, innovation, and through employee enthusiasm showed that 58% (n = 60) of the MLTs agreed that that training and development programs have direct impact on engagement of employees. Training and career development is one of these main dimensions which are considered in the process of engaging employees since it helps the employees to concentrate on a focused work dimension (75 & 70). However, Fleming and McConnell claim that in many instances training and development programs receive minimal attention from managers and supervisors in healthcare organizations. Simply reminding department managers that they have a responsibility for employee development is insufficient, as in the current study MLTs responses on their supervisors' training competence indicates lowest rate. Instead, managers and supervisors should be strategically and effectively trained to view training and development programs are critically important because it keeps maximizing employee engagement and that makes them valuable employees, interested, challenged and engaged (83).

Influence of Training and Development on Performance of Employees

Descriptive assessment of employees' performance shows that around 60% of the respondents agreed that their performance has been enhanced due to the training and development programs in the public hospitals. Moreover, correlation analysis between job satisfaction, motivation and engagement of employees resulted from training and development programs with performance of MLTs produced positive and statistically significant output. However, estimating the prediction power of these variables on job performance of MLTs using multiple regressions shows that job satisfaction and engagement of employees due to training and development have direct and statistically significant impact on MLTs' job performance. Similarly, many empirical studies on various industries show that training and development programs have direct influence not only on the performance of employees but also on business performance of organizations (91 - 92).

Despite its statistically significant correlation with performance of employees, motivation due to training and development does not predict the performance of the MLTs. This insignificant predicting power of motivation on performance of MLTs might be due the lower rate of agreement of respondents on motivation through leadership style items that inquires if supervisors have adequate training: to treat subordinates equitably with respect, to focus on strengths rather than weaknesses and to recognize staff suggestions. This result agrees with a study in sub-Saharan Africa countries on performance of laboratory professionals showed that laboratories have constituted one of the weakest areas in health systems and they have suffered from: inadequate infrastructure, limited funding, and lack of qualified human resources. These deficiencies hinder the performance of laboratory health workers and that of public health laboratories.

7 LIMITATIONS AND STRENGTH OF THE STUDY

7.1 Strength of the Study

As the objective of the study was to assess the influence of training and development on performance of employees, the strength of this study was that it enables to assess training and development programs availability in public hospitals, how these programs influence employees' job satisfaction, motivation and engagement and consequently performance of medical laboratory professionals. Furthermore, the current study included many core variables that might influence job performance of employees simultaneously as well as provides various data pattern for the management researcher.

7.2 Limitation of the Study

Despite the above strengths, the current study has several limitations. First, due to lack of transparent and formal employee performance appraisal procedures that lead to strategic and effective training and development programs, the relationship between training and development programs and performance of the medical laboratory professionals was assessed indirectly. This means, first respondents were inquired to rate the influence of training and development programs in their job satisfaction, motivation and engagement. Then after medical lab professionals perception of their performance as a resulted of training and development programs available was measured. Finally, to examine the influence training and development on performance of employees, these two responses were compared using correlation and multiple regression statistically techniques. However, other studies also utilized similar indirect method to assess the impact of training and development on performance of employees using these variables- job satisfaction, motivation and engagement (101) or as mediators or moderators (55).

Second, the current study used a cross-sectional design, and accordingly direct causality was the limitation. The cross-sectional design of the present study does not provide clear information on the accurate directions of relationships between the variables of the study. Instead, the study results report levels of association and prediction only. The third limitation of the study is that it only involved MLTs from public hospital instead, it would have been better to conduct the study including MLTs in private hospitals as well. However, due to lack of financial, geographical and time constraints, it is impossible to include these professional.

8 CONCLUSION AND RECOMMENDATION

8.1 Conclusion

More than half of the medical laboratory technologists working in public hospitals in Addis Ababa have agreed that training and development programs have direct impact on their job satisfaction, motivation, engagement and job performance. Correlation analysis between motivation, job satisfaction and engagement of employees resulted from training and development programs and job performance of MLTs showed direct and statistically significant relationship at $p < 0.01$. Moreover, multiple regression analysis indicated that except in the case of motivation, training and development through mediation of job satisfaction and engagement of employees have significant predicting power of MLTs' performance. The outcomes of the current research are generalizable only to MLTs in public hospital due to lack of formal documentation and uniform patterns of training and development programs. Thus, policy makers and HRM personnel need to make their training and development procedures available to researchers in order to enhance transparency and accountability of their human development operations.

8.2 Recommendation

As explained in the limitations of the study, the HRM departments' in public hospitals failure to document and their reluctance to disclose their methods, types and procedures of training and development programs requires a different approach. Because, training and development programs are matters that must be dealt with scientific procedures and issues that are concealed as secret in the name of confidentiality do not help to implement effective and strategic training and development programs. Therefore, the researcher of the study provides these recommendations as follows.

- Organizations should provide career related developmental activities to their leaders and supervisors to foster their employee's performance.
- Organizations must consider the equitable distribution of area of study when they provide educational opportunity for their employees.
- Organizations should focus on the motivator and engaging factors to influencing performance.
- HRMs must plan and design their training and development programs to all their lab professionals equitably based on trainee performance evaluation.

- HRMs need to document the training and development programs they provide to MLTs
- HRM departments should implement procedures for post training and development evaluation of MLTs.
- HRM departments should be making sure that their data and procedures transparent and accessible not only to internal evaluators but also to external researchers.

8.3 Suggestions for future research

The researcher of the current study suggests further research is required on the assessment of training and development programs available to all healthcare employees on private and public hospitals. This might lead to further investigate the influence of training and development programs on performance of healthcare employees directly.

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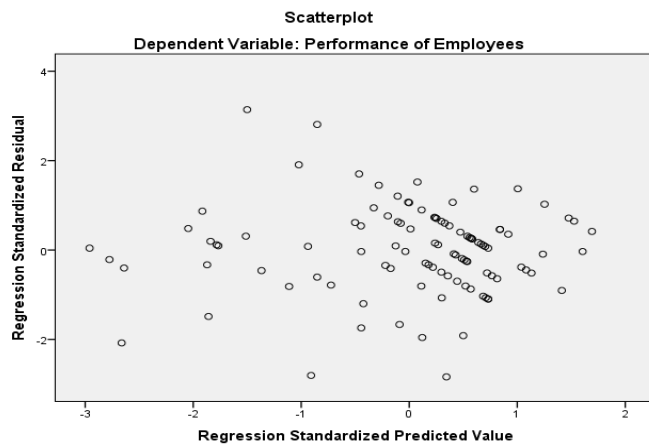
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10 ANNEXURES

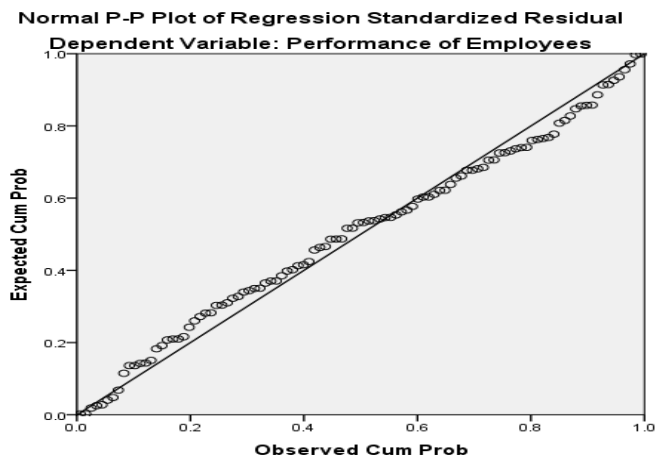
Annex I: Public hospitals from which sample respondents are drawn from based 30% rule of thumb approach March 02, 2021 to April 28, 2021 Addis Ababa

Public Hospitals	No of lab professionals in each public hospital	No of participant lab professionals selected based on 30% rule of thumb	No of pilot participant selected based on 30% rule of thumb
BLH	57	17	
SPHMMC	42	13	
Y12HMC	34	10	
MRH	26	8	
ALERT	26	8	
ZMH	25	8	
TBGH	24	7	
RDH	23	7	
AMSGH	21	6	
GMH	18	5	
ABET	18	5	
AFH	16	5	
PH	15	5	
Total	345	104	31

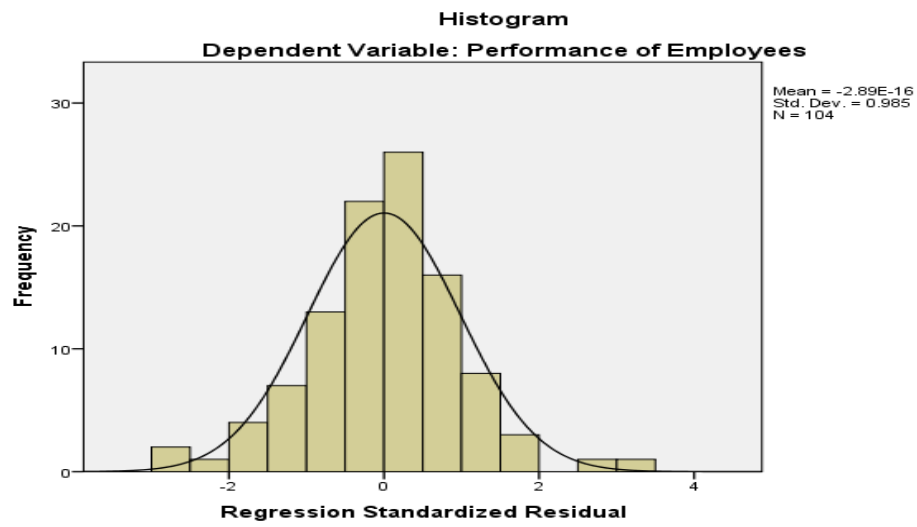
Annex II: Reliability and Validity check



Scatter Plot of regression standardized residuals vs. predicted value



Normal P-P Plot of standardized residuals with Employee Performance



Normality check of Regression Standardized Residuals

Annex III: Participant Information Sheet

Addis Ababa University College of Health Science Addis Ababa Ethiopia

My name is *Temesgen Basaznew* and I am graduate student in Addis Ababa University. I am conducting a research titled ***“Impact of Training and Development on Laboratory Personnel Performance”*** for the partial fulfillment of master’s degree in Clinical Laboratory Management and Quality Assurance.

Dear participant- I would like to invite you to take part in this research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time and read following information carefully. Ask any question if anything in the content is not clear for you or would like more information. Take time to decide whether or not to take part.

As a strategy to investigate the role of training on the Medical Laboratory professional’s Job satisfaction and retention. Believing this study will produce empirical evidence which will help for identifying gaps in the field for further improvement.

When I invite you to take part in this study is with a great concern of working in medical laboratory needs professionally well-equipped personnel as it follows various processes and procedures including legal requirements and policies. Participation in this study is voluntary and the information you provide is valuable to improve the quality of training given to laboratory professionals and other work-related development programs. Furthermore, the information you provide is solely used for this study and your confidentiality is fully protected. This means, I do not disclose any personal information that identifies any participant and data is disclosed only anonymously for the purpose of the research. You are free to withdraw from participation at any time.

To complete this questionnaire, it might take you from 30 to 40 minutes. If you do not want to respond to any item in the questionnaire, you are free to not respond.

Finally, I would like request you to respond to the items carefully because your information is vital for the success of this research.

Sincerely Yours’ Temesgen Basaznew

Annex IV: Informed Consent Form

Dear Respondent:

I am pleased to inform you that I am a graduate student at Addis Ababa University pursuing a Master Degree (MSc) in clinical Laboratory Management and Quality Assurance. As a partial fulfilment of the course, I am conducting a research assessment on the impact of training and development on employee performance through employee satisfaction and retention.

This study focus area is public health service laboratories in Addis Ababa as a case. The result of this study will provide the management with information regarding staff training & development and its impact on staff and the general organization's performance.

This is an academic research and confidentiality is strictly emphasized and any information that you give us to be only for the research purpose anonymously. The questionnaire will take you approximately 25 minutes to fill.

I know that there is no special payment for being participating in the study.

I agree to take part in this study.

Name: Signature: Date: _____

Yours Dependably,

Temesgen Basaznew

THANK YOU

Annex VI: Semi-structured Questionnaire

PART I: Demographic Characteristics

Answer all the questions by ticking in the place provided

Demographic Information

1. Your gender?

1. Male

2. Female

2. What is your age in years? _____

3. Marital status?

1. Single 2. Married 3. Separate 4. Divorced 5. Widowed

4. What is your highest level of educational achievement?

1. Diploma level 2. Bachelor's Degree 3. Master's Degree 4. PhD

5. What is your level of management in this hospital laboratory?

1. Front line service provider 2. Section supervisor 3. Other

6. How many years did you work in the laboratory profession? _____

7. How many years did you work in this Hospital? _____

II Questionnaire Items Related to Training and development

8. Did you receive any training related to your career since you started job at this hospital laboratory sponsored by your organization?

1. No

2. Yes

9. If your answer is “Yes”, how much training did you attend that you remember?

10. When did you take the last training?

1. In the last `12 months

2. Two years ago

3. Before three years

4. Other; Please specify _____

11. Did you get any educational opportunity to upgrade your profession sponsored by your employer?

1. No

2. Yes

12. If your answer is yes in which area of field did you graduate; Please specify_____

PART II: Training & Development and Employee Job Satisfaction

Indicate your level of agreement to the following statements concerning personnel trainings and employee job satisfaction at your work place. Use a scale of 1-5 where **1 is strongly disagrees**, **2 disagree**, **3 neutral**, **4 agree** and **5 strongly agree**.

	Sub- Categories and Statements	1	2	3	4	5
Satisfaction with work relationship						
1	I am satisfied of relationships with my coworkers due to learning and					
2	Staff training at my work place has improved my relationship with my					
3	After my training at work, I now enjoy good relationships with the organization					
Satisfaction with scope of using own initiative and skills						
4	Training at my work place has enabled me to use my skills and talents better					
5	Employee training offers me an opportunity to learn new skills					
6	Employee training at work increased my desire for additional training and					
Satisfaction with pay and promotional potential						
7	Employee trainings at the laboratory leads to better salaries					
8	Employee trainings offer opportunities for staff promotions					
9	My work at the laboratory can now be reorganized due to training & development					
Satisfaction with work Activities						
10	After attending staff trainings, staff at work place are given opportunities to be					
11	Staff trainings at the laboratory empowers staff to achieving degree of					
12	After employee trainings at my work place staff have adequate opportunities for					

PART III: Training & Development and Employee Motivation

Indicate your level of agreement to the following statements concerning personnel trainings and employee commitment at your work place. Use a scale of 1-5 where 1 is strongly disagrees, 2 disagree, 3 neutral, 4 agree and 5 strongly agree.

	Sub-Categories and Statements	1	2	3	4	5
Motivation through recognition						
1	After undergoing career related learning, now I can work on important tasks					
2	My training within the organization now gives me the necessary skills to work in					
3	I now take personal responsibility for my job outcomes after being trained					
Motivation by organization mission						
4	Learning and developmental opportunities enabled me to understand my efforts					
5	Developmental activities at this work place improves skills on future thinking					
6	Training motivates staff to fulfill organizational vision					
Motivation through leadership style						
7	My line supervisors have been trained on how to treat subordinates equitably with					
8	The organization leaders are sufficiently trained on how to focus on strengths					
9	The organization leadership are well trained on how to recognize staff suggestions					
Motivation through work itself						
10	I now find my work more interesting and passionate due to training and					
11	Training has empowered me to carry out my duties comfortably					
12	I can now complete my tasks in time after taking related developmental activities					

PART IV: Training & Development and Employee Engagement

Indicate your level of agreement to the following statements concerning personnel trainings and employee engagement at your work place. Use a scale of 1-5 where 1 is strongly disagrees, 2 disagree, 3 neutral, 4 agree and 5 strongly agree.

	Sub-Categories and Statements	1	2	3	4	5
Training and employee engagement in change process						
1	Personnel development at this facility has improved my willingness to accept					
2	I am more willing to take new tasks due to personnel trainings at this facility					
3	Staff trainings at this facility enhances my commitment to taking the initiative in					
Training and employee engagement in innovation						
4	Personnel training at this facility allow employees to proactively identify future					
5	Staff trainings at this facility empowers employees to always keep going when the					
6	In my organization, employees adapt quickly to difficult situations due to staff					
Training and employee engagement for better performance						
7	Taking trainings, enables me completely to focus on my work					
8	Trainings at this facility has made me give the best effort at work					
9	Learning opportunities make me more involved in my work and accomplish					
Training and employee enthusiasm						
10	Staff trainings has made me get excited about going to work daily					
11	Staff trainings at this facility has made me feel completely involved in my work					
12	I am now more inspired to meet my goals at work due to staff trainings at facility					

THANK YOU AGAIN

Declaration

I, the undersigned: declares that this MSc thesis is my original work, has not been presented for a degree in this or any other university and that all the sources and materials used for the thesis have been duly acknowledged.

MSc candidate: Temesgen Basaznew (BSc)

Signature: _____

Date of submission: _____

This thesis has been submitted with our approval as advisors.

Advisor: Fatuma Hassen (BSc, Mph, PhD fellowship)

Signature: _____

Date: _____

Place: Addis Ababa, Ethiopia.

Advisor: Alemayehu Nigatu (BSc, MSc, Mph)

Signature: _____

Date: _____

Place: Addis Ababa, Ethiopia.