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FDRE TECHNICAL & VOCATIONAL
TRAINING INSTITUTE

FDRE Technical and Vocational Training Institute

Faculty of Civil Technology

Department of Wood Technology

M.Sc. Thesis

on

The Effect of the Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in North West Region of Tigray, Shire Enda Selassie Town.

**Submitted in Partial Fulfilment of the Requirements for the Degree of Master Science in
Wood Technology**

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Addis Ababa, Ethiopia

June 2024

Approval sheet I

This is to certify that the thesis prepared by **Yemane Mekonen**, entitled “**The Effect of the Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in North West Region of Tigray, Shire Enda Selassie Town**” submitted in partial fulfillment of the requirements for the degree of master of science in Wood Technology of the Graduate Program on **FDRE Technical and Vocational Training Institute** meets the accepted standards with respect to originality and quality, under my supervision, and no part of the thesis has been submitted for any other degree or diploma. The assistance and help received during the course of this investigation have been duly acknowledged. Therefore, I recommend that it be accepted as fulfilling the thesis requirements.

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Approval sheet II

We, the undersigned, members of the Board of examiners of the final open defense by **Yemane Mekonen** have read and evaluated here thesis entitled “**The Effect of the Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in North West Region of Tigray, Shire Enda Selassie Town**”, and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Master of Science in Wood Technology.

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Declaration

I, **Yemane Mekonen**, hereby declare that this thesis entitled “**The Effect of the Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in North West Region of Tigray, Shire Enda Selassie Town.**” is the product of my original research work under the supervision of **Dr. Anteneh Tesfaye**. It was not submitted, in full or part, for the attainment of any academic degree elsewhere. To the best of my understanding, I have fully acknowledged the materials and pieces of information used in this study. It was submitted to partial fulfillment of the requirements for the Degree of Master of Science in Wood Technology complies with the procedures and meets the expected standards. Materials or ideas of other authors used in this thesis have been duly acknowledged and references are listed at the end of the main text.

Yemane Mekonen

Candidate

Signature

Date

Acknowledgment

It is the grace, mercy, charity, forgiveness, help and kindness of the almighty God that made me still alive, achieve this success and strength and to go through all the difficult time.

I would also like to express my heartfelt gratitude to my advisor Dr. Anteneh Tesfaye, for his unprecedented guidance, encouragement and advice that he has provided throughout my time as his student and advisee. I have been extremely lucky to have a supervisor who cared so much about my work. and who responded to my questions and queries so promptly.

My special gratitude also goes to my brother G/medhn Hailu for contribute to this education program and over all his support. I want also to thank my family members and friends. For their constant encouragement. I am extremely grateful to my respondents who genuinely shared their life experience with me.

Finally. My thank goes to FDRE Technical and Vocational Training Institute, for giving me the chance to learn post graduate program.

Table of Contents

Approval sheet I.....	i
Approval sheet II.....	ii
Declaration.....	iii
Acknowledgment.....	iv
List of tables.....	viii
List of figures.....	ix
List of abbreviations.....	x
Abstract.....	xi
CHAPTER ONE	1
INTRODUCTION	1
1.1. Back ground of the study.....	1
1.2. Statement of the problem.....	3
1.3. Objectives.....	4
1.3.1. General Objective.....	4
1.3.2. Specific Objectives.....	4
1.4. Research questions.....	4
1.5. Significance of the study.....	5
1.6. Scope of the study.....	5
CHAPTER TWO	6
LITERATURE REVIEW	6
2.1. Overview of furniture.....	6
2.2. Definition of micro and small-scale enterprises.....	7
2.2.1. Micro and small enterprises in Ethiopia.....	8
2.2.2. Role of micro and small enterprises in poverty reduction.....	9
2.2.3. Challenges of MSEs in Ethiopia.....	9
2.3. Furniture manufacturing.....	11
2.3.1. Furniture production globally.....	11
2.3.2. Furniture production in Africa.....	12
2.3.3. Furniture production in Ethiopia.....	13
2.4. Factors hindering productivity in furniture manufacturing.....	13
2.4.1. Technology and machineries.....	15

2.4.2. Finishing and coating techniques.....	15
2.4.3. Wood joint and lamination techniques	16
2.4.4. Furniture design	17
2.4.5. Quality and productivity improvement.....	18
2.5. Challenges of furniture enterprises	19
2.6. Impact of skill on performance of micro and small enterprises.....	19
2.6.1. Employability skill.....	20
2.7. Importance of skilled workers	21
2.8. Frame work of the study	23
CHAPTER THREE	24
METHOD LOGY	24
3.1. Description of the study area	24
3.2. Research design	25
3.3. Target population.....	26
3.4. Types and data collection methods	26
3.5. Data collection instruments.....	26
3.6. Procedure for data collection	26
3.7. Data analysis method.....	27
CHAPTER FOUR	28
RESULTS AND DISCUSSION	28
4.1. Demographic characteristics of the respondent employees in small and micro enterprises in the study area	28
4.2. Questionnaires response rate.....	29
4.3. Sex composition of the respondents	30
4.4. Respondent level of education	30
4.5. Level of skill of employers and the effect on the performance of MSEs	31
4.5.1. The level of skill of assembler and built in installer workers in micro and small enterprises	31
4.5.2. The level of skill of designer workers in micro and small-scale furniture enterprises ...	32
4.5.3 The level of skills of finishing workers in micro and small-scale furniture enterprises..	34
4.5.4. The level of skill of machinist workers in micro and small-scale furniture enterprises .	36
4.6. Performance measure of micro and small-scale enterprises	37

4.7. Effect of employee’s skill level on performance of micro and small-scale furniture enterprises	38
4.7.1. Results of inferential analysis using SPSS	38
4.7.1.1. Correlation analysis	38
4.7.1.2. Regression analysis	40
CHAPTER FIVE	42
CONCLUSION AND RECOMMENDATIONS	42
5.1. Conclusion	42
5.2. Recommendations	43
References	44
Appendix I	51
Appendix II	52
Definition of some terms	52
Appendix III	53
Survey questionnaire	53
Appendix IV	68
Tigrigna questionnaire	68

List of tables

Table 1. Demographic characteristics of the respondents	28
Table 2. Response rate	29
Table 3. Sex composition of the respondents in study area	30
Table 4. Level of education	30
Table 5. Effect of level of skill of furniture assembler and built in installer on performance of MSEs based on Five Likert scale	32
Table 6. Designer respondents' level of skill.....	33
Table 7. Level of skill of finishing workers.....	35
Table 8. The level of skill of machinist workers	36
Table 9. Performance rate of micro and small-scale enterprises	37
Table 10. Correlation analysis between skill level of workers with performance of MSEs.....	39
Table 11. Regression analysis.....	40
Table 12. Regression between correlating skills.....	40

List of figures

Figure 1: Conceptual frame work	23
Figure 2: Map of the study area	25
Figure 3: Procedures followed in research work	27
Figure 4: Demographic characteristics of respondents.....	29
Figure 5: Designer respondents' level of skill	34
Figure 6: Performance rate of SMEs	38

List of abbreviations

CAD	Computer Aided Design
CSA	Central Statistical Agency
DWCP	Decent Work Country Programmers
EC	Ethiopian Calendar
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
GDP	Growth Domestic Products
GTP	Growth and Transformation Policy
M.Sc.	Masters of Science
MoUDH	Ministry of Urban Development and Housing
OSB	Oriented Strand Board
SMEs	Small and Micro Enterprises
SMFEs	Small and Micro Furniture Enterprises
SSA	Sub-Saharan Africa
TVET	Technical Vocational and Education Training
UK	United Kingdom
US	United States
UV	Ultraviolet
VOC	Volatile Organic Compound

Title: The Effect of the Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in North West Region of Tigray, Shire Enda Selassie Town.

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Abstract

The furniture makers in Shire Enda Selassie town make their products having in mind what the customer needs in the town being competent on the market based on how productive they are. However, there is not enough information about how well these furniture makers are doing and competitive with others. If the assumptions about how skilled the furniture makers are wrong, which often happens, the furniture makers will not be able to compete and their revenue streams suffer. Therefore, it was important to assess how well these furniture makers are doing. To do this, the study was, conducted with the objective of investigating the Effect of Level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises (MSEs) in north west region of Tigray, Shire Enda Selassie Town. This research was focused on the performance (productivity) of furniture makers. and also, the research was collected through questioners and undertaken by employing both primary and secondary data sources. The research used both qualitative and quantitative (mixed) type of research methods for data collection. priority was given to those employers who know the basics of furniture production. Additionally, key informant interviews were conducted with industrial extension sector officials, trainers of furniture MSEs, and other concerned governmental officials. The significance value of all skills of employers in MSEs in Shire shows high significance (.000) against performance of enterprises. The effect of skill level of employers :(assembler and built in cabinet workers, machinist workers, finishing workers and designer workers) on performance of MSEs in Shire Enda Selassie town is by 84.4%. Results of this study is expected to be able to make a practical contribution to the SMEs competitiveness in the study area by improving the performance of SMEs, such as improving skills of employers; there by enabling them run better business processes in the hope of winning the competition.

Key words: Competitiveness, Furniture makers, Micro and small-scale enterprises, Performance, Productivity, Skill level.

CHAPTER ONE

INTRODUCTION

1.1. Back ground of the study

Ethiopia has more than hundred-year experience in production of wood and wood types products. in the country, now a day this industry sector, its age due to internal and external problems, raw material production is dominated by state forest enterprise on the one hand any many smallholders on the other. The low productivity of the forest plantations managed by these groups presents an opportunity to boost the forest sector (Girma and Abate, 2021).

Ethiopia's manufacturing sector is small even by African standards. For over 20 years the share of manufacturing value adds in total value add in Ethiopia has varied between five and four percent. Compared to other countries in sub Sahran Africa, (SSA) this is a very modes contribution like many other African countries, the industrial sector in Ethiopia is characterized by a large number of very small, typically informal, enterprises and a small number of large firms that accounts for the bulk of manufacturing output and employment. Micro and small firms tend to record low value added, low wages, virtually no experts, and little technological progress. Moreover, it is a common for small firm to trans-form themselves in to large firm that invest, export offered skilled, jobs and pay high wages. The structure of the manufacturing sector, in particular the concentration of activity in very small firms and the small number of large firms, is an important reason for the modest contribution of manufacturing to Ethiopia's economy (Shiferaw and Sderbom, 2019).

Production is becoming more customer focused as it departs from delivered standardized mass products to market segments, furniture production is a large and crucial area of the industry and it is often carried out by micro and small enterprises that usually operate in local markets. The furniture industry has a very specific set of a business models in terms of company customer cooperation. Fully standard productions can be self-assembled by the customer and products can be fully customized from the design. Different models lead to totally different characteristics of the design manufacturing, system including the product and its design lead times, technologies and organizational systems (Lukaszewicz and Urban, 2023).

Furniture manufacturing is a big business involving a large number of workers. It has traditionally been a resource and labor-intensive industry that includes both local craft-based firms and large volume producers. Small and medium enterprises play such an important role in the furniture sector that any decrease in trading volume will increase poverty. Conversely, growth in the furniture industry will increase the number of jobs available, and many reduce unemployment (Tafesse, 2016).

According to the study of (Radovic, 2013), Furniture manufacturing has a significant role in national economy which is reflected in their economic as well as wider social contribution, and which largely contributes to harmonization of the overall domestic development process. Productivity is one of the most widely used tool for evaluating, monitoring and improving the performance of industries and national economies. At a national level, productivity indicates how well an economy uses its resources in production goods and services. A decline in productivity can lead to slow economic growth and high inflation. On the other hand, improved productivity can lead to higher rate of economic growth and higher living standards for any nation (Bashir *et al.*, 2014). Today furniture is a necessity for any household and it has been considered as essential household items. Furniture facilitates give comfort to relax and to carry out domestic affairs for the family members, to accommodate visitors. Offices and business houses are also equipped with trendy furniture (Eshetu, 2018).

While the furniture industry plays a significant role in the economic development of many countries, particularly in terms of employment generation and contribution to GDP. In the North West region of Tigray, Shire Enda Selassie town, micro and small-scale furniture enterprises (MSFEs) have emerged as important contributors to the local economy. However, their performance and productivity levels vary significantly, which can be attributed to various factors, including the level of skill employed within these enterprises. This research aims to investigate the effect of skill level on the performance of MSFEs in the North West region of Tigray, Shire Enda Selassie town. By identifying and analyzing the skill sets employed in these enterprises, classifying their importance, and examining their impact on productivity, this study seeks to provide valuable insights into enhancing the overall performance of MSFEs.

1.2. Statement of the problem

There are a lot of factors that affect the performance of micro and small-scale enterprises either positively or negatively which intern will determine their fate in the competitive business environment. These factors which contribute to the success of the enterprise are mainly related with the personal attribute of the owner's and attributes related to the enterprises (Abebe, 2011). Various studies studies have shown that a number of factors, including a lack of capital, experience, education, talent, expertise, the sufficiency of support networks, financial backing, and the sociocultural background of the entrepreneurs, determine how well micro and small firms succeed. Micro and small furniture manufacturing businesses face a number of challenges that have an impact on their productivity. While some businesses collapse, some persist for extended periods of time without changing, while the majority provide comparable but non-standard goods (Achieng, 2010).

The Ethiopian government has spent the last few decades concentrating mostly on major enterprises, especially those in the manufacturing sector. However, the focus of policy efforts has switched to MSEs and SMEs due to the recent wave of private sector development measures. This new direction has been made possible by the underwhelming performance of the majority of state-owned enterprises, the tension brought about by globalization, and the growing need for competitiveness. Since they make use of local resources, meet the needs of a sizable portion of the population with their goods and services by leading the way in technological advancement, marketing, and management skill acquisition, and enable through the adoption of technology, the health of the micro and small business sectors is crucial to the potential for overall economic growth and the long-term viability of an economy (Abdissa and Fitwi, 2019).

As the global economy continues to integrate more, MSEs stand to gain a lot from being able to compete on a global scale. It is widely acknowledged that SMEs are playing a bigger role in the production of jobs, money, and innovation. Nonetheless, there are serious concerns regarding the caliber of management in this industry. Policymakers have indicated that there are specific deficiencies in terms of creativity, financial acumen, marketing, entrepreneurial flair, practical expertise, and human resource management. Because of this, many businesses never expand to their full potential (Abebaw, 2018).

Furniture manufacturing micro and small enterprises are confronted with several factors that affect their performance. Some enterprises fail to sustain, some others remain for long period of time without transforming, and most are producing similar and nonstandard (Cherkos *et al.*, 2018).

The performance of micro and small-scale furniture enterprise in the North West region of Tigray, Shire Enda Selassie town is influenced by a wide range of factors, with key determinants encompassing both personal attributes of owners and enterprise-related characteristics. Research by Abebe (2011) emphasizes the significance of these attributes in shaping the success of MSEs. Factors such as lack of capital, experience, education family support, skills and knowledge identified in studies like Achieng (2010), play a crucial role in the performance of micro and small business. Moreover, challenged faced by furniture manufacturing MSEs, as highlighted by Cherkos *et al.*, (2018), include difficulties in sustainability, lack of differentiation in products, and variable production standards. This research aims to identify and rank the skill sets employed in these enterprises, analyze their impact on productivity, and ultimately provide insights into how improving skills can enhance the performance of micro and small-scale furniture enterprises in the region specified in Shire Enda Selassie town.

1.3. Objectives

1.3.1. General Objective

The main objective of the research was to assess the effect of skill level on the performance of micro and small-scale furniture enterprises (MSEs) in North West region of Tigray, Shire Enda Selassie town.

1.3.2. Specific Objectives

The specific objectives of the study were to:

- To identify skill sets employed in micro and small-scale furniture enterprises (MSFE).
- To classify and rank the importance of identified skill sets in MSFEs.
- To analyze the effect of ranked skill sets on the performance (productivity) of micro and small-scale furniture enterprises.

1.4. Research questions

- What skill sets are employed in micro and small-scale furniture enterprises (MSFE)?
- How can the identified skill sets be classified and ranked in terms of importance in MSFEs?

- What is the effect of the skill sets on the performance (productivity) of micro and small-scale furniture enterprises?

1.5. Significance of the study

The significance of this study lies in its exploration of the crucial link between skill levels and the performance of micro and small-scale furniture enterprises, offering valuable insights for regional economic development and informing targeted strategies to enhance the competitiveness and success of by its findings implications for whom concerned, practitioners, policy makers, economic development efforts, and industry competitiveness in the North West region of Tigray, Shire Enda Selassie town.

1.6. Scope of the study

The scope of the study is limited on the investigation of the impact of skill level on the performance of micro and small-scale furniture enterprises in North West region of Tigray, on Shire Enda Selassie town.

CHAPTER TWO

LITERATURE REVIEW

2.1. Overview of furniture

Furniture comes from the word furnir which means furnish or household furniture. Furniture is all things that are used in the house, be it room furniture, small objects, or accessories. or in the other hand furniture is a household item or product that includes all items, such as beds, wardrobes, chairs, tables cabinets and other household furniture's (Atmaja, 2021).

Ethiopia's wood furniture production has relatively vast potential to significantly contribute to the country's GDP by using a huge amount of local imputes but it is less competitive. Local owners and executives of the furniture industries are puzzled by the high quality and low price of imported furniture which are making their products fail on the market miserably. About 3.8% of the national GDP is contributed by wood. This sub sector sources the vast majority of its raw materials from natural forests that are undergoing rapid deforestation. While the formal timber trade is dominated by government enterprises, they have been unable to meet demand and this has led to the growth of illegal loggers and traders (Abduselam, 2022).

Manufacturing sector is considered as the cornerstone of many national economies, crucial sector to the generation of structural change, productive jobs, and sustainable economic growth. According to the International financial group, manufacturing sectors generate the strongest forward and backward linkage across other sectors of the economy, which are important structural transmission links to growth and poverty (Chaturvedi and Saha, 2019). Furniture is a household article for use and decoration, and it is as old as man. It is a movable item made from wood like tables, chairs. Cabinets and shelves in a room or home. Furniture in home one way or the other, shows the life style and feelings of the owner, which involves viable furniture making trades (Davis, 2013). The wood is as row material has offered services to man from its existence on the earth, and has significantly contributed to the human survival and development of civilizations. it is also true, that wood although not respected today due to the development of synthetic substances is the most common basic material of countless products. one of the fundamental joys in crating tempting wood furniture is working with these materials and and getting to know the unique quality of every kind of wood, which is actually very important step towards the way of becoming a

furniture manufacturer. Every wood has its own character. Some kinds of wood in machining are processed more easily compared to other kind of wood (Trajkovic, 2014). According to the study (Arakistain and Barrado, 2013). Wood is an organic material, a natural composite cellulose fiber embedded in a matrix of lignin which resists compression. The earth contains about one trillion tons of wood, which growth at a rate of 10 billion tons per year as a renewable carbon absorbing natural material. Furniture is an inevitable part of human existence. It is used to for beatification of both public and private spaces while also providing significance opportunities for income generation, employment and development of craftsmanship. furniture is made in various forms, such as tables, doors, chairs, cabinets, shelves and decorations, windows cupboards, windows, roofing and other items (Sambe, 2022). furniture refers to movable object that made from wood, plastic and metal, like chairs, beds, tables which place in home or workplace and support various suitable human activities such as: seating, sleeping and work purpose (Haile, 2020).

2.2. Definition of micro and small-scale enterprises

Ethiopia's Industrial growth Strategy places a high priority on the growth of micro and small businesses. especially considering that micro and small enterprises are the primary engines of job creation in urban areas, and that the creation of jobs is the main objective of the nation's development plan. Not only do high-income nations like the United States of America and low-income nations like Ethiopia encourage the role of micro and small enterprises as the primary job creators? Therefore, encouraging and bolstering micro and small enterprises development ought to be one of Ethiopia's top development priorities because MSEs are essential to the generation of jobs. MSEs still don't hold much of a position in the manufacturing industry. Justification for giving micro and small enterprises development a high priority is provided by the possibility of filling this gap (EMUDH, 2016).

The definition and characteristics of micro and small-scale enterprises vary among nations; no single, globally accepted definition of these businesses exists; instead, each nation must define them according to its unique set of goals and realities. For example, the definition of micro and small enterprises varies depending on the context in our nation, Ethiopia. The Ministry of Trade and Industry (MoTI), 1997 provided the most relevant definition, which is based on three criteria: fixed asset level of paid capital, use of high-tech establishment, and consulting services (Tsegaye and Alamrew 2020).

Micro Enterprises: are those business enterprises with a paid-up capital of less than Birr 50,000 for service sectors and 100,000 for industry excluding high tech consultancy firms and other technology establishments and have five and fewer employees including family members. this research considered employee size of MSEs.

2.2.1. Micro and small enterprises in Ethiopia

Ethiopia's MSE sector is a major goal, but little is known about it currently in terms of its size, performance relative to GDP, employment, exports, and overall manufacturing production. Each month, a number of MSEs obtain licenses from government offices and begin operations; some of these grow to become medium-sized businesses, while the destinations of others remain unexplored. Therefore, it is necessary to try to investigate the factors influencing the expansion of SMEs (Simeon, 2005).

In most developing countries, micro and small enterprises constitute the vast majority of firms, generating a substantial share of both over-all employment and output. Given their significant role, one might expect micro and small enterprises to drive overall increase in output and income levels. In many cases, however, their largest economic contribution appears to be one of maintaining rather than generating new employment and income for the poor (Simeon, 2005). Everyone agrees that rapid economic expansion promotes social and economic advancement as well as the decrease of poverty. Simultaneously, there is a growing understanding that the degree to which poverty reduces growth depends on the characteristics of growth, including its antagonism, distribution, and sustainability. Small enterprises are those with paid-up capital of more than Birr 50,000 but not more than Birr 500,000 (for services) or more than Birr 100,000 but not more than Birr 1,500,000 (for industry). Technological consulting firms and other technology establishments with six to thirty employees, including family members, are not considered small businesses (Yodit, 2015).

According to the study of (Sileshi, 2014) As "essential engines for accomplishing national development goals such as economic growth, poverty alleviation, employment and wealth creation, leading to a more equitable distribution of income and increased productivity," micro and small-scale enterprises play a dynamic role in developing nations. Any transfer of resources from low-productive activities (like rural agriculture or urban informal services) towards manufacturing entails a significant structural change bonus, in what some authors have dubbed, manufacturing

becomes the engine of economic growth when structural change is understood from a normative perspective.

2.2.2. Role of micro and small enterprises in poverty reduction

Several development plans were created in Ethiopia to help the nation overcome its issues with unemployment and poverty. The development strategy for micro and small firms was one of the key tactics implemented. With the publication of the National Micro and Small Enterprises Strategy in 1997 and the founding of the Federal Micro and Small Enterprises Development Agency, the Ethiopian government demonstrated its commitment to advancing the growth of micro and small businesses and acknowledged the importance of this industry. The justifications for supporting this industry involve encouraging growth with equity, generating stable employment, serving as a foundation for medium-sized and large enterprises, and boosting exports. The strategy provides financial facilities, infrastructure, and other means of support for micro and small businesses (Ababiya, 2015).

Micro and small enterprises are small, loosely organized businesses that are primarily owned and run by the impoverished in developing nations like Ethiopia. They contribute greatly to the creation of income and the reduction of poverty, making up a sizeable portion of both the GDP and overall employment. They frequently serve as the primary source of income for the most vulnerable households in high-risk situations, such as ongoing droughts, natural catastrophes, and civil conflicts. (Serawitu, 2020). Due to the numerous socioeconomic advantages that the sector offers, micro and small enterprises have been shown to play a crucial role in a country's overall development process. Put another way, by creating larger job opportunities and revenue, the MSEs will have improved the welfare and standard of life for a greater number of people in the community in addition to helping to reduce poverty. Globally, the current school of thought recognizes MSEs as a long-term poverty-fighting instrument (Abera, 2017).

2.2.3. Challenges of MSEs in Ethiopia

The primary issues that impede the success and expansion of small businesses can be divided into two categories: first, internal issues that come from within the company, and second, external issues that come from outside the company. The traits and mindset of the business owners and the company as a whole are the internal reasons preventing small businesses from growing. Decisions taken by the company's employees or entrepreneurs may have an effect on these variables. These

factors include a lack of drive and motivation, a lack of prior business experience and background, a lack of capital, theft, cheating, and a lack of trust in the business world. They also include poor management, operating unregistered, informal businesses, a lack of proper record keeping, inadequate education and training, a people factor or a shortage of necessary talent, and improper professional advice and consultation. The external constraints impeding the growth of small firms are those that are related to decisions, regulations, and policies that directly impact the firm; as a result, the firm has some influence but not actual control over the decisions made (Abdissa and Fitwi, 2019). It is challenging for micro and small businesses to prosper because of the numerous barriers that stand in their way of achieving their desired outcomes. Micro and small firms face a number of recognized challenges. A notable obstacle pertains to the limited accessibility of resources, including cash, market, and experience (Kebede, 2015).

There seems to be a comparable issue facing micro and small enterprises in developing or least developed nations. Nonetheless, the severity of the issues differs between nations and industries, and it is dependent on the features of the organizations. Numerous internal and external obstacles currently face micro and small enterprises in their operations, impeding their expansion. A thorough examination of numerous studies has identified several factors that prevent micro and small enterprises from expanding and surviving. Regulatory restrictions, a lack of working space, a lack of managerial and technical skills, a lack of adequate funding (inadequate investment capital, insufficient loans, and an inefficient financial market are the main barriers to doing business), and an inconsistent supply of raw materials are some of the main obstacles to the growth of micro and small enterprises (Mengistu, 2020).

Production and sales of wooden furniture made by micro, small, and medium-sized furniture enterprises are impacted by a variety of issues and difficulties. Customers choose wooden products based on factors such as wood species, wood grade, durability, design/finishing, and color/grain (Babalola, 2018). There are so many challenges of micro and small-scale furniture enterprises. Some of the challenges facing micro and small furniture enterprises in Ethiopia include limited access to finance, high operating costs, limited market access, intense competition, skills and technology gaps, and regulatory constraints.

2.3. Furniture manufacturing

Early in the nineteenth century, the furniture industry-which had previously been a rural craft became automated, which led to regular union mergers into ever-larger, more potent organizations. Throughout the nineteenth century, there were three significant mergers, and this pattern persisted until the 1970s. In the US and the UK, sizable furniture trade unions were formed. Specialized furniture worker unions have, however, been absorbed into general trade unions throughout the past thirty or so years. In the UK, for example, the General, Municipal, Boilermakers and Allied Trade Union, a general trade union with over 600,000 members, combined with the Furniture, Timber and Allied Trade Union in 1994. A variety of expert services are offered by the unions. However, the modern furniture industry cannot be regarded as (Zee *et al.*, 2012).

When selecting materials for furniture creation, wood is prioritized because it is a natural substance. The robustness, resilience to weather, and longevity of hardwood furniture are its main qualities. Since wood is a natural material, it infuses the interior designs with freshness. However, since moisture, humidity, and dust are the wooden furniture's worst enemies, you should exercise caution while exposing it to these elements (Trajkovic, 2014). The furniture manufacturing sector appears to be important from social and economic as well as ecologically friendly industries' points of view (Azizi, and Mohebb, 2016).

By African standards, Ethiopia's industrial industry is modest. Ethiopia's manufacturing value added has fluctuated between 4 and 5 percent of total value added for more than 20 years. In contrast to other nations in Sub-Saharan Africa (SSA), this represents a relatively small contribution. Ethiopia's industrial sector, like that of many other African nations, is typified by a high number of very small, mostly informal businesses and a small number of large businesses that account for the majority of manufacturing production and employment. Micro and tiny businesses typically report poor pay, little value generated, almost no exports, and limited advancement in technology. Furthermore, it is not customary for small businesses to grow into big businesses that invest, export, provide skilled jobs, and (Shiferaw, 2019).

2.3.1. Furniture production globally

In 2004, there were around 284 billion pieces of furniture produced worldwide, and 273 billion pieces were consumed. Ten years later, these numbers had nearly doubled. In 2013, there were 446 billion dollars produced and 440 billion dollars consumed. Over the past ten years, there has

been a total of 3.5 trillion dollars produced and 3.1 trillion dollars consumed. These figures show what might be expected in the future, with a 1 trillion dollar forecast by 2030 (Dongel and Atar, 2015).

Historically, the furniture industry has involved both large-scale producers and small, locally based craft businesses, requiring a lot of effort and resources. With the introduction of ready-to-assemble or flat-pack designed furniture, mass producing furniture became a feasible production technique. Large-scale product design, manufacturing, and shipping were made possible by this product invention. Mass-producers of flat-pack furniture often provide low- to medium-priced markets. Manufacturers of solid wood furniture have managed to hold onto significant niche markets, mostly for high-end, pricy, and design-driven items. While mass-produced, large-volume goods are sold both locally and for export, these specialist products are typically bought locally (Kaplinsky, 2003).

2.3.2. Furniture production in Africa

Nearly all of Africa's newly independent governments started attempting to encourage the expansion of industry in the late 1950s. The growth of manufacturing in most African countries was largely driven by the state, either through greenfield investment in large, capital-intensive state-owned enterprises or the nationalization of foreign-owned firms that already existed. This was due to the lack of experienced or wealthy private entrepreneurs in most African countries to manage modern industrial firms. During this time, import substitution was common, much like in other developing nations. The 1960s saw the industrial revolution, propelled by public investment and shielded from foreign competition. Between 1960 and 1970, the manufacturing sector grew significantly faster than the entire output, and its percentage of the total output rose quickly as well (Ansu *et al.*, 2016).

With a few notable exceptions, the industrial sector's growth in sub-Saharan Africa (SSA) has been remarkably stagnant. With a 15% GDP share of manufacturing value added, South Asia has the lowest manufacturing value added share globally (Fukunishi, 2004). Manufacturing's performance is also concerning because it not only stayed low but actually significantly decreased during the first GTP, going from almost 6% of GDP in 2000–04 to about 4% (Shiferaw, 2017).

The potential for job creation and the possibility of boosting foreign exchange profits from exporting value-added products make the wood processing industry significant to the economy of

sub-Saharan African nations. Imported goods have primarily dominated the East African furniture market (Asumadu, 2004).

2.3.3. Furniture production in Ethiopia

Ethiopian furniture is constructed with a materialistic aesthetic, reflecting the history of the nation. Ethiopia's lifestyle and interior design are a blend of historical cultures, primarily impacted by western trends and centuries-long trade links with Arabia, India, and Rome. Thus, it is possible to categorize Ethiopian furniture into two categories: imported and locally produced. These furniture pieces also differ in terms of type, design, shape, and material. The furniture made locally adds uniqueness to the nation and its social ideals. Shabian art and design can be considered one of the national art forms. Shabian art is a style of drawing that is credited to the ancient queen of Sheba. (Ahmed, 2019).

By 2033, the high-value-adding wooden furniture subsector is predicted to have grown by almost 400%. By 2033, the overall furniture demand is expected to have increased from an estimated 0.8 million cubic meters to 1.8 million cubic meters. Ethiopia's small-scale wood industries mostly produce furniture, joinery, and carpenter cottages. According to the industrial census, the number of small and cottage furniture manufacturing businesses has generally increased over the past ten years, from approximately 8500 units to approximately 17,700 units, and the number of people employed in these businesses has increased from 23,000 to 290,000, all of whom have a significant role in the production of furniture (Girma *et al.*, 2021).

2.4. Factors hindering productivity in furniture manufacturing

Employers today are looking for professionals with strong employability skills in addition to abilities and positive personal attributes. Since computer-assisted manufacturing is replacing old-line manufacturing with more innovative methods, the market is now demanding more expertise and flexibility from manufacturing personnel. Many researches on graduates' employability abilities have been conducted in an effort to identify the elements contributing to the high rate of unemployment. Employers want for workers with strong communication skills. In addition, excellent verbal communication skills are a prerequisite for individuals to succeed in their particular fields of work. Additionally, with good communication acting as a lubricant, companies are able to run smoothly and successfully (Chan *et al.*, 2018).

Customers are unlikely to purchase many wood products on the spur of the moment without further incentive and consideration. Potential customers typically go through a review process to determine what kind of goods to purchase, with more thorough consideration given to more expensive products. There are five steps involved in deciding whether to buy a product: determining the need, gathering information, weighing your options, deciding to buy, and acting on your purchase (Marinov, 2020).

The skills needed by global enterprises are frequently not provided by traditional workforce development programs in developing nations; therefore, there needs to be more alignment between the competencies needed and the skills taught through education and training. (Stark *et al.*, 2012). The skills strategy encourages the establishment of industry-agreed professional standards to raise skill levels in certain industries and professions. In order to address the concerns of supply, demand, and skill utilization collectively, it recognizes the significance of increasing the visibility of employers' demands for skills and making sure that skills are used to their fullest productive potential. The definition of skills utilization is "about ensuring the most effective application of skills in the workplace to maximize performance, through the use of a variety of management and working practices and the use of a number of key agents (e.g., employers, employees, learning providers, and the state)". The goal of effective skill utilization is to align skill use with needs and demands of the business (Verma, 2012).

Therefore, having competent labor on hand is crucial for businesses and industries using both defensive and expanding measures. However, it is renowned challenging for nations to equip their workers with the skills that employers need, especially in a dynamic labor market. The upstream portion of the value chain, the importance of raw materials and components, labor costs and the availability of skilled labor, investments in technology, innovation, and design, and pertinent industry-affecting policies are the main factors affecting competitiveness in the furniture industry (Chobanova and Popova, 2015). Future challenges may include the need to continue developing appropriate technologies (machines, equipment, services, etc.) for smaller production entities as well as the establishment of financial and strategic support for targeted R&D and innovation, including concepts for product design and marketing (Teischinger and Vienna, 2016).

Employee productivity, also known as worker productivity, is the efficiency with which an individual or group of workers uses the specified inputs made available to them for production to

generate the required outputs at the stipulated quality acceptability level. The workforce's productivity is the primary determinant of an organization's success or failure, hence it is crucial for any business to take this into account. On the other hand, because it offers a continual gauge of economic growth and living standards within an economy, worker productivity is a measure of various economic variables (Burney *et al.*, 2018).

2.4.1. Technology and machineries

It is commonly acknowledged that having enough machinery is essential to the production process since it increases productivity and efficiency. This is true for all furniture market categories, but it's especially true for assembly-line manufacturers who produce large series. Minimizing expenses and standardizing output should go hand in hand, and technology both in production and logistics plays a critical part in this process. The capital expenditures made by businesses on equipment and plant have an effect on both safety and waste reduction (Chobanova and Popova, 2015). In order to improve efficiency and high levels of autonomy in the manufacturing process and reduce product time to market, there is a rising need for innovation in new manufacturing and assembly technologies that may offer extensive high accuracy, good quality, high production rates, and low production costs (Spencer, 2018).

2.4.2. Finishing and coating techniques

Wood finishing is the process of protecting, covering, or polishing a wooden surface. Wooden surfaces, also known as substrates, are usually painted, lacquered, varnished, stained, and dried. The process begins with surface preparation, which entails sanding any wood imperfections and filling them with wood filler. The surface coating protects the wood substrate from the elements, dirt, moisture, fungi, and scratches. The final stage of making wood furniture is surface coating, which is called "finishing" because the coating substance is called "finish." Finishing is one of the most important steps in the furniture-making process that increases the value of the final product. The type of wood is one factor that influences the choice of wood finishes (Fahmi *et al.*, 2018).

Six types of wood products are commonly used on the exterior of structures: (1) lumber (2) plywood (3) finger jointed wood (4) reconstitute wood products such as hard board and oriented strand board, (5) wood-plastic composite, and or fire retardant (6) or fire-retardant treated wood. each product has unique characteristics that affect application (William *et al.*, 2010).

Maintaining external wood products' ability to withstand mechanical abrasion that causes scratches is one of their biggest problems. The creation of more effective finishing techniques is necessary to preserve the attractive appearance of timber planks for the duration of their useful lives. The final application determines the necessary level of protection. For wood floors, a strong mechanical resistance is necessary. 100% solid ultra-violet curable acrylate coatings are used to protect prefinished wood floors. Even with increasingly effective coatings, scratches will inevitably emerge, particularly on brittle substrates like wood (Paquet *et al.*, 2020).

Environmental laws are currently having an impact on the wood coating sector. As a result, the furniture industry recognizes the need of water-borne systems, high solids, UV-cured coating, and powder coating. Interior coatings should have a high gloss effect, be abrasion and chemical resistant, and adhere to VOC (Volatile Organic Compounds) requirements. When it comes to external woodwork, longevity and defense against moisture, sunshine, and microbial invasion are the main concerns. It was discovered that altering the substrate or the coating material can greatly enhance the performance of external clear coatings (Salca *et al.*, 2017).

2.4.3. Wood joint and lamination techniques

In furniture building, joints serve crucial technological, operational, and aesthetic roles. Numerous articles that examine the effects of various elements, including joint type, glue type, and composite material, on the strength of skeleton furniture joints as well as their effects on stress distribution, attest to this (Podskarbi *et al.*, 2016).

The developed furniture must meet the following constructional requirements: the concept must be simple; materials must be chosen logically; the system must be stiff, stable, and strong; joints must be realized properly; and machining technology must be used. The performance qualities of the product as well as the technical and financial metrics of manufacturing are influenced by the straightforward design of a piece of furniture and all of its constituent parts, joints, and mechanisms. The selection of materials, encompassing their mechanical and physical attributes, is contingent upon the product's longevity and dependability, in addition to the production process's material absorption capacity. When creating a new project, the designer-builder must not only integrate the functional, aesthetic, and technological criteria; they also need to ascertain (Smardzewski, 2015).

2.4.4. Furniture design

A new product's design process may vary greatly based on a number of variables, such as the varying types, uses, and structural and aesthetic forms of wood goods. The fundamental shapes of furniture and woodworking have changed over the past few millennia, and there are occasionally startling parallels between chairs with braiding that date back about 4,000 years and those that are created now. As a result, there are frequently parallels between the fundamental shape design and forms that have existed in the past or currently (Csanady *et al.*, 2019). One of the biggest issues facing the furniture business is the lack of uniqueness and creativity in design, as well as the copying of both domestic and foreign works. Due to a rise in the number of manufacturing facilities for the wood sector and an increase in supply, there is more competition these days between sellers and manufacturers (Azizi and Mehdikhanloo, 2018).

The domains of technology, information, and communication have a major role in the creation of modern furniture and its shape. This form becomes the focus of experimental productions as a result of the rapidly advancing technology that is happening in tandem with scientific advancements. During the design process, CAD technologies mediate between the idea and the final product, increasing computing and production capabilities. They also enhance and augment the physical-notional skills and capacity of the designer and offer a more autonomous work environment. The use of computers in the design and production phases affects the furniture's structural integrity by making it easier to create delicate shapes and intricate geometries that were (Ozcam, 2017).

Within the wood furniture sector, it is imperative for the designer or product manager to comprehend the mechanical qualities of wood, including its tendency to shrink or swell in response to changes in atmospheric moisture. Furthermore, the qualities of wood vary depending on its type and location, even among the same wood species. Easy to use, easy creation, etc., and easy dissemination employing the following criteria are just a few of the ways that a skilled designer must address the primary objective of effective creative design. (1) Good function and aesthetics (2) durability (3) economy (4) right choice of materials (5) correct structure (6) character identity (7) Beauty caused by the positive reaction of buyers (Mapro, 2014).

According to the study of (Suandi *et al.*, 2022) Values of sustainability and growing customer interest in eco-friendly products have an impact on furniture design. Though there is a growing

market for sustainable furniture goods, there is still a lack of uniformity when it comes to sustainability features in furniture design.

2.4.5. Quality and productivity improvement

To stay in business in today's fiercely competitive market, a company must to increase the quality of its products and quickly adapt to the ever-changing needs of its customers. As a result, it becomes crucial to react quickly to changes in demand and design or technology. Furthermore, those adjustments have a big impact on the stock of raw materials, semi-finished goods, and finished goods. To optimize this stock and maintain a high level of service, either more precise sales forecasts or higher production frequency are needed. Due to a greater number of different manufacturing batches with lesser volumes, the latter directly impacts the efficiency of the production lines. Production flexibility affects the frequency of machine changes, which may also cause the line's capacity to drop (Zawadzki, 2018).

Productivity is a key component of competitiveness and is measured as the ratio of output to input. It is a key indicator of technical efficiency in manufacturing. More outputs can be created from the same number of inputs, or the same amount of inputs can be used to produce the same amount of outputs, if productivity is higher (Zhang and Nagubadi, 2006). Suitability for a purpose is one way to characterize quality. Taking this criterion into account, wood quality indicates that this raw material can be used as the foundation for a final product. Various raw material qualities can be taken into account to determine quality based on the final output (Hasegawa *et al.*, 2020).

To compete with manufacturers in developing nations, who can produce labor-intensive goods at cheaper costs, firms in rich nations must dramatically raise their productivity. Production per employee or commodities produced per hour are two common metrics used to measure productivity. The value of things produced divided by the value of resources consumed is productivity. There are several strategies to boost productivity, such as cutting expenses, improving raw material utilization efficiency, or raising product quality. Any decrease in the amount of work or material required to produce subpar goods would lower expenses and boost output (Elmekkawy *et al.*, 2006).

2.5. Challenges of furniture enterprises

Enterprises in the twenty-first century encounter numerous obstacles. The two that are most crucial are learning new things and always improving in order to satisfy clients and maintain secure working environments. Technology advancements of today compel business owners to continuously update manufacturing procedures and personalize goods (Karwasz *et al.*, 2023).

The primary problems faced by small-scale furniture manufacturers are inadequate starting capital, irregular raw material supply, and regulatory hurdles from the government. Numerous studies have noted that current technologies are not always readily available in local industrial supply markets and are also beyond the reach of furniture companies limited financial resources. Another issue facing the furniture industry is a lack of skilled workers. Many of the workers in the company have little to no training and operate solely on the basis of their prior experiences. These factors impede the production of creative and high-quality goods, which would further expand market shares (Koch, 2020).

According to the study of (Martins *et al.*, 2019). Several barriers stand in the way of the furniture industries' adoption of quality concepts. This entails a number of issues, including the price variation of raw materials, unit manufacturing, the handcrafted nature of most process processes, the necessity for specialized labor, a productive structure, and complex equipment to serve different market niches and segments linked to more extensive interaction with demanding clients. These elements directly affect product quality, which leads to unhappy customers and, as a result, a company's defection from the market.

2.6. Impact of skill on performance of micro and small enterprises

To manage micro and small businesses, one needs the necessary education and skills. In Kenya, the vast majority of people operating micro and small businesses lack the necessary training and experience. The majority of people in charge of MSEs are regular people with inadequate educational backgrounds. As a result, they might not be qualified to handle managerial tasks for their businesses (Achieng, 2010). Although education and training are important ways to gain pre-employment skills, particularly for occupations in the formal sector, skills and education are not the same thing. The talents of the workforce that is now employed may be far greater than what would be predicted from their educational levels with on-the-job experience and perhaps additional formal training. Though experience and training in their current positions, persons below a specific

level of education would not be able to access certain jobs, it is generally acknowledged that there is a certain matching between education and employment (Tan and Tanaka, 2016).

In markets characterized by swift technical advancements and heightened global integration, educational establishments and employers alike confront several obstacles. Over the course of their employment cycle, workers must be able to adjust to shifting demands at work. This calls for a labor force with comparatively high levels of cognitive skills, or the fundamental mental capacities that enable thinking, memory, and learning. These cognitive abilities are essential for learning new information and using that knowledge in various contexts (Jansen and Rainer, 2015).

Owners and managers can benefit from education by gaining information and skill sets like technology literacy, which can boost success and productivity. "The cultivation of comprehensive literacy through education can aid owners in integrating pertinent data for efficient planning and informed decision-making, ultimately contributing to the success of the organization. Conversely, the acquisition of qualifications and skills has been shown to improve worker employability, enterprise productivity, and the inclusiveness of economic growth (Abebe 2011).

2.6.1. Employability skill

Based on the study of (Fukunishi, 2004) There have been several theories put up as to why African manufacturing is performing poorly, including inward-looking trade policies, incompetent labor and management, protective industrial policies, and inflated exchange rates. Theoretically, factors of competitiveness will be investigated as an analytical framework in order to systematically comprehend the effects of these diverse causes.

In much of the industrialized world, there is still work to be done in accurately predicting future job creation and the related skills requirements. High unemployment rates and inadequate educational systems in developing nations make it more difficult to ensure that the labor supply can keep up with industry demands. Large demands on scarce resources, conflicting political agendas, poor information distribution, and regulatory requirements out of step with the demands of the emerging global economy all contribute to implementation's growing complexity (Fernandez *et al.*, 2012).

Many studies have shown that knowledge and skills play a vital role in small business development an entrepreneur must have sufficient skills in his field-of work if he wants to achieve success.

(Armanurah *et al.*, 2014). The capabilities required to perform the tasks and duties of a particular job are known as workforce skills. These competencies include cognitive (e.g., basic literacy and numeracy), non-cognitive (e.g., teamwork, communication, language, IT, and other “soft” skills), as well as job- or occupation-specific skills. The acquisition of skills occurs through a series of education, training, and labor market activities; skill formation proceeds in stages, each building on the previous one. Few nations, developing nations in particular, have comprehensive data on these various competencies, and research is only now starting to develop comparable indicators of the workforce skills required for employment and growth (Tan and Tanaka, 2016).

2.7. Importance of skilled workers

Using a similar labor skill measure, companies in skilled labor industries have larger returns than those in low skilled labor industries, which is consistent with some of the empirical findings provided here for the skill return spread. However, labor is not a uniform input in the technology employed by businesses to produce goods. The labor force is highly heterogeneous; a high-skilled worker (like an engineer) is not the same as a low-skilled worker (like a janitor). High skilled workers carry out complicated jobs and are expensive to hire and replace, whilst low skilled workers perform regular duties and are comparatively easier to hire and replace (Zewdie, 2014).

Technology and technical skills are the hope for improving the future technological capability of any country must be linked to the past and present activities in essence, the continuous building of technological capability is critical to sustainable technological progress. the increase in production of value-added products can be achieved by increasing the scale of production and increasing the use of technology (Mogeni, 2016). Rapid technological advancement and an increasingly integrated approach to employment are characteristics of global manufacturing. The performance of the company is becoming more and more dependent on abilities at all levels. It is simpler for businesses to enter new markets, both domestically and internationally, to survive and prosper there, and to adapt to shifting circumstances in international marketplaces. when they have access to a competent labor force. Since lead companies frequently need suppliers to adhere to current international quality standards, having access to a trained labor force makes it easier to connect to regional and worldwide value chains (Jansen & Rainer, 2015).

Promoting industrialization-related skills in emerging nations has not effectively addressed the disparate skill requirements of the official and informal economies. It was suggested that strategic

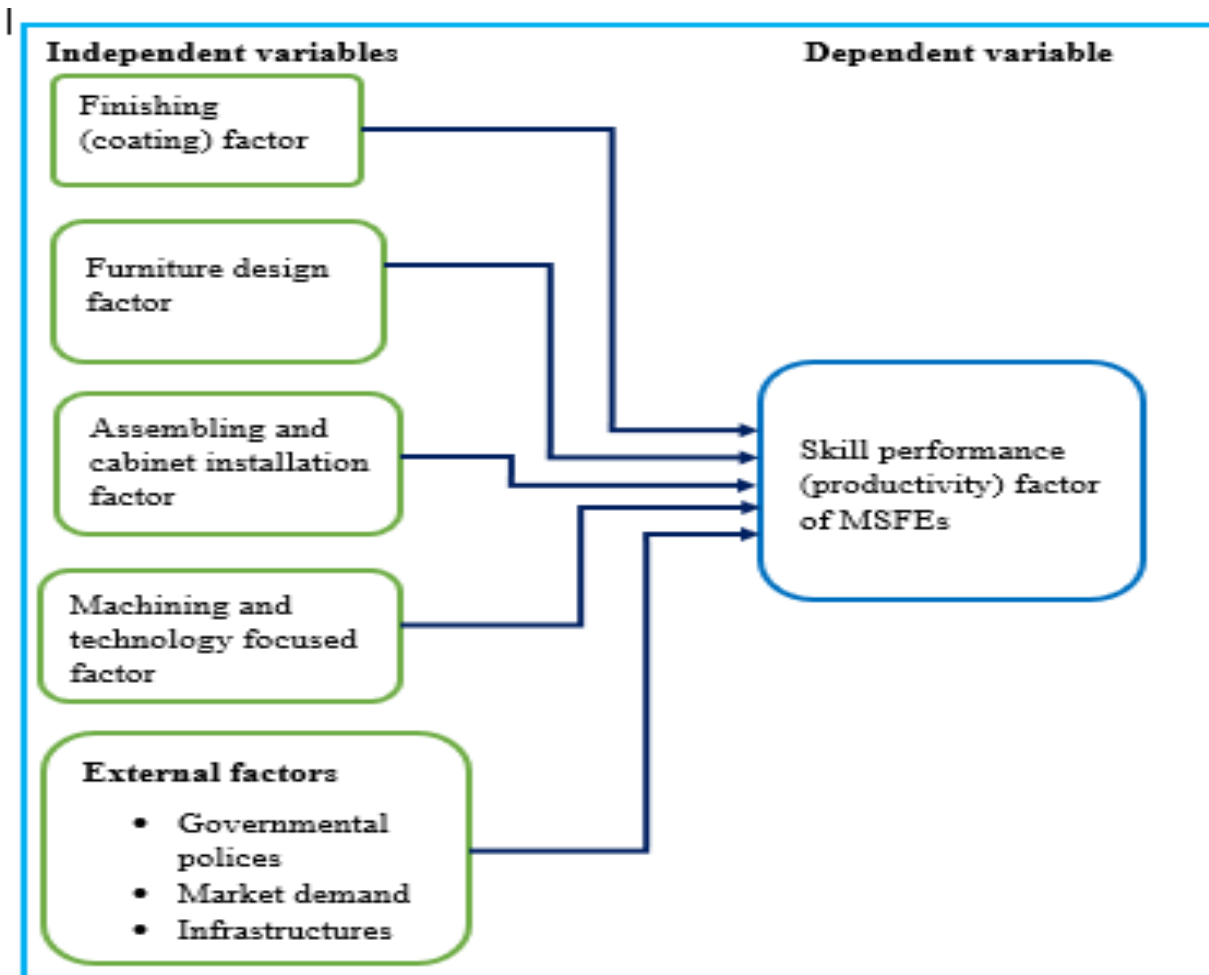
factors should play a significant role in skill profiling in countries that are developing. Despite the fact that Decent Work country programs (DWCP) incorporate aspects of education and skill development, strategy documents lack a rigorous connection between TVET and the goals of economic development. Government incentives to grow specific labor-intensive crops have the potential to significantly improve employment creation. according to an (Hurley, 2007).

Education has been understood to be an investment in the growing skill set of a country's workforce. Determining the growth-enhancing impacts of education in the form of schooling and training has been the subject of an expanding body of research in the fields of macro- and microeconomics. The enhanced Solow neo-classical approach, which concentrates on growth accounting techniques, and the approach based on new growth theories, which uses macro growth regressions, are the two main ways used in the field of macro-studies of the influence of education. The latter point out that improving education also raises an economy's long-term growth rate, while the former argue that improved output levels are affected over the long term. Both strategies emphasize that investing in education results in more than just greater pay (Landesmann *et al.*, 2009).

Many countries are experiencing skill shortages in a wide range of occupations that normally need university education or other post-school credentials for admittance. This is a result of the growing demand for higher level abilities. It is suggested that these shortages reflect "supply side" deficiencies in educational institutions, as they have not produced a sufficient number and caliber of trained individuals. It is also asserted that these training facilities perform inadequately when it comes to imparting "unique" or "employability" abilities. In the same way that increased educational attainment is seen as a direct result of new technology, it is also argued that talent shortages limit countries' ability to innovate (Toner, 2011). In many studies skill and skill levels are defined as some combination of education, training and experience (Tether *et al.*, 2005). This approach is taken by many national statically agencies in the classification and definition of occupations for the collection of labor market data. these occupational classifications also, on occupation, include a cardinal ranking of occupations from most to least skilled based (Toner, 2011).

2.8. Frame work of the study

The figure shows that a conceptual framework, in the level of skill of micro and small-scale furniture enterprises, the independent variable considered that the finishing (coating techniques), furniture design, wood joint, innovative skill factor and other external factors such as market demand, competition, and government policies. dependent variable is the performance or productivity of micro and small-scale furniture enterprises. this conceptual framework provides a visual representation of how the different variables are interconnected and how they may contribute to understanding the effect of skill level on the performance of MSFEs.



Source: own work

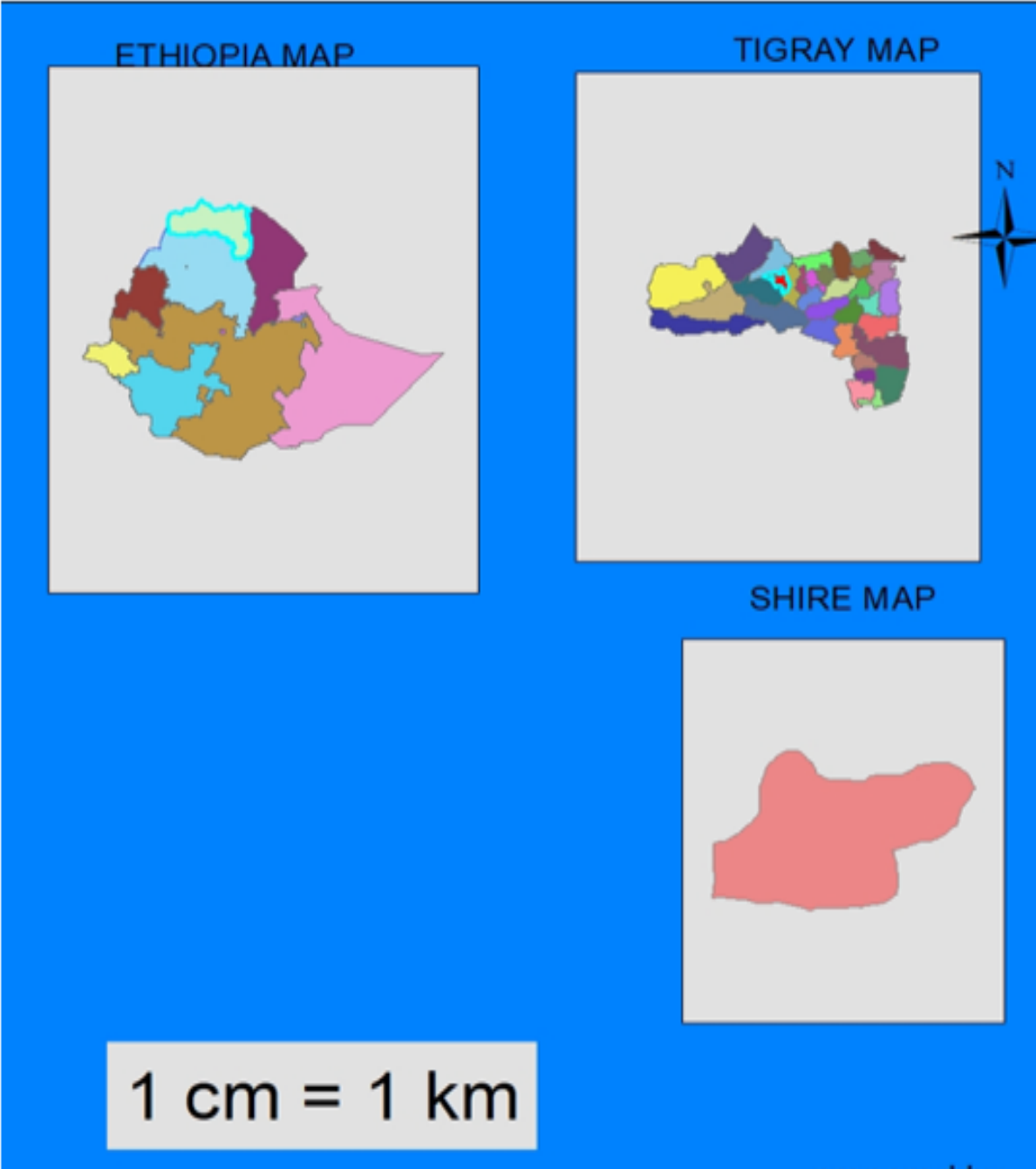
Figure 1: Conceptual frame work

CHAPTER THREE

METHOD LOGY

3.1. Description of the study area

The Shire Enda Selassie or known as Shire (in shortened form) is a town located the Tigray region of Ethiopia. The town experiences a semi-arid climate with hot temperatures throughout the year. The average temperature ranges from 20° C to 30° C with the hottest months being April and May. The total population of Shire is 120,000 and above. The town is located approximately 1061.4 road distance kilometers to north of Addis Ababa, the capital city of Ethiopia. It is also situated about 304.7 kilometers road distance to north west of Mekelle, the capital city of the Tigray region. Shire Enda Selassie known for its historical significance and additionally, the city serves as a gateway to popular tourist destinations such as Simien Mountains, Kafta Sheraro National Park and the historic city of Aksum. the town also serves as an important commercial center for the surrounding agricultural region, with a bustling market and vibrant local economy. Shire is also known for its diverse ethnic communities and rich cultural traditions. Socio economically, the town thrives on multiple economic activities like trade, gold trading, agriculture, and small-scale industries serving as a pivotal commercial center. Employment opportunities span sectors such as agriculture, local craft, service fostering livelihoods across a varied workforce. Essential infrastructure like roads, schools, one higher education (Aksum university branch) health facilities, and market support economic growth and communal well-being. Demographically, the town hosts a mix of ethnicities with Tigrayans being predominant, supplemented by Amharas, Oromos, and others. Age diversity reflects a spectrum of youth, adults, and elderly residents shaping social dynamics. Educational facilities and health care services cater to residents, influencing literacy rates and healthcare access. the household structure likely comprises extended families, contributing to the town. In terms of natural resource, Shire Enda Selassie located in a region that is known for agricultural productivity. The area is suitable for growing crops such as teff, wheat, barley and lentils. Livestock farming is also a common practice in the area. Additionally, Shire Enda Selassie is situated near the Tekeze River, which provides water for irrigation and other agricultural activities. The River also serves as a source of hydroelectric power for the region. Over all Shire Enda Selassie's population, services, demography, and natural resources are closely tied to its agricultural economy and strategic location in the Tigray region of Ethiopia.



Source: Ethio Arch GIS

Figure 2: Map of the study area

3.2. Research design

In this research were used both qualitative and quantitative (mixed) types of research methods for data collection, analysis and interpretation of results.

3.3. Target population

The target population of the study were owners of micro and small-scale furniture enterprises in all kebeles and their employees, governmental officials in the sector MSEs and furniture industrial extension experts of the city of Shire.

3.4. Types and data collection methods

In this research data were collected both from primary and secondary sources. The primary data were collected from the owners and employers of (MSFEs) of Shire town through questioner (both open-ended and closed-ended as presented in the appendix) inclusive of observation and interviewing. The secondary data were collected from concerned city administrators and other published materials. The questionnaires were developed both in English and Tigrigna languages. The questionnaire and observation checklist had a section that allowed collecting general information about respondent of the micro and small-scale furniture enterprises of Shire Enda Selassie town. Location, level of the enterprises, types of establishments, number of employees, experience, skill and educational background of owners, types of products they manufacture, the number of employees and level of educations were aspects on which data were collected.

3.5. Data collection instruments

The survey method was based on the questionnaire, observation and interviewing of respondents and micro and small enterprise sector of the city. A formal questionnaire which is presented in the appendix was prepared, with stated questions being prearranged in a logical order. The employed structured direct survey is the most popular data collection method which involved administering fixed-alternative questions, requiring the respondents to select from a predetermined set of responses. The survey method presented several advantages. First, the questionnaire was simple to administer. Second, the data obtained were reliable because the responses were limited to the stated alternatives. The use of fixed response questions reduced the variability in the results that may have been caused by differences in interviewers. Finally, coding, analysis, and interpretation of data were relatively simple.

3.6. Procedure for data collection

In order to assess the impact of skill level on the performance of micro and small-scale furniture enterprises in Shire Enda Selassie town, the researcher followed up the following three steps.

Step one: The researcher contacted industrial extension sector of the city, trainers of furniture making sector, and other concerned. And then the researcher explained about the objective of the research.

Step two: the researcher explained and presented to the owners of micro and small enterprise about the purpose of the study and the extent of the questionnaires.

Step three: After gaining permission from the concerned officials the researcher conducted detailed study on the impact of skill level on the performance of micro and small-scale enterprises and observations are conducted in all enterprises according to the prepared check list and key informants' (industry extension workers) were also interviewed.

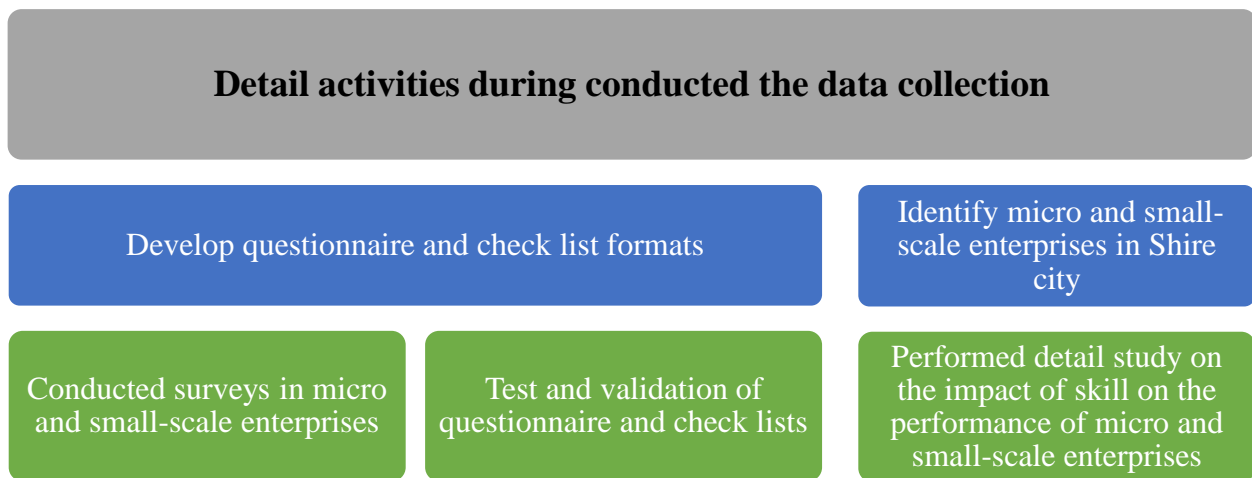


Figure 3: Procedures followed in research work

3.7. Data analysis method

The input data comprised information obtained from self-administered questionnaires, observations and interviews so as to identify, rank and analyze skill sets in these enterprises. The data analysis encompassed both qualitative and quantitative methods, which were used to examine correlations between skill sets and enterprise performance indicators. Expected out puts included insights into the significance of various skills on productivity levels. Statistical tools such as SPSS and Excel were utilized for in-depth analysis, with equations and models applied to quantify the relationship between skill levels and enterprise performance.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Demographic characteristics of the respondent employees in small and micro enterprises in the study area

Table 1 gives a summary of the backgrounds of the small and micro enterprise workers in Shire Enda Selassie town, based on data gathered from micro and small-scale furniture enterprises. Accordingly, out of the total 405 workers of the city, 100 respondents show unwilling (non-respondents) to participate in study, 305 employers were show willingness and questionnaire was given to them. And from 305 questionnaires given to them 300 respondents fill and back for the researcher.

Table 1. Demographic characteristics of the respondents

Position of respondents	No of respondents.	Percentage
Administrative staff	50	16.6
Design workers	20	6.7
Machinist workers	78	26
Assembler and built in cabinet installer	65	21.7
Finishing workers	87	29
Total	300	100

Source: Survey data, 2024

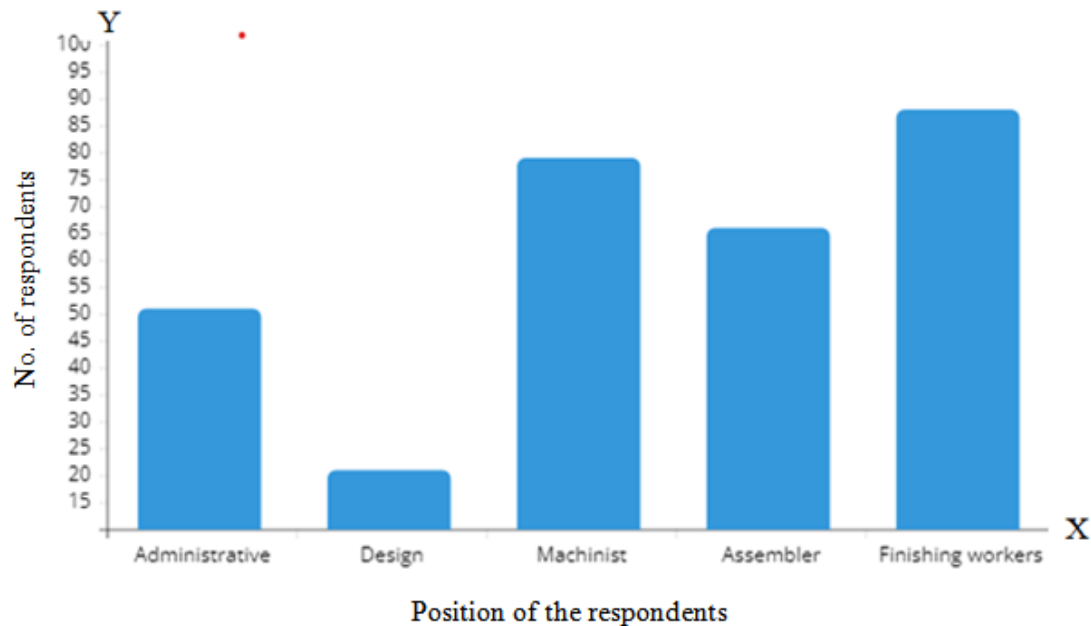


Figure 4: Demographic characteristics of respondents

The **table 1** above shows that about 50 (16.6%) respondents were administrative workers, 20 (6.7%) designers, 78(26%) machinists, 65 (21.7%) assemblers and built in cabinet installer and the remaining 87 (29%) respondents were finishing workers and combinations of the others.

4.2. Questionnaires response rate

The study targeted 405 respondents to which were administered the questionnaires Three hundred (300) questionnaires were completed and returned back giving a response rate of 98.4% which appears an excellent outcome. According to (Zewdie, 2019) above 70% is an excellent response rate, 60% response rate is good while 30% is not viable.

Table 2. Response rate

Response rate	No of respondents	Percentage
Respondent	300	98.4
Non-respondent	5	1.6
Total	305	100

Source: Survey data, 2024

4.3. Sex composition of the respondents

Table 3. Sex composition of the respondents in study area

Sex of the respondents	No of respondents.	Percentage
Male	202	67.3
Female	98	32.7
Total	300	100

Source: Survey data, 2024

The **table 3** above indicates that 202 (67.3%) and 98 (32.7%) of the respondents were male and female respectively.

4.4. Respondent level of education

Table 4. Level of education

Level of education	No of respondents	Percentage
Non-formal education	47	15.7
Certificate	82	27.3
Primary/secondary	78	26
Vocational trainee	59	19.6
Degree	29	9.7
Above degree	5	1.7
Total	300	100

Source: Survey data, 2024

Table 4 shows that, 47 (15.7%) of respondents had non-formal education, about 82 (27.3%) of respondents were with a qualification of certificate, about 78 (26%) with primary/secondary education, 59 (19.6%) of respondents were having TVET qualification while the rest 29 (9.7%) were with a university degree holder and 5 (1.7%) of respondents had miscellaneous qualifications.

4.5. Level of skill of employers and the effect on the performance of MSEs

Employees are the backbone in furniture enterprises, because employees accomplish tasks ranging from customer searching to the final production and delivery of furniture to customers which are directly interlinked to productivity and profitability. Production management skill, furniture assembly and built in cabinet installation skills, designing skills, finishing skills, machining skills, are the major professional skills which are found to be indispensable in furniture production process.

4.5.1. The level of skill of assembler and built in installer workers in micro and small enterprises

In this research data were collected from respondents in order to know the extent to which level of their skills affected the performance of MSEs using a five-point Likert's scale with the following categories 1.0 - 1.49 (No knowledge), 1.5 - 2.49 (Poor), 2.5 - 3.49 (Good), 3.5 - 4.49 (Very good) and 4.5 – 5 (Excellent). The details are presented in appendix 1.

Table 5. Effect of level of skill of furniture assembler and built in installer on performance of MSEs based on Five Likert scale

Level of skill	Reading and interpreting working drawing	Selecting appropriate type of materials based on their property	Wood working automation machine operation	Adjustment and machine maintenance	Proper handling of raw materials	Rough and final cutting of materials	Checking qualities of component parts	Coordinate work	Work with other workers	Communication skill	Raise alternative solution for problem occurred during furniture manufacturing	Reporting work	Providing first aid service	Overall
NR.	300	300	300	300	300	300	300	300	300	300	300	300	300	
Mean	2.10	2.49	2.75	3.07	2.47	2.87	2.15	2.67	2.67	3.49	2.18	2.40	1.62	2.53
S. D	0.50	0.578	0.433	0.25	0.58	0.78	0.50	0.84	0.84	0.72	0.931	0.491	0.801	.53
	3			4	5	1	8	8	8	6				

Note: NR: Number of respondents, SD: Standard deviation

The measure of professional skills demanded in furniture production, finishing, design, installation of cabinets, and machining is described in **Table 5**: Skills on reading and interpretation of working drawings: mean (2.1); selecting appropriate type of materials based on their property: mean (2.49); wood working automation machine operation: mean (2.75); machine maintenance and adjustment: mean (3.07) and Proper handling of raw materials: mean (2.47). Rough and final cutting of materials: mean (2.87), checking qualities of component: mean (2.15), coordinate work: mean (2.67); work with other workers: mean (2.67), Communication skill: mean (3.49); raise alternative solution for problems that occurred during furniture: mean (2.18); report work: mean (2.4), and providing first aid: mean (1.62). The overall mean of the assembler and built-in installer workers' skill levels indicates that these workers' skills are poor, as shown by (**M= 2.53, SD= 0.53**).

4.5.2. The level of skill of designer workers in micro and small-scale furniture enterprises

In this research data were collected from respondents in order to know the extent to which level of their skills affected the performance of MSEs and were rated on the basis of the five Likert's scale

with the following categories 1.0 - 1.49: No knowledge, 1.5 - 2.49: Poor, 2.5 - 3.49: Good, 3.5 - 4.49: Very good and 4.5 – 5: Excellent.

Table 6. Designer respondents’ level of skill

level of skill	Make by customer need	Conduct modern furniture design	Develop appropriate design	Select and use appropriate raw materials which can use for	Develop appropriate design	List and quantify appropriate materials and accessories	Use of design software	Cost calculation	Over all
NR	300	300	300	300	300	300	300	300	
Mean	2.20	1.94	2.01	2.50	1.94	2.20	1.94	2.29	2.12
Std. D	0.602	0.670	0.651	0.501	0.670	0.602	0.670	0.557	0.55

Note: NR: number of respondents, SD: Standard deviation

The summary depicted in **Table 6** established the following ratings of required skill: manufacturing based on customers’ need: mean (2.2), conducting modern furniture design: mean (1.94), developing design concept: mean (2.01), selecting and using appropriate raw materials which can be used for construction: mean (2.5), developing appropriate design: mean (1.94), listing and quantifying appropriate materials and accessories: mean (2.2), use of design software: mean (1.94), costing calculation: mean (2.29). The overall mean of the designer workers' skill levels indicates that these workers had no knowledge about modern design skills, as shown by the **M= 2.12, SD= 0.55**.

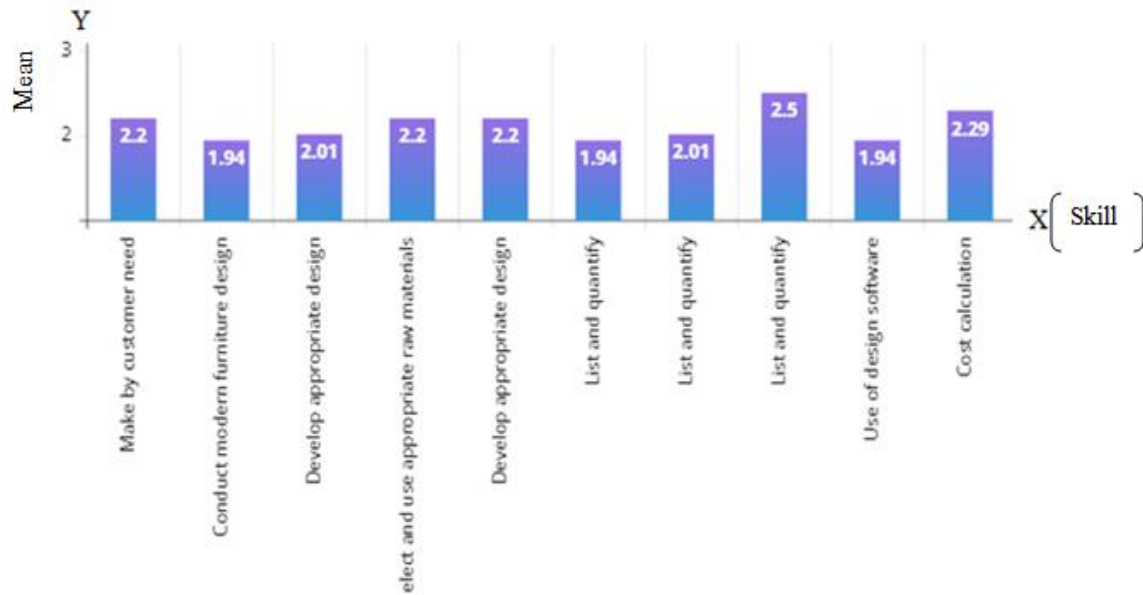


Figure 5: Designer respondents' level of skill

According to the survey, in all selected small and micro furniture enterprises there were no design teams (Architects and Drafts Man) and designing activity is accomplished without considering design concepts or design of furniture, which could have been fulfilled needs of customer by integrating their cultures, customs, beliefs and history. Cost calculation were also performed by a relatively more concern on gaining profit rather using the scientific way of cost estimation (incorporating scientific percentages for machine depreciation, labor cost, overhead cost, cost for solid wood and manufactured board wastages, miscellaneous cost).

4.5.3 The level of skills of finishing workers in micro and small-scale furniture enterprises

In this aspect of assessment of level of skills with regard to finishing were adopted the following categories that emanated from the five-point Likert scale: 1.0 - 1.49: No knowledge, 1.5 - 2.49: Poor, 2.5 - 3.49: Good, 3.5 - 4.49: Very good and 4.5 – 5: Excellent.

Table 7. Level of skill of finishing workers

Level of skill	Select and use appropriate materials and tools for surface preparation	Select and use appropriate finishing materials based on the materials properties	Mix with correct ratio based on manufacturers manual	Apply finishing materials with correct methods, procedures and tools	Sample preparation	Placing, storing and using by following manufacturers manual and with the	Properly cleaning tools and equipment after application of finishing	Select appropriate type of wood finishing (transparent, opaque and imitation)	Imitating colors	Work with others	Coordinate work	Communication skill	Raise alternative solution for problem occurred during furniture manufacturing	Check qualities of finishing	Providing first aid service	Over all
Mean	2.52	2.52	2.46	1.94	2.67	3.02	2.20	2.50	2.87	2.46	2.67	2.50	1.94	1.94	1.54	2.38
S. D	0.53	0.54	0.61	0.670	0.84	0.33	0.60	0.501	0.78	0.61	0.84	0.50	0.670	0.67	0.50	0.54
	6	5	5		8	9	2		1	5	8	1		0	0	

Note: SD: Standard deviation

The results presented in **Table 7** established skill levels on selecting and using appropriate materials and tools for surface preparation: mean (2.52), selecting and using appropriate finishing materials based on the materials properties: mean (2.52), mixing with correct ratio based on manufacturers manual: mean (2.46), applying finishing materials with correct methods, procedures and tools: mean (1.94), sample preparation: mean (2.67), placing , storing and using by following manufacturers manual: mean (3.02), properly cleaning tools and equipment after application of finishing : mean (2.2), selecting appropriate type of wood finishing (transparent, opaque and imitation): mean (2.5), imitating colors: mean (2.87), working with others: mean (2.46), coordinating work: mean (2.67), communication skill: mean (2.5), raising alternative solution for problem occurring during furniture manufacturing: mean (1.94), checking qualities of finishing: mean (1.94), providing first aid service: mean (1.54). The overall mean of the finishing workers' skill levels indicates that these workers' skills rated poor, as shown by magnitudes of the mean (**M= 2.38, SD= 0.54**).

At selected micro and small-scale furniture enterprises finishing workers develop their skill with experience not being supported by formal education. However, they have limited skills on:

Selecting appropriate wood finishing type (transparent, imitation and opaque) based on types of materials, selecting and using suitable types of finishing materials on each of wooden material based on their properties, mixing of finishing materials with correct ratio of solute and solvent based on manufacturers manual, applying of finishing materials based on correct methods, placing or storing and using of finishing materials based on manufacturers manual and expired date.

4.5.4. The level of skill of machinist workers in micro and small-scale furniture enterprises

The level of category of skills was done just as was done in the previous cases: 1.0 - 1.49: No knowledge, 1.5 - 2.49: Poor, 2.5 - 3.49: Good, 3.5 - 4.49: Very good and 4.5 – 5: Excellent.

Table 8. The level of skill of machinist workers

Level of skill	providing first aid service	reading and interpreting working drawing	reading and interpreting working drawing	checking qualities of component parts	raise alternative solution for problem occurred during furniture manufacturing	wood working automation machine operation	coordinate work	selecting appropriate type of materials based on their property	reporting work	adjustment and machine maintenance	work with other workers	proper handling of raw materials	communication skill	rough and final cutting of materials	Over all
Mean	2.47	2.67	2.67	3.02	2.67	3.49	2.67	2.15	2.47	2.40	2.75	2.50	2.52	1.62	2.57
Std. D	0.608	0.848	0.848	0.339	0.848	0.726	0.848	0.508	0.585	0.491	0.433	0.501	0.536	0.801	0.53

Note: SD: Standard deviation

The results presented in **Table 8** established the following ratings of skills: providing first aid service: mean (2.47), reading and interpreting working drawing: mean (2.67), checking qualities of component parts: mean (3.02), raising alternative solution for problem occurred during furniture manufacturing: mean (2.67), wood working automation machine operation: mean (3.49), coordinating work: mean (2.67), selecting appropriate type of materials based on their property: mean (2.15), reporting work: NK 3 (6%), P 27 (56%), VG 18 (38%), adjustment and machine

maintenance: mean (2.47), working with other workers: mean (2.75), proper handling of raw materials: mean (2.5), communication skill: mean (2.52), rough and final cutting of materials: mean (1.62). The overall mean of the machinist workers' skill levels indicates that these workers' skills rated poor, as shown by ($M= 2.57, SD= 0.53$).

4.6. Performance measure of micro and small-scale enterprises

The study also sought to know how the MSEs measured the performance of their businesses. The results are presented on the basis of the following ratings using the five-point Likert's scale, adopting categories: 1.0- 1.49 Strongly Disagree (SD), 1.5-2.49 Disagree (DS), 2.5-3.49 Neutral (N), 3.5-4.49 Agree (A) and 4.5-5 strongly Agree (SA).

Table 9. Performance rate of micro and small-scale enterprises

Performance measure	Respondents rating	Frequency	Percentage	Mean	SD
There is good sales turnover	SD	132	44	1.59	0.512
	DS	144	48		
	N	24	8		
The business is profitable	SD	145	48.3	1.59	0.563
	DS	139	46.3		
	N	16	5.4		
The business firm size is increasing	SD	182	60.6	1.54	0.499
	DS	118	39.4		
Average				1.56	0.51

Note: SD: Standard deviation

The majority of the respondents disagreed on existence of good turnover, profitability and regarding increases in the size of businesses indicating non-competitiveness.

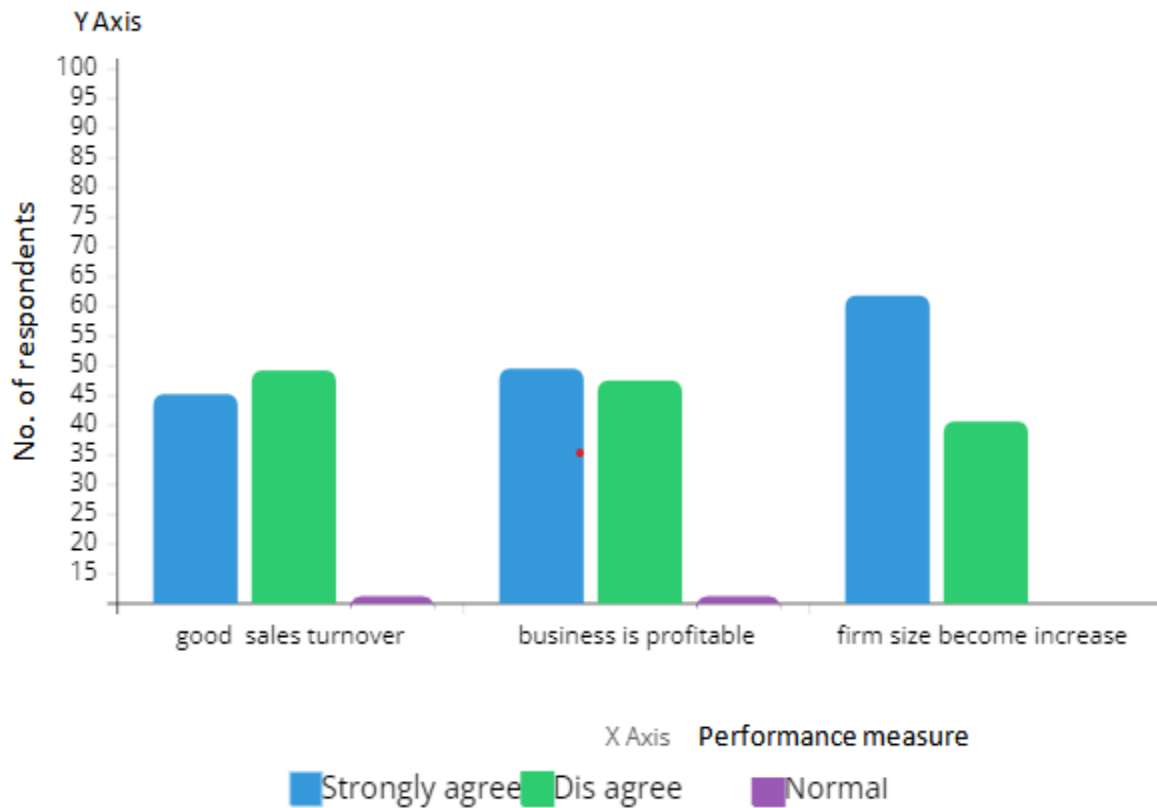


Figure 6: Performance rate of SMEs

4.7. Effect of employee’s skill level on performance of micro and small-scale furniture enterprises

4.7.1. Results of inferential analysis using SPSS

4.7.1.1. Correlation analysis

In this study Correlation Coefficient was used to determine whether there is significant relationship between levels of skill of workers: skill of assembler and built in cabinet workers, designer workers, finishing workers, and machinist workers with performance of micro and small-scale enterprises (dependent variable). The details are presented in the following section:

Table 10. Correlation analysis between skill level of workers with performance of MSEs

		Correlations				
		A	M	F	D	P
A	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	300				
M	Pearson Correlation	.986**	1			
	Sig. (2-tailed)	.000				
	N	300	300			
F	Pearson Correlation	.984**	.986**	1		
	Sig. (2-tailed)	.000	.000			
	N	300	300	300		
D	Pearson Correlation	.943**	.912**	.952**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	300	300	300	300	
P	Pearson Correlation	.820**	.852**	.875**	.780**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	300	300	300	300	300
**. Correlation is significant at the 0.01 level (2-tailed).						

Note: A: assembler and built in cabinet installer, M: machinist, F: finishing, D: designer P: performance.

As **table 10** shows there is varied degree of relationship among study variables, though positive correlations exist. According to Zewdie, (2019) interpretation of correlation coefficients, 0.00 to 0.01 shows no correlation; 0.02 to 0.09 show very weak correlation; 0.1 to 0.29 show weak correlation; 0.30 to 0.49 show moderately weak correlation; 0.5 to 0.69 show moderately strong correlation; 0.70 to 0.89 show strong correlation; 0.90 to 0.98 show very strong correlation while 0.99 to 1.00 show almost perfect correlation.

The results presented in **table 10** shows that the following skill level have statistically significant positive strong correlation with performance of MSEs in Shire Enda Selassie town: assembler and built in cabinet installers, skill of machinist workers, finishing workers and designer workers.

4.7.1.2. Regression analysis

Table 11. Regression analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919 ^a	.844	.841	.804
a. Predictors: (Constant), A: assembler and built in cabinet installer, M: machinist, F: finishing, D: designer				

In a model summary, the “R” value is used to indicate the strength and direction of the relationship between the variables. The closer the value gets to 1, the stronger the relationship. In this case, as shown in table 10, R= 0.919a, indicating that there was an overall strong and positive relationship between the variables.

The R-Square obtained in the study was 0.844. This value indicates that the independent variables (skill level of Assembler and built in cabinet workers, skill level of machinist workers, skill level of finishing workers and skill level of designer workers) can explain 84.4% of the variance in the performance of micro and small-scale enterprises in Shire Enda Selassie town. This is in line with research conducted by Reni Wijaya, *et.al.*, (2022) which explains that one of the variables that affect the performance of SMEs in Pariaman city is skills of employers.

Table 12. Regression between correlating skills

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	-1.513	.378		.000
	Skill level of Assemblers	.236	.011	.820	.000
	Skill level of Machinists	.248	.010	.852	.000
	Skill level of Finishing workers	.216	.008	.875	.000
	Skill level of Designers	.350	.019	.780	
a. Dependent Variable: Performance of enterprises					

The standardized beta coefficient column shows the contribution that an individual variable makes to the model. We can get the value of standardized coefficient of each independent variable from the product of unstandardized coefficient. Thus, the largest influence on the performance of MSEs is from the skill level of finishing workers (0.875), the next skill level of machinist workers (0.852), skill level of assembler and built in cabinet workers (0.82) and skill level of designer workers (0.78). Similar study done by Assefa, (2013) stated that choice of technology and innovative capacity is the important factor determining growth of MSEs.

In this study the results are also in line with the findings of Alaghbari *et al.* (2017), stating the fact that employee's skill plays a key role in determining the success or productivity of factories. It can, therefore, be concluded that skills level of assembler and built in cabinet installer workers, designing workers, machining and finishing workers do largely affect the performance of micro and small-scale enterprises in Shire Enda Selassie town. The results of this study are in line with research conducted by Reni Wijaya *et al.* (2022), which stated that the skills and knowledge variables have a positive and significance impact on the performance of SMEs.

According to Divyangkumar and Somabhai (2020), the common factors affecting productivity are working overtime, inadequate working methods, incomplete or revised drawings, poor work site management, unsafe working conditions, bad leadership skills, and a lack of skills and experience on the part of the workforce.

Study by Legesse (2021), similarly states that, performance in furniture-making factories depends and affected on a clever mix of people, equipment, efficient processes, type of technology used, staff training, the equipment used to generate parts and components, expensiveness of automation machines, machine maintenance, invest in software.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This research was conducted with the objective of assessing the effect of level of skills of employers on the performance of micro and small-scale enterprise in Shire Enda Selassie town. Based on the findings of the study, the following conclusions were drawn.

- It can be concluded that there is a strong and positive relationship between micro and small-scale enterprises performance and (skill level of employers: assembler and built in cabinet workers, machinist workers, finishing workers and designer workers).
- The breakdown of respondents based on their positions indicates a diverse range of skills within the workforce. For example, machinist workers, designers and finishing workers require specific technical skills, while administrative staff may require more general administrative and organizational skills. This suggests that small and micro enterprises employ individuals with a variety of skill levels and specializations to meet their operational needs.
- The significance value of all skills (assembler and built in cabinet installer, finishing, machinist and design) of employers in micro and small-scale enterprises in Shire Enda Selassie shows high significance (.000) against performance of enterprises. The effect of skill level of employers :(assembler and built in cabinet workers, machinist workers, finishing workers and designer workers) on performance of MSEs in Shire Enda Selassie town is by 84.4%.

5.2. Recommendations

From the results of this research, it is expected to be able to make a practical contribution to micro and small-scale enterprises in Shire Enda Selassie town so as to improve the performance of micro and small-scale enterprises, such as improving skills of employers to run better business processes in the hope of winning the competition.

- The MSEs in consultation with administrative staffs had better review on skill level of employers like: assembler and built in cabinet workers, machinist workers, finishing workers and designer workers)
- Establish or collaborate with vocational training centers to provide targeted skills training programs for employees in micro and small-scale furniture enterprises, particularly in areas where they have limited skills, such as modern furniture design cost calculation, and finishing works.
- Facilitating access to financial resources for micro and small-scale furniture enterprises to invest in equipment upgrades, technology, and training programs that can enhance productivity and skills.
- Keeping proper surface preparation for finishing based on the properties of wood.
- Selecting appropriate types of finishing materials and their application methods with the number of coats.
- Proper handling and using of each Machines and maintenance of workstations and tools.
- Development agents and technology extension workers are advised to support micro and small-scale enterprise by enhancing training for employers and providing incubation center

Further suggestion

- * For further researchers, it is recommended to add and look for other factors that can improve the performance of micro and small-scale enterprises to get better results.

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Appendix I

Assembler and built in cabinet workers skill level		No of respondents	Percent	Mean
Reading and interpreting working drawing	NK	46	15.3	2.10
	P	190	63.3	
	G	64	21.4	
Selecting appropriate type of materials based on their property	P	148	49.4	2.49
	G	115	38.3	
	VG	37	12.3	
Wood working automation machine operation	P	110	36.7	2.75
	G	190	63.3	
Adjustment and machine maintenance	G	203	67.7	3.07
	VG	97	32.3	
Proper handling of raw materials	P	155	51.7	2.47
	G	83	27.7	
	VG	62	20.6	
Rough and final cutting of materials	P	110	36.7	2.87
	G	110	36.7	
	VG	80	26.6	
Checking qualities of component parts	P	199	66.3	2.15
	G	46	15.3	
	VG	55	18.4	
Coordinate work	P	155	51.7	2.67
	G	62	20.6	
	VG	83	27.7	
Communication skill	NK	40	13.4	3.49
	G	130	43.3	
	VG	130	43.3	
Raise alternative solution for problem occurred during furniture manufacturing	NK	69	23	2.18
	P	180	60	
	VG	51	17	
Reporting work	P	150	50	2.4
	G	150	50	
Providing first aid service	NK	150	50	1.62
	P	80	26.7	
	G	70	23.3	

Appendix II

Definition of some terms

Factor: factor typically refers to an element or variable that influences the operations, performance or outcomes of the business. This can encompass a wide range of components, such as financial resources, human capital, market conditions, regulatory environment, technological capabilities, and managerial expertise.

Performance: performance refers to the overall effectiveness, efficiency, and achievement of business objectives, often measured in terms of productivity, profitability, customer satisfaction, and operational success. It encompasses the ability of the enterprise to meet its goals, generate revenue, and deliver value within its market or industry.

Micro enterprise: micro enterprises are small business with limited numbers of employees and limited turnover. These businesses typically employ fewer people and are often operated by the owner or a small team.

Small enterprises: small enterprises are business that are larger than micro- enterprises but are still relatively small in scale. These businesses generally have higher turnover than micro enterprises.

Skill: refers to the ability to perform a particular task or activity with competence, often acquired through training, practice or experience. It encompasses the practical application of knowledge, expertise, and proficiency in executing specific activities, whether they are technical, professional, or practical in nature. Skills can range from technical abilities, such as programming, carpentry or soft skills including communication or leadership capabilities.

Skill level: skill level refers to a person's proficiency or ability in a particular activity or field. It indicates how well someone can perform tasks or solve problems related to that skill, often measured on a scale ranging from beginner to expert.

Appendix III
Survey questionnaire

FDRE Technical Vocational and Training Institute

Faculty of Civil Technology

Department of Wood Technology

Questionnaire for Operators and Employees of furniture enterprises

I am Yemane Mekonen a post graduate student of Wood Science Technology I undertaking a study that aims to assess **“The Effect of the level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises in North West region of Tigray, Shire Enda Selassie town”** To this end, I have designed a questionnaire to gather information for my study. I kindly ask you to participate in the investigation, which will help for the investigation of level of skill set up on productivities of micro and small furniture enterprises in Shire town. your participation in the study by responding the questionnaire is very crucial. without it, the study will not be as complete as it should be. Please fill up all the questions honestly and return it to the researcher. Do not write your name and I assure you that your privacy and information you are giving will be treated with strict confidentiality.

General Direction: please answer this questionnaire very carefully and honestly by encircling the letters of your choice, writing your opinion or just marking a tick “√” sign on the space provided based on the question type and that satisfies your opinion. Some of the questions may have more than one answer.

Thank you for your time and kind cooperation!

Yemane Mekonen (the researcher)

Tel +251 919067561

Email yemanemekonen42@gmail.com

Column: 7. Major characteristics of enterprise workers

Column: 8. Occupation

No formal training.....0 Unpaid working proprietors and fam. Workers....1
 Formal basic training less than year.....1 Production workers2
 TVET certificate 1-2 years2 Administrative workers.....3
 Other certificate 1-2 years.....3
 TVET diploma.....4
 Other diploma 2 years and above.....5
 University.....6
 Informal through practice.....8
 other -----9

#	Job designation	Occupation	Sex	Age	Literacy	Formal training	Length of years in the establishment
1	2	3	4	5	6	7	8
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

9. Question about the industry employees

Designing of furniture1	Assembling furniture component parts alone.....7
Preparing working drawing....2	Preparing surfaces of furniture component part for finishing.....8
Reading and interpreting working drawing...3	Selecting and Mixing of finishing materials.....9
Selecting raw materials.....4	Applying finishing materials on furniture component part.....10
Operating or using wood working machines and tools...5	Calculating furniture production and selling cost.....11
Producing furniture component parts.....6	Project assembler and hard ware fixture12

No	work position	Number of workers		Occupation	Year of Experience	Skill											
		M	F			1	2	3	4	5	6	7	8	9	10	11	12
01.	General manager																
02.	Production manager																
03.	Designer																
04.	Machinist																
05.	Support machinist																
06.	Assembler																
07.	Assembling Supporter																
08.	Finishing																
09.	Finishing supporter																
10.	Display room worker and seller																
11.	Installer																
12.	Hard ware fixture																

10. Condition of skilled and unskilled workers, detail information about the performance of the enterprise employees

No	List of skill	Excellent		Very good		Good		Poor		No knowledge	
		M	F	M	F	M	F	M	F	M	F
1	Design skill										
2	Preparing working drawing										
3	Reading and interpreting working drawing										
4	Select and use appropriate raw materials based on its property										
5	List and quantify appropriate materials and accessories										
6	Operating or using wood working machines										
7	Adjustment and wood working machines										
8	Producing furniture component parts										
9	Assembling furniture component parts										
10	Preparing solid wood surfaces of furniture component part for finishing										

11	Selecting and Mixing of finishing materials										
12	Applying finishing materials on furniture component part										
13	Use of design soft ware										
14	Cost calculation										
15	Customer handling										
16	Check qualities and functionalities of assembled and installed furniture										
17	Coordinate work										
18	Work with other workers										
19	Communication skill										

11. do you want to take further training of wood working to improve your skill for the future?

- A. Yes B. No C. Undecide

12. If your answer for question no “18” is ‘NO’ please indicate your reason

- A. My work schedule is not flexible to further my education. E. I improve my skill through process
 B. My income is not enough to cover school fees. F. I have enough skill on furniture making
 C. I have no time due to my domestic responsibilities. G. any other specify _____
 D. I am not interested to take further classes.

13. What are the productivity hindering factors in your furniture enterprise?

14. Do you think that your skill is adequate for current market status?

A. Yes

B. No

15. if your answer for question “14” is ‘No’ please write the reason

16. Have you ever received customer complaints with regard to your furniture products? Please use the tick (“√”) sign on the space provided.

No	Type of products	Finishing	Type of complaint						
			Durability	Joints	Defective parts				
					Material usage	Assembling	Sanding	Hard wares	laminating
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
12									
13									
14									
15									
16									
17									
18									
19									
20									

If any other idea regarding the defect of products specify in the following provided idea

17. Employee motivation for work

- A. weak B. moderate C. strong D. very strong

18. What tools and equipment does your enterprise use for furniture production?

- A. Hand tools B. Power tools C. CNC machines D. Other _____

19. What skills do you believe are most important for success in the furniture industry?

- A. Design skill
- B. Preparing working drawing
- C. Finishing skill
- D. Communication skill
- E. Operating or wood working machines
- F. Joint separate pieces of wood skill
- G. any other specify_____

20. How would you rate the design creativity of your furniture products?

- A. Low creativity B. Moderate creativity C. High creativity

21. Do you get any support training in your profession

- A. Yes B. No

22. if your answer for question 21 is 'Yes' please please write the kind of training

23. How much do you agree with the following statement? furniture enterprises productivity is directly impacted by level of skill in particular areas?

- A. Strongly agree B. Agree C. Neutral D. Dis agree E. Strongly dis agree

Appendix II “B”

Questionnaire for employees

Dear Respondent, please answer the questionnaire very carefully and honestly by writing your opinion or just marking a tick (“√”) sign on the space provided.

24. Your skill and Knowledge on furniture production

No.	List of skills	No knowledge	Poor	Good	Very good	Excellent
01.	Making by customer needs					
02.	Finishing technique					
03.	Develop design concept					
04.	Develop appropriate design					
05.	Select and use appropriate raw materials, use for construction					
06.	List and quantify appropriate materials and accessories					
07.	Use of design soft ware					
08.	Cost calculation					
09	Assembling projects					
10	Wood jointing					
11	Operating wood working machines					

25. Have you received any formal education or training in woodworking design?

Questionnaire for furniture enterprise machinists

Dear Respondent, please answer the questionnaire very carefully and honestly by writing your opinion or just marking a tick ("√") sign on the space provided.

26. Information on your machine operation skill

No.	List of skills	No knowledge	Poor	Good	Very good	Excellent
01.	Reading & interpreting working drawing					
02.	Selecting appropriate type of materials based on their property					
03.	Woodworking automation machine operation					
04.	Adjustment and machine maintenance					
05.	Proper handling of raw materials					
06.	Rough and final cutting of material					
07.	Checking qualities of component parts					
08.	Coordinate work					
09.	Work with other workers					
10.	Communication skill					
11.	Raise alternative solution for problem occurred during furniture manufacturing					
12.	Reporting work					
13.	Providing first aid service					

Questionnaire for furniture finishing workers

Dear Respondent, please answer the questionnaire very carefully and honestly by writing your opinion or just marking a tick (“√”) sign on the space provided.

27. Information on your skill on finishing part

No.	List of skills	No knowledge	Poor	Good	Very good	Excellent
01.	Select and use appropriate materials & tools for surface preparation					
02.	Prepare surface for finishing					
03.	Select and use appropriate finishing materials based on the materials properties					
04.	Mix with correct ratio based on manufacturers manual					
05.	Apply finishing materials with correct methods, procedures and tools					
06.	sample preparation					
07.	Placing, storing & using by following manufacturers manual and with the consideration of date of expiration.					
08.	Properly cleaning tools & equipment after application of finishing					
09.	Select appropriate type of wood finishing (transparent, opaque & imitation)					
10.	Imitating colors					
11.	Coordinate work					
12.	Work with other workers					

13.	Communication skill					
14.	Raise alternative solution for problem occurred during furniture manufacturing					
15.	Check qualities of finishing					
16.	Providing first aid service					

28. Have you received any formal training in wood finishing techniques?

29. How do you ensure a smooth and even finish on wooden surfaces?

30. Write any additional knowledge and skills on finishing technique

Questionnaire for furniture designers

Dear Respondent, please answer the questionnaire very carefully and honestly by writing your opinion or just marking a tick “√” sign on the space provided.

31. Information on your furniture design skill

No.	List of skills	No knowledge	Poor	Good	Very good	Excellent
01.	Make by customer needs					
02.	Conduct modern furniture design					
03.	Develop design concept					
04.	Develop appropriate design					
05.	Select and use appropriate raw materials which can use for construction					
06.	List and quantify appropriate materials and accessories					
07.	Use of design soft ware					
08.	Cost calculation					

32. What software or tools do you use to create detailed design plans for woodworking projects?

Questionnaire for Assembler and built-in furniture installers

Dear Respondent, please answer the questionnaire very carefully and honestly by writing your opinion or just marking a tick “√” sign on the space provided.

33. Information on your skill

No.	List of skills	No knowledge	Poor	Good	Very good	Excellent
01.	Reading & interpreting working drawing					
02.	Check assembling tools & equipment for proper operation					
03.	Operate assembling tools & equipment					
04.	Proper handling of furniture components required to assemble					
405.	Checking qualities of component parts					
06.	List and quantify appropriate materials and accessories for assembly					
07.	Coordinate work					
08.	Work with other workers					
09.	Communication skill					
10.	Raise alternative solution for problem occurred during furniture manufacturing					
11.	Check qualities and functionalities of assembled and installed furniture					
12.	Reporting work					
13.	Providing first aid service					

Appendix II “C”

Observation Check list (filling by the researcher)

34. Information regarding to skill and knowledge of the enterprises

No	Working activities	Remark				
		Excellent	Very good	Good	Poor	Very poor
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

Observation comments regarding the skill and knowledge overall activities of the enterprises

Appendix II “D”

Interview questions for governmental concerns and industrial extension teachers

1. How do you perceive the importance of skill development in enhancing the performance of micro and small-scale furniture enterprises in our region? _____.
2. In your opinion, what specific skill sets are crucial for the sustainable growth and competitiveness of furniture enterprises _____.
3. How actively is the government currently involved in promoting skill development programs for woodworkers in the region? _____.
4. How do you envision governmental support contributing to the advancement of skill sets and productivity in the local furniture industry? _____.
5. What steps is the government taking to enhance skill development opportunities for small business owners and their employees _____.
6. In your opinion, what are the key challenges faced by micro and small enterprises in our region?
_____.
7. Any additional comments or suggestions you would like to share regarding the support and enhancement of micro and small enterprises by the government? _____.
8. Can you provide examples of successful skill development initiatives that have positively impacted the performance and productivity of micro and small-scale furniture enterprises?
_____.
9. How can industrial extension programs better support woodworkers in enhancing their skill levels and overall productivity in the furniture domain? _____.
10. Any additional comments or suggestions you would like to share regarding the support and enhancement of micro and small enterprises in your profession?
_____.

Thank you

Appendix IV
Tigrigna questionnaire

FDRE Technical Vocational and Training Institute

Faculty of Civil Technology

Department of Wood Technology

መጠየቅ ንባዓል ዋናታትን ሰራሕተኛታትን ደቀቅትን ኣናእሽትን ትካላት ፈርኒቸር

ኣነ የማነ መኮነን ደመወዝ ዝተብሃልኩ ብ Wood Technology ናይ ድሕረ ምረቓ ተምሃራይ (ማስተርስ) እዩ። ኣብዚ ሓዚ ሰዓት “The Effect of the level of Skill on the Performance of Micro and Small-Scale Furniture Enterprises in North West region of Tigray, Shire Enda Selassie town” ብዝብል ርእሲ ንባዓል ዋናታትን ሰራሕተኛታትን ደቀቅትን ኣናእሽትን ትካላት ፈርኒቸር ንምግምጋም ዝዓለመ መፅናዕቲ የካይድ ኣለኹ፣ ነዚ ንምትግባር ድማ ንመጽናዕተይ ዝኸውን ሓበሬታ ንምእካብ መሕተቲ ፅሑፍ ኣዳልዮ ኣለኹ። ኣብቲ መፅናዕቲ ክትሳተፉ ድማ ብትሕትና ይሓትት። እዚ ድማ ኣብ ከተማ ሸረ ኣብ ኣፍራይነት ደቀቅትን ኣናእሽትን ትካላት ፈርኒቸር ዘሎ ደረጃ ክእለት ንምርመራ ዝሕግዝ እዩ። ነቲ መሕተቲ መልሲ ብምሃብ ኣብቲ መፅናዕቲ ተሳትፎኹም ኣዝዩ ወሳኒ እዩ። ብዘይ ብእኡ እቲ መጽናዕቲ ከምቲ ክኸውን ዝግብኦ ምሉእ ክኸውንን ኣይክእልን። ስለዚ በይዘኣም ኩሉ ሕቶታት ብቕንዕና መሊኦም ናብ በዓል ዋና ይምለስዎ። ስምኩም ምፅሓፍ ኣድላዪ ድማ ኣይኮነን። ን ትህብኒ ሓበሬታን ምትሕቢባሪን ብጥብቂ ከም ዝሕዝ ከረጋግፀልኩም ይፈቱ።

መብረሂ: ነዚ መሕተቲ ፅሑፍ ብዝመረፅዎ ፊደላት ብምክባብ፣ ርእይቶኹም ብምፅሓፍ ወይ ድማ ኣብቲ ዝተዋህበ በታ ብዓይነት ሕቶ መሰረት ብምግባርን ንርእይቶኹም ዘዕግብ ምልክት “√” ጥራይ ብምምልካት ኣዝዩ ብጥንቃቄን ብቕንዕናን ክትመልስዎ ይሓትት። ገለ ካብቶም ሕቶታት ካብ ሓደ ንላዕሊ መልሲ ክህልዎም ይኸእል እዩ።

ስለቲ ግዜኹምን ምትሕብባርኩምን የመስግን!

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ዓምዳ: 7. ዓበይቲ ባህርያት ሰራሕተኛታት ትካል

ዓምዳ: 8. ሞያ

ወግዓዊ ስልጠና የለን.....0

ወግዓዊ መሰረታዊ ስልጠና ካብ ዓመት ንታሕቲ.....1

ናይ TVET ምስክር ወረቐት ካብ 1-2 ዓመት2

ካልእ ምስክር ወረቐት ካብ 1-2 ዓመት.....3

ዲፕሎማ ቲሺኢቲ.....4

ካልእ ዲፕሎማ 2 ዓመትን ልዕሊኡን.....5

ዩኒቨርሲቲ.....6

ዘይወግዓዊ ስልጠና ብተግባር.....7

ካልእ -----8

ዘይክፈሎም ዝሰርሑ ሰራሕተኛታት... 1

ሰራሕተኛታት ምፍራይ.....2

ምምሕዳራዊ ሰራሕተኛታት.....3

#	ዝተዋረረሉ ዓውደ ስራሕ	ዓ/ት ሞያ	ፆታ	ዕድመ	ደረጃ ት/ቲ	ወግዓዊ ስልጠና	ንውሓት ዓመታት ካብ ዝምስረት
1	2	3	4	5	6	7	8
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

9. ሕዳቶ ብዛዕባ ሰራሕተኛታት እቲ ኢንዱስትሪ

ፈርኒቸር ዲዛይን	1	ናይ ፈርኒቸር ኣካላት ምግጥጥም.....	7
ክእለት ድረዊኒግ ምድላው.....	2	ን ፍኒሽንግ ዝኸውን ናይ ፈርኒቸር ክፍሊ ኣካላት ቅድመ ዝግጅት.....	8
ኪእለት ድረዊኒግ ምድላውን ምንባብን.....	3	ምምራፅን ምሕዋስን ናይ ፍንሽንግ ማተርያላት.....	9
ኣመራርፃ መሰሪሒ ማተርያላት.....	4	ምቅባእ ን ፈርኒቸር ክፍሊ ኣካላት.....	10
ናይ ስራሕቲ ዕንጹይቲ ማሸናፊት ኣጠቀቅማ.....	5	ናይ ዕዳጋ ዝርዝር ዋጋ ምውፃእን መሸጢ ዋጋ ምርባሕን.....	11
ናይ ፈርኒቸር ክፍሊ ኣካላት ምምራፅ ክእለት.....	6	ፕሮጀክት ምግጥታም: ሻርኔላ፣ እጀታ፣ ቁለፊን ወዘተ.....	12

ተ. ቁ	ስራሕ መደብ	ጠቅላላ ሰራሕተኛታት		ዝተዋፈረ ዓውዲ ስራሕ	ልምዲ ስራሕ	ሞያታት											
		ተባ	ኣነ			1	2	3	4	5	6	7	8	9	10	11	12
01.	ስራሕ መካያዲ /ላዕለዋይ ሓላፊ/																
02.	ናይ ምህርቲ ሓላፊ																
03.	ዲዛይነር																
04.	ማሸን ኦፕሬተር																
05.	ረዳት ማሸኒስት																
06.	ናይ ምግጥታም በዓል ሞያ																
07.	ናይ ምግጥታም በዓል ሞያ ረዳት																
08.	ናይ ፊንሽንግ በዓል ሞያ																
09.	ናይ ፊንሽንግ በዓል ሞያ ረዳት																
10.	ናይ መሸጢ ቦታ ሰራሕተኛ																
11.	ናይ ምውቃር ክእለት																
12.	ሃርድ ዌር ምግትጣም; እጀታ፣ ቁለፊ ወዘተ																

10. ናይ ፈርኒቸር ሰራሕተኛታት ኩነታት ሞያዊ ብቅዓቶም ዝገልፅ ሰንጠረዥ

ተ. ቁ	ዝርዝር ሞያታት	ብሉፅ		ብጠዕሚ ፅቡቕ		ፅቡቕ		ድኹም		አፍልጦ የብለይን	
		ተባ	አነ	ተባ	አነ	ተባ	አነ	ተባ	አነ	ተባ	አነ
1	ናይ ዲዛይን ክእለት										
2	ድረዊንግ ምዝግጃው										
3	ድረዊንግ ምንባብን ምዝግጃውን										
4	ብ ዝተመረፀ ዓይነት ትእዛዝ መሰረት ትክክለኛነት ማተርያል ምጥቃም										
5	ትክክለኛነት ማተርያል እና መለዋወጢታት ኣብ ምምራፅ										
6	ዉድ ዎርክ ማሽናት ኣጠቓቕማ										
7	ዉድ ዎርክ ማሽናት ኣጠቓቕማን ኣተሓሕዛን										
8	ናይ ገዛ አቁሑት /ፈርኒቸር/ ምምራት										
9	ናይ ፈርኒቸር ክፈሊ ኣካላት ምውቃር /ምግጥጣም/										
10	ን ፍንሺንግ ዝግበር ቅድመ ምድላው										

11	አመራር፣ ትክክለኛነትን አተላታውሳን ናይ ፍኒሽንግ ማተርያላት										
12	አቀባብአ ፍኒሽንግ ማተርያላት										
13	ብ ሰፍት ዌር ድዛይን ምግባር										
14	ዋጋ ምውፃእ										
15	አታሕዛ ደንበኛ										
16	ፅሬት ምርግጋፅ										
17	ስራሕ አወሃሂድካ ኣብ ምስራሕ										
18	ምስ ካልኣት በዓል ሞያታት ሓቢርካ ምስራሕ										
19	ናይ ምርድዳእ ክእለት										

11. ብ ሞያ ፈርኒቸር ክኣለትካ ንምምሕያሽ ን ቀፃሊ ትምህርቲ ክትወስድ ትሓስብ ዶ?

- U. እወ ለ. ኣይፋል ሐ. ኣይሓሰብኩሉን

12. እንድሕር ን ሕቶ ቁፅሪ 10 መልስካ/ኪ ‘ኣይፋል’ ኮይኑ ካብዞም ዝስዕቡ መልስካ ኣየናይ ይከውን

- U. ናይ ስራሕ ሰዓተይ ን ትምህርቲ ስለዘይጥዕም ረ. ሞያይ ኣብ ከይዲ ከመሓይሽ ስለዝክእል
 ለ. ዘለኒ ኣታዊ ናይ ትምህርቲ ክፍሊት ንምክፋል እኩል ስለዘይኮነ ሰ. እኩል ዝኮነ ብቅዓት ስለዘለኒ
 ሐ. ቀፃሊ ትምህርቲ ንምውሳድ ግዜ ስለዘይብይ ሸ. ካልእ እንተሃልዩካ/ኪ _____
 መ. ን ቀፃሊ ትምህርቲ ክወስድ ድሌት ስለ ዘይብለይ

17. ሰራሕተኛታትካ/ኪ ን ስራሕ ዘለዎም ድሌት ከመይ ትገልጻለህ።

ሀ. ድኸም ለ. ማእከላይ ሐ. ፅቡቅ መ. አዝዩ ፅቡቅ

18. ትካልኩም ንምህርቲ ፈርኒቸር እንታይ ዓይነት መሳርሕታትን ማሽነሪታትን ይጠቀም?

ሀ. ናይ ኢድ መሳርሕታት ሐ. CNC ማሽን፣

ለ. ብ ኤለክትሪክ ዝሰርሑ መሳርሕታት መ. ካልእ _____

19. ኣብ ኢንዱስትሪ ፈርኒቸር ንዕቤት ዝያዳ ኣገደስቲ እዮም ኢልካ እትኣምነሉ ክእለት እንታይ እዮም?

ሀ. ናይ ዲዛይን ክእለት ሐ. ናይ ፍኒሺንግ ክእለት

ለ. ምግጥጦም ክእለት መ. ናይ ርክብ ክእለት።

ረ. ናይ ማሽን ኣፕሬተርን ክእለት ሰ. ናይ ፅገና ክእለት።

ሸ. ካልእ እንተህልዩ _____

20. ን ናይ ፈርኒቸር ፍርያትካ ዲዛይን ፈጠራ ብኸመይ ምመዘንካዮ?

ሀ. ትሑት ፈጠራ ለ. ማእከላይ ፈጠራ ሐ. ልዑል ፈጠራ

21. ኣብ ሞያኻ ዝኸነ ናይ ደገፍ ስልጠና ረኪብካ ትፈልጥ ዶ?

ሀ. እወ ለ. ኣይፋል

22. ንሕቶ ቁ '20' መልስኹም 'እወ' እንተኾይኑ በይዘኣም ዓይነት ስልጠና ፀሓፊ

23. ምስዚ ዝስዕብ ኣበሃህላ ክሰብ ክንደይ ትሰማምዑ? ፈርኒቸር ትካላት ኣፍራይነት ብቐጥታ ብክእለት ኣብ ፍሉይ መዳያት ይፅሎ እዩ?

ሀ. ብጣዕሚ ይሰማማዕ ለ. ይሰማማዕ ሐ. ገለልተኛ

መ. ኣይሰማማዕን ረ. አዝዩ ኣይሰማማዕን

Appendix II “B”

ን ስራሕተኛታት ፈርኒቸር ትካላት ዝዳለዎ መጠየቕ

ዝሽበርካ መላሲ፡ ርእይቶኻ ብምፅሓፍ ወይ ኣብቲ ዝተዋህበ ቦታ ናይ (“√”) ምልክት ጥራይ ብ ምጥቃም፡ ነቲ መሕተቲ ኣዝዩ ብጥንቃቕን ብቕንዕናን ክትምልሶ ብትሕትና ይሓትት።

24. ኣብ ፈርኒቸር ስራሕቲ ዘለዎም ፍልጠትን ክእለትን

ተ.ቁ	ዝርዝር ክእለታት	ኣፍልጦ የብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
01.	ብ ድሌታት ዓማዊል ምስራሕ					
02.	ናይ ፍኒሺንግ ክእለት					
03.	ዲዛይን ኣብ ምምዕባል					
04.	ግቡእ ዲዛይን ምምዕባል					
05.	ዝምጥን ማተርያላት ምምራፅን ኣጠቓቕማን፤					
06.	ትክክለኛነት ዘድልዩ መሳርሕታት ምዝርዝር					
07.	ብ ሰፍት ዌር ዲዛይን ምጥቃም					
08.	ዋጋ ምውፃእ					
09.	ፕሮጀክትታት ምግጫው/ምግጥጣም/					
10.	ዕንፀይቲ ምርካብ/ጀይንት/					
11.	ናይ ማሸናፊ ኣፕሬሽን					

25. ኣብ ዲዛይን ስራሕ ዕንፀይቲ ዝኾነ ወግዓዊ ትምህርቲ ወይ ስልጠና ረኪብካ ትፈልጥ ዶ?

ን ማሽን አጥፊነት ዝተዳለወ መጠየቅ

ዝኸበርካ መላሲ፡ ርእይቶኽ ብምፅሓፍ ወይ ኣብቲ ዝተዋህበ ቦታ ናይ (“√”) ምልክት ብ ምጥቃም፡ ነቲ መሕተቲ ኣዝዩ ብጥንቃቕን ብቕንዕናን ክትምልሶ ብትሕትና ይሓትት።

26. ኣብ ማሽን ዘለካ/ኪ ክእለትን ፍልጠትን

ተ.ቁ	ዝርዝር ክእለታት	ኣፍልጦ የብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
01.	ምንባብን & ምትርጓምን ፈርኒቸር ዲዛይን					
02.	ነቲ ትእዛዝ ዝምጥን ዓይነት ንብረት ኣብ ምምራፅ					
03.	ኣውቶማቲክ ማሽን አጥፊሽን					
04.	ምትዕርራይን ፅገና ማሽንን					
05.	ግቡእ ኣተሓሕዞ ንብረታት					
06.	ብትክክል ኣብ ምቕራፅ /ጣውላ/ን ካልኣትን					
07.	ፅሬት ስራሕ ምርግጋፅ					
08.	ስራሕ ኣወሃሂድካ ኣብ ምስራሕ					
09.	ምስ ካልኣት ሰራሕተኛታት ሓቢርካ ምስራሕ					
10.	ምስ ካልኣት ዘለካ/ኪ ርክብ					
11.	ኣብ እዋን ምፍራይ ፈርኒቸር ን ዝተፈጠረ ፀገም ኣማራጺ መፍትሒ ኣብ ምውሳድ ዘለካ ክእለት					
12.	ዝሰራሕካዮ ፀብፃብ ኣብ ምቕራብ					
13.	ኣገልግሎት ቀዳማይ ረድኤት ኣብ ምጥቃም					

ን ፍንሺንግ በዓል ሞያታት ዝተዳለወ መጠየቅ

ዝኸበርካ መላሲ፡ ርእይቶኽ ብምፅሓፍ ወይ ኣብቲ ዝተዋህበ በታ ናይ (“√”) ምልክት ጥራይ ብ ምጥቃም፡

ነቲ መሕተቲ ኣዝዩ ብጥንቃቕን ብቕንዕናን ክትምልሶ ብትሕትና ይሓትት።

27. ብዛዕባ ክእለትን ፍልጠትን ኣብ ፍንሺንግ

ተ.ቁ	ዝርዝር ክእለታት	ኣፍልጦ የብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
01.	ን ቅድመ ምድላው ፍንሺንግ ዝምጥን ንብረት & መሳርሒታት ምምራፅን ምጥቃምን					
02.	ን ፍንሺንግ ዝኸውን ምቕው ኩነታት ምድላው					
03.	ኣብ ባህርያት ንብረት መሰረት ግቡእ ናይ ፍንሺንግ ንብረት ምምራፅን ምጥቃምን					
04.	ኣብ መምርሒ ኣፍረይቲ ተመርኩስካ ብትኽክለኛ ሬሾ ምሕዋስ					
05.	ናይ ፍንሺንግ ንብረት ብትኽክለኛ ኣገባብ፣ ኣሰራርሓን መሳርሒታትን ምልካይ/ምቅባእ/					
06.	ናሙና ምድላው					
07.	ምቕማጥ፣ ምኽዛንን ምጥቃምን መምርሒ ኣፍረይቲ ብምኽታልን ኣብ ሰዓትካ ምውዳእን ኣብ ግምት ብምእታውን					
08.	ድሕሪ ምጥቃምካ/ኪ ናይ ፍንሺንግ መሳርሒታት ብ ግቡእ ምቕማጥን ምፅራይን					
09.	ዝምጥን ዓይነት ናይ ዕንፀይቲ ፍንሺንግ ምምራፅን ምምስሳልን					

10.	ሕብርታት ምምስሳል/ ፈንሺንግ/					
11.	ስራሕ ኣወሃሂድካ ኣብ ምስራሕ					
12.	ምስ ካልኣት ሰራሕተኛታት ሐቢርካ ምስራሕ					
13.	ምስ ካልኣት ናይ ምርድዳእ ክእለት					
14.	ኣብ እዋን ምፍራይ ፈርኒቸር ንዝተፈጠረ ፀገም ኣማራጺ መፍትሒ ኣብ ምውሳድ					
15.	ናይ ፍንሺንግ ባህርያት ምፍታሽን ምፅናዕን					
16.	ኣገልግሎት ቀዳማይ ረድኤት ኣብ ምጥቃም					

28. ኣብ ሜላታት ፍንሺንግ ዕንፀይቲ ዝኾነ ወግዓዊ ስልጠና ወሲድካ ትፈልጥ/ጢ/ ዶ?

29. ኣብ እዋን ፍንሺንግ እቲ ዕንፀይቲ ልሙፅነተቱ ትክክለኛነቱን ብኸመይ ተረጋግፆ?

30. ዝኾነ ተወሳኺ ፍልጠትን ክእለትን ኣብ ቴክኒክ ፍንሺንግ እንተሃልዩካ ፀሓፊ።

መጠየቅ ን ፈርሲቸር ዲዛይነራት

ዝኸበርካ መላሲ፡ ርእይቶኻ ብምፅሓፍ ወይ ኣብቲ ዝተዋህበ ቦታ ናይ “√” ምልክት ጥራይ ብ ምጥቃም ነቲ መሕተቲ ኣዘዩ ብጥንቃቕን ብቕንዕናን ክትምልሶ ብትሕትና ይሓትት።

31. ብዛዕባ ክእለትን ፍልጠትን ፈርሲቸር ዲዛይን

ተ.ቁ	ዝርዝር ክእለታት	ኣፍልጦ የብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
01.	ብ ድሌታት ዓማዊል ምግባር					
02.	ዘመናዊ ዲዛይን ፈርሲቸር ምክያድ					
03.	ዲዛይን ኣብ ምምዕባል					
04.	ግቡእ ዲዛይን ምምዕባል					
05.	ን ህንፀት ፈርሲቸር ክውዕሉ ዝኸእሉ ግቡእ ጥረ ነገራት ምምራፅን ምጥቃምን					
06.	ዝምልከቶም ንዋትን መሳርሕታትን ምዝርዛርን ብቕፅሪ ምሃብን					
07.	ዲዛይን ብ ሰፍትዌር ምጥቃም					
08.	ዋጋ ምውፃእ					

32. ን ፕሮጀክትታት ስራሕ ዕንፀይቲ ዝርዝር ዲዛይን ፕላን ንምፍጣር እንታይ ዓይነት ሰፍትዌር ወይ መሳርሒታት ትጥቀም?

መጠየቅን መግጣጠሙትን መጋጨውትን ናይ ፈርኒቸር ፕሮጀክት

ዝኸበርካ መላሲ፡ ርእይቶኻ ብምፅሓፍ ወይ ኣብቲ ዝተዋህበ ቦታ ናይ “√” ምልክት ጥራይ ብ ምጥቃም ነቲ መሕተቲ ኣዝዩ ብጥንቃቕን ብቕንዕናን ክትምልሶ ብትሕትና ይሓትት።

33. ኣበሬታ ብዛዕባ ክእለትን ፍልጠትን

ተ.ቁ	ዝርዝር ክእለታት	ኣፍልጦ የብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
01.	ምንባብን & ምትርጓምን ፈርኒቸር ዲዛይን					
02.	ናይ ምግጥጣም መሳርሒታት ትክክል ከምዘለዉ ምፍታሽ					
03.	ናይ ምግጥጣም መሳርሒታት ኣጠቓቕማ					
04.	ንምግጥጣም ዘድልዩ ኣካላት ፈርኒቸር ብግቡእ ምሓዝ					
05.	ፅሬት ስራሕ ምርግጋፅ					
06.	ትክክለኛነት ዘድልዩ መሳርሒታት ምዝርዘር					
07.	ስራሕ ኣወሃሂድካ ኣብ ምስራሕ					
08.	ምስ ካልኣት ሰራሕተኛታት ሓቢርካ ምስራሕ					
09.	ምስ ካልኣት ዘለካ/ኪ ርክብ					
10.	ኣብ እዋን ምፍራይ ፈርኒቸር ንዝተፈጠረ ፀገም ኣማራጺ መፍትሒ ኣብ ምውሳድ					
11.	ዝተጋጣጡሙ ፕሮጀክት ፅሬቶም ምርግጋፅ					
12.	ዝሰራሕካዮ ፀብግብ ኣብ ምቅራብ					
13.	ኣገልግሎት ቀዳማይ ረድኤት ኣብ ምጥቃም					

Appendix II “C”

ትዕዛብቲ ዝርዝር ስራሕቲ (ብተመራማሪ ዝምለእ)

34. ክእለትን ፍልጠትን መሰረት ዝገበር ናይ ፈርኒቸር ትካላት ሓበሬታ

ተ. ቁ	መብረሂ					
	ናይ ስራሕ ዓይነታት	ኣፍልጦ ዮብለይን	ድኹም	ፅቡቕ	ብጣዕሚ ፅቡቕ	ብሉፅ
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

ኣፈሻዊ ንጥፈታት ክእለትን ፍልጠትን እተን ትካላት ብዝምልከት ናይ ትዕዛብቲ ርኢቶታት

Appendix II “D”

ን መንግስታዊ ትካላትን መምህራን ኢንዱስትሪያል ኤክስቴንሽንን ዝተዳለወ ሕቶታት

1. ኣብ ክልልና ኣፈፃፀማ ደቀቅትን ኣናኣሽቱን ትካላት ፈርኒቸር ኣብ ምዕባይ ግደ ዝሰልጠነ በዓል ሞያ ብኸመይ ትርጕይዎ? _____

2. ብናትኩም ኣረኣጃያ ንዘላቂ ዕብዮትን ተወዳዳርነትን ትካላት ፈርኒቸር ወሳኒ ዝኾኑ ፍሉይት ክእለታት እንታይ እዮም ኢሎም ይሓስቡ _____

3. ኣብዚ ሕዚ እዋን መንግስቲ ኣብዚ ዘባ ንዝርከቡ ሰራሕቲ ዕንፀይቲ መደባት ምዕባለ ክእለት ኣብ ምድንፋዕ እንታይ ዓይነት ደገፍ ይገብር ኣሎ? _____

4. መንግስታዊ ደገፍ ኣብ ምዕባለ ክእለትን ኣፍራይነትን ኣብ ውሽጢ ዓዲ ኢንዱስትሪ ፈርኒቸር ከመይ ኣበርክቶ ክግበር ዝሕሰብ ነገር ኣሎ ዶ? _____

5. መንግስቲ ንወነንቲ ኣንእሽተይ ትካላትን ሰራሕተኛታቶምን ዕድላት ምዕባለ ክእለት ንምዕባይ እንታይ ስጉምታታት ይወስድ ኣሎ _____ ::

6. ብናትኩም ኣረኣጃያ ኣብ ክልልና ደቀቅትን ኣናኣሽተይን ትካላት ዘጋጥሞም ቁልፊ ብድሆታት እንታይ እዮም? _____

7. ንደቀቅትን ኣናኣሽቱን ትካላት ፈርኒቸር ምህርቶም ንክውስኽ ኣድላዪ ዝብልዎ መንግስታዊ ደገፍ እንተሃልዩ በይዘኣም ይግለፁ _____

8. ኣብ ኣፈፃፀማን ኣፍራይነትን ደቀቅትን ኣናኣሽቱን ትካላት ፈርኒቸር ፅልዎ ዘሕደሩ ዕውታት ተበግሶታት ምዕባለ ክእለት ኣብነታት ክትህቡ ትኸእሉ ዶ? _____

9. መደባት ኤክስቴንሽን ኢንዱስትሪ ን ሰራሕተኛታት ዕንፀይቲ ደረጃ ክእለቶምን ሓፈሻዊ ኣፍራይነቶምን ንምዕባይ ብኸመይ እንተተደገፎም ብዝበለፀ ዕቤት ከምዝግቡ ዝኸእሉ? _____

10. ኣብ ሞያኹም ንዝርከቡ ደቀቅትን ኣናኣሽተይን ትካላት ንዝግበር ደገፍን ምዕባይን ብዝምልከት ተወሳኺ ርኢቶ ወይ ሓሳብ እንተሃልዩዎም ይግለፁ? _____

የቕንዩለይ!