Analyzing Job Satisfaction by Quality Management for Ethiopian Leather Industry

Ph.D. THESIS

by

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DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE-247667 (INDIA)

DECEMBER, 2017

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A THESIS
Submitted in partial fulfilment of the requirements for the award of the degree

of
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In
INDUSTRIAL ENGINEERING

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ROORKEE

CANDIDATE'S DECLARATION

I hereby certify that, the work which is being presented in the thesis entitled **"Analyzing Job Satisfaction by Quality Management for Ethiopian Leather Industry**" in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy and submitted in the Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee, Roorkee is an authentic record of my own work carried out during a period from July, 2014 to Dec, 2017 under the supervision of Dr. Akshay Dvivedi, Associate Professor, Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee, Roorkee and Dr. Birhanu Beshah, Associate Professor, School of Mechanical and Industrial Engineering, Addis Ababa Institute of Technology, Addis Ababa, Ethiopia.

The matter presented in this thesis has not been submitted by me for the award of any other degree of this or any other institute.

SISAY ADDIS

This is to certify that, the above statement made by the candidate is correct to the best of my knowledge.

(Akshay Dvivedi)

Supervisor

Dated:

ACKNOWLEDGEMENT

In the name of the Almighty God, the Most Gracious and the Most Merciful, I offer my humble gratitude for the countless blessings and allowing me to achieve more than I could ever hope.

In completing this research, I am greatly indebted to various wonderful people for their assistance and contributions, without whose support this dissertation would have been challenging to complete.

First and foremost, my sincere gratitude and appreciation goes to my respected supervisor **Dr. Akshay Dvivedi,** Associate Professor, Department of Mechanical and Industrial Engineering, for his excellent guidance throughout this research. His invaluable assistance and insightful comments at all stages of the research have greatly contributed to my work. He provided me with the freedom to explore research directions and choose the routes that I wanted to investigate. It is an honor for me to have his support and be able to benefit from his experience and wisdom. I am also equally grateful and feel privileged to his understanding of personal issues during my stay in IIT Roorkee. I thank Dr. Dvivedi again for all that you did throughout the entire process and made me able to complete this study.

I would also like to sincerely thank my co-supervisor **Dr. Birhanu Beshah**, Associate Professor, School of Mechanical and Industrial Engineering, Addis Ababa Institute of Technology, Ethiopia, for his care, help, encouragement and supportive role during my research visits to Ethiopia. Also, I would like to thank Dr. Birhanu for providing me his valuable suggestions and comments during this period.

I would like to acknowledge to **Dr. Dinesh Kumar,** Professor and Head and **Dr. Pradeep Kumar,** Professor, Department of Mechanical and Industrial Engineering, for allowing me the infrastructural facilities to carry out this work in the department and laboratory.

I wish to express my sincere thanks to **Dr. D. K. Dwivedi**, Professor, (Chairman of SRC), Department of Mechanical and Industrial Engineering, **Dr. A. K. Sharma,** Associate Professor, (Internal Expert of SRC), Department of Mechanical and Industrial Engineering and **Dr. M. K. Barua,** Associate Professor, (External Expert of SRC), Department of Management Studies, for giving their valuable time and suggestions in successful completion of this work.

Outside the supervisory and expert team, my utmost gratitude goes to senior researchers and experts at the leather industries development institute of Ethiopia, who helped me across bureaucratic lines to access research data and allowing me to intensively use their databases and

other statistical records for my research. Also, I would like to mention the management and staff of the sample leather product manufacturing industries for their cooperation in providing data, information, and freedom of investigation. Special mention must be made of the generous co-operation of the production line workers of the selected companies for their unreserved cooperation during the data collection phase of the research.

Although my research project has little in common, it was a great privilege to come to know and work with several PhD colleagues. Their social company was a great treasure for my stay in India. Although I cannot mention all of them here, I would like name a few: Dr. Temesgen Birhanu, Dr. Abrham Bayeh, Dr. Tesfa Worku and his wife Kokeb Worku, Mr. Tarlochan Singh, Mr. Sandeep Kumar, Mr. Vineet Yadav, Mr. Rajendra Arya, Mr. Radha Raman Mishra, Mr. Ujendra Komal, Mr. Jimmy Karloopia, Mr. Jayant Patel, Mr. Sri Charan, Mr. Dheeraj Chandra and all Ethiopian students in IITR. I am proud to have such friends and greatly value their friendship.

I am thankful to **Mr. Deepak** at the secretariat office of the head of the department for his kindness in handling many requests and friendly services throughout the PhD process. Deepak was such a blessing with his warm personality and willingness to listen the events surrounding my study even when he was extremely busy.

I would like to give my special gratitude to my parents **Mr. Addis Filketu** and **Mrs. Jemanesh Kidane** for their love, encouragement, watchful eyes, prayers and belief in me. Thank you Dad for your tremendous advices and insight into management practices borne of your personal experience and Mom for just being the bravest Mom. Thanks for doing what parents do the best. I also owe much gratitude to my brothers for being encouraging and good wishers.

Last but not least, I wish to express my sincere and deepest gratitude to my dearest wife, **Liyuwork Rorisa**, for her unwavering and everlasting love that have been the sources of my encouragement on this journey. I would like to take this opportunity to express my unfailing gratitude and love to my wife.

Finally, and most importantly, I would like to extend my gratitude and affection to my beloved son, **Kirubel Sisay**, for the inspiration that has greatly facilitated the completion of this PhD research.

(Sisay Addis)

ABSTRACT

Job satisfaction is considered as one of the most important factor that enable organizations achieve competitive advantages over their competitors. Also, lack of job satisfaction results in work-related fatigue and affects organizations from a holistic 360 degree point of view. Accordingly, improving satisfaction of employees is typically viewed as a 'win-win' proposition, as it is worthy for both workers and organizations. Hence, organizations should understand how employees can be kept satisfied, in searching for greater organizational wide performance. Previous research has extensively linked practices within quality management with various organizational outcomes such as productivity and customer satisfaction. On the other hand, the literature portrays a widespread consensus that the behavioral aspects in organizations such as job satisfaction is considered as one of the most important driver of customer satisfaction and ensuing customer retentions, and even their relationship is underlined as unilateral rather than bilateral. However, the wellbeing of employees is vaguely described in many of management philosophies like quality management. There would seem to be great gains if organizations can establish sustainable workplace satisfaction among their employees.

The purpose of the research described in this thesis was to examine how job satisfaction can be attained and to generate a knowledge on the interconnection between job satisfaction and quality management, with a focus of examining what it is within quality management that influences job satisfaction of shop floor workers. Accordingly, the purpose was also to contribute to the understanding of the relation between sustainable job satisfaction and quality Management. To fulfil the purpose of the research, research questions were formulated. The findings are described in the studies performed throughout the research endeavor. The focus of the studies were limited to Ethiopian organizations, particularly to the leather industry.

Structured survey questionnaire was used to evaluate the extent to which workers themselves perceive the contextual work factors in Ethiopia and to investigate the quality management practices in relation to promoting workplace satisfaction among shop floor workers. In addition to the questionnaire survey, focus groups discussions were carried out in order to find out what is of most importance when practicing quality management in order to influence sustainable shop floor satisfaction. The focus groups interviews were important in obtaining an extended useful qualitative data, which helps to obtain a deeper understanding of workers' perceptions of their working life and interpretation of the quantitative results. The research has

employed Fuzzy QFD for setting JS improvement programs. A systematic fuzzy QFD procedure is proposed that used to establish priority of the technical solutions for the improvement of JS.

The results are descriptions of behaviors, practices and measurement approach to be used by the organizations to support workplace satisfaction. Specifically, the results pointed to 'top management leadership commitment' as the most central of the practices for achieving sustainable job satisfaction among the shop floor workers. Furthermore, the practices 'everybody's participation' and 'continuous improvement' were found to be related to job satisfaction. These three quality management practices were then further elaborated during the focus groups discussions and dimensions are extracted that are important to realize sustainable job satisfaction.

From the practice *'top management leadership commitment'*, four dimensions were extracted. They are 'manage through visibility', 'compensation', 'bottom-up communication', and 'continuity'. The results showed relations between the practice 'top management leadership commitment' within quality management and sustainable job satisfaction. The results indicate that managers need to work in accordance with the practice 'top management leadership commitment' that are characterized by the dimensions mentioned above to achieve results in the work towards sustainable job satisfaction among shop floor workers. According to the identified dimensions, managers have to avail themselves in workplaces and act as a leader, establish a formal compensation system to encourage individuals for quality enhancement, communicate employees and be alert to listen and understand their voice and stay long enough in their positions to build up trust and execute a long-term paradigm shift in the organization.

Second, the practice *'everybody's participation'* has been shown to be related to sustainable job satisfaction, signifying the importance of working in accordance with this practice to achieve job satisfaction among the shop floor workers. Three dimensions characterize the practice 'everybody's participation': 'keep employees informed', 'belongingness', and 'influence'. These three dimensions denotes the extent of communication of managers to employees, the involvement of employees in organizational issues and empowerment of employees to make decisions and solve problems.

The practice *'continuous improvement'* has also been shown to be related to sustainable job satisfaction among the shop floor workers. Three dimensions were extracted that characterize this practice. These are 'appraisals and development', 'trialability and innovation' and 'thrust'. These dimensions denotes the requirement of the organization to give concern for the evaluation

and career advancement of workers, encouragement of innovative thinking, and keeping moral and freedom of employees in workplaces.

Finally, based on the identified dimensions, the research developed a measurement approach called ‘job satisfaction-related quality management’. The measurement approach can be administered regularly in workplaces to evaluate the extent to which the practices, ‘top management commitment’, ‘everybody’s participation’ and ‘continuous improvement’ permeate an organization. It can be used as a pre-test baseline measurement in order to detect and resolve changes associated with QM efforts. This helps to bring sustainability of JS. Managers may also use the measurement approach longitudinally to assess before and after working conditions carrying through an organizational change.

In future, studies may use longitudinal approaches to ascertain the nature and direction of the causal relationships between the QM practices and satisfaction at different stages of QM implementation. Also, future studies may extract different QM dimensions following the dynamic nature of working environment that may influence job satisfaction.

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ACRONYMS/ABBREVIATIONS	DESCRIPTION
CFA	Confirmatory Factor Analysis
CPR	Customer Preference Rating
ES	Ethiopian Standards
EFA	Exploratory Factor Analysis
ELI	Ethiopian leather industry
ELLPI	Ethiopian Leather and Leather Products Industry
ESA	Ethiopia Standard Authority
ESI	Ethiopia Standard Institutes
FAO	Food and Agricultural Organization
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
HOQ	House of Quality
HR	Human Resource
HRM	Human Resources Management
IV	Integral Value
JS	Job Satisfaction
KPI	Key Performance Indicator
LIDI	Leather Industry Development Institute
LPMI	Leather Products Manufacturing Industry
MIE	Ministry of Industry of Ethiopia
MRA	Multiple Regression Analysis
MST	Ministry of Science and Technology

OJS	Overall Job Satisfaction
OM	Operations Management
PDM	Participation in Decision-Making
PG	Preference Graph
PI	Performance Indictor
PMS	Performance Measurement System
QFD	Quality Function Deployment
QM	Quality Management
QSAE	Quality and Standard Authority of Ethiopia
RQ	Research Question
RP	Remuneration Packages
SEM	Structural Equation Modeling
TFN	Triangular Fuzzy Number
UNIDO	United Nations Industrial Development Org.
VOE	Voice of Employees

CHAPTER 1

INTRODUCTION

1.0 Preamble

Globalization has posed many challenges to industries around the world. Its pressure has emphasized over the last few decades and is placing an impact on competitiveness of manufacturing industries and making them very vulnerable [Garg and Singh 2002; Jain and Garg 2007]. For this reason, success and survival in such times demands new perspectives to ensure competitiveness [Singh et al. 2008]. Operational performance is one of the major factors that enable the manufacturing industries to compete in the global market [Addis et al. 2017].

As evidenced by the "East Asian newly industrialized countries", a country must build strong export-oriented manufacturing industries to generate fast growth, and thereby create employment and reduce poverty. These companies will generate the greatest possible profits and therefore allow the fastest possible accumulation of capital. Productivity growth is a precondition to alleviate poverty and enhance the living standards of a people [Altenburg 2010]. Low and lower-middle-income countries in particular need to emphasize productivity growth to contribute to economic development. Indeed, the transition from low-productivity to more productive societies is a contested issue, especially for developing countries. For instance, Ethiopia as a developing nation has demonstrated impressive dedication and ability to create the preconditions for a market-based and socially inclusive industrial transformation [Altenburg 2010]. The immediate point that comes up is the role of labor-intensive manufacturing industries in achieving higher levels of performance in terms of job growth and provide high-volume of employment opportunities. As noted in Scott (2006), one of the noteworthy features of the modern economy is the emergence of many different kinds of low technology, labor-intensive industries as engines of growth and development, both in low and middle-income countries. The agro-processing industries (e.g. grain milling, sugar, edible oil production, leather tanning) and basic consumer goods producers (textiles, footwear and garment) are especially significant industries, because of their propensity to reduce the high rate of unemployment in developing countries caused by the fast growing population. With the growth of population, the increasing requirement of leather and its products led to the establishment of large commercial tanneries in the world. Leather and leather product industries can claim to be the world's largest industrial sector based upon a variety of products.

Leather is often cut and assembled into shoes, clothing, furniture, leather goods and many other items of daily use. The leather products are amongst the most widely used and traded commodities in the world. It is compared very well with agricultural commodities and, in fact, with any internationally traded commodity. According to the report of Food and Agricultural Organization (FAO) in 2010, the total value of annual trade of leather items is more than two times of the value of meat trade; more than six times that of coffee; and more than seven times that of rice (see Table 1.1). At the same time, the leather industry plays a prominent role in the world's economy (contributes approximately USD100 billion/year) (UNIDO, 2010). The importance of the leather industry is not only limited to its economic impact resulting from the trade value. From a social viewpoint, the industry has the ability to offers substantial employment opportunities and thus significantly contribute to poverty alleviation. The number of people employed in the tanning industry worldwide is estimated at over 500,000 (Netsanet, 2014). Moreover, the increasing requirement of leather products in the world demands more establishment of large commercial leather processing industries, implying the need of huge requirement of work forces. Consequently, more productive labor is required to enhance manufacturing performances of the leather industry in different countries and meet the test of international competition. This will help to realize the beneficial importance of the industry to world's economy.

Table 1.1 Comparison of products in the whole world (in thousands of tons) (Netsanet, 2014)

Products	Developing Countries	Developed Countries	World
Leather Items	23,929.30	29,989.50	53,824.80
Meat from Cattle, Sheep and Goats	5,264	18,841	24,105
Rubber	6,859	162	7,022
Cotton	3,086	6,122	9,208
Coffee	6,738	2,869	9,607
Tea	2,567	691	3,258
Rice	5,779	1,231	7,010
Sugar	6,930	4,222	12,281

1.1. Global review of leather industry

Tanning is one of the oldest industries in the world and the use of leather goes back to prehistoric times. The tannery operation consists of converting the raw skin (a highly putrescible material) into leather (a stable material). The leather material uses for the manufacture of a wide range of products. According to FAO, the top five leather-producing countries in the world are

China, Brazil, Italy, Russia and India, with 4 billion sq. feet, 1.7 billion sq. feet, 1.5 billion sq. feet, 1.4 billion sq. feet and 1.4 billion sq. feet of production in 2013, respectively [FAO 2015]. In the international market, 78.3% of the world‘s hides and skins are produced by developing countries, out of which the share of African countries amounts to only 11% [AGP-LMD 2013]. World annual total export of leather is estimated at US $17 billion. Developed countries account for 51.2% of the total export of leather out of which 40% are hold by Europe. Developing countries account for 48.8%, while Africa has a contribution only for 1.9% of the total export of leather [LIDI 2012]. Global performance indicates that the total accruals in terms of revenue from leather and leather products are estimated at $100 billion annually with Africa earning only $4 billion [Mwinyihija and Quiesenberry 2013]. This shows that seizing the global market opportunities is a key challenge for the leather industry in Africa. The global trade value and export share from leather trade in 2010 are presented in Table 1.2. The leading exporter is China with a market share of 40 % followed by Hong Kong, china with market share of 11.6 % and Italy, France, Germany, India and USA account for 9.7%, 9.4%, 3.5%, 2.8 % and 2.3%, respectively. The share of Africa in world leather trade has remained low in the last twenty-five years of the 20th century, irrespective of having 21% of livestock population in the world [UNIDO 2010]. In 2011, Africa accounts total cumulative productivity of only 4.01% of the world production and 3.31% of the value when compared to the rest of the world [Mwinyihija 2014]. Also, exports of hides and skins have fallen in recent years from 4% to 2%, and their tanning capacity from 9.2% to 6.8%. At a time when other developing countries are increasing their share of world production, African countries have shown only modest increase [Mwinyihija 2012]. A look at Ethiopia, one of the leading leather processing country in Africa, the export share in the world is negligible. The export share of Ethiopia was, on average, only 0.00023% over 2001-2003 [Mekonnen and Gezahegn 2008] and 0.000597 % in 2010 [Mengstu 2014]. In general, the total production of leather in Africa is much lower qualitatively, quantitatively and value-wise [Mwinyihija 2012].

Table 1.2: The global trade value and export share from leather trade in 2010[LIDI 2012]

Country exporters	Trade value in ‘000’ USD	Share (%)
World	52,009,877	-
China	20,845,585	40 %
Hong Kong, china	6,015,987	11.6 %
Italy	5,030,378	9.7%
France	4,867,508	9.4%

Germany	1,819,172	3.5%
India	1,446,996	2.8 %
USA	1,209,977	2.3%

The orientation of finishing tanneries has altered over the last few decades. Now a day, tanneries produce leather material mainly for footwear, garments, general goods, furniture manufacturers and automotive upholstery manufacturers. Of which, the footwear sub-sector has grown considerably fast. About 65% of the world production of leather is estimated to go into leather footwear production [Netsanet 2014]. The leather footwear production plays a significant role in the development process of both developed and developing countries [Ulutas and Islier 2015]. The footwear manufacturers mainly produce two kinds of products: a complete shoe (i.e. a shoe ready for use) and an upper part of the shoe (i.e. a shoe without sole, called 'Upper'). World total exports of leather footwear are US $47 billion. China is the leading exporter of footwear with total market share of 22% followed by Italy, which accounts a value of 15%. Vietnam, Hong Kong, Germany and Belgium follow with footwear export share of 8%, 7.8%, 4.4%, and 3.9%, respectively. On the contrary, Africa's share of footwear export is mere 1.3% [LIDI 2012]. Countries with less resource endowment for making leather are mainly engaged in the import of 'Upper' and make a complete shoe. The import of 'Upper' is dominated by Europe and USA, which accounts for 53.2 % and 23.6%, respectively, while Africa totally account for 0.8% only [LIDI 2012].

In general, the underperformances of the leather industry in Africa shows considerable potential for the economic and industrial development of the continent. Reducing the gap between resources and production is especially critical for the economic and industrial development of many leather-processing countries in Africa. Ethiopia is one of the leading leather processing country in Africa during the last decades [AGP-LMD 2013]. The leather industry in Ethiopia puts at the forefront of the African leather sector in line with its current comparative advantage for the raw material needs (1^{st} in Africa and 10^{th} in the world in livestock population) [UNIDO 2010]. Given the country's major comparative advantage for the raw material needs, the leather industry of Ethiopia is a good candidate for a concerted effort to expand production and achieve competitiveness at the international level.

1.2 Ethiopian Leather Industry

"Our strategy is to produce finished leather and leather products both for export and local market"

The late Prime Minster of Ethiopia, Meles Zenawi (2006)

Ethiopia is one of the developing countries of sub-Saharan Africa. It is the second, next to Nigeria, most populous country in Sub-Saharan Africa with a population of about a 90 million; population growth rate was 2.6 % in 2013 [World bank 2014]. Ethiopia's economy is predominantly based on agriculture, which accounts for over 85% of the employment of the country's workforce and contributes 41.5% of GDP [Altenburg 2010]. The manufacturing sector in Ethiopia has been characterized by a low level of development, even by the standards of many least developed countries [Cherkos 2011]. The current share of the manufacturing to GDP is stagnated at 5% over the last 20 years [Altenburg 2010]. Currently, the Ethiopian government has demonstrated impressive dedication and ability to create the preconditions for a socially inclusive industrial transformation [Altenburg 2010]. The sectorial focus of the plan is on subsectors that are labor-intensive and export-oriented manufacturing industries, using agricultural products as an input. There is a clear recognition of this strategy by policy makers in Ethiopia as indicated by the second Growth and Transformation Plan (GTP)[1], drafted for the five-year period from 2015/16 to 2019/2020 [MIE 2014]. The GTP document has a much more explicit focus on the development of labor-intensive manufacturing industries such as the leather and leather products manufacturing industry. In this regard, employment is expected to serve as the principal channel through which the economic growth of the country can be established. According to the GTP, the manufacturing sector needs to grow at a faster rate than other economic sources (agriculture and service) with an employment opportunity for 1 million workforces. The GTP seeks a 22% contribution from the manufacturing sector to the GDP by 2020 [MIE 2014].

In the GTP document, the leather products manufacturing industry (LPMI) is one of the priority sector in Ethiopia that is capable of accelerating economic development by creating more employment opportunities [MIE 2014]. Given the country's major comparative advantage for ability to satisfy global raw material requirements, the LPMI in Ethiopia is a good candidate for a concerted effort to expand production and achieve competitiveness at the international level. Also,

[1] *GTP is a plan initiated by the Ethiopian government. The main objective of the GTP is to transform the country from an agriculture-based to an industry-based economy and achieve at least mid-level income country by 2025.*

the massive labor force that the country possesses provide an opportunity for the development of the leather industry in Ethiopia. Thus, the importance of developing the industry is not only its economic impact resulting from the trade. It also brings social benefits to the country in terms of reducing unemployment rate [Cherkos 2011].

Despite above mentioned indigenous resource potentials, the LPMI of Ethiopia is yet to utilize its resources to appreciable extent. It is significantly lags behind many countries that are less abundantly endowed with their indigenous resources [Netsanet 2014]. The industry faces serious problems, both in the manufacturing stages and upstream in the production of raw materials. The tannery and footwear producers operate at 44.97% and 47.6% of the daily production performance, respectively. Whereas, the daily installed capacity of leather goods and garment producers is ranging 20-150 pieces per unit, but the actual output ranges from 10-60 pieces of garments [Gebeyehu 2014]. The export performance of the industry is also stagnated below average (see Figure 1.1). The export performance report of the industry for the period of 2005-2013 showed that the industry was achievable to only 56.89% of the projected export plan [LIDI 2014]. For the period of 2005-2009, the footwear producers performed, on average, only 27.55% of planned export value [LIDI 2009]. Similarly, tannery's export value was quite below of the projected plan.

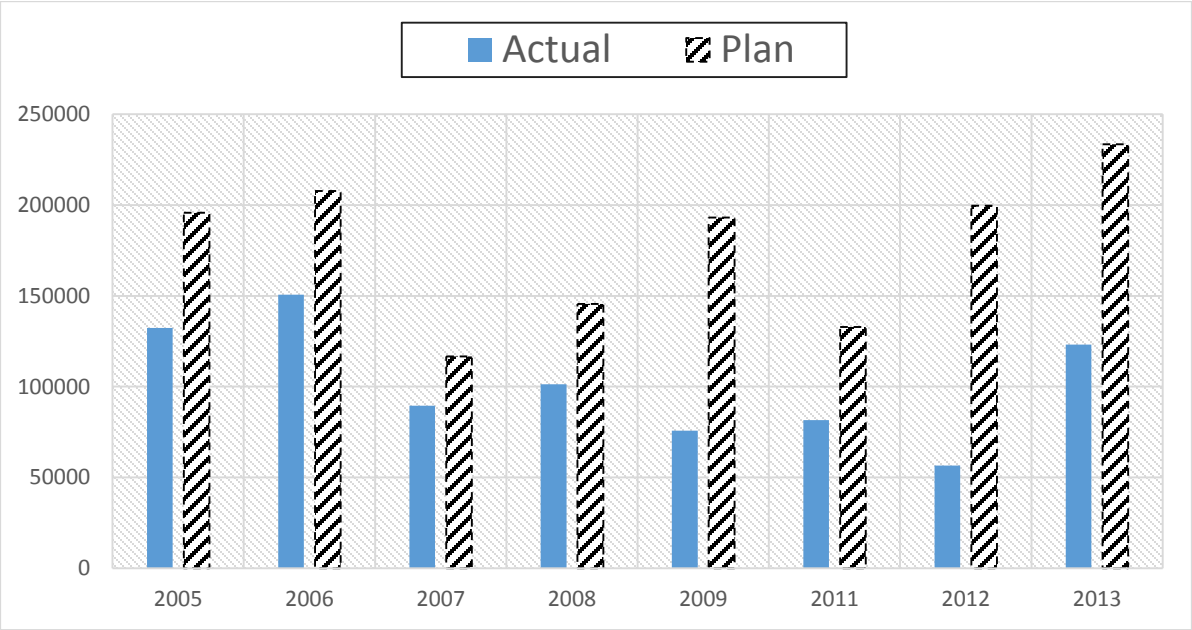

Figure 1.1 Export performance of the leather industry of Ethiopia (000') (2005-2013)

Source: Export performance report from LIDI in 2014

Also, the actual average production of the industry is far below the international benchmark standards. For instance, in 2009, the higher labor productivity of the footwear producing companies in Ethiopia was 4 pairs of shoe/day/person, which characterized low operational performance and production efficiency as compared to best practices (i.e. 16 pairs of shoe/day/person) [Cherkos 2011]. As a result, the country could not obtain the expected economic return from its huge resource potentials. In the past years, estimates of the loss to the Ethiopian economy reach US $14 million per year [Gebeyehu 2014]. The performance gaps described above may indicate the considerable potential for the development of the LPMI in Ethiopia.

Previous studies revealed that the nature of problems in the industry are multifaceted that seem to explain the underperformance of the industry. Some of the problems are low utilization of capacity, shortage of raw materials (e.g. processed leather for footwear manufacturers), production delays and bottleneck at workstations, lack of an efficient market structure, financial constraints, lack of latest technologies, lack of human resource management and low labor productivity [Mekonnen and Gezahegn 2008; Netsanet 2014]. If Ethiopia has to fully exploit its resource potentials, the industry needs to address the manifold problems in the value chain of the industry. It is understandable that the LPMI of Ethiopia faces serious problems in the manufacturing stages. Addressing constraints downstream to the manufacturing stage is critical, because increased level of performance is achieved with higher stage of processing/manufacturing activity. Then, the industry achieve higher operational performance and hence live up to the challenge of international competition. Studies underscore that the underperformances of the LPMI in Ethiopia is mainly attributed to extensive human resource (HR) problems in the manufacturing stage [Chekos 2011; Gebeyehu 2014; Tesfaye et al. 2014]. Particularly, in their study on the investigation of Ethiopian LPMI from the point of view of labor productivity improvement, Gebeyehu (2014) underlined that the critical problem that affects the performance of the industry is related to the technical management of labor. This may imply the need of strategic intervention that maneuvers the creation of more productive labor. So far, studies have proposed different kinds of solutions like skill development, implementing work study principles and line balancing in order to utilize the main resource of the industry i.e. humans. Another possible area of interest, which this thesis chosen, would be to study the Ethiopian leather industry from the point of view of employee's well-being. In Ethiopia, organizations including the LPMI struggle with high levels of labor market behaviors such as low labor productivity and performance. In a country where manufacturing

hopes to provide work to many households and contributes significantly to economic and social development, it is highly relevant to study labor market behaviors. One way to support these companies is making them to realize how much they are successful in achieving high levels of work motivation among their employees. As Jung (2017) notes, job satisfaction is a single summary construct to capture employees' perceptions of how they are treated by their organization. A motivated workforce is the most immediate and fundamental requirement for the emerging leather manufacturing industry in Ethiopia. Enhanced work motivation can contribute to improving workers' performance, which in turn contributes to the improvement of the industry performances [Yamfwa 2001].

1.3. The present research

In modern management theory, job satisfaction is an important dimension of employee well-being in its own right and is also a desired indicator of organizational performance and success [Abdulla et al. 2011]. The present research, however, is not introverted with responding narrowly to workplace satisfaction issues. Rather, it has sought to tap into people-related quality management practices, as a means of improving job satisfaction of employees. Quality management is the management philosophy and company practices that aim to harness the human resources of an organization in the most effective way to achieve objectives of an organization. However, quality management has been sparsely researched from the perspectives of job satisfaction while it likely affects different aspects of employees' at workplaces. Studies have been primarily pursuing quality management implementation to deliver high-quality products and thus satisfy the needs of external customers [Julian and Wafa 2014]. On the other hand, the literature portrays a widespread consensus that the behavioral aspects in organizations such as job satisfaction is considered as one of the most important driver of customer satisfaction and ensuing customer retentions, and even their relationship is underlined as unilateral rather than bilateral [Jeon and Choi 2012]. Therefore, there would seem to be great gains if organizations can establish sustainable workplace satisfaction among their employees. The research described in this thesis aims to examine how quality management can be practiced in order to promote job satisfaction and study what it is within quality management that influences job satisfaction. Accordingly, the purpose is also to contribute to the understanding of the relationship between job satisfaction and

quality management. Therefore, the problem for the present research work has been defined as follows: **"Analyzing Job Satisfaction by Quality Management for Ethiopian Leather Industry".**

1.4. Organization of the Thesis

This research work is divided into the following seven chapters:

Chapter 1: Introduction

This chapter presents background of the research. It provides the general overview of the leather industry in the world with a particular focus on the Ethiopia leather industry. The motivation of the research in also presented in this chapter.

Chapter 2: Theoretical Frame of Reference and Literature Review

This chapter provides an understanding of the research area and provided a theoretical foundation upon which the thesis rest. Theory on quality management and job satisfaction are provided, and their relationships are reviewed and discussed. This chapter presents research gaps, research questions and objectives of the research. Moreover, detail descriptions about the organizational setup of the LPMI of Ethiopia are presented in this chapter in order to provide a general overview of the sector.

Chapter 3: Research Methodology

This chapter primarily aims at describing the methodological choices made along the research journey. The methodical choices are discussed in relation to the purpose of the research and the research questions. An overall research algorithm, which gives a general picture of the research process, is also illustrated. This chapter also presents the identification and prioritization of key performance indicators of the industry using 'customer preference rating' technique.

Chapter 4: Job Satisfaction in the Ethiopian Leather Products Manufacturing Industry

In this chapter, the potential determinants of job satisfaction are identified based on the understanding of country-specific phenomena and the relative influence of each of these factors on job satisfaction are evaluated. In addition, this chapter proposes job satisfaction improvement programs using fuzzy QFD model.

Chapter 5: Quality Management Practices as a Tool for Job Satisfaction Improvement of Shop Floor Workers

This chapter is the crucial body of the research. It presents the transferability of quality management practices by validating the direct relations between people-related quality

management practices and job satisfaction using structural equation modelling technique. In this chapter, further understandings about the association between quality management and job satisfaction is established via exploring the underlying dimensions between them. This chapter mainly created a knowledge about the mechanics of the relationship and provided an understanding about how one is constituted in the other.

Chapter 6: A Job Satisfaction-related Quality Measurement Approach

This chapter details the development and validation of a measurement approach that can be used to measure the job satisfaction-related quality management to promote sustainable job satisfaction among shop floor workers.

Chapter 7: Findings and Conclusions

In this chapter, the findings of the research are presented in connection to the research questions, followed by conclusions, limitations of the research and issues for future research.

CHAPTER 2

THEORETICAL FRAME OF REFERENCE AND LITERATURE REVIEW

2.0. Overview

In today's competitive environment, organizations need to adopt a modern management philosophy that helps for the technical management of labor forces. The quality management philosophy, particularly the people-related practices, has been emerged as being a current popular methodology to positively influence employees, promote job satisfaction, maximize their work potential and then brings organizational wide change. This chapter aimed at laying down the theoretical framework relevant to the research described in this thesis and review related literature in the area. A brief description is presented about the theoretical descriptions of quality management and job satisfaction in the subsequent sections, with the critical focus being towards their relationship. They are described in more detail by means of a historical description, theories, definitions and dimensions. The problem formulation for the present work is presented in this chapter. This chapter also provides research gaps, research questions and objectives. Moreover, the detail descriptions of the LPMI of are presented in this chapter in order to provide a general overview of the sector.

2.1. Quality - an explanation of the concept

Quality is an integral part of human activity [Birhanu 2011]. It requires many individuals performing appropriate activities in business process. The concept of quality has started as early as human existence. However, it is one of the most misunderstood issues, and yet it is central to the survival of even the most successful companies in the world [Goh 2000]. In the past, companies defined quality for its customers [Goh 2000]. Then, companies started to determine actual requirements of customer and produce what its customers want, within the required period, at minimum cost [Ramessur et al. 2015]. Soon post-war, quality became to be defined by customers [Bergman and Klefsjö 2003].

Quality is a multifaceted term [Hallgren 2007]. Historically, quality has been given many different definitions by various gurus, consultants and researchers. For example, Crosby (1980), who defines quality as "conformance to requirements", which seems narrower definition as it reflects producers' perspective only [Bäckström 2009]. Juran (1988) defines quality as "fitness for

use". Quality, according to Flood (1993), means meeting customer (agreed) requirements, formal and informal, at lowest cost, first time every time. MacDonald and Piggott (1990) defined quality as delighting customer by continuously meeting and improving upon agreed requirements. In USA, one broadly accepted definition of quality is 'the totality of features and characteristics of a product/service that bears on its ability to satisfy given need' [Evans and Lindsay 2008, P. 15]. This definition is consistent with the views of Feigenbaum (1983), who indicated that quality is multidimensional and thus, it must be defined comprehensively. Bergman and Klefsjö (2003) define quality as a wider concept: "quality is to satisfy, and preferably exceed, the needs and expectations of the customers". More widely, Revees (1994) defined the term 'quality' as value, conformance to specifications and to requirements, excellence and meeting and/or exceeding customers' expectations.

Abusa (2011) identified common emphases of the quality gurus and classified the definitions of quality into two general classifications. The first classification urges that quality means 'producing a product/service' according to the predefined numerical specification and the second one urges quality as 'satisfying the customer' expectations'. Hanan and Karp's (1989) argument clearly consistent with the second classification, saying that 'customer satisfaction is the ultimate objective of every business: not to supply, not to sell, not to service, but to satisfy the needs that drive customers to do businesses'. The definition given by Feigenbaum (1983) contained essential points such as 'quality is dynamic because customers have changing needs and expectations'. This definition posits the need of organizations to be very close to their customers to manage their satisfaction status continuously. Still looking at quality from the customers' viewpoint, Soare (2012) notes quality is typically represents customer's perception. All these ideas of various scholars show that customers are a central component of quality, implying that quality is exclusively evaluated and judged by customers. Thus, organizations that aims to increase quality and hence performances has to start by identifying their customers.

Essentially, customers are categorized into two: external customer and internal customer. External customers are those who purchase product and influence sale of the product while internal customers pertains every person inside the company such as shop floor workers, supervisors, and others. The meaning and the definition of the concept of 'customer' varies, from as narrow as in the ISO 9000:2000 standard "an organization or person that receives a product" to the wider given by Juran and Gryna (1988) "anyone who is affected by the product or by the process used to

produce the product". While the former definition is limited to describe the external customers, the later definition pictured both external and internal customers. After the extensive review of the perspectives of quality gurus, Abusa (2011) concluded that 'quality should be defined comprehensively. The focus must be on every aspect of an organization towards the satisfaction of both internal and external customers and to minimize the society's dissatisfaction'. Further, Matzler et al. (2004) revealed that a positive work-related attitude of internal customers' is considered as one of the most important driver of external customers' satisfaction. A recent study carried out by Jeon and Choi (2012) where on the basis of a dyadic data affirms that internal customers satisfaction leads to external customer satisfaction, but not vice versa, indicating their relationship is unilateral rather than bilateral. Hence, it is reasonable to expect that customer satisfaction, the primary objective of organizations, can be achieved via sustaining the efforts of their employees. The research described in this thesis also considered *'internal customers'* as a focus of the study.

2.2. Quality management (QM)

2.2.1. Introduction

In a world of imperfect information and understanding, latent opportunities for performance improvement are always abundant. QM methods provide some novel ways of converting a portion of these latent opportunities into recognized opportunities and recognized opportunities into actual improvement [Thakkar et al. 2006]. Since its introduction, QM has become a key concern for many organizations. It is implemented worldwide to achieve improvements in organizational effectiveness and became the buzzword in the management practices [Prajogo and Sohal 2003]. It has been well accepted by managers and quality practitioners as a change management quality approach [Talib et al. 2010]. Organizations that have implemented QM gain advantages in various aspects of organizational performances [Talib et al. 2011]. Some of the benefits are improved financial performance [Mehra and Ranganathan 2008], foster organizational learning and innovation [Lam et al. 2006], established knowledge management [Ooi et al. 2009], increased market share and profitability [Evans and Lindsay 2008], improved labor productivity [Chapman and Al-Khawaldeh 2002], etc. QM can therefore be seen as a way to gain competitive advantage in the world market. In the following sub-sections, some aspects of QM are presented such as its evolution, definitions and the underlying practices.

2.2.2. The evolution of QM

The concept of quality started as early as human existence, but the evolution of QM began in the 1920s to the 1960s [Aziz 2015]. As noted in Birhanu (2011), there are three hypotheses to the origin and development of QM (1) it is evolved from classical human-oriented management theories, (2) it is an outcome of a revolutionary scientific development and (3) it is an evolutionary development of quality inspection.

The first approach is the development of classical management theories that has started in the early 20th century. The major contributors were Frederick W. Taylor (1856-1915) on scientific management, Henry L. Gantt (1861-1919) on the incentive system, Frank B. and Lillian M. Gilbreth (1868-1924 and 1878-1972) on motion and fatigue and Henri Fayol (1841-1925) on modern management. After the Second World War, different management theories were developed such as management science, system approach, contingency approach and dynamic engagement. QM is considered as one of the dynamic dimensions of management, since quality is always a moving target.

The second approach is based on Thomas Khun's (1970) theory of scientific advancement. Dooley (2000) proposed three epochs within the revolution of QM: pre-industrial paradigm of "let the buyer beware", an industrial paradigm of quality control and a post-industrial paradigm of TQM. This theory suggests that each paradigm was the result of the discipline's adaptation to environmental contingencies and the discipline of QM can be thought of as evolving overtime through these three paradigms [Dooley 2000]. Also, Waddell et al. (2009) view QM as an advancement from early scientific management principles because it incorporates many characteristics presented in contemporary management theories such as customer focus, performance management and change management. These management theories and principles are applied in firms that adopt QM, which naturally results in better business performance.

The third argument categorize the development of QM into four stages: quality inspection (after production) (1920s-1960s), quality control (during production) (1960s-1970s), quality assurance (before production) (1970s-1980s) and the current fourth phase is TQM (continuous improvements before, during and after production) [Aziz 2015]. It emphasizes that quality has passed through different steps starting from inspection to TQM. This pertains TQM starts with simple inspection-based system.

Following a step-by-step development, TQM is now part of a much wider concept that addresses overall organizational performance and recognizes the importance of quality processes. TQM considers all activities of the overall management function that determine quality policy, objectives, and responsibilities, and implement them by means such as quality planning, quality assurance, quality control, and quality improvement within the system.

Irrespective of the fact that the interpretations of the development of QM differ, TQM can be seen as the current phase. On the other hand, there is no agreed distinction between the definitions of TQM and QM and it is under debate by researchers [Bäckström 2009]. As revealed by Martínez-Lorente et al. (1998), TQM appeared to be a well-accepted system of management by the end of the 20th century. Nevertheless, the term has not been frequently used; for instance, Deming avoided the TQM term by himself [Bäckström 2009]. Juran did not use it either in his main books "Quality Control Handbook" and "Juran on Planning for Quality" [Martínez et al. 1998]. According to Juran, management for quality is carried out by "The Juran Trilogy": quality planning, quality control, and quality improvement [Juran 1989]. This can be seen as his description of QM [Bäckström 2009]. Also, Soare (2012) recognized that TQM is a basic QM approach. As such, TQM can be seen as being included in the term QM. In this thesis, the more generic term QM is used rather than TQM. The latter can be seen as a description of the current stage in the evolution of the former [Bäckström 2009].

2.2.3. Future Perspectives

So far, QM has been continuously extending itself to many sectors and disciplines [Maistry et al. 2017]. The future of QM could be predicted based on Tomas Khun's structure of scientific theory [Dooley 2000]. Based on Kuhnian model of paradigm evolution prediction, if the current quality paradigm of QM continues, then more context-specific theories and models would be developed that refine the more generalized existing knowledge base. In management theory terms, this means a growing emphasis on contingency and configuration theories [Doty et al. 1993], which is theory-building process of clarifying and refining the logic underlying a theory and develop a valid model that accurately represents its logical structure. As noted by Dooley (2000), this is actually happening in the paradigm of QM as the effectiveness of certain QM activities are appeared to be dependent on the environment in which the organization finds itself in. For example, based on a large-scale study of over 500 companies (global), the International Quality Study [Ernst and Young 1992] indicated that certain QM practices were valid for companies

depending on their maturity level: low quality performers, medium range performers and high range performers.

2.2.4. Definitions about QM

As there are many definitions for quality, QM has also been described in different ways over the years. Defining the term has remained the controversial issue debated in the literature [Aueaungkul 2013]. The inability of the researchers to reach consensus on the common definition may arise from the concept being changeable and adaptable to the spirit of the time and context-specific factors [Bäckström 2009]. This subsection will review sample people-related QM definitions.

Anwar and Jabnoun (2006) defines QM as a single integrated approach to the organizational functions, and a mechanism seeking to attain consistency and harmony. After extensive reviews, Aueaungkul (2013) viewed QM as a management philosophy concerned with corporate culture as a main principle; however with an ultimate focus on increasing internal and external customer satisfaction effectively and efficiently. According to Dahlgaard and Dahlgaard-Park (2006), QM is "a corporate culture characterized by increased customer satisfaction through continuous improvements, in which all employees actively participate". Also, Mehra and Ranganathan (2008) defined QM as, "an organization-wide philosophy requiring employees at every level of an organization to focus his/her efforts to help improve each business activity of the organization". Kitaw and Bete (2003) defined QM as a management philosophy for achieving highest standards in customer satisfaction through employee participation. From these definitions, it is evident that employees are vital for the effective operationalization of QM and enable organizations achieve market success through meeting the satisfaction of external customers. This achievement undoubtedly requires the involvement of satisfied employees, each of whom are committed to run QM. ISO 8402 (1994) define QM more better saying that QM is "a management approach of an organization centered on quality, based on the participation of all its members, and aimed at long-term success through customer satisfaction and benefits to all members of the organization and society". It is revealed from the literature that social aspects in organizations such as employee efforts are considered as essential to the fulfilment of customers' needs. This means that if the business employees cannot functions at their optimum efficiency, the level of services is affected and the end customer is impacted [Joshi and Rao 2013].

2.2.5. QM Practices

Successful implementation and execution of strategies are partly dependent on manager's ability to nurture a work climate that can make people motivated. Managing best-known factors of QM are amongst strategy execution processes in organizations [Kabak et al. 2014]. Many authors have conducted research on identifying a set of factors essential for the implementation of QM. Scholars identified the factors with different terminologies like 'practices' [Flynn et al. 1995], 'constructs' [Ahire et al. 1996], 'critical factors' [Sila and Ebrahimpour 2005], 'elements' [Powel 1995], etc. Regardless of using different terminologies, however, the meaning of the factors has remained the same [Martin 2016]. Due to their profoundness and best match with the intention of the research, this thesis prefer to call the factors as 'practices'.

Fundamentally, QM comprises 'hard' and 'soft' practices [Wilkinson 1992]. The hard side associates a range of tools and techniques required for the improvement of production processes including QFD, seven tools, just-in-time inventory, etc. On the other hand, the soft side is associated with people factors such as leadership, employee empowerment, teamwork, culture, etc [Maistry et al. 2017]. Many commentators argued that organizations should primarily understand the soft side for variety of reasons in order to attain successful implementation of QM [Prajogo and Cooper 2010]. First, according to Rahman and Bullock (2005), the soft practices creates an environment where the 'hard' practices can be implemented. This explains that promoting and upgrading hard practices may not necessarily improve performance, because ultimately it is 'people that make quality happen' [Prajogo and Cooper 2010]. Second, studies revealed that in addition to the direct effects, soft practices have an indirect effect on organizational performance through its effect on hard practices [Rahman and Bullock 2005]. Third, in their study on exploring the relationships between "soft" and "hard" QM practices, Psomas and Fotopoulos (2009) reported that quality improvement and consolidation of company's market position are mainly influenced by initially adopting soft practices followed by 'hard' QM practices. Consequently, the research described in this thesis considered the soft (people-related) practices of QM as it is best match with the intention of the research.

According to Dean and Bowen (1994), QM implementation can only be accomplished through a set of common practices that supports the QM philosophy. Talib and Rahman (2012) further asserts that the benefits of QM can be achieved through identifying the sets of common QM practices. Organizations also regularly follow known and accepted common practices [Abusa

2011]. Several soft QM practices are recommended in the literature [see Guimaraes 1996; Psomas and Fotopoulos 2009]. In the research described in this thesis, QM is grounded in certain core practices that define the characteristics of soft QM in five dimensions. These are top management leadership commitment, everybody's participation, customer focus, teamwork and continuous improvement. These practices of QM are widely recognized by scholars to signify the standard people-related QM practices [e.g. Sila and Ebrahimpour 2002; Das et al. 2008; Psomas and Fotopoulos 2009]. In their 76 survey-based QM studies between 1989 and 2000, Sila and Ebrahimpour (2002) identified those set of practices having the highest coverage in the QM literature and suggested as essential in enabling employees to utilize their full potential to achieve higher level of organizational performance. Also, those set of practices are recognized as part of the 'QM wheel in an organization' that are crucial for quality improvement [Sarathy 2013]. Dale (2003) further enumerates that the soft QM practices mentioned above are relevant to organizational excellence and people-oriented aspects such as job satisfaction from the QM's perspective. Details of the aforementioned soft practices in relation to job satisfaction have been discussed and presented in Section 5.1.3.

2.3. Summary of QM

Quality is a multifaceted term. However, ideas from various scholars have shown a common theme that customers are a central component of quality, implying that quality is exclusively evaluated and judged by customers based on their level of satisfaction. Particularly, literature indicated that internal customers satisfaction leads to external customers satisfaction. It means that if the business employees cannot function at their optimum efficiency, the level of services is affected and the end customer is impacted. As there are many definitions for quality, QM is also described in different ways. Defining the term QM has remained the controversial issue debated in the literature. There is still an ongoing debate on approaches for the evolution of QM and the current quality paradigm of QM is continuous. According to the paradigm evolution prediction, the more-context specific theories and models would be developed that refine the more generalized existing knowledge base about QM. Also, it is hard to differ what QM practices should include. Rahman and Bullock (2005) explains that promoting and upgrading hard QM practices may not necessarily improve performance, because ultimately it is people that make quality happen. They described the soft QM practices as the behavioral aspects of management and creates an environment where the hard practices can be implemented. In this thesis, QM is defined as a

management approach to harness people in organizations and make them function at their optimum efficiency.

2.4. Job satisfaction (JS)

2.4.1. Introduction

Human capital is the greatest asset that an organization can possess [Adeoye and Fields 2014]. To be successful, it requires collective action from every member of an organization [Ooi et al. 2013; Markovitch et al. 2015]. Employees take interest on organizations based on the degree to which the organization values their welfare, security and comfort [Mabasa and Ngirande 2015; Aygun et al. 2013]. Happiness and well-being are important elements of a person's life [Oswald 1997]. Most people spend a relatively large amount of their adult life on working and, hence, how they feel about their job is said to be one of the most important ingredients of personal happiness and overall wellbeing [Schön 2007]. As a key indicator for the work life quality, JS has been linked to various behavioral outcomes, including employees' mental and physical health, their family interactions and overall life satisfaction [Ehsani et al. 2013]. According to Jung (2017), JS is a single summary construct to capture employees' perceptions of how they are treated by their organization. In organizational management, JS has been linked with various organizational outcomes such as customer satisfaction and productivity [Matzler et al. 2004]. Further, it is considered as one of the most important factor that enable organizations achieve competitive advantages over their competitors [Adeoye and Fields 2014]. Also, lack of JS results in work-related fatigue [Böckerman and Ilmakunnas 2009] and affects organizations from holistic 360 degree point of view [Islam et al. 2012). According to Ooi et al. (2013), work-life balance has a major impact not only on society but also on the business performance as a whole. Consequently, JS typically can be viewed as a 'win-win' proposition, as it is worthy for both employees and organization. Schön (2007) noted that the world is becoming more complex and thus the importance of JS and releasing human potential at every level of an organization becomes more and more important. Therefore, organizations should understand how their employees could be kept satisfied, in searching for greater organizational performance [Mabasa and Ngirande 2015].

Understanding the term "job satisfaction" is vital to the researcher embarking on a study of the concept. In the following, the concept of JS is discussed in terms of historical development, definitions, theories and consequences on organizational outcomes.

2.4.2. Historical development

An examination of the concept of JS should begin with a review of the historical background of the subject. At the beginning of the twentieth century, JS was not really an issue for researchers or managers. After Frederick Taylor introduced the principles of scientific management, employers began to adopt techniques emphasizing efficiency and productivity. All employees were assumed to be motivated only by financial incentives, while the impact of other working factors were ignored [Reiner and Zhao 1999]. The classic Hawthorne studies however provided an important lesson on the importance of different factors.

Elton Mayo first developed the concept of JS in his study of the Hawthorne plant, Chicago from 1924 to 1933 [Bisen 2010]. The Hawthorne studies changed the outlook of researchers and managers toward employee attitudes. An experiment has made on the effect of illumination on productivity. In this series of tests at the Western Electric Company in Cicero, Illinois, work productivity continued to increase, regardless of the changing experimental conditions. Subsequent interviews with the employees showed that the improved productivity was not a result of changes in illumination, but instead stemmed from employee perceptions of improved interpersonal communication. These experiments found out that not only financial matters can affect the JS level of employee but social factors also influence satisfaction level. This important finding opened the doors for researchers to begin to identify different work factors and examine the relationships between employee JS and work performance [Reiner and Zhao 1999]. Today, JS research continues to seek to improve the work experience of employees in numerous occupations. Organizations are seeking to improve satisfaction in order to reap benefits from improved organizational performance.

2.4.3. Definitions about JS

Henceforth the Hawthorne studies, different authors have defined the concept of JS differently. So far, hundreds [Özpehlivan and Acar 2015] and even countless [Tlaiss and Mendelson 2014] definitions have been made about JS. This indicates that the subject of JS is well represented in the literature and hence the present researcher does not intend to go into detail here. However, it seems important to explain some scholarly thoughts to determine a particular concept of JS, using which the present research is established. A sample of the definitions are presented in the following.

"Job satisfaction is the extent to which a person derives pleasure from a job" [Muchinsky 1987].

"*JS as the net sum of the individual's positive and negative emotions experienced at work*" [Weiss 2002].

"*JS is an outcome of expectations of, and experiences from, a job*" [Pan 2015].

One common theme in these definitions is that JS is an individual's perception. Each employee assesses his/her work experience in the context of personal background and environmental factors. Satisfaction will be high when the difference between expectations and experience is low and vice versa. JS, in this thesis, is merely defined as *"the difference between what people expect from the job and what they get in actual"* [Farooqui and Nagendra 2014].

2.4.4. Research on JS

Having defined the concept of JS, in this section, past research efforts have been examined to provide the foundation for the present research. JS research can be divided into three broad categories.

First, there have been studies that examined JS as an *independent variable* to assess its impact on various dependent variables. For instance, researchers have examined the relationships between levels of JS and work performance, employee stress, absenteeism, and turnover rate. In the second category of JS research, researchers use JS as an *intermediate variable*. The intermediate approach values JS as a transitional state leading to the achievement of other organizational goals. In the third category of JS research, researchers have examined JS as a *dependent variable*. This type of research approach assumes JS is a desirable goal and seeks to identify the factors that can produce/influence it. These factors could include individual characteristics of employee, perceptions of the workplace environment, or attributes of the work itself.

From the examination of the past research, it appears that JS can be viewed as a continuum from independent variable on one end to dependent variable on the other. The research described in the present thesis employed the third approach - JS as the dependent variable. As explained earlier, this thesis considered QM as an independent variable to identify which of its practices influence JS of employees.

2.4.5. Theories on assessment of JS

A review of literature of the existing theories on the assessment of JS shows similar divergence that was evidenced in the definition of the concept. There are two well-founded perspectives of explaining and assessing the concept: content and process perspectives [Abdulla et al. 2011; Staelens et al. 2016].

The 'content-theories' attempt to explain JS from the individual's personal or intrinsic factors. The content perspective approaches JS from the perspective of needs fulfilment and assumes that all individuals have the same set of needs. The content-theory includes the motivator-hygiene theory proposed by Maslow's (1954) and Herzberg et al. (1959) need hierarchy theory. The basic suggestion of the Maslow's theory is that people are wanting-beings, i.e. people always require more than what they have, and what they need depends on what they have at present. Only unsatisfied needs will motivate people, and if a specific need is not met, all efforts are directed at fulfilling that need [Walker and Miller 2010]. Maslow's theory is based on two assumptions; that is: people always want more and people arranged their needs in order of importance [Couglan 2013]. Based on Maslow's (1954) theory, Herzberg et al. (1959) identified two separate groups of factors affecting motivation - Hygiene factors and Motivation factors. Hygiene factors (lower order needs) cannot increase satisfaction, but need to be maintained at a level where they will not cause dissatisfaction. Motivation factors (higher order needs) play an important role in positively influencing satisfaction.

The other group of theories, namely, process-theories, focus on the cognitive or overall processes leading to job (dis)satisfaction. It prefers to measure external factors that indirectly affect JS. The process theory include Adams' (1963) equity theory and Vroom's (1964) expectancy theory. Adams' (1963) equity theory is based on the conception of social comparison. Social comparison refers a process by which individuals compare and judge the fairness of working conditions of themselves with other people through comparing. At the same time, they also evaluate what they get in comparison with what they expect [Fekadu 2015]. Vroom (1964) proposed that motivation of employees is first and foremost influenced by his/her expectation that additional effort will lead to additional rewards. According to Vroom, it will not be possible to positively influence an employee's motivation if this expectation is not met [Coughlan 2013].

According to Staelens et al. (2016), both the content and process theories agreed that job characteristics are the most important predictors of JS. Job characteristics can be separated into

intrinsic and extrinsic rewards [Aletraris 2010]. Intrinsic rewards are related with the job context or activity itself that satisfies a worker's non-material needs by giving a worker the feeling of accomplishing something worthwhile on the job. It includes nature of work, recognitions, feedback, etc. By contrast, extrinsic factors include organizational rewards that are derived from the job. Intrinsic rewards include, for example, pay, benefits, etc. Both of these factors have been identified in the literature to have a significant positive relationship with JS [Abdulla et al. 2011]. Consequently, in this particular research, both sets of these factors have been considered to enhance the reliability of the assessment of JS.

2.5. Sustainable job satisfaction

Apart from the classical theoretical issues, which have survived in the JS literature for about a century, it is important to examine further issues with regard to JS management.

The first and most important issue is sustainability of JS. Today's world is dynamic and ever-changing. In this environment, JS is an integral factor in motivating employees to accomplish organizational goals and objectives. As Dale (2002) noted, improvement is a process, which, once started, should never end and the same can be said of the research into JS. Therefore, the JS promotion should be set in motion intervention effects that are sustained over time [Kabak et al. 2014]. Srivastava (2004) state that JS is dynamic; it can decline even more quickly than it developed because of different forces from the immediate working environment. According to Docherty et al. (2002), a sustainable work system is "a system where human and social resources are regenerated through the process of work while still maintaining productivity and competitiveness". Sustainable manufacturing also seeks continuous improvements in organizations for a better social, environment, and economic development [Ayber and Ulutas 2017]. As noted in Arnetz (2002) and Bäckström (2009), research on health, stress and renewal offers a number of interesting clues for managers on how an operation can be renewed and unpleasant work environment is blocked. The positive attitude of employees to their job therefore always evolves along with the changes in the business environment. Zairi and Liburd (2001) defined sustainability as the ability of an organization to adapt to change in the business environment. The present research also observed that it takes a whole series of such efforts to achieve a sustainable JS of employees. A model suggested by Arnetz (2002) suggests that people who work in efficient organizations tend to generate a positive attitude towards their job. Managers, therefore, cannot establish the conditions leading to high satisfaction now and then

neglect it, as employee needs may change suddenly. As mentioned earlier, the JS may decline shortly after being secured, yet it has been strongly suggested that JS will only produce significant benefits if it is realized in a long-term basis [Kabak et al. 2014]. In the research described in this thesis, the definition of JS is extended to include "sustainability". The long-term perspective considers the positive progress on JS made by managers and organizations over time. This is also in line with the view given by Adeoye and Fields (2014). They said to cope up with current changes and future challenges, organizations need to pay attention to rectify factors regularly that significantly influence JS.

The second key further issue regarding JS examination is concerned with the problem of using objective measures to assess JS status of employees'. Literature highlight that researchers regularly used objective measures such as certification schemes, labour regulations and codes of conducts to analyze and evaluate the JS [Staelens et al. 2016]. According to Staelens et al. (2016), to date, what is missing in JS research is any inclusion of workers' own perceptions on how they themselves evaluate the quality of their working life. In other words, studies have neglected to include the voices of workers themselves rather they have much focused in analyzing the existing discrepancies between current work practices and benchmarks for working conditions. Literature revealed that 'self-report' has proven to be a valuable indicator of the actual work-related attitude [Bäckström 2009]. In this thesis, the employee's perception of their satisfaction at workplaces, which is self-reported, have been used to measure JS.

In summary, the definition of sustainable JS in this thesis is influenced by the aspects described above, and can be expressed as *"durable, self-perceived contentment"*. This definition is intended to explicate long-term perspective of JS reported by one's own, which seem to be central to strive for durable work-related attitude.

2.6. QM and JS

The literature portrays a widespread consensus that the ultimate objective of QM philosophy is meeting/exceeding customer satisfaction [Talib et al. 2010]. The research focus has largely remained on improving external customer satisfaction and continuous improvements through the implementation of QM [Del Río-Rama et al. 2016]. However, the social aspects in organizations such as employee efforts are considered as essential to the fulfilment of customers' needs [Eskildsen and Dahlgaard 2000]. In the QM literature, Matzler et al. (2004) revealed that JS is considered as one of the most important driver of customer satisfaction. It is therefore reasonable

to expect that customer satisfaction, the ultimate objective of QM, can be achieved via sustaining JS of internal customers in organizations.

Despite the fact that JS and QM are very old concepts, the research focus within QM has sparsely laid on internal customer satisfaction while it likely affects different aspects of employees' at workplaces [De Menezes 2012; Del Río-Rama et al. 2016]. It seems the QM literature is essentially characterized by assumptions, lacking a clearly strong empirical support on the association between such kinds of issues. Ooi et al. (2007b) and Mendes and Jesus (2016) indicated that most of the previous studies are theoretical and only few provide empirical evidence to support their conclusions.

In theory, there are the two sides of extreme arguments circulating in the literature regarding the effects of implementing QM practices on work-related attitude of employees. One claims that QM is a tool for employee participation and empowerment by giving them an opportunity to participate in planning and implementation [Lin and Wayne 1995]. In other words, the aim of QM is to reduce control over employees through increased participation and empowerment. It entails providing healthy working conditions for the employees is an important value within the field of QM [Bäckström 2009]. On the negative side, it is argued that organizations working under QM environment likely affects different aspects of employees' at workplaces. QM initiatives change organizational structures, policies, nature of work, procedures, working instructions and ways of evaluating performance outputs. These changes requires individuals to take on new roles, can impose more work demands, high-pressure working environments and closer monitoring over employees [Green 2006], which in turn are directly related to situational behaviors like satisfaction at workplaces [Ellickson and Logsdon 2002]. Lam (1995, p. 73) stated that "it should not be assumed that a workforce would necessarily welcome QM. What is seen by QM trainers as an unambiguously positive impact on employees may be seen by employees as increasing pressure by getting them to take on more work and responsibility". Welikala and Sohal (2008) have noted that employees may perceive their jobs in the quality environment to be controlling as opposed to empowering. Also, Arnetz (2002) said that organizational change that takes place when implementing a new improvement methodology can cause stress and anxiety among the workers. De Menezes (2012) noted that performance gains in organizations might be achieved at the expense of employee well-being.

Besides the theoretical assumptions, few empirical studies also produced critically dispersed findings, contributing to a fragmented knowhow about the relationship between JS and QM. Some authors find positive relationship [e.g. Ooi et al. 2007b; Prajogo and Cooper 2010], while others reported no relationship within workplace employments [e.g. Lam 1995; De Menezes 2012].

In summary, there seems to be a need for more research into JS under QM environment and how employees JS can be sustained in long term. Conducting more research is required until the theoretical foundation about the true relationship between JS & QM is clearly recognized. The present research is a continuation of the efforts that are being made in finding the appropriate relationship between JS & QM. Since this is one of the important area of study in the domain of QM, research that are more systematic are valuable to contribute to the theoretical foundation about how one is linked to the other [Liu and Liu 2014]. So far, the available researches tried to study such relationships by merely relating their respective factors. Lagrosen et al. (2010) said that while establishing a relationship between study variables, it is more useful to create an understanding of how one is constituted within the corpus of the other. This is what the present research uniquely attempts to do. The present research needs to create an understanding of the mechanics of the relationship and knowledge of the factors of which it is constituted.

It is understandable from the literature that there is great potential gain if managers work with QM and manage to establish a positive job-related attitude among their employees. However, there are still a lot of organizations in developing economies suffering from high costs caused by labor-related problems, which would save organizations significant amounts of money.

2.7. Quality movement in Ethiopia

In Ethiopian context, there are many reasons for enhancing and necessitate the promotion and application of QM. Among the many reasons, economic development is the main one to fulfill national needs [Kitaw and Bete 2003]. As a response to these, at national level, the government considered quality as a development infrastructure [Beshah and Kitaw 2014]. In 1964, the Ethiopian government organizes "Standard Office". After a lot of efforts and different activities, an independent organization, which is the Ethiopia Standard Institutes (ESI), was established in 1970 as an autonomous institution [Kitaw amd Bete 2003]. The purpose to establish the institution was to determine the quality of agriculture and industrial products. Also, it is intended to promote and expand standardization and quality control activities in the national economy. To benefit the

people and protect customers, agricultural and industrial products were expected to meet the required national standards. Similarly, export commodities were expected to meet internationally recognized standards. Since 1974, the country has adopted centrally planned socialist economy system. Many state owned enterprise set-up, and nearly all the private companies were confiscated or bought by the government. The government has established special departments to perform both the procurement and marketing functions for industries. However, it was common that no independent quality department or function was established in companies. Majority of companies had no clear quality vision and mission, and their management lacked the initiative to steer quality activities through corporate strategies and policies. There were several deep-rooted barriers of QM. These includes, but not limited to, lack of awareness and misconception about quality and quality control techniques, the inability to plan for changes and the ignorance of cost of poor quality. More than others, lack of customer focus made the situation deteriorate further and imposed difficulties in developing QM practices at the time.

The difficult situation had prolonged its effects throughout the whole country until the present days. In order to restart the engine of quality transformation efforts in Ethiopia, many challenges and difficulties were faced concerning changing the risk-avoidance culture among Ethiopian enterprises and rebuilding their confidence toward better reward and recognition that could be achieved through QM practices [Kitaw and Bete 2003]. Despite the fact that almost all of Ethiopian organizations are still in the early stage of quality control and promoting quality assurance practices, the progress has moved to the subsequent diffusion of the ISO 9000 quality standards, and the concept of TQM in Ethiopia. The ESI, which was established in 1970, has been renamed and raised to a status of an authority in 1987, i.e. the Ethiopia Standard Authority (ESA), taking the important practices of internal standardization, quality control, quality assurance and certification into consideration. In 1998, the ESA was re-established as a Quality and Standard Authority of Ethiopia (QSAE). In its new organization, the QSAE has taken the QM practices as one of its central objectives. In February 2009, QSAE obtained system certification and localize the processes. Now the authority can give internationally accepted certificate [Birhanu 2011].

QSAE safeguards Ethiopia's interest in international standardization through participation in technical committees. QSAE is a member of the ISO, International Organization of Legal Metrology and International Electro-technical Commission. It is also a founding member of the African Regional Organization for Standardization (ARSO) and a member of South African

Quality Institute (SAQI). Standard was given more emphasis by QSAE because it was believed that Ethiopian Standards (ES) would provide industry and users a framework for economy of design, greater product/service quality, more inter-operability, and better production and delivery efficiency. QSAE is also emphasized on standards and regulation such as incoming material, defective products in the market, mandatory standards, and calibration. Despite the profound efforts made, however, the QSAE efforts in Ethiopia to promote quality do have limitations [Birhanu 2011]. Due to its exclusive focus on standards, the deployment of the quality concept in Ethiopia is still questionable.

Employees' well-being can be mentioned as an area that has not been emphasized in the QSAE. Standardization and customer focus has been greatly focused in the QSAE. Standardizations has been used as a road map towards quality. However, working based on standardization is undoubtedly could not be realized without the effectiveness of employees in organizations. Human resources are the pivot of organizational effectiveness [Adeoye and Fields 2014]. To be successful, it requires collective action from every member of the organization [Ooi et al. 2013]. These arguments are reflected by the recently developed mottos in marketing research:

"The customer comes second: Put your people first"

[Rosenbluth and Peters 2002]

"Employees' first, customers second: Turning conventional management upside down"

[Nayar 2010]

This was also realized by the psychologist McGregor [Schön 2007]. The current value of the McGregor's work has been noted in Schön (2007, p.1):

> *"…Those businesses that thrive today are not necessarily those with the most valuable resources, the greatest market share, or the most capital (though none of these hurt); rather, those businesses that are able to tap their human potential in the most productive manner are the ones who enjoy enduring success".*

It is commonly perceived that working professionally is tightly related to the quality of human life [Ooi et al. 2013]. Employees take interest in an organization based on the degree to which the organization values their welfare, security and comfort [Mabasa and Ngirande 2015]. This is particularly much true for the labor-intensive nature of the Ethiopian leather industry. The QSAE requires promoting an improved quality of life by safeguarding well-being of employees and protecting the work environment in general.

As described earlier, this research tries to address the LPMI of Ethiopia. Some studies have been conducted in the Ethiopian leather from different perspectives such as skilled manpower development [Gebeyehu 2014], performance improvement through total performance scorecard [Cherkos 2011], productivity improvement through maintenance management [Misikir 2004] and integrating supply chain and industrial cluster theories to increase the competitiveness of Ethiopian leather in the world market [Netsanet 2014]. In addition, managers often focus on obvious money saving activities, such as, improved productivity, product quality and profitability. However, no research has been conducted from the point of view of employee's well-being. The construct of JS is given immense attention in any line of work, because no organization can successfully achieve its goal and mission unless and until those who constitute the organization are satisfied in their jobs [Srivastava 2004]. JS is an important dimension of employee well-being. Hiwot (2015) said that organizations could not possibly sustain its continuity disregarding or ignoring the level of JS of its employees. A research into this theme could have a great significance for the LPMI. The research described in this thesis aimed to provide an understanding of the interconnection of soft (people-related) QM practices and JS in the leather industry of Ethiopia. Showing the relationship between them will enable the industry to think its way into JS management. This research is an attempt to fill this gap and to increase the operational performance of the leather industry in Ethiopia. This would involve an analysis of the working environment in order to assess how these might impact the sector.

Ooi et al. (2008) argued that quality production is directly dependent on the effectiveness of shop floor workers. According to Daily and Bishop (2003) and Karia and Asaari (2006), QM implementation may heavily relies on the brawn and brain of front-line workers who are directly involved in making products. Despite this, authors in the quality area rarely mention shop floor satisfaction in particular. Studies have analyzed QM practices as strategies that can improve shop floor efficiency, minimizing existing productivity problems. However, as noted by Welikala and Sohal (2008), "workers at the shop-floor level see a QM program as coercive, due to increased pressure on them continuously to improve quality". Properly managing QM practices are required towards achieving higher satisfaction of shop floor workers. This helps to realize organizational performances through quality production. According to Yee et al. (2008), satisfied employees are more likely to have greater influence on quality. Therefore, this research need to address shop floor workers satisfaction.

2.8 Summary

As there are many definitions for quality, QM is also described in different ways. Defining the term QM has remained the controversial issue debated in the literature. Similarly, JS is extensively researched phenomena in organizational behavior and management. Both concepts, i.e. QM and JS, were practiced by many companies in isolation. As a result, enormous management philosophies had emanated by many gurus. However, research on the merger of QM and JS is still in its infancy, and it is difficult to put theoretical results into practice. In other words, interlink between them was scarcely researched and their source of relationship is not clearly established in the literature. It is understandable that it requires more research until the true relationship between QM and JS is clearly recognized. This research aims to create an understanding of the mechanics of the relationship and knowledge of the factors of which it is constituted. This will contribute differently to the relationship between QM and JS. Lagrosen et al. (2010) stated that the best way to understand the relationship between two variables requires an examination of their common sources of linking.

2.9. Gaps and Opportunities

The literature reviewed in the above sections revealed that an extensive amount of work has not been carried out in the area of interconnection between QM and JS. It is revealed that the available studies provided contrary results regarding the relationship between them. The reason for the mixed results may be attributed for either most of the studies had limited outcome in scope (i.e. linked only one or two elements of QM with JS) or often faced methodological constraints or inaccuracies (i.e. using descriptive statistics such as frequencies and means to analyze data) [Chapman and Al-Khawaldeh 2002; Ooi et al. 2007b]. In the pursuit of the optimum relationship between JS and QM, they should be measured and analyzed properly and their common sources of relationship need to be thoroughly identified. Also, the literature revealed the need of systematic research to contribute to the theoretical foundation about how one is linked to the other. So far, studies were limited to present a straightforward relationship study by simply relating the underlying factors of the studying variables. The research described in this thesis keens to create an understanding of the mechanics of the relationship and knowledge of the factors of which it is constituted. In other words, while establishing a relationship between study variables, it is more useful to create an understanding of how the factors of the study variables are constituted to each other. This is what the present thesis uniquely attempts to do. This will contributes differently for the theoretical foundation of the issue. Second, there are no empirical studies on factors fostering

the sustainable continuation of JS within the QM environment. This thesis will develop a measurement approach for JS-related QM, which will be re-administered periodically in workplaces in order to identify changes associated with QM efforts and hence, bring sustainability of JS.

Furthermore, based on the reviewed literature, a number of gaps and opportunities have been identified, which are given in following Table 2.1.

Table 2.1 Gaps and opportunities

S. No.	Gaps	Opportunity
1	As revealed in the literature, an extensive amount of work has been carried out in the area of JS. However, research on JS has received less/no attention in the context of Ethiopian manufacturing organizations.	The manufacturing industry in Ethiopia is HR-intensive. In parallel, organizations in Ethiopia struggle with high levels of labor market behaviors such as low labor productivity and low performance. Therefore, identifying what factors influence JS of employees is required, as it is a desired indicator of organizational success.
2	Despite the proliferation of studies on JS, it seems research has solely focused on cause identification. Understandings of solution proposals have not advanced at a pace commensurate with research efforts.	Studies underscore that underperformance of organizations are mainly attributed to extensive HR problems. Productive workforce in organizations can be realized by devising technical management of labor.
3	Studies neglected to include workers' own perceptions on how they themselves evaluate the quality of their working life. So far, research has mainly used objective measures such as labor regulations to evaluate working conditions.	In 2003, Ethiopia has inaugurated a labor law in an attempt to safeguard the interests of sector workers and build a pleasurable working condition. Yet, organizations has done little to fulfill that mission. To develop an effective labor law, policy-makers might need to consider subjective measures (as perceived by workers) to

		obtain better results and a complete picture about quality of the jobs provided.
4	Very less work was done on the relationship between QM and JS, while QM likely affects different aspects of employees' at workplaces. Also, the available studies produced critically dispersed findings, contributing to a fragmented knowhow about the issue.	Since it is one of the important area of study in QM, more evidence and theoretical supports are needed to contribute to the theoretical foundations about their relationship.
5	Previous studies did not provide understandings about the mechanics of the relationships between QM and JS.	Recognizing their relationships have a very wide area of importance for the effectiveness of QM in an organization. Their relationship needs to be investigated systematically as how one is constituted within the corpus of the other.
6	Researchers mainly used combination of workers from various levels and functions of an organization as a study population. Authors rarely consider shop floor workers satisfaction in particular.	Achieving higher workforce performances are vital particularly for labor-intensive organizations, where shop floor workers are the main agent for operational performances (such as quality production).

2.10. Problem Definition

The present research was an empirical investigation on the interconnection between QM and JS in the LPMI, in order to develop understanding of the job-related behavior of shop floor workers under QM environment and to obtain what it is within QM that can promote JS of the employees sustainably.

2.11. Research Questions

In view of the above, this research formulated the following four research questions. The research questions are slightly progressive in nature since new knowledge during the research journey has created new questions. Knowledge from seeking answer to the first Research Question

(RQ1) created new question (i.e. RQ2) and a base for further research. The research questions are briefly described in the following.

As discussed in Chapter 1, there are wide spread reasons for the low performance of the LPMI of Ethiopia both in the upstream to the production of raw materials and in downstream to the manufacturing stage. It has been indicated that the leather industry needs to be transformed to a fully-fledged manufacturing stage. This is so because increased level of organizational performance is achieved with higher stage of processing/manufacturing activity. One way to support the industry is to identify the most critical constraint downstream to the manufacturing stage that largely inhibit the performance of the industry. It is only then that the industry could improve performances tremendously and live up to the challenge of international competition. The first research question is:

RQ 1. What is of most important to improve organizational performance of the industry?

There are many reasons for organizations to work for high levels of JS among their employees. This has also been acknowledged by many successful organizations in the world. In Ethiopia, a number of organizations, including the LPMI, struggle with high levels of labor market behaviors such as low labor productivity and low performance. One way to support these companies is making them to realize how much they are successful in achieving high levels of JS. Therefore, the second research question is:

RQ 2. How much organizations are successful in achieving high level of JS among shop-floor workers?

The work done while looking for an answer to *RQ2* generated other questions that are needed to be answered. The organizations had achieved low level of JS among shop-floor workers. Many organizations choose to use a systematic methodology to improve and sustain a high level of JS. To aid organizations systematizing such improvement work, organizations are using improvement methodologies within the larger frame of QM. Even though employees must be able to cope with the ever-changing demands of modern working life, which, even without a demanding improvement methodology, can cause stress and anxiety (Arnetz, 2005). Lam (1995) stated that employees might see QM as an increasing pressure by getting them to take on more work and responsibility. Also, Welikala and Sohal (2008) noted that employees may perceive their jobs in the quality environment to be controlling as opposed to empowering. Therefore, the author of this

thesis finds it intriguing to explore the QM with the intention of identifying which of its practices are most significant to improve the working life of employees in the LPMI. The analysis and the results had proven some of the QM practices to be more important in this respect than others. The results from those analyses showed that there also seemed to be underlying dimensions to the practices that affected JS of employees. Thus, the quest for these underlying dimensions to the practices was the next step in the research journey. Important dimensions were explored that affected JS of employees. If managers in organizations wanted to improve and sustain JS over time, they should measure and control the progress of JS status through a time. Therefore, the third and fourth research questions are:

RQ 3. What is of most important when practicing QM in order to sustain JS amongst shop-floor workers?

RQ 4. How can QM be measured within organizations in order to promote sustainable JS?

2.12. Objectives of the Research

The following research objectives were derived from the research questions. The main links between the research questions and the objectives of the research are illustrated in Figure 2.1.

General Objectives

The main objective of this thesis is to generate knowledge of how JS can be attained. Particularly, the research described in this thesis aims to examine how QM can be practiced in order to promote JS sustainably and what it is within QM that influences sustainable JS among shop floor workers.

Specific Objectives

1. To identify and prioritize the operational performance indicators of the industry
2. To identify the determinants of JS in the Ethiopian leather industry
3. To propose the possible solutions for the improvement of JS in the leather products manufacturing industry in Ethiopia.
4. To investigate the association between employee's JS and QM from the perspectives of shop floor workers
5. To develop a measurement approach for JS-related QM.

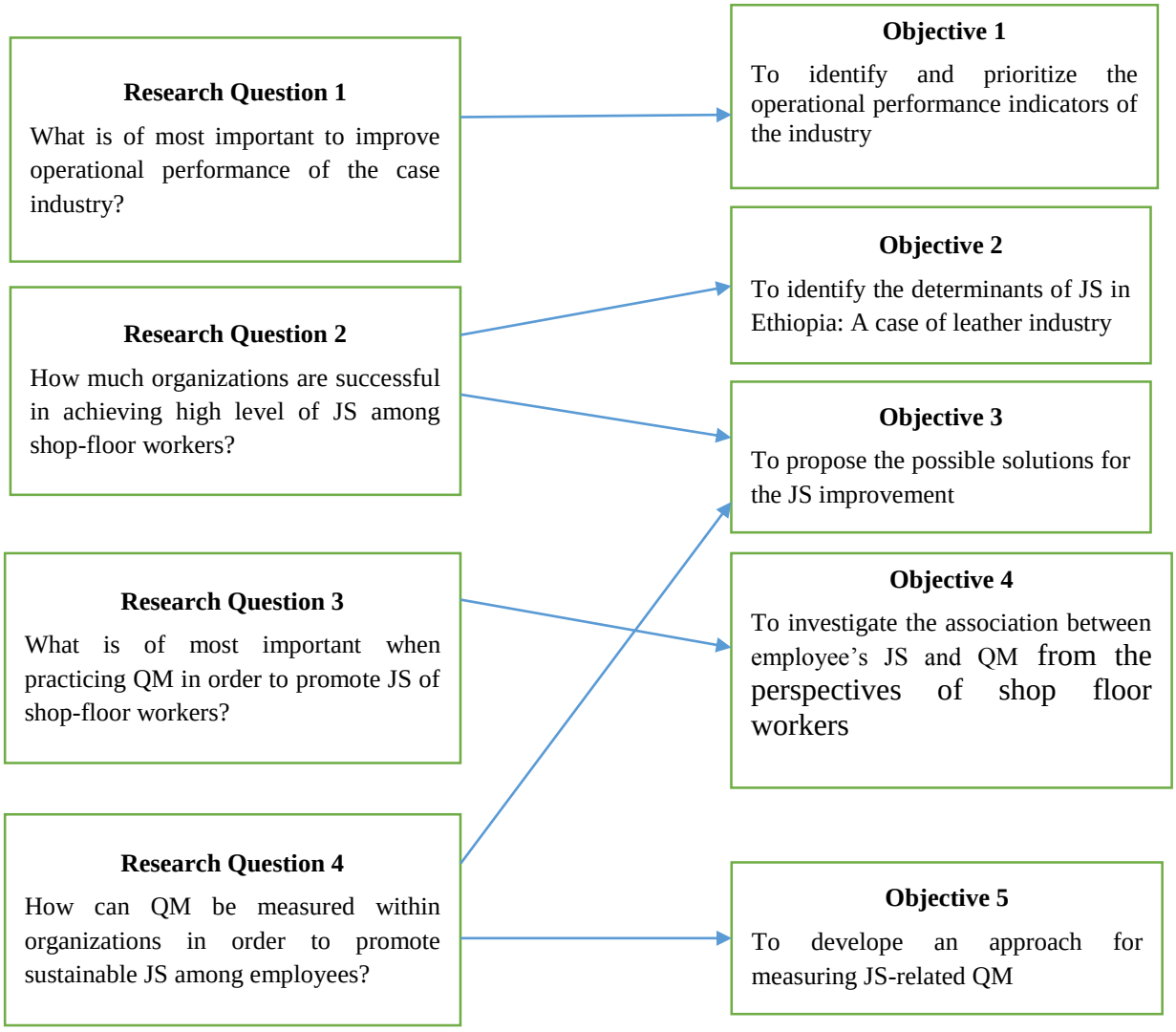

Figure 2.1 The main links between the research questions and the research objectives

In the next section, the detail description of the LPMI of Ethiopia are presented, with a particular focus on the footwear industry. The overall organizational setup of the footwear industry is described terms of describing representative footwear companies, production process operations, employment capacity, working conditions, capacity utilization and export performances.

2.13. Leather Products Manufacturing Industry (LPMI) in Ethiopia

2.13.1. Introduction

Government of Ethiopia has identified the leather sector as one of the growth sectors capable of accelerating economic development by creating more employment, generating income

through exports, and offering investment potential. The availability of large livestock population, cheap labour force, existence of big tanneries, and open access to international markets constituted the country's comparative advantages in the leather sector. The leather industry comes as the leading exporter, within the manufacturing sector, accounting for, on average, up to 67% of the total manufacturing export in Ethiopia (Abdurrahman 2012). The population growth trend of livestock (cattle, sheep and goat) shows the potential of the leather industry to be the main economic source of the country in the future (see Figure 2.2). The leather sector in general can be divided into three phases: the acquisition of hides and skins, the leather processing in tanneries, and the manufacture of leather products such as footwear, industrial gloves, etc. Figure 2.3 shows a few products of the Ethiopian leather sector. Currently, Ethiopia has shifted the major export items from the low value and processed leather to high value-added leather products. Its objective is to expand production of locally produced products, in terms of both variety and quality, as substitutes for imported leather products, increase foreign exchange earnings. The GTP has proposed the leather footwear industry as a leading sub-sector to pull up the whole industry development. The export of leather shoes is expected to become one of the leading export items in the GTP. Presently, the footwear sub-sector is expected to lead the leather sector's modernization to build a big impact on Ethiopian economy through foreign exchanges [Tesfaye et al. 2014]. Also, from a social viewpoint, the sector offers substantial employment opportunities.

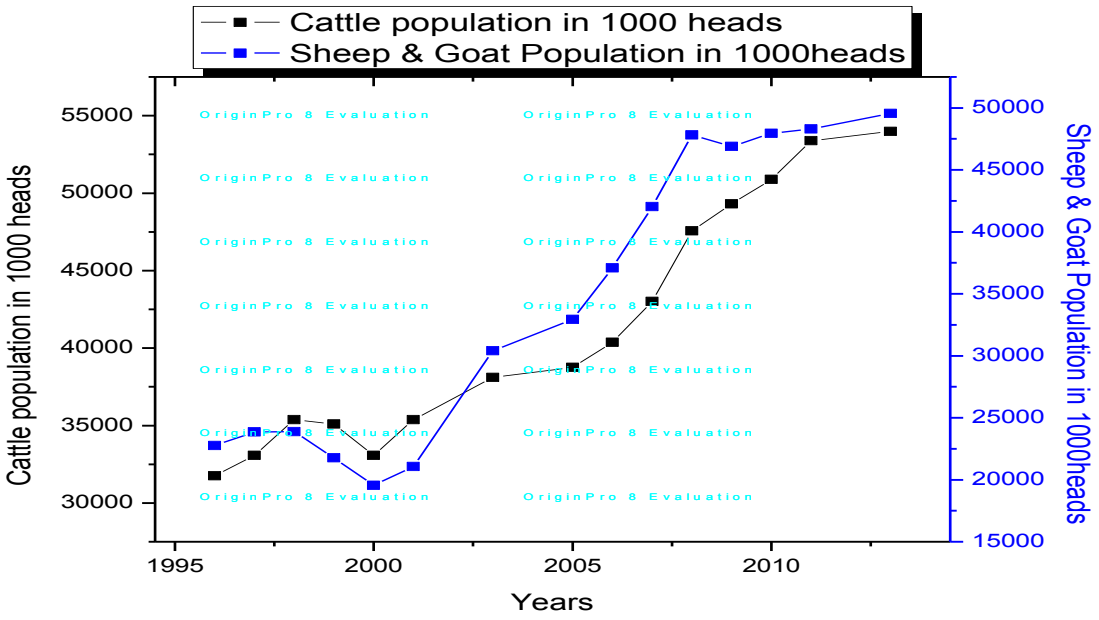

Figure 2.2 Cattle and Sheet & Goat population growth trend of Ethiopia [Leta amd Mesele 2014]

Figure 2.3 Some of leather products in the Ethiopian leather industry

2.13.2. Leather footwear sub-sector in Ethiopia

The leather footwear sector in Ethiopia has a long history of handicrafts production, but modern industrialisation is of recent origin with the strategic support and attention provided by the government. The modern production has started around the mid of the 20th century when Armenian merchants founded two shoe factories in Addis Ababa, Tikure Abbay and Anbessa shoe factories [Cherkos 2011]. These factories nurtured a number of shoemakers, who opened their own factories in Addis Ababa and trained their workers. Today, the neighborhood of Mercato, a huge marketplace in the city, swarms with shoemakers, wholesale shops dealing in leather, soles, and shoe accessories, and shoe retail stores.

In the subsequent sub-sections, details of an overall organizational setup of the footwear industry of Ethiopia are presented. Section 2.13.2.1 presents description of representative footwear companies in order to provide a general overview of the subsector. Section 2.13.2.2 describes production process operations and flow chart of leather shoe manufacturing process. Section 2.13.2.3 describes employment capacity followed by working conditions in the footwear industry in section 2.13.2.4. The capacity utilization and export performance of the industry are analyzed in section 2.13.2.5 and 2.13.2.6, respectively.

2.13.2.1. Description of representative companies

Organization 1: Anbessa Shoe Share Company

Anbessa shoe Share Company, formerly known as the Darmar Shoe Factory, was established in 1935 by an Italian expatriate, making the company being the first shoe manufacturing business in Ethiopia. It is recognized to be a pioneer in terms of introducing modern shoe making technology in Ethiopia. The company is engaged in both manufacturing (production) and distribution (sales) of various types of main products such as leather shoes (casual, military and safety shoes) and outsole. The company has about 200 different kinds of shoe models. It serves both the domestic and the export market. Anbessa is a market leader, commanding approximately 65% to 70% of the local shoe retail business. The company is located in Addis Ababa (capital of Ethiopia) and has about 30 retail outlets locally, out of which 11 in Addis Ababa and 19 are in the regions. It also contributes significantly to the generation of foreign currency for the country by exporting shoes to different countries of the world. The main export markets are Italy (90% of exports), Germany, Kenya, Uganda, Israel and the United States. Actual current practice in the company indicates that 3300 pairs per day represents the physical capacity of the installed machinery. Attainable capacity under the prevailing company circumstance however is 2600 pairs of shoes. The total workforce amounts to 675, most of whom are employed on a permanent basis. The organizational structure of Anbessa shoe company has a managing board primarily in charge of policy formulation and close supervision of its implementation. The general manager is responsible for overall execution of the company objectives. Five functional managers are assigned to sales, finance, human resources, technical and production departments. Shop floor workers are responsible for handling routine activities.

Now Anbesa Shoe Company has gone through manufacturing expansion project. There are plans to increase productivity via improving labor productivity and installing a more modern production system. The company aims to be compliant with international best practice, thereby enhancing production efficiency, capacity and health and safety standards for employees.

Organization 2: Kangaroo Shoe Factory

Kangaroo Shoe factory is engaged in a business of manufacturing pure leather footwear that was established before 1975 in Addis Ababa. The average installed capacity of the factory was about 800 pairs of shoe per day, but attainable capacity so far does not exceed 500 pairs per day. The factory mainly produces men, ladies and children leather Shoe. It exports 5-10% of its

products to the international market since 1990. Kangaroo Shoe Factory currently opened a work opportunity for more than 310 workers in the factory. The factory has established an excellent track record for the best customer satisfaction. The company believes in keeping the customers happy and providing them with products at a very competent price. An important asset to the company is the high quality processed leather it acquires from its sister company, Batu Tannery.

Organization 3: Peacock Shoe Factory

Peacock Shoe Factory is a unit of Dire Industries PLC (family business) which was established in 1994. The installed capacity of the factory is about 2000 pairs of shoes/day and currently it is operating at a production capacity of 1400 pairs/day and is mainly engaged in production of quality dress casual men's shoes. Ladies, children, military shoe of different styles and colors are also among the major products of Peacock Shoe Factory. Since its establishment, the company has become one of the few leading shoe manufacturers in Ethiopia, with over 350 employees. Even though Peacock has a large share in the internal market, its prime focus is on exporting shoes and it has an aggressive international marketing strategy. It has even achieved 90% export production. The factory's success has been its dedication to quality. For the first time in Ethiopia footwear history, the Peacock shoe factory is the first to land on the export market. On April 19, 2005, the factory sent its products with Messina shipping to the global market like Sergio (Italy), BZ moda (Germany), Mogocor (Spain), Alkahir (Jida), Brimac industries (Nigeria) etc. The factory implemented kaizen philosophy and has been awarded from Ethiopian kaizen institute.

Organization 4: Ramsay shoe factory

Ramsay shoe factory is one of the new companies established in the early 1990s, mainly in response to the increased demand for shoe exports, which the country needed to earn foreign currency from its surplus raw material. Ramsay produces both men's and women's shoe, with men's shoes accounting for more than 85% of output. The firm has a production capacity of 2000 pairs/day and currently operating at a production capacity of 1500 pairs/day. Most of the products are designed and exported to international markets for European and global shoe companies that outsource their demand to the factory, together with their design and brand name. Ramsey has been exporting its products since 2012 and presently 90% of total revenue comes from export sales. Apart from this, the company is also involved in selling footwear through agents, 10 retail outlets shopping centers all over the country and institutional sales in the domestic segment. The firm has a traditional production system, which is relatively labour

intensive. At present, the company has around 267 employees. The firm has a formal organizational structure, but the owner, who is also the managing director of the factory, takes most decisions without the participation of employees.

Organization 5: Tikur Abay shoes factory

Tikur Abay shoes factory is one of the oldest factory established in 1948 next to Anbesa shoe Share Company in Addis Ababa city by Armenian families. The company has a mission of producing and distributing shoes with reasonable price and better quality to the local as well as export market to generate foreign currency and minimize import of similar product by producing substitute products at local in order to save foreign currency. The company's current employment is close to 572 employees. Tikur Abay Shoe factory is Ethiopia's biggest shoe factory engaged in the production of military and civilian durable leaser footwear all made from genuine leather. The company has a production planned capacity of 5800 pairs/day, but the actual production is 3600 pairs/day. The factory has about 40 different shoe models with seven product types, which can be categorized as military, working, casual, safety shoes and export standard shoes. The company aims at expanding its operations by exploring foreign market opportunities and importing new technologies. The company has achieved 60% production for export market. Presently, Tikur Abay is exporting its products to countries such as Burundi, Canada, Italy, Rwanda, Sudan, Uganda and the United States.

2.13.2.2. Production process descriptions

There are three main shoe-making processes. These processes are cutting, stitching and lasting/finishing. Operatives normally work to a pattern supplied by the design team to complete the different stages of production. When a design is converted into working patterns, footwear manufacturing starts in the so-called cutting of the uppers and linings from finished leather. Major operations in the manufacturing process are depicted below.

A. Cutting Section

This section is where the manufacturing process starts to make the top part of the shoe, which is called the upper or vamp. Cutting, also called clicking, refers to cutting of different components of footwear as per the approved design or size. This involves trimming and shaping leather or fabric sections for the upper and marking sections to indicate where to put stitches. The process of the cutting can be carried out either for leather material or non-leather synthetic material depending on the requirement. The upper parts of a shoe are cut from a single piece with a die

cutting machine. Cutting of leather to different shoe components is done by modern hydraulic presses with swing arms using moveable shaped knives. Also, there are some situations where hand cutting is practiced. The cutting machine is equipped with cutting dies, cutting board, and other necessary materials. The leather cutting machine can be seen in Figure 2.4. The cutting force required depends on the type of the cutting machine used. The quality characteristics of the various parts of the same piece of leather need very careful attention of the skilled worker to make the maximum utilization of the entire leather. That means, while the clicker/cutter cuts out various shaped pieces that will eventually make up the upper, waste must be kept to a minimum. Defective portion of leather should be carefully clicked so that the defective portion does not spoil the appearance of the finished product. After cutting, certain additional operations are undertaken in the cutting section. These are:

- **Material cutting:** Cutting textile fabrics, nylon, plastic materials and sponge foam that are to be attached to upper components.

Figure 2.4 Leather cutting machine: Taken from cutting department of Peacock Shoe company

- **Marking:** Marking the upper components by using silver pen. The marking line used as a guide during stitching the leather components (see Figure 2.5).

Figure 2.5 Marking/marked leather component: Taken from cutting department of Peacock Shoe company

- **Skiving:** Reducing the thickness of the edge of the upper leather components using skiving knife to enable the needle of the stitching machine easily penetrate the components (see Figure 2.6).
- **Re-enforcement material attachment:** Re-enforcement materials (nylon, plastic materials, sponge foam, etc.) are cemented with glue and attached to upper components to avoid tiring while the leather parts are stitched and helps the shoe to have strength and flexibility (see Figure 2.7).
- **Loading:** Ready components in the cutting department are counted and stored until they are shipped to the stitching department.

Figure 2.6 Skived leather component: Taken from cutting department of Peacock Shoe company

(a) (b)

Figure 2.7 (a) Re-enforcing and (b) re-enforced leather component: Taken from cutting department of Peacock Shoe company

B. Stitching Section

The upper components which are the outputs of the cutting department are assembled in the stitching section. This section is mainly equipped with sewing machines similar to those used for clothing but specially designed to deal with the diverse shapes, thick material and specialized types of stitching involved. Flat bed, post bed, zigzag and eyeleting are some kind of stitching machine used to assembly of the different components of the upper parts of shoes. The stitching operation can be seen in Figure 2.8. Other important operations in the stitching section are:

- **Trimming:** Trimming activity is done after stitching is accomplished. Trimming is very useful to remove the unnecessary parts around the edge of the upper components.
- **Folding and Hammering:** the upper components are folded to inside to enable the upper have good shape and appearance.
- **Back Part Molding:** The heal side of the upper is molded using mold machine.
- **Pulling and burning threads:** The threads left out from stitching operation are pulled out and burned. Inserting eyelets to accommodate the laces in the finished shoes are done in this workstation.
- **Fixing operation:** This activity is mainly concerned with joining of main assembled components. The main fixing activities include: Component to component, toe puff fixing, counter stiffness fixing, sub-assembled lining fixing and foam fixing

Figure 2.8 Leather stitching operation: Taken from stitching department of Anbesa Shoe company (Phot credit: Gebeyehu (2014))

C. Lasting/finishing Section

This stage is known as ‘lasting’ because operatives mould and shape the uppers into the finished form on a wooden or metal pattern called a 'last'. A last is a hinged wooden or plastic block having similar shape as foot and used continually to produce more shoes. The closed upper, which comes from the stitching department, the insole and the bottom components are brought together to construct the shoe either by stitching, or with adhesive. The completed uppers now need to be molded into a foot shape using a last. Different operations are performed in the lasting department. These includes back part molding, upper prepare-hot, toe puff attaching-hot, seat lasting, seat and side lasting-hot, ironing-hot, sole press-hot, and other tools and fixture. Sole, insole and last are the main materials required in the lasting department. The first operation is to attach the insole to the bottom of the last and the upper is stretched and molded over the last and attached to the insole rib, i.e. a lasted shoe is prepared. Then, the lasted shoe are passed through a heat-setting cabinet which successively forces steam into them and dries them out so as to relax the strains caused in lasting and to set the upper permanently to the shape of the last. The pre-cemented outsole or complete bottom unit is then attached to the lasted upper in a press which, for a predetermined time, maintains the pressure required to shape the bottom unit and establish a permanent bond. The sole edge and heel are trimmed and buffed to give them a smooth finish.

Liquid cream are then sprayed, polished and waxed to give the shoe an attractive finish and to ensure the edge is waterproof. Other activities of finishing are burning treads, posting the shoe size and trademark on the finished shoe. The shoes will then go on to inspection and packaging. The leather shoe is inspected if there is tearing and stitching problem on the finished shoe, then boxing and packaging pair of shoe ready for dispatching to the customer. The simplified flow of work process is illustrated in Figure 2.9.

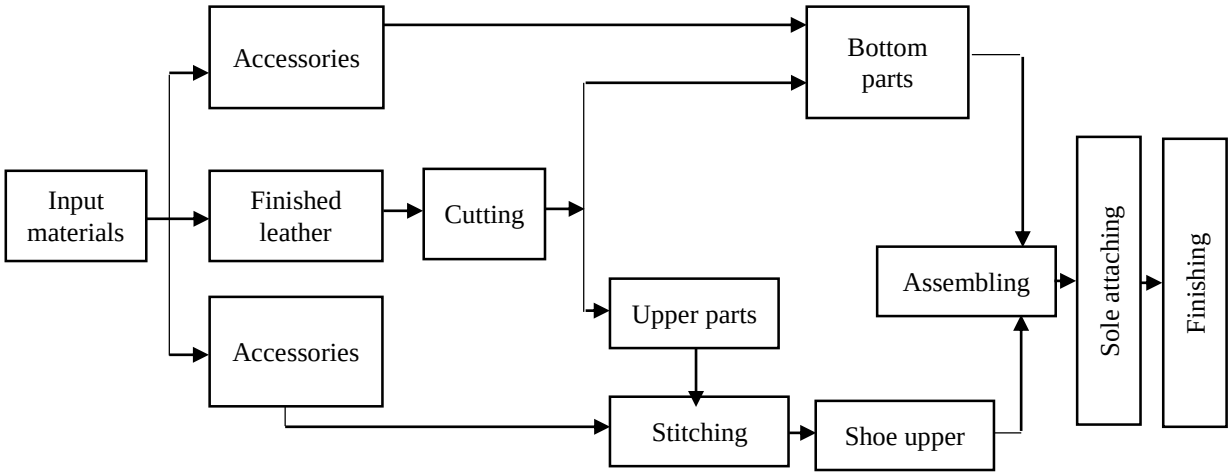

Figure 2.9 Simplified flow chart of leather footwear manufacturing process

2.13.2.3. Employment Capacity

One of the criteria of measuring a sector‘s economic importance to a nation is the job opportunities that it creates for citizens. With a population over 90 million, Ethiopia has an abundant, hard-working and inexpensive labor force [Gebeyehu 2014]. Labor costs in Ethiopia are very low compared with those of potential competitors in and outside Africa (for example, labor costs in Ethiopia are almost one-third of those in China). It is difficult to estimate accurately the employment generated by the Ethiopian leather product-manufacturing subsector, as the numbers of self-employed in the area is not clearly known. In recent years, the employment generation power of the sector has been increasing. According to the Central Statistical Agency‘s annual report for the year 2010, the number of employees in the sector has increased by 15%. The leather sector created direct employment for more than 14,019 people. More than 52% of employment in the leather sector is contributed by tanning and dressing of leather and the remaining 48% is contributed by the footwear sector [Netsanet 2014].

2.13.2.4. Working Conditions

In a typical work setting, people in this sector have a medium level of social interaction. They spend time alone working on products and are most of the time responsible for the work done by themselves not by other workers and assistants. Physical work conditions are characterized as always indoor work, sharing work spaces with other workers, all of whom need to repeat the same physical activities over and over while remaining alert and interested in doing a good job. They may work longer hours (more than 8hrs per day) during busy times to meet orders. Most tasks in this subsector involve frequent use of hands to handle, control, or feel objects, tools, or controls, standing at workbenches for the whole shift and repeating the same motions. The average wage for unskilled labor generally ranges from US$ 1.5-2.0 per day. The salaries of new university graduates normally range from US$ 100-150 per month. These unpleasant work conditions has a direct effect on workforce performance. Work performance in Ethiopian leather is usually computed in terms of physical measures of productivity (see Table 2.2). For example, in the cutting section of the footwear manufacturing process, time is used as the major denominator in determining the performance of a technical workforce. Table 2.2 shows the methods of performance evaluation used in the leather footwear manufacturing subsector in general.

Table 2.2 Methods of employee performance evaluation in the footwear subsector [Gebeyehu 2014]

Manufacturing section	**Method of employee productivity evaluation**	**Unit of measurement**
Cutting	Number of cut components per individual per day, or material consumption	Number of cuts/unit time
Stitching	line performance is measured as the stitching operation is sequential containing multi-operations	Daily production output
Lasting	Line performance is measured as individual operations in the lasting section are always dependent on the prior operation	Daily production output

2.13.2.5. Capacity utilization

The Ethiopian footwear industry consists of two distinct groups: smaller manufacturers that produce for the local market; and medium and large scale manufacturers that produce for the export market. Currently, 13 major shoe companies produce for the export market. Footwear producers in Ethiopia can produce more than 23,000 pairs of shoes per day, but the actual production remains only 60% of the installed capacity (see Table 2.3). Such low utilization of capacity could arise from variety of reasons. In order to utilize the idle capacities, productivity constraints must be minimized. One of the potential areas of intervention is therefore, increasing the human productivity by studying labor market behaviors in relation to the working conditions. In a country where manufacturing hopes to provides work to many households and contributes significantly to economic and social development, it is highly relevant to study labor market behaviors. For instance, there are signs of increased labor mobility to other sectors due to low wage levels in the subsector [Gebeyehu 204]. The annual installed production capacities of the major footwear companies are given in Table 2.3.

Table 2.3 Capacity utilization of major leather footwear companies

S.N.	Company Name	Installed Capacity (Pairs/day)	Actual output (Pairs/day)	Capacity utilization (%)
1	Anbessa Shoe S.C	3300	2600	78.78
2	Tikur Abbay Shoe S/C	5800	3600	62.07
3	Ramsay Shoe Factory	2000	1500	75
4	Jamaica Shoe Factory	1200	1000	83.3
5	Kangaroo Shoe Factory PLC	800	450	56.25
6	Peacock Shoe Factory	2000	1400	70
7	Ras Dashen Shoe Factory	1000	200	20
8	Wallia Shoe Factory	1000	250	25
10	Gamb Shoe Factory	1000	500	50
11	Melese Teka Shoe factory	2000	1200	60
12	Gelila Shoe Factory	1200	800	66.67
13	Ara Shoe Factory	1500	700	46.67
	Total	23,600	14,200	60.17

Source: LIDI, 2015

2.13.2.6. Export performance

The export of leather products has a short history compared to the entire sector‘s participation in the international market. Exporting of footwear has started in 2005 and accounts for only 2% of all the leather-related exports in the same year [Cherkos 2011]. Since the industry has been targeting only the domestic market for a long time, the product and market development have remained as crucial issues to increase the trade volume. By increasing its exports, the subsector can bring a range of both economic and social benefits to the country, as it is a labor-intensive industry and thus an important source of employment. Although the export of leather products started only in 2005, export value has been growing steadily since then and is expected to make a big impact on the Ethiopian economy. For example, the export value of leather footwear escalated from USD1.57 Million in 2005/06 to USD7.24 million in 2008/09 to USD34.58 million in 2014/15 [see Table 2.4 and Table 2.5]. This shows the potential increase in trade value of the footwear industry. However, the export performance is too much below from its plan. Table 2.4 shows the plan and actual export values of the footwear industry sector for the period of 2004/05-2008/09. It has been planned to earn USD10.6 million in the year 2004/05, but the actual performance is USD3.4 million. Especially in 2007/08 and 2008/09, the planed and actual export shows high deviation. As can be calculated from Table 2.4, on average, exports account for only 27.55% of the planned export value. Moreover, it can be seen from Table 2.5 that the footwear industry is in its infancy in terms of earning foreign currency for the country compared to leather tanning and processing industries. Although the general trend of footwear export shows an increasing trend, Table 2.5 indicates that the footwear industry has not kept pace with the substantial growth of tanneries (leather processing). Seizing the national and global market opportunities is the key challenge for the Ethiopian footwear industry. By increasing its exports, the industry can bring a range of both economic and social benefits to the country, as it is a labor-intensive industry and thus an important source of employment.

Table 2.4 Export performance of shoe factories in the budget year of 2004/05-2008/09 (‘000 USD)

Years	Shoe factories total	
	Actual	Plan
2004/05	3,446	10,604
2005/06	1,569	5,464
2006/07	5,541	8,441

2007/08	9,871	34,307
2008/09	7,174	41,369
Average 5 years	5,520	20,037
%	27.55	

Source: LIDI, 2009

Table 2.5 Export values generated from finished leather and footwear in the budget year of 2008/09-2014/15 (‘000 USD)

Export value in 000's USD							
Product type	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Finished leather	11,158	12,878	22,243.93	52,106.04	100,385.76	97,692.35	92,102.62
Footwear	7,240	5,737	9,005.77	11,957.09	19,097.53	30,543.71	34,577.57
Total	18,398	18,615	31,250	64,063	119,483	128,236	126,680

Source: LIDI, 2015

The performance gaps described above may indicate the considerable potential for the development of the LPMI in Ethiopia. Previous studies revealed that the nature of problems in the industry are multifaceted that seem to explain the underperformance of the industry. If Ethiopia has to fully exploit its resource potentials, the industry needs to address the manifold problems in the value chain of the industry. One way to support the industry is to identify the most critical constraint downstream to the manufacturing stage that largely inhibit the performance of the industry. Then, the industry could improve performances tremendously and live up to the challenge of international competition. In the next chapter (Section 3.4.), key performance indicators of the industry has been identified and prioritized that are believed to have a high impact on operational performance of the industry.

2.14. Scope and limitations of the research

The study focuses on systematic working condition analysis in order (1) to identify how much companies are successful in achieving JS at high level, (2) to investigate the interconnection between the JS with QM and (3) to develop a JS-related QM measurement approach for the entire LPMI in Ethiopia. This research is confined to analyzing work-related behavior of employees in the footwear manufacturing companies. Particularly, shop floor workers are the focus of the study. The research does not investigate either raw material quality problems, or supply chain problems,

or financial and business regulation barriers, or the poor national infrastructure, which are also amongst the major causes of under performance of the industry. The focus here is on how a measurement approach can be developed and implemented to tackle JS problems under QM environment.

3.5. Summary

This chapter briefly presented the theoretical descriptions of QM and JS, with the critical focus being towards their relationship. They are described in more detail by means of a historical description, theories, definitions and dimensions. Moreover, the detail descriptions of the LPMI of are presented in this chapter in order to provide a general overview of the sector. Within the leather sector, footwear producers will be expected to have the lion‘s share in generating foreign currency in Ethiopia. Also, the leather footwear industry has great potential to increase employment opportunities and reduce poverty. This chapter presents the detail description of the footwear industry. The overall organizational setup of the footwear industry are described. Capacity utilization and export performance of the industry in general shows progress, but this is still limited.

CHAPTER 3

Research Methodology

3.0. Overview

As a research is the systematic and organized form of continuous attention applied to field of knowledge, undertaken to establish facts and relations, research methodology is the study of conducting a research activity. This chapter primarily aims at describing the methodological choices made along the research journey. The methodical choices are discussed in relation to the purpose of the research and the research questions. An overall research algorithm, which gives a general picture of the research process, is also illustrated. Moreover, this chapter presents the identification and prioritization of key performance indicators that have a high impact on operational performance of the LPMI of Ethiopia. It is revealed in the previous chapters that there are wide spread reasons for the low performance of the LPMI of Ethiopia. One way to support the industry is to identify the most critical constraint downstream to the manufacturing stage that largely inhibit the performance of the industry. Literature review was conducted for identifying the performance indicators of the industry and then expert interviews was conducted followed by 'customer preference rating' technique for prioritizing the identified performance indicators. The results of the study are presented at the end of the chapter followed by discussions and chapter summary.

3.1. Type and purpose of the research

In any research, there are two major types of research problems – state problems and process problems [Ephrem 2014]. State problems aims at answering what the state of a phenomenon is at a given time, while process problems deal with the change of a phenomenon over time. Based on the distinct nature of these two problems, the literature owes three different kinds of research purposes - exploratory, descriptive and explanatory (see Table 3.1) [Marshall and Rossman 2006]. Each them follows its own logical way of collecting and analyzing empirical evidence.

The main purpose of the research described in this thesis *is to examine how Quality Management can be practiced in order to promote job satisfaction and what it is within Quality*

Parts of this chapter have been published in International journal of Productivity and Quality Management, Vol. 22 (3); pp. 378 - 394, 2017

Management that influences sustainable job satisfaction among shop floor workers. Accordingly, the purpose of this research is to gather information that can help to understand and measure the JS and QM issues, the primary task being, examining the relationship between JS and QM. Hence, the purpose of the research is mainly explanatory as the intention is mainly to examining the relationship between QM and JS (see Table 3.1). The research questions described previously deals with 'how' and 'what', which is typical for explanatory research. Yin (1994) stresses that when the research questions deal with 'how' and 'what', explanatory research is probably the best strategy. Also, the research is of a descriptive nature. Much has been written on QM implementation. However, most of the literature found concerns Western organizations such as American and British companies. In Ethiopia, organizations rarely working with QM. Companies mainly trying to adopt QM after 1998, when QSAE established in Ethiopia. This novelty of the methodology might examine and describe the small amount of QM in Ethiopia. Other rationale for the research being descriptive is its aim to examine and describe how QM can be practiced. The research is also exploratory by nature. Little has been found in the literature on the employee perspective of QM. As described earlier, the purpose of this research is to explore how QM affects JS. Thus, a relationship between QM and JS is searched for.

Table 3.1 Different kinds of research purposes [Marshall and Rossman 2006, p.34]

Exploratory	**Descriptive**	**Explanatory**
• To investigate little-understood phenomena	• To document and describe the phenomenon of interest	• To explain the pattern related to the phenomenon in question
• To identify/discover important categories of meaning		• To identify plausible relationships shaping the phenomenon
• To generate hypotheses for further research		

3.2. Strategy of the research

3.2.1. Types of research strategies

There are several different types of research strategies to choose from and a lot of decisions to be made by the researcher during the research process, in order to best answer the research question Ephrem (2014) noted three most common strategies employed in conducting research. These research strategies are: case study method; experimental method; and correlational method. Each strategy can be used for descriptive, explanatory and explorative research purposes.

As noted in Ephrem (2014), the *case study method* involves collecting information about a phenomenon under study by observing the phenomenon in the real world. Case studies are the preferred research strategy when how questions are being posed. The how question is asked when the researcher has little or no control over a contemporary set of events [Schon 2007]. It is used in many situations in order to contribute to knowledge about individual, group, organizational, social, and politically related phenomena [Yin 1994]. However, case study approach is often criticized for being subjective in nature and unscientific [Ephrem 2014]. It is depicted as a methodology that sacrifices precision for relevance. The *experimental/scientific method* accumulates information by conducting controlled experiments. The experimental method is formal and objective in nature and helps in determining whether or not a cause-effect relationship exists between two variables. But, critics claimed that it has poor external validity which refers to the degree to which its results can be generalized beyond the setting in which it is conducted. On the other hand, *a correlational method* is employed to determine whether or not two or more variables are statistically related to one another. If two variables are statistically related to one another, the correlational method helps to predict a score on one variable through use of the score on the second variable. The major goal of correlational research is to determine the extent to which a subject's score on one variable can be predicted if one knows the subject's score on the second variable. Although the correlational method provides a blend of both relevance and precision, it lacks the degree of relevance associated with the case study method and also the degree of precision associated with the experimental method.

In a similar manner to previous research that focused on relationship of two units [e.g. Ephrem 2014], the present research also uses a combined strategy of the case study and the correlational methods. The case study method is an obvious choice for the present research. This was because it contains a ‘how’ question in order to contribute to the understanding of the relationship between JS and QM. The case study method is deployed to collect data of the study

variables; and these data are used for the correlational study among the variables by verifying the hypothesis through the analytical analysis.

A primary distinction when designing case studies is between holistic or embedded designs depending on the defined 'unit of analysis' [Yin 1994]. The choice between holistic or embedded examination within the cases depends on whether the case studies examine one or several sub-units. When only one unit of analysis is studied, the case study is considered to be holistic. If, on the other hand, the case study involves more than one unit of analysis, meaning attention is also given to different sub-units; the design will be called an embedded case study design [Yin 1994]. Both variants have their weaknesses. In holistic design, the entire nature of the study may shift during its progress. On the other hand, embedded design can have problems when the sub-unit level analysis fails to return to the larger unit of analysis [Bäckström 2009]. As described earlier, the research described in this thesis aimed to focus only on shop-floor workers behavior only, i.e. the research chosen holistic case study design, with careful consideration for its drawbacks.

3.2.2. Deduction and induction

In discussions concerning methodological choices, there is often a distinction between deduction and induction research [Schon 2007; Bäckström 2009]. In deduction research, a specific case is explained, which is departed from a general conclusion. Induction, on the other hand, is research where generalizations are drawn based on empirical findings from a number of specific cases [Alvesson and Sköldberg 1994].

The RQ1 & RQ2 was performed using an inductive approach. In order to answer these questions, empirical data were collected from the case companies in order to make analytical generalizations on the important operational performance indicator (RQ1) and on the contextual factors of JS (RQ2). Thus, the research connected to RQ1 & RQ2 can be described as induction since they emerged from the empirical material. The RQ3 can be seen as deduction as it considers the generalizations made in the previous research. Also, the question can be classified as partly inductive since it starts by collecting empirical data regarding the QM practices. In this question, it was suspected that QM could have a positive effect on JS. In the RQ4, exploring how QM can be measured within organizations to promote JS, a deductive approach was used. This question was addressed based on the findings of previous research. Its intention was to obtain what it is within

QM that promote JS of employees sustainably. An overarching description over the research approach is depicted in Figure 3.1.

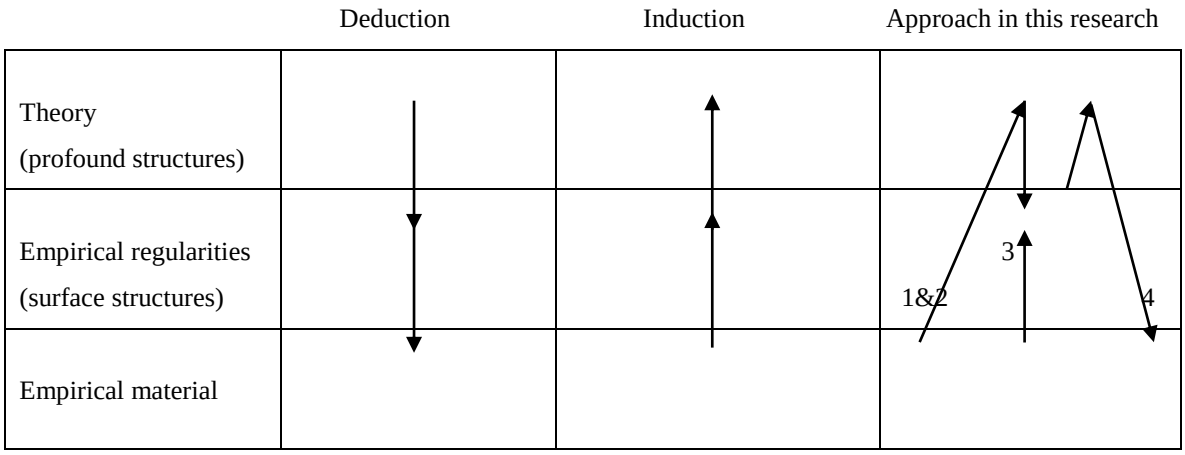

Figure 3.1 The different research approaches; deduction, induction and the selected approaches in this thesis. The numbers refer to the research questions. The figure is inspired by Alvesson and Sköldberg (1994).

3.2.3. Quantitative, qualitative or mixed approaches

There are two main research methods; namely quantitative and qualitative [Bryman et al. 1997]. Qualitative is an information that is conveyed by words, while quantitative is an information that is conveyed by numbers. Qualitative data consists of detailed descriptions of situations, people and observed behaviors, attitudes and occurrences etc. that are not experimentally examined or measured [Denzin and Lincoln 2000]. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables [Denzin and Lincoln 2000]. According to Bryman et al. (1997), these two research traditions can be combined and they can contribute to a rich picture of the studied phenomenon since they are studying the same question in different ways. With a combination between quantitative and qualitative methods, researchers can be surer of their conclusions since they have confirmed their results in two different ways [Bryman et al. 1997]. According to Creswell (2003), this kind of procedure, whereby the researcher seeks to elaborate on or expand the findings of one method with another method, is called a sequential procedure. It is nearly always discussed in scientific reports [Schon 2007].

The research presented in this thesis was performed through a combination of qualitative and quantitative approaches. As described earlier, this thesis used a combined strategy of the case studies and the correlational methods. According to Bäckström (2009), case studies can be based on

any mix of quantitative and qualitative proof. Without this combination, this research process would probably not have reached such a deep understanding of key indicators of operational performances (RQ1), self-perceived JS (RQ2) and the underlying dimensions within QM (RQ3). RQ1 aimed at identifying the prioritized order of the key indicators of operational performance for the LPMI of Ethiopia. To answer RQ1 in a reliable way it was decided that information needed to be collected through interviews, with senior experts from the Ethiopian leather industry development institute (LIDI). During the interview, the researcher asked the experts to make pair wise comparison of the indicators. Then, their feedback was analyzed quantitatively using the 'Customer Rating Preference Technique'. RQ2 aimed at exploring how successful companies had attained high levels of JS. Besides the quantitative approach, RQ2 was also suited for a qualitative approach. Information on worker's perceptions towards the working conditions was searched for through 'focus group discussions'. These detailed discussions generated important information, which could not have been achieved through a quantitative approach. RQ3 aimed at finding the mechanics of the relationships between JS and QM from the perspectives of shop floor workers. To answer RQ3 in a reliable way, data triangulation was used in the form of questionnaire survey and focus group interviews of shop floor workers. Using more than one method to answer the same question is called triangulation [Bryman et al. 1997]. Thus, it was beneficial to use a quantitative and qualitative approach to acquire a reliable material and obtain a rich picture of the studied phenomenon. RQ4, on the other hand, aimed at developing a measurement approach and was therefore suited for a quantitative approach.

A more detailed description of the methodological choices such as data collection methods used in the whole research process are presented in the subsequent chapters together with the performed analysis.

3.3. Flowchart of the research

The concise work plan of the present research work is presented in Figure 3.2. This plan details the flow of the work to achieve the objectives of the research.

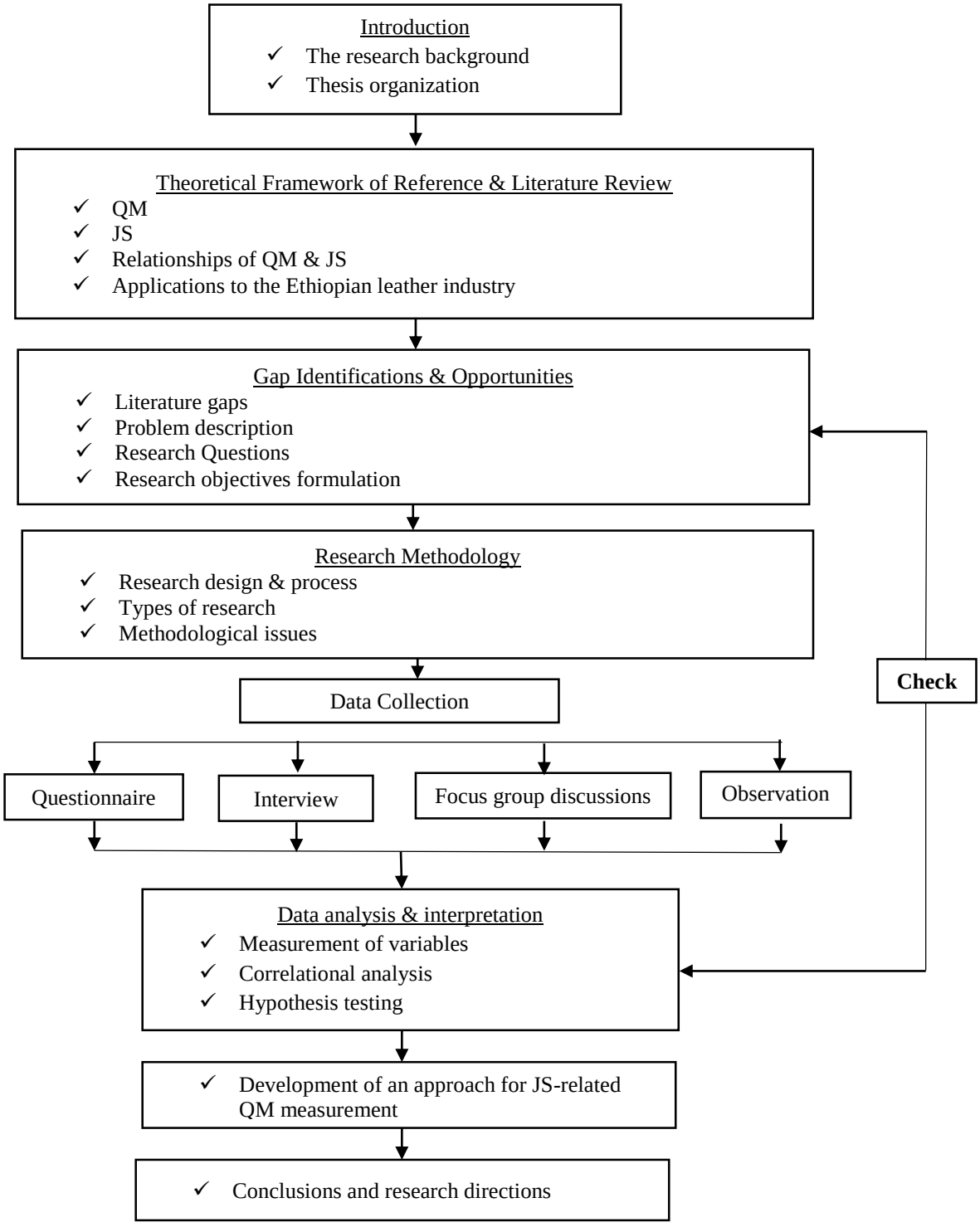

Figure 3.2 Flowchart of the research

It is revealed in the previous chapters that there are wide spread reasons for the low performance of the LPMI of Ethiopia. One way to support the industry is to identify the most critical constraint downstream to the manufacturing stage that largely inhibit the performance of the

industry. In the next section, key performance indicators has been identified and prioritized that are believed to have a high impact on operational performance of the industry.

3.4. Identifying and prioritizing operational performance indicators using Customer Preference Rating technique

3.4.1. Introduction

Manufacturing organizations need to regularly measure and improve their performances due to the broad spectrum of performance required by today's competitive environment [Jayant et al. 2009; Hurreeram et al. 2014]. As a consequence, organizations deal with careful identification of a set performance indicators (PIs) in different areas [Shahin and Mahbod 2007]. A performance measurement system (PMS), as shown in Figure 3.3, emphasized that careful identification of appropriate PIs should be the first and the most important step during the implementation of a PMS in an organization. After an extensive review, El Mola and Parsaei (2010) identified seven PIs (delivery, cost, quality, flexibility, finance, time, and customer satisfaction) that are widely accepted in the manufacturing strategy literature. These indicators are believed to collectively contain strategic assets of manufacturers that enable to achieve organizational goals [Amrina and Yusof 2011]. El Mola and Parsaei (2010) also emphasized that PMS of a manufacturing organization should comprehensively cover a set of PIs that needs to be measured and built organizational performances. The significance of employing a set of suitable performance measures in manufacturing companies has also been described in literature [Medori and Steeple 2000]. In fact, manufacturers, especially world class manufacturers, are aware of the importance of PMS; they develop and quantitatively measures a set of PIs for the effectiveness of their manufacturing system performance [Dangayach and Deshmukh 2006]. In practice, however, organizations need to select a particular indicator at a time since addressing a set of indicators concurrently is usually infeasible [Baas and Kwakernaak 1977]. Certainly, organizations need to operate within a shrinking budgets [Shahin and Mahbod 2007]. The subject of production economics also emphasizes how manufacturing companies economically deploy their scarce resources to make outputs [Hallgren 2007]. In such a case, prioritizing PIs with careful analysis is required [Chin et al. 2008].

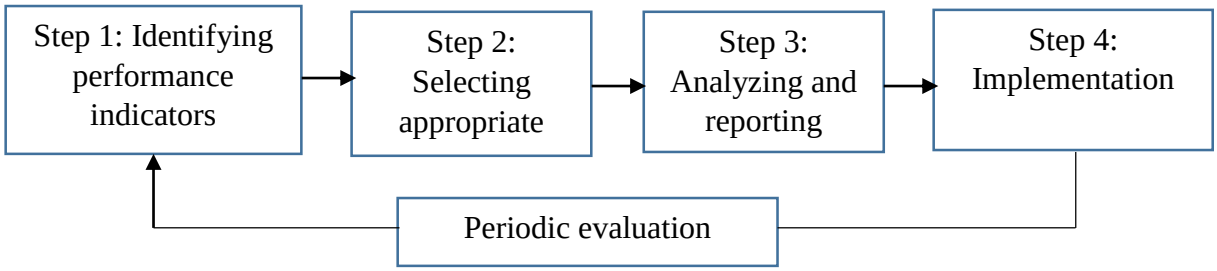

Figure 3.3 The PMS [Adapted from Maskell (1991); Medori and Steeple (2000)]

Despite these facts, organizations have given little attention to identifying and selecting PIs and uses misaligned and inappropriate measures [Schmenner and Vollmann 1994; El Mola and Parsaei 2010]. It regularly happens that an organization face the problems of choosing among PIs [Baas and Kwakernaak 1977]. The reality is that a particular indicator is more essential than others so that an indicator with excellent requirement is explicitly prioritized [Wiegers 1999]. According to Schmenner and Vollmann (1994), if an organization gives great emphasis for an indicator which is less important for organizational success, 'a false alarm is sounded'. Alternatively, if little emphasis is given for an indicator which is critical for the long-run success, 'a gap is located'. In other words, El Mola and Parsaei (2010) explained that measuring a wrong indicator wastes productive times in improving something that has few positive; and failing to measure the right indicator makes organizations to lose something important. Generally, it can be inferred that careful identification and prioritization of PIs can be used as a compass that guides management in recognizing the most efficient indicators as the most well-run one [Jafarpour et al. 2014].

In our case, the focus of the study is on Ethiopian leather industry (ELI). The study aims to identify key performance indicators (KPIs) of the production sections of ELI and then prioritize them according to their relative importance to boost the operational performances. Owing to limited access to finance (UNIDO, 2012), the study results would be imperative for the ELI when manufacturing strategies need to be established or improved.

3.4.2 Prioritizing technique

Owing to limited resources, it is usually infeasible for organizations to address all performance indicators concurrently [Chin et al. 2008]. As a result, a number of traditional methods have been proposed and a number of new approaches are being proposed to prioritize performance indicators [Shahin and Mahbod 2007]. The advantages and limitations of prioritizing approaches are discussed in the literature [Nahm et al. 2013; Cheema et al. 2013; Chalisgaonkar and Kumar

2015]. The prioritization techniques developed to date have their own features. Quite simple techniques are available, but provide less information. On the other hand, complex techniques present much more information, however, needs widespread computations. This study keens to use a newly developed approach, i.e. customer preference rating (CPR) [Nahm et al. 2013]. Originally, CPR has been developed for rating the relative importance of customer requirements in the operation of quality function deployment. Presenting PIs in the form of CPR based model is a new effort in the area of PMS. In this study, CPR has been proven to be useful in prioritizing KPIs.

CPR approach

The main advantage of CPR is that it shows the dominance of each requirement ("KPI" in this paper) over the other. The method can intuitively capture and simply quantify relative importance ratings of KPIs. Also, the method requires less processing calculations. CPR is categorized under the "priori articulation of preferences" where degrees of relative importance of an indicator over the others are specified by a user [Marler and Arora 2004]. CPR may also be related to "user's preference rating" [Cheema et al. 2013] and "multiple user preferences" [Chalisgaonkar and Kumar 2015]. In these methods, utility concept is integrated with CPR and they are applied in prioritizing quality characteristics of a machining process. First, CPR uses the preference graph (PG) to represent individual users' preference structure on the relative importance of the KPIs. In this paper, experts are considered as internal customers and supposed to be involved in developing PG, which is used to present their preference of KPIs using a graph form.

The CPR consists of the following six steps:

a. *Collect PGs of individual experts*

b. *Forming adjacency matrix:* it is used to represent individual PGs in a matrix form. Adjacency matrix can be represented as:

$$PG_k = \left[PG_{ij}\right]_{M*M} \qquad i,j = 1,2,3,\ldots\ldots m,\ldots\ldots M \tag{1}$$

Where, k is the number of experts, M is denoted as indicators and PG_{ij} gives the dominance of i over j in an M*M matrix.

c. *Computing dominance matrix (D):* dominance matrix is developed by using adjacency matrices to show the number of ways that a particular indicator dominates the other indicators. The following equations have been used to represent a particular PG.

$$D^k = PG_k^1 + PG_k^2 + PG_k^3 + PG_k^4 + \ldots\ldots + PG_k^m \ldots\ldots + PG_k^{M-1} \quad (2)$$

$$d_m^k = \sum_{j=1}^{M} (pg)_{mj} \quad (3)$$

Where, d_m^k is a summation of entries (pg_{mj}) of a particular row m in dominance matrix. This number indicates total dominance ways of m in 1, 2… M-1 stages:

d. *Calculating relative degree of preference (RDP):* it notifies relative comparison of indicators. The following formula is used to calculate values of rdp_m^k for each "k".

$$rdp_m^k = \frac{1 + d_m^k}{Max_{m=1\ldots\ldots M}(1 + d_m^k)} \qquad where, k = 1, \ldots\ldots\ldots K \quad (4)$$

e. *Calculating relative importance rating (RIR):* it calculates the combined views for each k using RDP values obtained in step (d). rir_m is given by:

$$rir_m = \frac{\sum_{k=1}^{k} rdp_m^k}{Max_{m=1,\ldots 5}\left(\sum_{k=1}^{k} rdp_m^k\right)} \quad (5)$$

f. Finally, based on RIR values, ranking of indicators can be made. The highest RIR values rank first; meaning, that indicator needs to be addressed first.

3.4.3. Framework of the study

As shown in Figure 3.4, the PIs are identified based on the literature review. Next, the KPIs are selected based on their frequency occurrence (frequency count summary) and then, data has been collected from the experts to compare the selected KIP's. Finally, CPR computation are conducted to rank the KPIs.

3.4.4. Methodology

3.4.4.1 Identifying and defining key operational performance indicators of ELI

In this section, operational PIs of ELI were identified based on extensive reviews of the literature. A total of twelfth PIs was identified from ten informative sources. The PIs are presented in Table 3.2 with their respective frequency count summary. The frequency count numbers conspicuously portray the degree of necessity of each PIs. Five indicators (i.e. cost, quality, human resources management (HRM), flexibility and downtime) were found as the most responsive to enhance the operational performances of the industry and were selected as KPI's. These KPIs

represent performance measures that provide key information about operational performance of the ELI. In this study, these five KPIs were used as inputs and outputs of CRP model. Descriptions of the KPI's are given in Table 3.3.

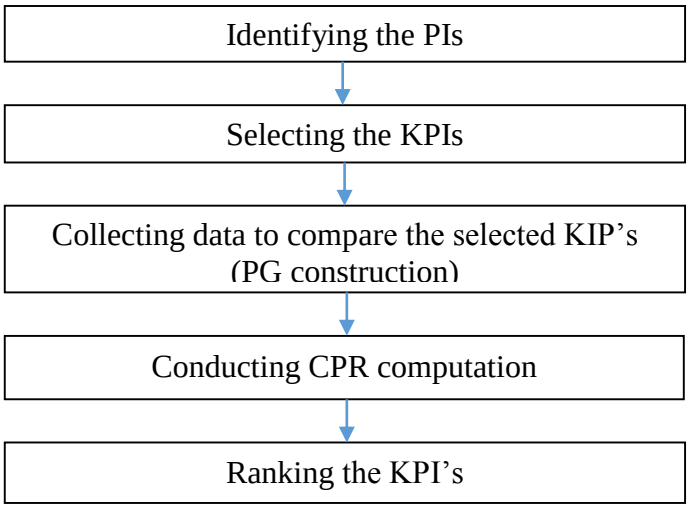

Figure 3.4 The conceptual framework of the study

3.4.4.2 Data collection

Robbins (1994) suggested that five or seven decision-makers are suitable for dealing with decision-making problems. In this study, five experts were selected from LIDI in Ethiopia to compare the selected KIP's (i.e. for the construction of PGs). The experts work for over 7 years as a senior researcher in the institute. They have extensive training in the international arena and regularly surveys leather companies for benchmarking purposes. The list of KPIs was presented for them to examine and confirm their exigency. They confirmed the importance of the proposed KPIs without adding other indicators. Then, interviews were composed (in the form of discussion) in order to construct the PGs, which are shown in Figure 3.5 (1) - (5). To develop the PG, the experts used actual data and their experience in correspondence with the industry's ultimate vision of becoming globally competitive. One logical argument is that the relative importance mayn't be the same for different persons who are developing the PG's. This can be overcome by considering the dominance of each KPI over the other during CPR computation.

Table 3.2 Operational performance indicators of ELI with their frequency count numbers

Performance indicators (PIs)	*Sources (references)*										*Frequency count*	*KPIs*
	Abdurrahman (2012)	*Cherkos (2011)*	*Tesfaye et al. (2014)*	*Tadele (2011)*	*Teklemariam (2004)*	*Daniel (2011)*	*Gebeyehu (2014)*	*Endalew (2011)*	*Urgessa (2013)*	*Abadi (2000*		
Down time (PI_1)	*	*	*	*	*						5	KPI_1
Work in process inventory (PI_2)	*	*		*							3	-
Quality (PI_3)	*	*		*		*		*	*	*	7	KPI_2
Rapid product introduction (PI_4)	*	*				*					3	-
Delivery (PI_5)	*	*									2	-
Working environment (PI_6)	*										1	-
Cost (PI_7)	*	*	*	*		*		*		*	7	KPI_3
HRM (PI_8)	*	*	*			*	*				5	KPI_4
Bottleneck workstations (PI_9)	*										1	-
Standard time for process (PI_{10})	*	*									2	-
Flexibility (PI_{11})	*	*	*	*				*			5	KPI_5
Process layout (PI_{12})	*										1	-

Table 3.3 Descriptions of the key operational performance indicators

KPIs	*Descriptions*
Cost	Quality costs, setup and equipment cost, maintenance costs, tooling cost, labor cost.
Quality	Manufactured with high quality, rejection rate, rework and scrap level.
HRM	Training and people development, job satisfaction, turnover rate, occupational health
Flexibility	Ability of handling flexibility in volume, product, process, technology and new product development.
Down time	Resource availability like machines availability.

3.4.4.3. Employing the CPR model

As provided in the previous section, experts are supposed to be involved in the development of preference graph (PG). This section presented CPR computation for prioritizing the KPIs through a number of steps [Nahm et al. 2013]. The subsequent steps are presented below in conjunction with the empirical analysis:

Step I: Formation of the adjacency matrix

PGs shown in Figure 3.5 represent individual expert's preference configurations of the KPIs (KPI_i, i = 1, 2, 3, 4 and 5). In this section, the adjacency matrix is used to represent the individual PGs in a mathematical form. Adjacency matrix is represented by equation (1):

$$PG_k = [PG_{ij}]_{M*M} \qquad i, j = 1,2,3, \ldots\ldots m, \ldots\ldots M \tag{1}$$

Where, k is the number of experts, M is denoted as indicators and pg_{ij} gives the dominance of i over j in an M*M matrix. The adjacency matrixes of PG_1, PG_2, PG_3, PG_4 and PG_5 are presented below. Note: "1" represents the dominance of a single KPI over the other one.

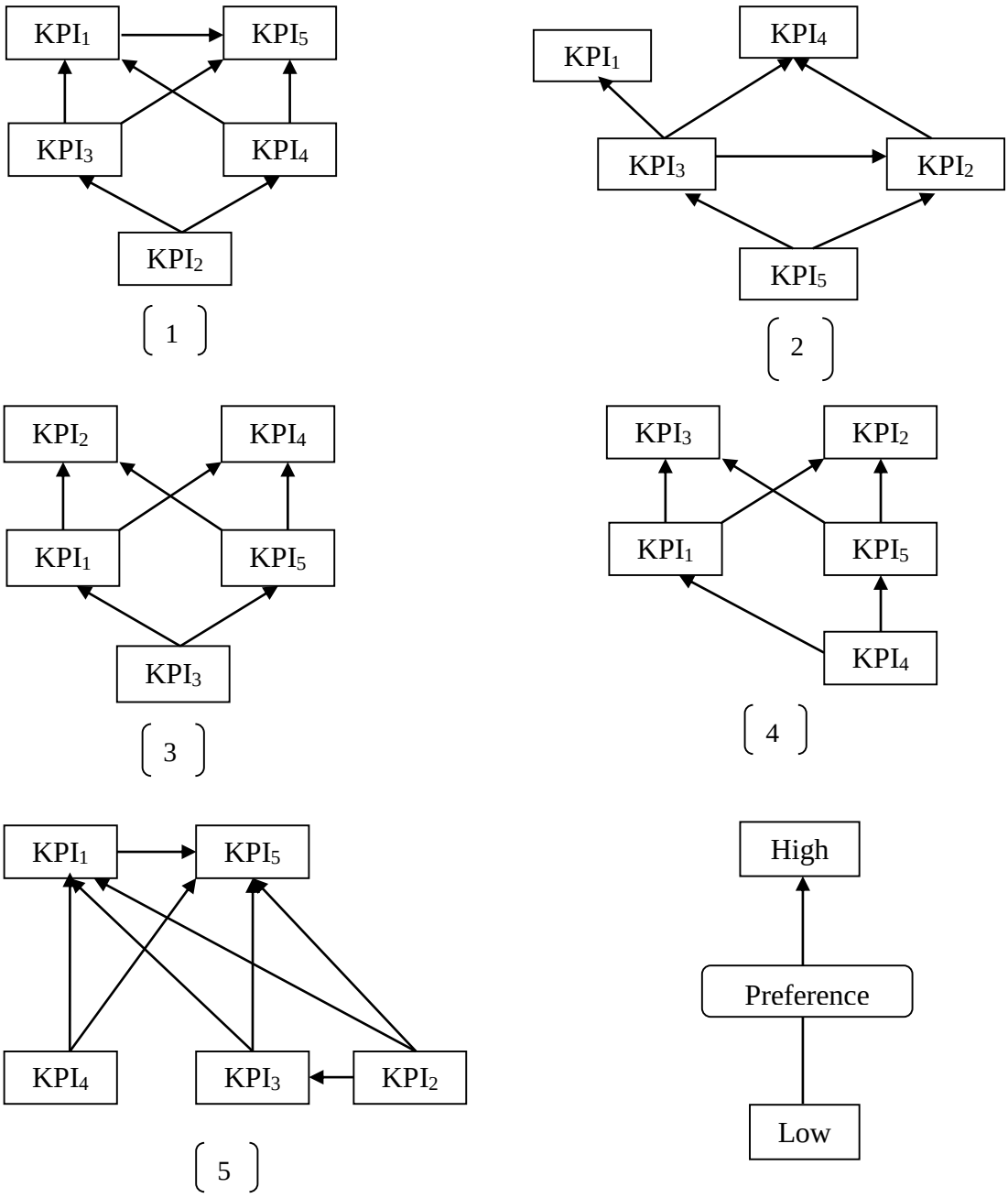

Figure 3.5 Expert's preference graphs showing the relationship between KPIs

$$PG_1 = \begin{array}{c|ccccc} & KPI_1 & KPI_2 & KPI_3 & KPI_4 & KPI_5 \\ KPI_1 & 0 & 0 & 1 & 1 & 0 \\ KPI_2 & 0 & 0 & 0 & 0 & 0 \\ KPI_3 & 0 & 1 & 0 & 0 & 0 \\ KPI_4 & 0 & 1 & 0 & 0 & 0 \\ KPI_5 & 1 & 0 & 1 & 1 & 0 \end{array} \quad PG_2 = \begin{array}{c|ccccc} & KPI_1 & KPI_2 & KPI_3 & KPI_4 & KPI_5 \\ KPI_1 & 0 & 0 & 1 & 0 & 0 \\ KPI_2 & 0 & 0 & 1 & 0 & 1 \\ KPI_3 & 0 & 0 & 0 & 0 & 1 \\ KPI_4 & 0 & 1 & 1 & 0 & 0 \\ KPI_5 & 1 & 0 & 0 & 0 & 0 \end{array}$$

$$PG_3 = \begin{array}{c|ccccc} & KPI_1 & KPI_2 & KPI_3 & KPI_4 & KPI_5 \\ KPI_1 & 0 & 0 & 0 & 1 & 0 \\ KPI_2 & 1 & 0 & 0 & 0 & 1 \\ KPI_3 & 0 & 0 & 0 & 0 & 0 \\ KPI_4 & 1 & 0 & 0 & 0 & 1 \\ KPI_5 & 0 & 0 & 1 & 0 & 0 \end{array} \quad PG_4 = \begin{array}{c|ccccc} & KPI_1 & KPI_2 & KPI_3 & KPI_4 & KPI_5 \\ KPI_1 & 0 & 0 & 0 & 1 & 0 \\ KPI_2 & 1 & 0 & 0 & 0 & 1 \\ KPI_3 & 1 & 0 & 0 & 0 & 1 \\ KPI_4 & 0 & 0 & 0 & 0 & 0 \\ KPI_5 & 0 & 0 & 0 & 1 & 0 \end{array}$$

$$PG_5 = \begin{array}{c|ccccc} & KPI_1 & KPI_2 & KPI_3 & KPI_4 & KPI_5 \\ KPI_1 & 0 & 1 & 1 & 1 & 0 \\ KPI_2 & 0 & 0 & 0 & 0 & 0 \\ KPI_3 & 0 & 1 & 0 & 0 & 0 \\ KPI_4 & 0 & 0 & 0 & 0 & 0 \\ KPI_5 & 1 & 1 & 1 & 1 & 0 \end{array}$$

Step II: Computing the dominance matrix (D^k)

The dominance matrixes have been developed by using adjacency matrices (PGs). A D^k tells the number of ways that a particular KPI is preferred (dominated) over the others. The equation used to represent a dominance matrix and a summation of entries of a particular row m in dominance matrix is shown in equation (2) and equation (3), respectively, as:

$$D^k = PG_k^1 + PG_k^2 + PG_k^3 + PG_k^4 + \ldots\ldots + PG_k^m \ldots\ldots + PG_k^{M-1} \quad (2)$$

$$d_m^k = \sum_{j=1}^{M} (pg)_{mj} \quad (3)$$

d_m^k being summation of entries $(pg)_{mj}$ of a particular row m in dominance matrix. This umber indicates total dominance ways of m in 1, 2… M-1 stages. Using equation (2), the dominance matrixes were calculated as shown below. Note that M equals to 5 in all cases:

$D^1 =$

	KPI_1	KPI_2	KPI_3	KPI_4	KPI_5	$\sum$
KPI_1	0	2	1	1	0	**4**
KPI_2	0	0	0	0	0	0
KPI_3	0	1	0	0	0	**1**
KPI_4	0	1	0	0	0	**1**
KPI_5	1	3	2	2	0	**8**

$D^2 =$

	KPI_1	KPI_2	KPI_3	KPI_4	KPI_5	$\sum$
KPI_1	0	0	1	0	1	**2**
KPI_2	0	0	1	0	2	**3**
KPI_3	0	0	0	0	1	**1**
KPI_4	0	1	1	0	2	**4**
KPI_5	0	0	0	0	0	**0**

$D^3 =$

	KPI_1	KPI_2	KPI_3	KPI_4	KPI_5	$\sum$
KPI_1	0	0	1	0	0	**1**
KPI_2	1	0	2	0	1	4
KPI_3	0	0	0	0	0	**0**
KPI_4	1	0	2	0	0	**3**
KPI_5	0	0	1	0	0	**1**

$D^4 =$

	KPI_1	KPI_2	KPI_3	KPI_4	KPI_5	$\sum$
KPI_1	0	0	0	1	0	**1**
KPI_2	1	0	0	2	0	3
KPI_3	1	0	0	2	1	**4**
KPI_4	0	0	0	0	0	**0**
KPI_5	0	0	0	1	0	**1**

$D^5 =$

	KPI_1	KPI_2	KPI_3	KPI_4	KPI_5	$\sum$
KPI_1	0	2	1	1	0	**4**
KPI_2	0	0	0	0	0	0
KPI_3	0	1	0	0	0	**1**
KPI_4	0	0	0	0	0	**0**
KPI_5	1	3	2	2	0	**8**

The values d_m^k for each indicator was determined using equation (3). The following values are determined from dominance matrix D^1:

d^1_1= 0+2+1+1+0=4, d^1_2= 0+0+0+0+0=0, d^1_3= 0+1+0+0+0=1,

d^1_4= 0+1+0+0+0=1, d^1_5=1+3+2+2+0=8

It can then be said that I_5 is dominated (preferred) in 1+3+2+2+0=8 ways. Similarly, in D^2, KPI_4 dominated in 4 ways; in D^3, KPI_2 dominated in 4 ways; in D^4, KPI_3 dominated in 4 ways; in D^5, KPI_5 dominated in 8 ways.

Step III: Calculating the relative degree of preference (RDP)

RDP notifies relative comparison of KPIs. KPIs in the same PG was compared on a scale of 0-1. Since "0" preference is not possible or reasonable, "1" is added to (d_m^k) for the computation of RDP. The formula used to calculate values of rdp_m^k for each "k" is indicated in equation (4). It was used for all PG.

$$rdp_m^k = \frac{1 + d_m^k}{Max_{m=1\ldots\ldots M}(1 + d_m^k)} \qquad where, k = 1, \ldots\ldots\ldots K \qquad (4)$$

RDP of each k can be given in vector form:

$$RDP_k = (rdp_{k1}, rdp_{k2}, rdp_{k3}, rdp_{k4}, rdp_{k5})$$

Hence, RDPs for each dominance matrix D^1, D^2, D^3, D^4 and D^5 were determined by using equation (4). This is shown in the following:

- RDP_1 = (5/9, 1/9, 2/9, 2/9, 9/9) = (0.555, 0.111, 0.222, 0.222, 1)
- RDP_2 = (3/5, 4/5, 2/5, 5/5, 1/5) = (0.6, 0.8, 0.4, 1, 0.2)
- RDP_3 = (2/5, 5/5, 1/5, 5/5, 2/5) = (0.4, 1, 0.2, 1, 0.4)
- RDP_4 = (2/5, 5/5, 5/5, 1/5, 2/5) = (0.4, 1, 1, 0.2, 0.4)
- RDP_5 = (5/9, 1/9, 2/9, 1/9, 9/9) = (0.555, 0.111, 0.222, 0.111, 1)

Step IV: Calculating relative importance rating (RIR)

To calculate RIR of each KPI (m), the RDP values (step III) were used. This means, the combined rating (RIR) of a single KPI was calculated by considering the views of each k. rir_m represents the combined rating as given by equation (5).

$$rir_m = \frac{\sum_{k=1}^{k} rdp_m^k}{Max_{m=1,\ldots5}\left(\sum_{k=1}^{k} rdp_m^k\right)} \quad (5)$$

First, $Max_{m=1,\ldots5}\left(\sum_{k=1}^{k} rdp_m^k\right)$ needs to be determined:

- $\sum_{k=1}^{5} rdp_1$ = 0.555 + 0.6 + 0.4 + 0.4 + 0.555 = 2.51
- $\sum_{k=1}^{5} rdp_2$ = 0.111 + 0.8 + 1 + 1 + 0.111 = 3.02
- $\sum_{k=1}^{5} rdp_3$ = 0.222 + 0.4 + 0.2 + 1 + 0.222 = 2.04
- $\sum_{k=1}^{5} rdp_4$ = 0.222 + 1 + 1 + 0.2 + 0.111 = 2.53
- $\sum_{k=1}^{5} rdp_5$ = 1 + 0.2 + 0.4 + 0.4 + 1 = 3.00

Therefore, the maximum $\sum_{k=1}^{K} rdp_2$ value is 3.02; i.e $Max_{m=1,\ldots5}\left(\sum_{k=1}^{k} rdp_m^k\right)$ = 3.02

The vector form can be used to represent the total RIRs for KPI_1, KPI_2, KPI_3, KPI_4, and KPI_5 as:

$$RIR = (rir_1, rir_2, rir_3, \ldots\ldots, rir_{m,\ldots\ldots}rir_M)$$

Now, rir value of each KPI is determined using the equation 5 as follows:

- rir for the KPI_1 = rir_1 = 2.51/3.02 = 0.831
- rir for the KPI_2 = rir_2 = 3.02/3.02 = 1.000
- rir for the KPI_3 = rir_3 = 2.04/3.02 = 0.675
- rir for the KPI_4 = rir_4 = 2.53/3.02 = 0.837
- rir for the KPI_5 = rir_5 = 3.00/3.02 = 0.993

RIR = (rir_1, rir_2, rir_3, rir_4, rir_5) = (0.831, 1.000, 0.675, 0.837, 0.993)

Finally, the five KPIs have the following ranking order from the viewpoint of their relative importance to enhance production performance of ELI.

$KPI_2 > KPI_5 > KPI_4 > KPI_1 > KPI_3$, Where" >" means 'more important than'

3.4.5. Discussions

The purpose of this paper was identifying and prioritizing the KPIs of ELI. It comes out that 'quality', 'flexibility', 'HRM', 'down time' and 'cost' are prioritized according to their relative importance to enhance the operational performances. The result of the study in general is consistent with the 'sand cone model' proposed by Ferdows and De Meyer (1990). This model proposed a sequence in the performance improvement process, "which starts from quality, then proceeds to reliability and flexibility, and finishes with efficiency and costs". Detail discussions and suggestions on each KPIs are presented in the following.

Quality with a RIR value of 1.000 is ranked at the first place. Indeed, the goal of any manufacturing system is to provide products to customers with lowest manufacturing price, using minimum resources, at shortest lead-time and with highest quality, and remain competitive [Karim et al. 2011; Trehan et al. 2015]. If these are embedded in any manufacturing processes, the success of any factory can virtually be guaranteed [Karim et al. 2011]. The quality dimensions considered are detection-based measures such as rework, scrap, rejection rate, defects, and quality costs [El Mola and Parsaei 2010]. The reason for quality took the first rank is that quality targets are not defined and displayed at work centers, application of statistical process control tools is less, less focus on determination of quality costs, quality control activities are limited on checking and inspection, high levels of reworks and scraps. These premises together made quality as the primary indicator of operational performance of the ELI. The logic behind rework and scrap is the outcome of poor conformance quality which in turn requires more buffers [Hallgren 2007; Guinot et al. 2016]. In general, ELI should be committed to design an improvement action plan to improve

quality performances as it gratifies crucial values for organizations by satisfying and retaining their customers. According to Anderson and Sullivan (1993), customer satisfaction is often regarded as the prime measure of external quality performance. In other words, if a product does not have competitive quality, it does not make sense to produce it for the market [Karim and Yarlagadda, 2011]. The 'sand cone model' also asserts that improvements in quality provide the basis for long-term improvements in productions.

The indicator *flexibility* with RIR value of 0.993 is ranked at the second place. Within the manufacturing operations, the ability to adjust production volume and the ability to change between products are the two most influential flexibility types [Hutchison and Das 2007]. Further, Slack (1983) noted that opportunities to product customization and flexible delivery times directly influence the competitive position of organizations. In the ELI, there is less focus on practical system for new product development and global market research. However, the industry, especially footwear manufacturers, tries to manage variations in volume with large manufacturing lead time and poor capital utilization [Tesfaye et al. 2014]. Resolving the outlined flexibility problems in labor intensive industries may be challenging. Automating the production process may resolve such problems. But, currently access to finance is the main constraint of the industry. The industry can consider automation issues as a long term plan. Presently, emphasis should be placed on research and development to offer a variety of products based on global demands.

The indicator *HRM* with RIR 0.837 is ranked at the third place. The ELI is to large extent labor intensive so that operational performance is highly dependent on a person's capability. However, labor is the most underutilized resources: value-added per employee and labor productivity are the prominent problems [Gebeyehu 2014]. This shows the need to focus on bringing people's hidden capabilities through changing their attitude towards the job, skill development, good team relationship. Enhanced work motivation can contribute to improving workers' performance, which in turn contributes to the improvement of the industry performances [Yamfwa 2001].

The indicator *downtime* with RIR 0.831 ranked at the fourth place. This is inline with the literature found that while few organizations actually cost downtime; even fewer valued more than one or two of the most obvious costs [Fox et al. 2008]. Machine downtime, whether planned or unplanned, is very costly to most manufacturing organizations. Aside from the obvious costs of idle production labor and spares value, the cost of downtime extends to other resources within

the facility, as well as to the organization as a whole. For many organizations, however, these costs are very difficult to quantify [Fox et al. 2008]. The cost indicator in ELI is basically occurs due to the machines being failed and power interruption in the industry. These problems make manufacturing effectiveness of the company (operational planning efficiency) is not well attained [Tesfaye et al. 2014]. The downtime increases manufacturing lead time and ultimately influence delivery performance. According to Hallgren (2007), delivery reliability is sometimes referred to as on-time delivery or delivering according to a promised plan. Since power intermittent is a country wise problem, the industry should give much attention on maintenance management system to increase machines availability.

Sandeep Naik and Ganguly, K. K. (2015) (include it in downtime issues)

Even though *cost* performance is the most important operational performance dimension [Guinot et al. 2016; Trehan et al. 2015], in this study, cost has been ranked as the least important indicator for the ELI. Consistent to this, other empirical studies often found cost as the least important that other performance indicators [e.g. Boyer and Lewis 2002]. The reason for cost being ranked last might be operational cost measures are majorly associated with costs in other indicators. For instance, devising a solution strategy for quality problems and problems associated with machine failure (downtime) would enable the industry to improve its cost-effectiveness.

3.5. Summary

This chapter described the methodological choices made along the research journey. The methodical choices are discussed in relation to the purpose of the research and the research questions. Moreover, this chapter presented the identification and prioritization of key performance indicators that have a high impact on operational performance of the LPMI of Ethiopia. For the prioritization, a newly developed approach called CPR has been employed. Presenting the performance indicators in the form of CPR based model is a new effort in the area of performance measurement and analysis. According to the findings, the industry should be committed to design an improvement action plan to improve quality performances as it gratifies crucial values for the industry. On the other hand, the finding indicated that HR issue, which is ranked at the third place, is amongst the prominent problem for the operational performance of the industry. Gebeyehu (2014) also reported that the underperformances of the industry are mainly attributed to extensive HR problems such as producing low quality outputs. This may indicates the

need to focus on thriving quality improvement via changing technical management of labor. According to Yee et al. (2008), satisfied employees are more likely to have greater influence on quality. Due to the highly labor-intensive nature of the industry, a motivated workforce is the most immediate and fundamental requirement for the LPMI in Ethiopia. According to Yee et al. (2008), satisfied employees are more likely to have greater influence on quality. Implicit in these expectations is the basic idea that employees who are satisfied with their jobs are likely to be more committed to the organization and more productive [De Menezes 2012]. The next chapter provides examination of the job satisfaction issues in the LPMI of Ethiopia.

CHAPTER 4

JOB SATISFACTION IN THE ETHIOPIAN LEATHER PRODUCTS MANUFACTURING INDUSTRY

4.0. Overview

Literature review reveals that the limited research was reported on JS in Ethiopia. Thus, much exploration is required to know the existing working conditions and work-related attitude of employees. This chapter contains two broad sections. The first section presents the identification of contextual work factors in Ethiopia and evaluation of the relative influence of each of the work factors on JS of shop floor workers. The first section develops research hypothesis that underpin the study, and then conducts multiple linear regression analysis to test hypothesizes. The second section is about proposing possible solutions for the improvement of JS using Fuzzy QFD. A systematic fuzzy QFD procedure is proposed that used to establish priority of the technical solutions for the improvement of JS. Later, summary is presented for the chapter.

4.1. Determinants of Job Satisfaction

4.1.1. Introduction

Global competitiveness, an attribute of today's economic scenario, has compelled companies to invest more and more resources into enhancing their management efficiency [Singh et al. 2007; Aba and Badar 2013]. In the 21st century, the global market is driven by developing various sources of competitive advantages. Human resource is the most valuable asset of any company [Callychurn et al. 2014]. People are considered as organizational asset that cannot be easily imitated by competitors and regarded as source of competitiveness (Wright et al., 1994). It is, therefore, imperative for organizations to build and preserve their human capacity more than ever before.

Globalization has increasingly relocate labor-intensive industries towards countries where labour is cheaper (Scott, 2006). As Staelens *et al*. (2016) notes, these industries are often regarded as an engine for the growth of developing countries due to their performance in terms of job creation. At the same time, however, there is a growing concern that organizations in these

Parts of contents of this chapter have been published in Total Quality Management & Business Excellence, DOI: 10.1080/14783363.2017.1354693

countries are facing a series challenge to retain human capital for variety of reasons (Munir and Rahman, 2016). Their contributions for development are highly unevenly distributed as workers often work under poor working conditions like working for long hours for low wages (Staelens et al., 2016). Studies on working conditions of employees have been largely carried out in developed Western countries and capital-intensive companies (Abdulla et al., 2011). Organizations characterized by low technological level, which are using a labor force at large relative to capital equipment, in developing nations are currently vacant research areas (Sharma and Gadenne 2010). Understanding of working conditions of employees in the developing countries is very important given that employees in these nations often do not perceive their work as a source of satisfaction, demonstrate laziness and withdrawal behavior such as absenteeism and turnover, which often leads to low productivity and inefficiency (Tlaiss, 2013a).

Scholars have frequently argued that the most reliable predictor of workplace conditions is job satisfaction (JS) (Linley *et al*., 2009). As Jung (2017) notes, JS is a single summary construct to capture employees' perceptions of how they are treated by their organization. JS has long been considered as the antecedent that should be addressed before the development of any motivation schemes within the organization. In this regard, JS has been argued to matter for employees' work-related attitudes or behavior (Rainey, 2014). As a key indicator for the work life quality, JS has been linked to various behavioral outcomes, including employees' mental and physical health, their family interactions and overall life satisfaction (Tomaževič, *et al*., 2014). JS has also been linked with various organizational outcomes such as customer satisfaction and productivity of an organization (Ellickson and Logsdon, 2001). In view of the fact that JS has a well-established association with a wide range of organizational outcomes, this study emphasizes to study working conditions in a developing nation. Particularly, the aim of this study is to contribute to the knowledge that currently exists on the JS in Ethiopia.

Context of the study

In order to acquire a clear view of the circumstances in which the study was carried out, it is necessary to understand the existing situations in Ethiopian organizations. Since 1994, Ethiopia has undergone profound political, social and economic transitions (Altenburg, 2010). Particularly, the transition has embarked efforts to invest in vocational training, established social recognition

that value group welfare more than one's own, initiated a program for result-based monitoring and evaluation, established tools to benchmark sector performance, introduced instruments to increase accountability, commenced privatization of state-owned firms and others (Vaughan and Tronvoll, 2003; Altenburg, 2010). At this point, one can raise a question on whether workers are still motivated by the same situational variables, and is their response in terms of satisfaction remain the same? Roe *et al*. (2000) have raised a similar point, arguing that workers in different situational variables responds differently to motivational techniques and managerial practices. Roe et al. further emphasized that organizational interventions would give wrong results in human behavior when based on assumptions that do not hold true for the current situation.

The possible effects of the aforementioned changes can be characterized by many particularities that are mostly related to satisfaction and morale of employees. First, when dealing with the social recognition, it may enhances group moral of employees, while influencing satisfaction of a single individual (Locke, 1976). Second, accelerating private sector development for employment generation results in gross disparities in private and public sector remuneration and opportunities (Vaughan and Tronvoll, 2003). Third, the top-down decision-making systems may reduce communication of workers' with management bodies. Fourth, the free-market economy in the country has lead for monopoly pricing of goods, which is influencing the common life of the people (Karunakara, 2013). Although these profound possible effects are available, there is a paucity of studies that analyzed working perceptions and motivational behavior of employees in Ethiopian organizations. Studies like the one presented in this paper might contribute to a greater understanding of the situation and suggest the possible and necessary changes in the management of industrial workers. Further, the study may enriches the JS literature by considering workers in low technological level in the developing world, particularly in the eastern part of Africa, where nations share similar cross-cultural norms and economic settings (Kragh, 2016). This research has aimed to study working conditions in the LPMI of Ethiopia. A number of contextualized work factors are examined using data surveyed from its work force.

From employers' perspective, the study may offer valuable information about the working conditions of the industry and job attitude of employees, which enables to create a steady workforce. From the perspective of development policy, the study findings may highlight the importance of having policies that do not limit themselves to job creation as it would be a too narrow approach (Staelens *et al*., 2016). Understanding what makes people (dis)satisfied with their

jobs should be central to any employment-oriented development policy, as it is an important component of individual well-being.

4.1.3. Job satisfaction (JS) and its dimensionality

Details of JS and its dimensionality have been discussed and presented in Chapter 2 (Section 2.4).

4.1.4. Research expectations

This section introduces hypothesis that underpin the present research. The hypothesis are derived based on country-specific phenomena in Ethiopia. Of course, some of the factor are existed in the universal principles of JS. Overall job satisfaction (OJS) were used to defined and measure satisfaction from various factors.

Pay is most frequently considered as the key factor influencing employee satisfaction [Jalalkamali et al. 2016]. Pay refers to basic wage and supplementary payments such as overtime payments [Heery and Noon 2001]. It is generally known that money is an important instrument in fulfilling ones needs and pay satisfaction refers to how employee perceive payments [Cobb 2004]. A meta-analysis of the literature on the relationship between pay and JS conducted by Judge et al. (2010) revealed that pay is a significant determinant of JS for employees at any workplaces. Pay also plays vital role in human capital intensive firms to attract and retain experienced workforces [Tooksoon 2011].

In Ethiopian context, pay may be even more important in determining JS. Workers often hired on a less secure basis, earning quite less than other countries in and outside Africa (for example, wage in Ethiopia is almost 1/3rd in China) [Staelens et al. 2016]. For instance, workers in the LPMI of Ethiopia earn a wage around the poverty line ranges between US$ 1.5-2.0 per day [Gebeyehu 2014]. Furthermore, minimum wages have not been prescribed for the majority of workers in the formal sectors in Ethiopia [Kibru 2012]. Minimum wage can be used as a point of reference that allows laborers to negotiate with their employers; without which, employees might be forced to accept whatever is suggested by the employer. As such, sector workers are mostly disadvantaged in this regard. In this context, the present study propose to test the following hypothesis:

Hypothesis 1: Pay is positively related to OJS.

Training provides opportunities in which employees can broaden their knowledge and skills for more efficient work achievement and achieve individual growth and development. Saks (1996) found that workers who received trainings report higher levels of JS than those without such training. The tangible study results in the literature clearly disclosed that JS is an increasing function of adequate training opportunities [Gazioglu and Tansel 2006]. Employee satisfaction associated with training stems from the fact that employees gain confidence of producing high quality, perceive potential for career advancement, and appreciate their companies' investment in them [Saks 1996].

In many countries, particularly in the developing world, one of the major challenges in organizations are delivering effectively targeted interventions such as social development [Kibru 2012]. Ethiopia is not an exception in this regard. Previously, there was a theory-oriented training approach in Ethiopia to train sector workers. Since 1994, the Ethiopian government has launched a new strategy called skills-based training program, particularly for the manufacturing sector. The aim of this program was structuring vocational and technical trainings such as functional skills of production and help sector workers improve their cognitive skills and motivate them for success [Kibru 2012]. However, it is repeatedly reported that training is the least practiced HR element in most organizations in Ethiopia [Gebeyehu 2013]. There exists, inadequacy of training, unequal access to training and improper need assessment for training. Organizations are mainly focused only on the short-term productivity rather than the long-term benefit of training like social development [Gebeyehu 2013]. It is our conjecture that workers are likely to be satisfied if they receive effective training. The present study propose to test the following hypothesis:
Hypothesis 2: Opportunities for vocational trainings are positively related to OJS.

The increase in ethnic diversity in workplaces results in a significant change in terms of workforce composition. Empirical research on ethnic diversity resulted in positive findings regarding work-related outcomes of employees [Page 2007]. They demonstrated that ethnically diverse teams can outperform in terms of introducing new ideas, innovatively and problem solving capabilities, which leads to higher JS and employee well-being within organizations.

Following the change of regime in 1991, Ethiopia has introduced a model of federalism that politically recognizes ethnic identities, more so than ever before [Abbink 2006]. The central focus of the ethnic identity is to bring meaningful social reforms based on ethno-linguistic criteria

and empowering all ethnic communities equally. Although the positive aspects of ethnicity were enjoyed in the country, at the same, ethnic nationalism has suffered the people from excessive bureaucracy, especially nepotism in workplaces [Gebeyehu 2013]. Gebeyehu (2013) further reported that most organizations face the problem of nepotism; that is, managers give preferential treatment (e.g. selecting trainees and offering promotions) to members who belong to their communities (e.g. similar ethnics). According to Tomaževič et al. (2014), employees are satisfied and contribute to their organization when the work environment gives them the feeling of equity and fairness. The present study proposed following hypothesis:

Hypothesis 3: Ethnic diversity is positively related to OJS.

Performance appraisal is an important management tool to assess employees' efficiency in the workplace [Manoharan et al. 2009]. It may be defined as a structured formal interaction between a subordinate and supervisor that usually takes the form of a periodic interview (annual or semiannual) to evaluate the work performance [Pearce and Porter 1986]. Performance appraisal has been extensively documented in the HRM literature [Jalalkamali et al. 2016]. However, it is rarely discussed in organizational behavior literature [Ellickson and Logsdon 2001]. A longitudinal study conducted by Blau (1999) examines the importance of performance appraisal on JS, presenting persuasive evidence of a significant, positive relationship between them. According to Harrison (1993), the main aim of performance appraisal is to provide information to determine promotion and determine training needs of employees. The effect of promotion on JS is recognized considerably in the literature. Nguyen et al. (2003) concluded that JS is the result of promotion opportunities in organizations. Employees can take promotion as the ultimate achievement in their career since it involves subsequent changes in job content, pay, responsibility, independence, status, etc. [Blau 1999].

In principle, performance evaluation is supposed to be undertaken regularly. However, it is rarely conducted in Ethiopian organizations [Gebeyehu 2013]. Ethiopia is characterized by collectivist culture, where performance appraisal and promotions in organizations are usually execute at a larger level such as groups or sections, without recognizing individual level contributions [Vaughan and Tronvoll 2003]. However, scholars in the field revealed that a single individual may believe that being rewarded is related to a particular reason associated in a single

individual [Cobb 2004; Abdulla et al. 2011]. Hence, the present study propose to test the following hypothesis:

Hypothesis 4: Satisfaction with performance appraisal is positively related to OJS.

Hypothesis 5: Satisfaction with opportunities for promotions is positively related to OJS.

According to Dunham and Klafehn (1990), the two primary sets of people in any organizations who directly affect JS of an employee are supervisors and coworkers. Quality of supervision is a very important aspect in workplaces. Individuals who dislike and think negatively about their people around them are less willing to communicate or have less motivation to work and vice versa. Studies have shown that supervision contribute to higher levels of JS [e.g. Ellickson and Logsdon 2001]. They generally revealed that a supportive and friendly relationship at workplaces drive JS to a higher level and motivate employees to share good and innovative ideas. Regarding coworkers, James (1996) concluded that working as a team and a friendly relationship work environment has significant impact on the satisfaction level of employees. Interpersonal relations among workers lead to certain group dynamics, which in turn affect organizational productivity and JS [Ellicson and Lodgson 2001].

We expect the same positive relationship between both sets of people and JS in the context of Ethiopia. Ethiopia has introduced a '1-to-5' model in the past few years to bring social reforms in workplaces. The model was designed to organize sector workers into groups of five, with a single monitor in each group being designated as group leader. Its objective is to develop team spirit, introduce collaborative working and improvement in working culture. Organizations offer responsibilities for immediate supervisors to co-ordinate, facilitate and evaluated performances of individual members in each group [Gebeyehu 2013]. In this context, the present study propose to test the following hypothesis:

Hypothesis 6: Coworkers are positively influencing OJS of employees.

Hypothesis 7: Supervisory is positively influencing OJS of employees.

Most previous studies have measured JS as an outcome variable of different work factors, but communication satisfaction has been largely ignored [Jalalkamali et al. 2016]. Satisfaction from communication refers to the degree of involvement of an individual in issues concerning interpersonal, group, and organizational contexts [Spector 1997]. Hecht (1978) said that communication satisfaction is generally considered as an affective reaction when an expectation

is fulfilled in the process of exchanging information. Chen et al. (2006) argued that the endeavors of an organization to enhance the state of organizational communication can have a positive effect on employees attitude as well as on the organization as a whole.

In the case of Ethiopian organizations, there is marginal evidence that employee satisfaction may be associated with organizational communication. Organizations in Ethiopia generally adopt top-down decision-making systems, in which employees do not have an opportunity to get in touch with managers. Such kind of traditional communication system affects direct participation of workers' in organizational issues. There is a lot of red tapism and lots of bureaucracy in rules and procedures [Gebeyehu 2013]. Indeed, the association between communication and employee satisfaction has not been studied extensively for the Ethiopian industry. However, it can be generally inferred from the existing literature that as the quality of communication increases, JS of employees are likely to increase in Ethiopian organizations:
Hypothesis 8: Organizational communication is positively related to OJS.

Past researches reported that the work itself is the most powerful determinant of JS [Imran 2014; Singh et al. 2016]. A job that provide individuals with opportunities for learning, interesting, stimulating tasks, the chance to be responsible and accountable results in an increased JS [Robbins et al. 2003]. Jyoti and Sharma (2006) observed that employees who have boring jobs tend to be less satisfied with their work. In a study that asked 1000 employees to rank 10 possible work factors, 'interesting work' was preferred in the majority of cases [Kovach 1995]. Intrinsically motivated individuals give high values to the work itself, to feelings of self- determination, and to competence and personal development [Kim 2005].

In the case of Ethiopian organizations, there is marginal evidence that employee satisfaction may be associated with nature of work. For instance, working in the LPMI involves monotonous and repetitive work. The daily tasks mainly consist of cutting and stitching the leather. Most workers, especially who are working in cutting section, are required to perform their job by standing for a shift (one shift equals eight hours). Research has shown that a long time standing work situations cause workers to develop muscle fatigue and stress. It is noted that worker's performance is related with several factors such as working postures [Sharma et al. 2016; Ulutas 2017]. The industry also not regularly maintain the production equipment such as leather cutting

dies and cutting board, which causes workers not to complete their tasks on time. This directly affects the sense of doing something worthwhile.

Hypothesis 9: Intrinsic rewards is positively related to OJS.

4.1.5. Methods

4.1.5.1. Data

The distribution of employees in the LPMI in Ethiopia showed that the vast majority of workers (85-90%) are engaged directly in production activities [Gebeyehu 2014]. This paper draws on full-time shop-floor workers as a study population. Sample companies located in/around Addis Ababa, capital of Ethiopia, were considered, where 98% of the total number of companies in the country are concentrated [Gebeyehu 2014]. Five representative companies, which comprises 66% of the companies in that city, were selected based on their sales revenue and number of employees engaged. Descriptions of the representative companies are provided in Chapter 2 (Section 2.13.2.1). Within each company, random sampling procedures were used to ensure an adequate representation of workers who had different job functions. These job functions included leather cutting, stitching, lasting and finishing in leather footwear companies. Description of the job functions are provided in Chapter 2 (Section 2.13.2.2).

As presented in Table 4.1, a structured questionnaire was used to collect required data's. The basic version of the questionnaire was prepared in English. To avoid comprehension gaps, the questionnaire was first translated into the local language of Ethiopia (Amharic) by two language experts, who are fluent in both languages. Before the survey was launched, the questionnaire was also pilot tested using twenty people from two of the sample companies. This helped to identify potential problem within the questionnaire and to prevent biases during the actual survey [Saunders et al. 2007]. The final questionnaire included questions on demographics, working factors and OJS. After removal of uncompleted questionnaires, we obtained a final response of 247 representing 66% response rate, which is adequate considering the norm for response rate of 60 ± 20 for conventional population as suggested by Baruch (1999).

Table 4.1 Measurement descriptions of the study variables

Variables	Question/statement used to define the work factors
Dependent variable (OJS)	'Considering all the job's facets, what is your level of satisfaction with your job/organization?'
Independent variables (Environmental factors)	
Pay (F_1)	'How satisfied are you with your pay?'
Vocational trainings (F_2)	"What is your level of satisfaction with training opportunities available for you?"
Ethnic diversity (F_3)	'How satisfied are you with the availability of ethnic diversity in your organization?'
Performance appraisal [a] (F_4)	'Getting enough feedback about work performances'.
	'Using of a formal template to evaluate work performances'.
	'Favoritism in performance appraisal process'.
	'Usefulness of the feedback received at most recent performance review'.
Promotion opportunities (F_5)	'What is your level of satisfaction with your promotion opportunities in your present position?'
Coworker (F_6)	'How satisfied are you with your coworkers?'
Supervisory b (F_7)	'Easily approachable'.
	'Praises good works'.
	'Values individual's opinions and suggestions about the work setting'.
	'Motivates to look for better ways to perform my job'.
Organizational communication [c] (F_8)	'How satisfied are you with the informational communication within the company?'
	'How satisfied are you with the relational communication within the company?'
Intrinsic rewards [d] (F_9)	'How satisfied are you with a variation on the job'.
	'How satisfied are you with a freedom to decide how I do my work'.
	'How satisfied are you with learning new skills and abilities in your job'.
Independent variables (Demographic characteristics)	
Gender	Male; Female.
Age	20 or less; 21 – 25; 26 – 30; 31 – 35; 36 – 40; 40 and above.
Length of services (years)	Less than 1; 1-2; 3-5; 5-10; 10-20; Above 20 years.

Note: [a] Cronbach α = .837; [b] Cronbach α = .780; [c] Cronbach α = .789; [d] Cronbach α = .792.

In addition, three focus groups (each contains five workers) were organized. Out of the sample companies, three companies were selected on the basis of comparability. They were located relatively close to one another. The purpose of the focus groups was to obtain a deeper understanding of workers' perceptions of their working life. Focus group discussions were held in nearby areas of the companies in alternative days. A range of themes was discussed related to worker's perceptions towards the working conditions. Qualitative data were gathered through

extensive notes that were analyzed qualitatively and enabled a deeper understanding and interpretation of the quantitative results.

4.1.5.2. Variables

Work environment factors

To measure OJS, respondents were asked to answer the following question: 'Considering all the job's facets, what is your level of satisfaction with your job/organization?' on a 5-point Likert-type scale ranging from 1 ('very dissatisfied') to 5 ('very satisfied').

To identify the job attributes that contribute to OJS, the present study included nine contextualized work factors (Table 4.1). The factors were measured as a single item. However, for the sake of easiness to measure, some factors (i.e. supervisory, performance appraisal, communication and intrinsic organizational rewards) were measured using multiple item questions [Ellickson and Logsdon 2001]. The score of these factors were derived by averaging the points for each of their respective items in order to form a single factor [Abdulla et al. 2011]. For instance, communication satisfaction was measured using two optimal variables: informational and relational communication [Jalalkamali et al. 2016]. The informational communication satisfaction dimension refers to satisfaction from exchange of information to all members an organization (the organizational viewpoint); whereas, the relational dimension refers to employees' perception of one another in all levels within the organization. The reliability of the scale for these two measuring items yielded a reliability coefficient of .789. Table 1 presents a detailed overview of each of the measuring work factors.

Demographic factors

Age, gender and work experience have been empirically shown to be significant predictors of JS [Aletraris 2010; Kaiser 2007]. Hence, these three demographic variables were included in the present study.

4.1.5.3. Data analysis

The research objectives were analyzed using statistical software package SPSS Version 20.0. Due to the nature of our dependent variable, i.e. OJS, multiple linear regression analysis was used to predict individual contribution of work factors and demographic factors, and their summated effects on variability of OJS [Hair et al. 1998]. This is a commonly used approach in JS research [Abdulla et al. 2011; Tomaževič et al. 2014]. Initially, reliability and correlation analysis

were undertaken to understand the variability and check collinearity problems within the study variables.

4.1.6. Results

4.1.6.1 Profile of respondents

Descriptive statistics revealed that more than half (55.34%) of respondents were female. Majority of the respondents were a young population with 74.31% of them are under the age of 35. The majority of the study sample (81%) has less than 10 years of working experience. In general, the distribution of responses revealed that less than half of the respondents (34%) show positive attitude (i.e. 'satisfied' and 'very satisfied') towards their satisfaction.

4.1.6.2. Reliabilities analysis and correlation analysis

Cronbach's reliability coefficient (**α**) was used to evaluate reliability of the questionnaire [Nunnally 1978]. The α values of the variables in this study range from 0.782 to 0.811, which exceeded the smallest acceptable level of 0.7 as suggested by Nunnally (1978). In addition, a Pearson's correlation analysis was used to assess the bivariate relationships among the study variables under investigation. The means, standard deviations, and intercorrelations are given in Table 4.2. The highest coefficient of correlation was calculated as 0.57, which indicates that multicollinearity was not a problem for this study [Hair et al. 1998].

Table 4.2 Means, standard deviations and correlations of the study variables

Variables	M	SD	F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	F_9
F_1	2.83	1.22	-								
F_2	2.81	1.20	.31	-							
F_3	2.99	1.27	.53	.55	-						
F_4	2.95	1.14	.27	.35	.29	-					
F_5	3.14	1.14	.33	.37	.51	.31	-				
F_6	3.13	1.11	.23	.44	.46	.57	.49	-			
F_7	2.57	1.23	.24	.26	.17	.26	.11	.30	-		
F_8	3.08	1.16	.36	.19	.32	.46	.25	.22	.27	-	
F_9	2.46	1.18	.30	.10	.32	.16	.39	.28	.03	.31	

Note: Absolute value of the correlations are provided; significance at the .05 level (two-tailed tests); M = means; SD = standard deviation.

4.1.6.3. Multiple regression analysis (MRA)

Sample size of the data is one of the main consideration in MRA [Hair et al. 1998]. To achieve meaningful estimates, Hair et al. provided an adequate sample size to predictor ratio of 15:1 or preferable with 20:1. In this study, the parameter ratio is 27.44:1, indicating adequacy of the sample size. Table 4.3 presents the results of two separate regression models that estimates the relative importance of the work environment and demographic factors on OJS. In the first model (i.e. Model I), only the environmental variables were considered and in Model II both the demographic and environmental variables were considered to comprehend their summated effect on OJS. The Durbin-Watson index was 1.659 and 1.666 for model I and model II regressions, respectively. These index values are within the range of 1.50-2.50, suggesting that autocorrelation was not a problem in the data [Ooi et al. 2008]. Collinearity tests were also conducted. As presented in Table 4.3, for model I, the minimum tolerance value and the maximum variation inflation factor (VIF) values were .408 and 2.449, respectively. Similarly, for model II, 0.405 is the lowest tolerance value and the highest VIF is 2.469. These findings indicated that the models had no serious multicollinearity problem, because the tolerance values are higher than 0.25 and VIF values are less than 2.50 [Katz 2011]. Therefore, the study met the assumptions required to ensure validity of significance tests for MRA.

The coefficient of determination (R^2) was determined to get an understanding of how much variation in the dependent variable is explained by the models. Results suggest that Model I explained 64.7% of the variance in OJS with F-statistics (*p-value* = 0.000) significant at the 1% level ($p < 0.01$). On the other hand, Model II explained 65% of the variance with *F*-statistics (*p-value* = 0.000) significant at the 1% level ($p < 0.01$). The R^2 values in both models are significantly higher than the cut-off level of 13.8% for strong relationships [Cohen 1988] suggesting that both models significantly affect the satisfaction. A comparison of the R^2 values however showed that the demographic variables added only 0.3% to the total amount of variance explained in OJS. In addition, the differences between the standardized regression coefficients (β) for the environmental variables had little significance (see Table 4.3). These results suggest that the contribution of the demographic variables were less important in predicting variations in OJS.

Table 4.3 Results of regression analyses for variables of OJS

Variables	Model I			Model II			Differences $\lvert\beta_1 - \beta_2\rvert$
	Standardized coefficients β_1 (Reg 1)	Collinearity test		Standardized coefficients β_2 (Reg 2)	Collinearity test		
		Tolerance	VIF		Tolerance	VIF	
F_1	0.663**	.637	1.570	.665**	.627	1.594	.002
F_2	- 0.103	.615	1.626	- .099	.609	1.642	.004
F_3	-0.166	.408	2.449	- .161	.405	2.469	.005
F_4	0.166**	.528	1.895	.171**	.525	1.904	.005
F_5	0.138*	.464	2.154	.130*	.459	2.181	.008
F_6	0.030	.413	2.423	.032	.412	2.429	.002
F_7	0.092	.796	1.256	.092	.785	1.247	.000
F_8	0.133**	.647	1.545	.123*	.629	1.591	.010
F_9	0.062	.745	1.343	.067	.742	1.348	.005
Age	-	-	-	-.002	.946	1.057	-
Gender	-	-	-	.005	.947	1.056	-
Services	-	-	-	-.058	.951	1.051	-
R^2 (%)	64.7			65			0.3

Notes: **p < 0.01; *p < 0.05; Model I considered the environmental variables only and Model II considered both the demographic and environmental variables.

Table 4.3 presents the individual contribution of the work factors for the variations explained in the OJS. The standardized regression coefficients (β) revealed that four of the study variables such as pay ($\beta = .663$, $p < 0.01$), performance appraisal ($\beta = .166$, $p < 0.01$), promotional opportunities ($B = .138$, $p < 0.05$) and communication ($\beta = .133$, $p < 0.01$) were found as the most powerful and significant predictors of OJS. Hence, Hypothesis 1, Hypothesis 4, Hypothesis 5 and Hypothesis 8 are supported. The strength of these factors together may give a strong support to the importance of extrinsic factors than intrinsic factors for the improvement of working conditions in the Ethiopian manufacturing organizations. Supervisor ($\beta = .092$, $p > 0.05$) and coworker ($\beta = .030$, $p > 0.05$) were identified to have insignificant effect on OJS. Meanwhile, opportunity for training ($\beta = - 0.103$, $p < 0.05$) and ethnic diversity ($\beta = -.166$, $p < 0.05$) were found to have a negative relationship with OJS. It is found that the intrinsic organizational rewards are not significantly related with OJS ($\beta = 0.062$, $p > 0.05$). The study findings in general suggested that satisfaction is predominantly derived from the provision of extrinsic factors. Particularly, the impact of pay on satisfaction is prominent, given that its effect on OJS ($\beta = .663$, $p < 0.01$) was at least four times of other work factors.

4.1.7. Discussions

The main objective of this study was to understand the impact of the various contextual work factors and demographic variables on satisfaction of employees in Ethiopia. The results indicated that the work factors are the key determinants of JS than the demographic variables. This finding reaffirms the similar findings of previous researches conducted in emerging economies (e.g. Abdulla et al., 2011; Tlaiss, 2013b). Though it cannot be generalized, this finding may provide an insight for practitioners and academics in similar economic settings to place more effort on work factors to study organizational behaviors than demographic variables. Moreover, the study findings suggests that satisfaction is predominantly derived from the provision of extrinsic factors. This finding is in agreement with the extant research, which posits that employees in collectivist cultures derive more JS from factors extrinsic to the job (Abdulla et al., 2011). The factor 'Pay' was identified as the strongest determinant of JS followed by performance appraisal, promotional opportunities and communications. The emphasis of employees on promotions and pay can be further understood and interpreted from the human capital theory and expectations theory perspectives. The human capital theory suggests that individuals who invest in their human capital attributes, such as experience, will bring a different quality of human assets and skills (Becker, 1964). These individuals expect to demonstrate better work performance and rewards, and mostly expect to be rewarded financially through their pay level for the additional human capital they demonstrate (Ballout, 2007). According to the expectations theory, workers in Ethiopia are less satisfied because the organizational rewards did not meet their expectations of career advancement.

As presented earlier, this study identified 'pay' as the most powerful factor of OJS. Its effect is found as at least four times of other work factors. Studies examining pay level and JS in the developing countries seem to report similar findings (Tlaiss, 2013a). Pay in emerging economies is often aligned with security (Tlaiss, 2013a). The findings support the theory/concepts of the development of employee satisfaction, and that a meta-analytic study carried out by Judge et al. (2010) showed that the most important influences on a person's JS experience to emanate from payments. The finding of this study may indicates the fact that workers in the LPMI of Ethiopia earn a wage around the poverty line ranges between US$ 1.5-2.0 per day (Gebeyehu, 2014). The focus group participants also reported that inadequate civil service wages and inappropriate wage structures are amongst the main constraining problems in the workplaces of Ethiopia. Further, less culture of praising efforts and achievements are reported, indicating the

need of developing a formal compensation system and incentive plan, which indirectly supports income.

Next to pay, performance appraisals was found to be an important factor of OJS. The reason behind this may relate with the fact that performance appraisal is positively linked to subsequent satisfaction facets such as personal recognition and pay (Blau, 1999). Focus group participants reported that appraisals and promotion from 'within' is not the preferred approach in the organizations, with every position being advertised externally. One said that 'there is less/no opportunity for the development of workers in the shop-floor level'. It can be argued that if workers lose their hope to be appraised, it may cause additional stress as their wages are considered too low to cope with their income stream. For the conditions in the company to be perceived fair, employees should be provided with an opportunity for performance appraisals and development.

Consistent with previous research (e.g. Ellickson and Logsdon, 2001), this study showed that 'promotion opportunity' is significantly affecting OJS. This did not come as a surprise, as employees perhaps take professional advancement prospects as the ultimate achievement in their career, because it involves a change in status, job content, independence, responsibility, and others (Ankudinov et al., 2015).

'Communication' was also identified to play a major role in OJS. This can be explained from the cultural domain of power distance in Ethiopia, where powerfully has more rights than anyone else, and are entitled to everything (Gebeyehu, 2013). Focus group participations revealed that it is hard for workers to get in touch with managers due to bureaucratic work environment, and workers are expected to face down when managers walks around the company and show maximum respect as being in a servile position. They further explained that 'we are only engaged in executing managerial orders; ideas from our side are not emphasized', indicating a dominance of 'top-down hierarchical structure' working culture in the organizations. This kind of organizational structure limits direct participation of employees even in job-related decision-makings; rather solely rely on top managers' orders and decisions (Gebeyehu, 2013). It was also reported that managers are not alert to notify employees about important organizational issues. One of the shop floor workers said that 'managers notice us only when something goes wrong while keeping delightful moments like goal achievements with them'. It is perceived that managers must provide distinct channel to communicate employees and be alert to listen and understand their voice in relation to organizational functioning.

Unlike too many past studies (e,g, Kirkman and Shapiro, 2001; Osland, 1997) and the widely held assumption that a good employee-environment fit has greatest importance to the work-related attitude of employees, this study identified 'supervision' and 'coworkers' to be insignificantly related to OJS. Previous studies also found social relations to have little influence on JS at workplace (Roelen et al., 2008). It is revealed from the interviews that workers tend to focus intensively and exclusively on his/her task and perform to the best of their ability, considering being rewarded is related to a particular reason associated in a single individual. One possible explanation for the finding of the present study may relate with educational level of employees. Majority of shop floor employees in the Ethiopian LPMI are less educated (Gebeyehu, 2014) and they may lack consciousness on the importance of social relations and collaboration working in workplaces. Studies revealed that working together with production unit and collegial work improve working lives of employees' (Ooi *et al.,* 2008). Organizations should make employees to realize the importance of working cooperatively through trainings in order to create a livelier workplace.

Surprisingly, the finding of the present study shows that training opportunities and ethnic diversity have a negative relationship with OJS. Regarding trainings, the result is against the widely held assumptions and the tangible study results that revealed the development of competencies through various training programs has a positive impact on JS (Gazioglu and Tansel, 2006). The finding of the present study may be associated with the fact of rising of living costs in Ethiopia (WFP, 2016). Employees may not be interested for the long run benefits of training like career development rather they may need to have a secured life at present through improved remunerations, appraisals and promotions.

Finally, the intrinsic organizational rewards have not been found to significantly relate with OJS. Though the study has not assimilated extrinsic factors as a mediating factor, it might be argued that they may not sufficiently met to allow intrinsic factors to matter very much. In other words, only if basic needs such as pay and promotions are met, will workers care about intrinsic rewards (Staelens *et al.,* 2016).

In summary, the analysis showed that the mean scores for most of the work factors were lied around medium level of the measuring scale, indicating the need of improvement of JS in the LPMI of Ethiopia. In the next section, the JS improvement programs will be analyzed using fuzzy QFD model.

4.2 Decision-Making on Job Satisfaction Improvement Programs Using Fuzzy QFD Model

4.2.1. Introduction

Research interest on JS is not a recent phenomenon. Researches were interested on its concept [e.g. Thompson and Phua 2012; O¨ zpehlivan and Acar 2015], antecedents and consequences [e.g. Bhatti and Qureshi 2007], and causes and determinants [Abdulla et al. 2011]. Despite the proliferation of studies, understandings about solution proposals to address JS problems have not advanced at a pace commensurate with research efforts. Johansson (2010) said that 'although there is much written about JS, there seems to be a lack of research on how to actually improve the JS in an organization'. In the opinion of Ankudinov et al. (2015), studies in JS that extend beyond cause identification are even harder to find. Research recommends that understandings about what makes people (dis)satisfied with their jobs should be central to practitioners [Staelens et al. 2016]. Addressing JS problems would be of key importance for labour economics [Ankudinov et al. 2015] and in creating stable workforces [Tlaiss and Mendelson 2014]. Tomaz˘evic˘ et al. (2014) noted that employees are satisfied and contribute to the effectiveness of an organization if managers create an environment with which employees can recognize their merits. The authors consider this an important research gap in the JS management literature, especially because several researches demonstrated a clear link between workers' levels of JS and labour market behavior. Workers with higher JS are less likely to quit [Staelens et al. 2016] and willing to involve in in-role and extra-role performances of organisations [Ellickson and Logsdon 2001].

The second key issue is concerned with the availability of adequate resources. Literature highlights that regularly organizations face resource limitations to address different aspects of JS simultaneously [Matzler et al. 2004]. Organizations may need to decide on how best to deploy limited resources to achieve the highest level of satisfaction at workplaces. The person-environment (P-E) fit approach [Eulberg et al. 1988] has been applied in studies about need fulfilment. However, the serious theoretical and methodological problems associated with the traditional P-E fit approach are revealed in the literature that may severely threaten conclusiveness of empirical evidences [Edwards and Cooper 1990]. In practice, the importance-performance analysis (IPA) is a broadly used method of setting priorities of factors in the JS literature [Matzler et al. 2004; Pan 2015]. IPA mainly uses linguistic characteristics such as high, medium, low as a rating scale to measure perception of respondents towards their level of satisfaction. These

measurement approaches, however, provide imprecise information as no sharp transition between two linguistic values exists [Zahedi et al. 2011]. These kinds of situations may require additional qualitative data to support decision-making processes [De Boer et al. 1998]. Fuzziness-based quality function deployment (fuzzy QFD) provides just a solution in a situation where information is expressed with linguistic variables [Ding 2009; Liang et al. 2012]. According to Hisdal (1988), fuzzy logic can handle verbal variables in a mathematically well-defined decision making environment. QFD is an effective and well-recognized tool that is used to translate customer requirements into technical characteristics [Thomson et al. 2007]. Using the fuzzy QFD approach, JS requirements can be transformed into JS technical solutions and their priorities of implementation can be developed. The application of QFD in the human resource development domain is rarely available in the literature. One study carried out by Shahin and Rabbanimehr (2013) demonstrated QFD for evaluating the performance of managers towards organizational excellence. The present study demonstrated the application of QFD from employees' perspective by proposing JS improvement programmes.

4.2.2. JS

So far, hundreds [Ozpehlivan and Acar 2015] and even countless [Tlaiss and Mendelson 2014] definitions have been made about the concept of JS. Sample definitions about JS can be seen in Chapter 2. According to Farooqui and Nagendra (2014), JS is the difference between what people expect from the job and what they get in actual. Similar to Farooqui and Nagendra (2014), Pan (2015) defined JS as 'an outcome of expectations of, and experiences from, a job'. According to this definition, satisfaction will be high when the difference between expectations and experience is low and vice versa. The present study considered the definition of JS given by Pan (2015). The terms 'expectation' and 'perception' have been used throughout the paper to refer to 'what an employee expects' and 'what an employee gets in actual' from a job, respectively. Satisfaction will be the difference between the two.

Further details about JS and its dimensionality have been discussed and presented in Chapter 2 (Section 2.4).

4.2.3. The fundamentals of QFD and fuzzy QFD approach

4.2.3.1. QFD and house of quality (HOQ)

The QFD model belongs to the sphere of QM methods [Akao and Mazur 2003]. It is an effective tool to employ customer requirements in a search for the best product development solutions [Thomson et al. 2007]. QFD is a four-phased model: product planning (HOQ); component planning; process planning and production planning. Detailed explanation of the QFD model may be found in Akao (1990). In the present study, the attention is on HOQ, to use its procedures in order to prioritize JS solutions. HOQ is considered as the core of the QFD model. It provides product design specifications in terms of their relative importance. HOQ uses matrices to show multiple relationships between customer requirements and technical specifications.

In this study, HOQ matrices are supposed to be used in the sphere of JS construct. Basically, the mechanisms of QFD are provided for the requirements of meeting/exceeding external customer expectations, not for employees [Yang et al. 2003]. However, similarities between employees and customers can be explained through an examination of the satisfaction processes. Customer needs are satisfied when they perceive goods meet/exceed their expectations. Similarly, employee needs are satisfied when rewards from the organization (e.g. pay, meaningful work, promotion, etc.) meet/exceed their expectations. In both cases, it can be said needs of either employees or customers are not satisfied when their expectations are not realized. Therefore, for the operationalization of QFD, this paper has treated employees as customers, customers' requirements as 'JS requirements or voice of employees' and technical specifications as 'JS solutions or voice of an organization'. The HOQ matrices are used to organize JS requirements and establish the priority of JS solutions in order to meet JS requirements. Figure 4.1 shows a typical HOQ chart. The figure consists of six packages. Each of the packages are described and presented in Section 4.2.4.4.

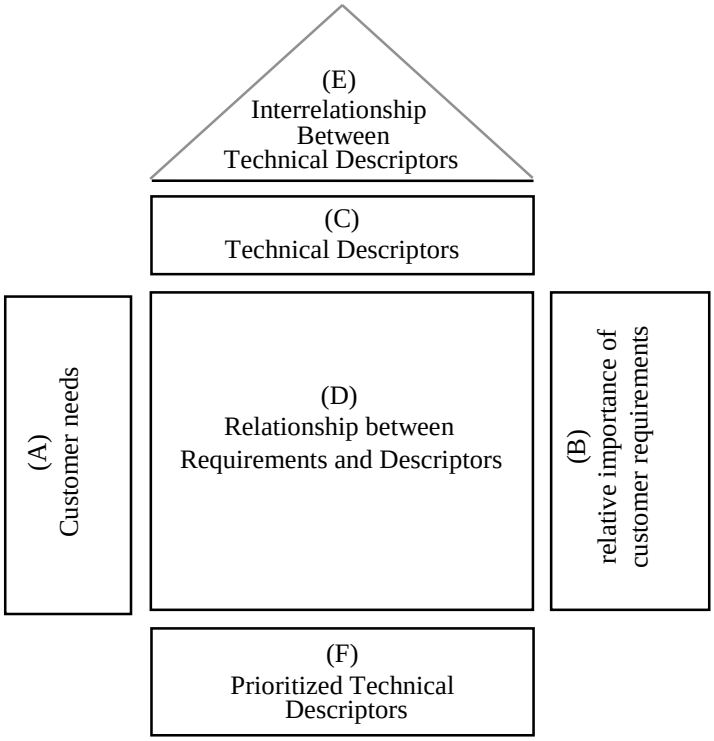

Figure 4.1 House of quality

4.2.3.2. Fuzzy logic and fuzzy QFD

In real decision-making processes, decision makers often deal with difficulties when they are provided with imprecise information like yes/no, true/false; very high, medium and high. Probability theory may handle such kind of information, but it is limited to measure imprecision that stems from human behaviour, which is neither random nor stochastic [Bevilacqua et al. 2006]. To deal with this type of uncertainty correctly, 'fuzzy logic' is designed by Zadeh (1965). It is designed to compute 'degrees of truth' of an information that is expressed in linguistic terms. Fuzzy logic utilises a fuzzy sets theory. A fuzzy set is a set of objects that has no clear-cut or predefined boundary between the objects. The key concept behind this description on fuzzy set is that of 'membership'. Membership indicates the degree to which the object is a member of the set. Membership is expressed using a value ranging from 0 to 1 inclusive, indicating the 'minimum' and 'maximum' degrees of membership, respectively, while all the intermediate values indicate 'partial' degrees of membership [Zahedi et al. 2011; Liang et al. 2012].

After its inception, QFD has made substantial progress. A fuzzy procedure has been proposed by Shen et al. (2001) to examine the sensitivity of the ranking of HOWs. Its aim is to

determine an optimum rating of the HOWs (i.e. 'Area F' in Figure 4.1). A fuzzy QFD approach has been used in different areas of applications [Bevilacqua et al. 2006; Zahedi et al. 2011]. In the present study, the authors propose the fuzzy QFD methodology for the prioritization of JS solutions.

4.2.4. Methodology

This sub-section briefly introduces the concepts and methods used for solution proposals.

4.2.4.1. Triangular fuzzy numbers

From the point of view of its easiness to manage computations [Bevilacqua et al. 2006], this study uses triangular fuzzy numbers (TFN). The TFN is represented by a set of triplet numbers A = (c, a, b). For example, let U = {very high; high; medium; low; very low} be a set of linguistic variables used to express opinions towards a group of attributes. Then, the linguistic variables in U can be translated into TFN as presented in Table 4.4. For instance, the variable 'high (H)' contains elements of grade 'c = 6' up to grade 'b = 8', with a maximum degree of membership at 'a = 7', i.e. at 'a=7', degree of membership of H is equal to 1.

Table 4.4 Quantifying linguistic variables with TFNs

Linguistic variables	Triangular fuzzy numbers (TFNs)
VH =Very high	(8, 9, 10)
H = High	(6, 7, 8)
M = Medium	(4, 5, 6)
L = Low	(2, 3, 4)
VL = Very low	(0, 1, 2)

4.2.4.2. Algebraic operations of fuzzy numbers

According to the extension principle [Zadeh 1965], the algebraic operations of any two fuzzy numbers $A_1 = (c_1, a_1, b_1)$ and $A_2 = (c_2, a_2, b_2)$ can be expressed as:

- Fuzzy addition ($\oplus$):

$$A_1 \oplus A_2 = (c_1 + c_2, a_1 + a_2, b_1 + b_2);$$

- Fuzzy multiplication ($\otimes$):

$$k \otimes A_2 = (kc_2, ka_2, kb_2),\ k \in R,\ k \geq 0;$$

4.2.4.3. Ranking fuzzy numbers

This study considers the integral value (IV) method proposed by Liou and Wang (1992) to convert the fuzzy output to a scalar output quantity. Unlike other method, the IV method considers the degree of pessimism or optimism of an appraiser who may generate different evaluations under the same condition [Chen and Huang, 2011]. This method permits the appraisers to choose an α value from zero to unity based upon the degree of pessimism or optimism [Liou and Chen 2006]. An α - value of zero and unity represents an extremely pessimistic and optimistic attitude, respectively. An α - value of 0.5 represents moderate or neutral objective personality of an appraiser. Details of the total integral equation can be referred from Liou and Wang (1992). Given $\alpha = 0.5$, the total IV of a TFN becomes:

$$P(A) = \frac{c + 2a + b}{4} \quad (1)$$

Equation (1) has been used as the standard of preference comparison for reviewer of management [Liou and Chen 2006]. Suppose A_i and A_j are two fuzzy numbers and $P(A_i)$ and $P(A_j)$ are their crisp number, respectively. We define:

- $A_i < A_j \Leftrightarrow P(A_i) < P(A_j)$
- $A_i > A_j \Leftrightarrow P(A_i) > P(A_j)$
- $A_i = A_j \Leftrightarrow P(A_i) = P(A_j)$

4.2.4.4. The systematic steps of fuzzy QFD approach

Following the concept and format introduced by Chen & Huang (2011), this study has proposed the following fuzzy QFD procedures to link JS requirements and its technical solutions in order to establish priority of the technical solutions.

Step 1: Identifying the JS requirements (WHATs) (i.e. 'Area A' in Figure 4.1).

Step 2: Comparing the 'expectation' and 'perception' degrees of employees towards each WHATs (i.e. 'Area B' in Figure 4.1). In this paper, both the expectation and perception are identified based on questionnaire survey.

Step 3: Identifying JS technical solutions (HOWs) that need to meet the WHATs (i.e. 'Area C' in Figure 4.1). The 'HOWs' are the main issue and termed as the 'JS solutions'.

Step 4: Identifying the priorities or relative importance of the WHATs (i.e. 'Area B' in Figure 4.1).

Step 5: Construction of the central interrelationship matrix to link the WHATs and the HOWs (i.e. 'Area D' in Figure 4.1). In this paper, the relationship strength is expressed by using TFN.

Step 6: Calculating fuzzy weights for each HOWs (i.e. 'Area F' in Figure 4.1).

Step 7: Defuzzifying the fuzzy weights into crisp values to prioritize the HOWs. The rank order of HOWs indicates their relative importance for improving the overall JS satisfaction

4.2.5. Empirical analyses and results

In this sub-section, the steps provided above are employed in conjunction with empirical analysis to prioritise the HOWs for the improvement of JS in the LPMI.

Step 1: Identifying the JS requirements and attributes

The measures of JS are influenced by cultures and norms of a specific nation (Abdulla et al., 2011). In this study, a total of 31 JS attributes (WHATs) are identified to measure the JS construct in the context of the Ethiopian nation. Table 4.5 presents the WHATs with their respective references. The WHATs were obtained via extensive review of the academic literature and with consultation of key experts from the leather industry development institute (LIDI) in Ethiopia. The experts are the institute's senior researchers with over seven years of experience. They have extensive training in the international arena and regularly survey leather companies for benchmarking purposes. The literature widely highlighted the WHATs as important determinants of JS in organisations [e.g. Abdulla et al. 2011; Ellickson and Logsdon 2001]. The WHATs contain both the process perspective, which emphasises the cognitive process leading to JS, and the content perspective, which approaches JS from the perspective of needs fulfilment [Abdulla et al. 2011; Staelens et al. 2016].

4.2.5.1. Questionnaire and data collection

A questionnaire was prepared to measure the 'expectation' and 'perception' level of employees towards the identified WHATs. The feedback resulted in the modification of some of the items [Saunders et al. 2007]. A 5-point Likert scale was used to measure the level of expectation and perception of employees towards the question items. Data were collected from three representative companies. Descriptions of the representative companies are provided in Section 2.13.2.1. The target population of this study was shop floor workers. Two hundred workers (i.e. 77% of the population) were randomly selected from the production areas. The surveys were

completed through personal distribution of the questionnaire. After careful examination, 116 valid responses were selected with a response rate of 58%, which is adequate considering the norm for response rate of 60±20 for a conventional population as suggested by Baruch (1999). Cronbach's α coefficient was used to assess the internal consistency that existed among a set of questionnaire items. The minimum a values of all the requirements with respect to the expectation and perception degrees are 0.792 and 0.742, respectively, indicating a satisfactory level of reliability in research [Nunnally and Bernstein 1978].

Table 4.5 JS requirements and attributes (WHATs)

JS requirements and attributes	References
Salary (R_1): • Adequately cover basic needs (C_1) • Compares well with workload and experience (C_2) • Chances for increment (C_3) • Compares well with other organizations (C_4) • On-time payment of salary (C_5)	Nguyen et al. (2003); Judge et al. (2010); Abdulla et al. (2011); Staelens et al. (2016)
Benefits & incentives (R_2) • Availability of benefit packages (medical, transport services, day-off, vacation leave, etc.) (C_6) • Fairness compared to others at a similar level of duty (C_7) • Opportunities for career growth (C_8) • Availability of proper criteria for rewards and promotions (C_9)	Hansen (2003); Abdulla et al. (2011); Islam et al. (2012)
Nature of work (R_3) • Enjoyable (C_{10}) • Suits qualifications and experiences (C_{11}) • Fully explained job description and up to date (C_{12})	Spector (1985); Abdulla et al. (2011); Munir and Rahman (2016)
Supervision (R_4) • Approachable (C_{13}) • Praises good works (C_{14}) • Values individual's opinions and suggestions about the work setting C_{15}) • Gives the opportunity to participate in important decision making (C_{16})	Spector (1985); Staelens et al. (2016)
Co-workers (R_5) • Approachable (C_{17}) • Availability of fair competitive environment (C_{18})	Abdulla et al. (2011); Islam et al. (2012); Staelens et al. (2016)

• Cooperative and willing to share ideas (C_{19}) • No verbal and physical abuses (C_{20})	
Organizational protection (R_6) • The overall job security (C_{21}) • Availability of proper precautions to ensure a healthy workplace (e.g. air conditioning, lighting, etc.) (C_{22}) • Proper attention is given to employees' complaints and grievances (C_{23}) • Protects individual's ethnic values (C_{24})	Tomaz˘evic˘ et al. (2014); Abdulla et al. (2011); Yousef (2017)
Performance appraisal (R_7) • Getting enough feedback about work performances (C_{25}) • Using of a formal template to evaluate work performances (C_{26}) • Favoritism in performance appraisal process (C_{27}) • Usefulness of the feedback received at most recent performance review (C_{28})	Abdulla et al. (2011); Ellickson and Logsdon (2001)
Organizational communication (R_8) • Sharing of information openly, timely, accurately within the organization (C_{29}) • Communication with colleagues and management bodies (C_{30}) • Working under integrated communication system (C_{31})	Kim (2002); Spector (1985)

Step 2: Comparing the degrees of 'expectation' and 'perception' towards WHATs

The expectation degrees were measured to reflect the VOE, whereas the perception degrees were measured to reflect the current attitude of employees towards each WHAT. If the latter is greater than the former, the JS attributes will be acceptable. Conversely, if the former is higher than the latter, some solutions shall be devised to enhance perceptions and then increase the satisfaction status. A significance test was performed for the mean value differences between expectation and perception. Before performing the significance test, the distribution of the data was checked for its normality using a Kolmogorov-Smirnov (KS) test. As presented in Table 4.6, the significance level for all the JS requirements was found to be above 5%, suggesting acceptable distribution symmetry of the data [Razali and Wah 2011]. Then, the significance differences between expectation and perception were tested using 'two-related t-test'. The results are presented in Table 4.6. It can be seen that the mean of expectation for each of the JS requirements was

significantly higher than the mean of perception at the 0.01 level of significance. Therefore, the LPMI should try to reduce this gap, and hence step 3 is executed.

Table 4.6 *T*-test for equality of means between expectation and perception levels

S. No	JS requirements	No. of items	$\mu_{overall\ expectation}$	$\mu_{overall\ perception}$	*p-value (KS-test)*	*P-value* (*two-related t-test*)
1	Salary	5	4.326	2.786	0.200**	.000**
2	Benefits and incentives	4	4.013	2.849	0.059**	.000**
3	Nature of work	3	3.929	2.684	0.108**	.000**
4	Supervision	4	3.912	2.913	0.066**	.000**
5	Co-workers	4	3.957	3.216	0.170**	.000**
6	Organizational protection	4	3.651	2.685	0.129**	.000**
7	Performance appraisal	4	3.876	3.106	0.151**	.000**
8	Organizational communication	3	3.844	3.108	0.200**	.000**

*Notes: KS-test: **p > 0.05; two-related t-test: **p < 0.01.*

Step 3: Identifying technical solutions (HOWs)

In this study, the 'HOWs' issue is considered from the angle of identifying JS solutions. A total of 6 dimensions and 16 sub-dimensions (HOWs) were identified from the academic literature (see Table 4.7). Then, experts from the LIDI were consulted to examine the appropriateness of the 'HOWs' for the case industry settings. The HOWs have been acknowledged as a useful instrument to positively affect the work behaviour and productivity of employees [e.g. Adeoye and Fields 2014; Hsieh 2015]. For instance, Adeoye and Fields (2014) noted that compensation and incentive packages are the crucial instrument to attract, motivate and retain hardworking employees, and ultimately enhance the overall effectiveness of an organisation. According to Hsieh (2015), participation in decision-making (PDM) makes employees to enhance their job involvement and JS. This in turn contributes to a trustworthy manager–employee relationship [Appelbaum et al. 2013]. Table 4.7 presents the list of the entire 'HOWs' with their references.

Table 4.7 Items for JS technical solutions (HOWs)

Dimensions and sub-dimensions	References
Participation in decision making (PDM): The company should (provide) • Establish teamwork such as 'quality circles' and involve them in decision-making and problem solving endeavors (A_1). • Enhance individuals' degree of empowerment: this satisfies individual's social and self-actualization needs (A_2). • Arrange periodical Q & A sessions: it may create a room for the employee's participation and encourage frequent face-to-face communication with organizational bodies (A_3).	Kim (2002); Appelbaum et al. (2013); Hsieh (2015)
Remuneration packages (RP): The company should (provide) • A competitive and reasonable salary: it can compensate for many hitches like work overload, overtime or even a stressful job (A_4). • Hold sessions to correct payment: including supplementary cash payments such as overtime pay (A_5). • Establish a system to facilitate on-time payments (A_6).	Goel et al. (2012); Malherbe and Hendriks (2014);
Work environment (WE): The company should (provide) • Create conducive physical working environment (e.g. air conditioning, lighting, etc.) and properly designed workstations to ensure a healthy workplace and provides mental peace (A7). • Create workplace democratization: authoritative behavior and discriminatory treatment can spoil one's peace of mind (A8).	Goel et al. (2012)
Adequate incentive and benefit packages (AIBP): The company should (provide) • Establish a distinct reward and recognition systems: it makes employees have the right attitude towards their job (A_9). • Promote and help people to grow: professional advancement prospects bring change in pay, job content, independence, responsibility, and others (A_{10}). • Provide necessary benefit packages such as medical services, transport services, day-off, vacation leave, etc.) (A_{11}). • Install coffee-nets (A_{12}).	Adeoye and Fields (2014); Terera and Ngirande (2014)
Alternative work schedules (AWS): The company should provide • *Compressed workweek schedule:* increasing the number of hours worked per day. This extends weekends to 3 or more days so that employees can better adjust to and master their life outside the workplace (work-life balance) (A_{13}). • Shiftwork arrangements (A_{14}).	Baltes et al. (1999); Goel et al. (2012)
Work re-design (WRD): The company should (provide) WRDs with an attempt to reduce boredom on the job: • *Job enlargement*: "a horizontal change involving the addition of more related tasks of the same level of difficulty so as to change the work cycle of an individual's job" (A_{15}).	Hackman and Oldham (1976); Tripp et al. (2016)

• *Job rotation:* "the formal movement of worker between different jobs usually of the same degree of difficulty" (A_{16}).	

Step 4: Identifying the priorities of JS attributes (WHATs)

In step 2, the degree of expectation and perception towards each of WHATs was compared by calculating their mean values. In this step, the priorities of the WHATs are obtained by calculating their relative weights. Let $\overline{x_i}$ and $\overline{y_i}$ be the mean values of expectation and perception level towards the JS attributes i.e. C_i; Where, i = 1, 2, . . ., 31. The $\overline{x_i}$ and $\overline{y_i}$ values are presented on the right side of Table 5. The original priority rating or weighting (w_i) of C_i and the normalized weight (W_i) of C_i can be obtained using equation 2 & 3, respectively, as given by Liang et al. (2006). The priority weight (w_i) of an attribute has a direct relationship with the degree of expectation and inverse relationship with the degree of perception [Liang et al. 2006]. W_i is calculated for each attribute by dividing the weight of an attribute by the average of the weights of all the attributes used in the analysis. Using the equations, the priority of each attribute has been found. The results are presented in the right side of Table 4.8.

$$w_i = \overline{x_i}\ (5 - \overline{y_i}) \tag{2}$$

$$W_i = w_i / \sum_{i-1}^{31} w_i \tag{3}$$

Step 5: Constructing the central relationship matrix

In this step, a relationship matrix in the HOQ is constructed to assess the fuzzy relationship degrees between the WHATs (C_i, i = 1, 2, 3, . . ., 31) and the HOWs (A_j, j = 1, 2, 3, . . ., 16). Tsai et al. (2008) said that a group of professionals should evaluate the degrees of relationship between two variables. In this study, the three key experts who are considered in 'Step 1'were used as a decision maker (DM) to construct the relationship matrix linking the WHATs and the HOWs. The use of three DM is fairly common in the literature [e.g. Bevilacqua et al. 2006; Zahedi et al. 2011]. The DMs have evaluated the relationship between the WHATs and HOWs using linguistic values, as given in Table 4.4.

Let X_{ij} be a linguistic value given to the position *(i, j)* in the HOQ matrix (R). Then, this linguistic value should be transferred into the corresponding TFNs as provided in Table 4.4. Thus,

X_{ij}^{g} = $(c_{ij}^{g}, a_{ij}^{g}, b_{ij}^{g})$, g = 1, 2, …., h, represents the TFNs given to the i[th] attribute and the corresponding j[th] technical solution by the g[th] expert.

Let R_{ij} be the integrated fuzzy relationship degree in the position (i, j) of the matrix R and can be calculated using equation 4:

$$R_{ij} = \left(\frac{1}{h}\right) \otimes (X_{ij}^{1} \oplus X_{ij}^{2}, \ldots\ldots \oplus X_{ij}^{g} \oplus, \ldots\ldots \oplus X_{ij}^{h}) = (c_{ij}, a_{ij}, b_{ij}) \quad (4)$$

where,

(c, a, b) is a set of triplet TFN; 'h' represents the total numbers of DMs involved in the study;

$$c_{ij} = \frac{\sum_{g=1}^{h} c_{ij}^{g}}{h};\ a_{ij} = \frac{\sum_{g=1}^{h} a_{ij}^{g}}{h};\ b_{ij} = \frac{\sum_{g=1}^{h} b_{ij}^{g}}{h}$$

Using this approach, the HOQ matrix can be constructed.

Then after, a cell value (i.e. R_{ij}) in R is multiplied (using the operations applied to the fuzzy numbers provided in section 4.2.4.2) by the corresponding normalized weight W_i to get the fuzzy weight of each position *(i, j)* in the matrix.

For instance, the selected three experts assigned their own linguistic variables ('very high', 'high', 'medium') to evaluate the relationship strength between C_3 and A_5 (i.e. R_{35}). These linguistic variables were translated to the corresponding TFN as (8,9,10), (6,7,8) and (4, 5, 6), respectively. Then, the integrated fuzzy relationship degree at R_{35} is computed using equation 4 as follows:

$$R_{35} = \frac{((8,9,10) \oplus (6,7,8) \oplus (4,5,6))}{3} = \frac{((8 \oplus 6 \oplus 4), (9 \oplus 7 \oplus 5), (10 \oplus 8 \oplus 6))}{3}$$

$$R_{35} = \frac{(18, 21, 24)}{3} = (6, 7, 8)$$

Then, the fuzzy weight of R_{35} in the matrix R is calculated as:

$R_{35} = W_3 \otimes R_{35} = W_3 \otimes (c_{35}, a_{35}, b_{35}) = 0.0377 \otimes (6, 7, 8)$ = (0.226, 0.264, 0.302).

The completed fuzzy weight of all cell values (i.e. R_{ij}) can be seen in Table 4.8.

Step 6: Calculating fuzzy weights for the technical solutions (HOWs)

After constructing the fuzzy QFD matrix, the fuzzy weights (FW_j) of each technical solution A_j (j = 1, 2, . . . , 16) can be calculated using equation 5. The empirical results of the FW_j are presented in Table 5.

$$FW_j = \left(\frac{\sum_{i=1}^{n} W_i c_{ij}}{n}, \frac{\sum_{i=1}^{n} W_i a_{ij}}{n}, \frac{\sum_{i=1}^{n} W_i b_{ij}}{n}\right) \quad (5)$$

Table 4.8 The completed HOQ matrix

WHATs↓	HOWs					
	PDM			RP		
	A_1	A_2	A_3	A_4	A_5	A_6
C_1	(.102, .140, .178)	(.076, .114, .152)	(.025, .064, .102)	(.305, .343, .381)	(.305, .343, .381)	(.201, .239, .276)
C_2	(.081, .121, .161)	(.027, .067, .107)	(.134, .175, .215)	(.322, .363, .403)	(.296, .336, .376)	(.296, .336, .376)
C_3	(.176, .214, .251)	(.050, .088, .126)	(.201, .239, .276)	(.276, .314, .352)	(.226, .264, .302)	(.226, .264, .302)
C_4	(.093, .139, .186)	(.000, .046, .093)	(.186, .232, .278)	(.371, .418, .464)	(.371, .418, .464)	(.186, .232, .278)
C_5	(.083, .114, .145)	(.104, .135, .166)	(.145, .176, .207)	(.124, .156, .187)	(.062, .093, .124)	(.062, .093, .124)
C_6	(.177, .221, .265)	(.029, .074, .118)	(.177, .221, .265)	(.324, .368, .413)	(.354, .398, .442)	(.354, .398, .442)
C_7	(.114, .142, .170)	(.170, .199, .227)	(.133, .161, .189)	(.133, .161, .189)	(.208, .237, .265)	(.208, .237, .265)
C_8	(.178, .212, .245)	(.200, .234, .267)	(.111, .145, .178)	(.245, .278, .312)	(.178, .212, .245)	(.045, .078, .111)
C_9	(.079, .109, .139)	(.119, .149, .179)	(.019, .228, .258)	(.219, .248, .278)	(.139, .169, .199)	(.199, .228, .258)
C_{10}	(.215, .255, .296)	(.322, .363, .403)	(.296, .336, .376)	(.269, .309, .349)	(.188, .228, .269)	(.242, .282, .322)
C_{11}	(.043, .076, .109)	(.022, .054, .087)	(.043, .076, .109)	(.196, .228, .261)	(.152, .185, .217)	(.043, .076, .109)
C_{12}	(.023, .056, .090)	(.113, .146, .180)	(.000, .034, .068)	(.203, .237, .270)	(.113, .146, .180)	(.000, .034, .068)
C_{13}	(.195, .228, .260)	(.238, .271, .303)	(.022, .054, .087)	(.238, .271, .303)	(.087, .119, .152)	(.043, .076, .108)
C_{14}	(.077, .106, .135)	(.116, .145, .173)	(.173, .202, .231)	(.193, .222, .250)	(.135, .164, .193)	(.019, .048, .077)
C_{15}	(.146, .174, .201)	(.183, .210, .237)	(.128, .155, .183)	(.091, .119, .146)	(.201, .228, .256)	(.055, .082, .110)
C_{16}	(.309, .347, .386)	(.103, .142, .180)	(.129, .167, .206)	(.206, .244, .283)	(.257, .296, .335)	(.051, .090, .129)
C_{17}	(.208, .236, .264)	(.170, .198, .226)	(.170, .198, .226)	(.113, .142, .170)	(.075, .104, .132)	(.057, .085, .113)
C_{18}	(.180, .204, .229)	(.163, .188, .212)	(.163, .188, .212)	(.131, .155, .180)	(.082, .106, .131)	(.016, .041, .065)
C_{19}	(.176, .206, .235)	(.118, .147, .176)	(.176, .206, .235)	(.098, .127, .157)	(.078, .108, .137)	(.000, .029, .059)
C_{20}	(.207, .235, .263)	(.132, .160, .188)	(.150, .179, .207)	(.038, .066, .094)	(.075, .103, .132)	(.056, .085, .113)
C_{21}	(.134, .175, .215)	(.242, .282, .322)	(.161, .202, .242)	(.161, .202, .242)	(.134, .175, .215)	(.054, .094, .134)
C_{22}	(.119, .149, .178)	(.119, .149, .178)	(.139, .168, .198)	(.000, .030, .059)	(.119, .149, .178)	(.020, .050, .079)
C_{23}	(.126, .158, .189)	(.189, .221, .252)	(.147, .179, .210)	(.021, .053, .084)	(.126, .158, .189)	(.042, .073, .105)
C_{24}	(.165, .196, .227)	(.227, .258, .289)	(.227, .258, .289)	(.021, .052, .083)	(.165, .196, .227)	(.041, .072, .103)
C_{25}	(.114, .143, .172)	(.095, .124, .153)	(.076, .105, .133)	(.229, .257, .286)	(.191, .219, .248)	(.019, .048, .076)
C_{26}	(.061, .091, .121)	(.081, .111, .141)	(.081, .111, .141)	(.202, .232, .263)	(.202, .232, .263)	(.000, .030, .061)
C_{27}	(.130, .158, .186)	(.037, .065, .093)	(.056, .084, .112)	(.167, .195, .223)	(.112, .140, .167)	(.056, .084, .112)
C_{28}	(.185, .213, .241)	(.037, .065, .093)	(.093, .120, .148)	(.204, .232, .259)	(.167, .195, .222)	(.000, .028, .056)
C_{29}	(.146, .174, .201)	(.091, .119, .146)	(.055, .082, .110)	(.164, .192, .219)	(.201, .228, .256)	(.091, .119, .146)
C_{30}	(.130, .155, .179)	(.130, .155, .179)	(.065, .089, .114)	(.114, .138, .163)	(.146, .171, .195)	(.016, .041, .065)
C_{31}	(.134, .168, .201)	(.179, .212, .246)	(.134, .168, .201)	(.134, .168, .201)	(.223, .257, .290)	(.022, .056, .089)
FW	(.139, .171, .204)	(.125, .158, .190)	(.129, .161, .194)	(.183, .217, .243)	(.173, .206, .238)	(.087, .120, .153)
Integral values	0.1712	0.1578	0.1612	0.2150	0.2057	0.1200
Rank the priority	**5**	**7**	**6**	**1**	**2**	**12**

Table 4.8 continued

WHATs↓	HOWs					
	WE		AIBP			
	A_7	A_8	A_9	A_{10}	A_{11}	A_{12}
C_1	(.051, .089, .127)	(.305, .343, .381)	(.102, .140, .178)	(.178, .216, .254)	(.254, .292, .330)	(.305, .343, .381)
C_2	(.107, .148, .188)	(.322, .363, .403)	(.161, .202, .242)	(.161, .202, .242)	(.161, .202, .242)	(.161, .202, .242)
C_3	(.025, .063, .101)	(.276, .314, .352)	(.050, .088, .126)	(.151, .189, .226)	(.101, .138, .176)	(.151, .189, .226)
C_4	(.186, .232, .278)	(.371, .418, .464)	(.247, .387, .340)	(.278, .325, .371)	(.031, .077, .124)	(.278, .325, .371)
C_5	(.083, .114, .145)	(.124, .156, .187)	(.228, .197, .290)	(.041, .073, .104)	(.104, .135, .166)	(.166, .197, .228)
C_6	(.029, .074, .118)	(.324, .368, .413)	(.236, .280, .324)	(.206, .250, .295)	(.265, .309, .354)	(.295, .339, .383)
C_7	(.095, .123, .151)	(.114, .142, .170)	(.076, .104, .133)	(.133, .161, .189)	(.208, .237, .265)	(.208, .237, .265)
C_8	(.089, .122, .156)	(.089, .122, .156)	(.178, .212, .245)	(.245, .278, .312)	(.089, .122, .156)	(.200, .234, .267)
C_9	(.020, .050, .079)	(.099, .129, .159)	(.179, .209, .238)	(.219, .248, .278)	(.040, .070, .099)	(.119, .149, .179)
C_{10}	(.296, .336, .376)	(.322, .363, .403)	(.269, .309, .349)	(.242, .282, .322)	(.269, .309, .349)	(.161, .202, .242)
C_{11}	(.087, .120, .152)	(.022, .054, .087)	(.043, .076, .109)	(.239, .272, .304)	(.043, .076, .109)	(.000, .033, .065)
C_{12}	(.158, .192, .225)	(.045, .079, .113)	(.158, .192, .225)	(.135, .169, .203)	(.000, .034, .068)	(.023, .056, .090)
C_{13}	(.217, .249, .282)	(.087, .119, .152)	(.195, .228, .260)	(.173, .206, .238)	(.022, .054, .087)	(.065, .098, .130)
C_{14}	(.116, .145, .173)	(.000, .029, .058)	(.193, .222, .250)	(.193, .222, .250)	(.058, .087, .116)	(.039, .067, .096)
C_{15}	(.055, .082, .110)	(.055, .082, .110)	(.201, .228, .256)	(.146, .174, .201)	(.055, .082, .110)	(.037, .064, .091)
C_{16}	(.026, .064, .103)	(.026, .064, .103)	(.206, .244, .283)	(.103, .142, .180)	(.103, .142, .180)	(.000, .039, .077)
C_{17}	(.151, .179, .208)	(.038, .066, .094)	(.170, .198, .226)	(.094, .123, .151)	(.094, .123, .151)	(.132, .160, .189)
C_{18}	(.163, .188, .212)	(.065, .090, .144)	(.131, .155, .180)	(.180, .204, .229)	(.065, .090, .114)	(.147, .172, .196)
C_{19}	(.157, .186, .216)	(.020, .049, .078)	(.098, .127, .157)	(.059, .088, .118)	(.059, .088, .118)	(.078, .108, .137)
C_{20}	(.132, .160, .188)	(.075, .103, .132)	(.056, .085, .113)	(.056, .085, .113)	(.075, .103, .132)	(.038, .066, .094)
C_{21}	(.161, .202, .242)	(.027, .067, .107)	(.161, .202, .242)	(.161, .202, .242)	(.134, .175, .215)	(.000, .040, .081)
C_{22}	(.079, .109, .139)	(.040, .069, .099)	(.020, .050, .079)	(.020, .050, .079)	(.040, .069, .099)	(.059, .089, .119)
C_{23}	(.000, .032, .063)	(.042, .073, .105)	(.126, .158, .189)	(.063, .095, .126)	(.063, .095, .126)	(.021, .053, .084)
C_{24}	(.041, .072, .103)	(.041, .072, .103)	(.062, .093, .124)	(.062, .093, .124)	(.083, .114, .145)	(.041, .072, .103)
C_{25}	(.210, .238, .262)	(.019, .048, .076)	(.114, .143, .172)	(.133, .162, .191)	(.019, .048, .076)	(.095, .124, .153)
C_{26}	(.222, .252, .283)	(.020, .051, .081)	(.081, .111, .141)	(.141, .172, .202)	(.020, .051, .081)	(.101, .131, .162)
C_{27}	(.037, .065, .093)	(.019, .047, .074)	(.112, .140, .167)	(.186, .214, .242)	(.019, .047, .074)	(.074, .102, .130)
C_{28}	(.056, .083, .111)	(.019, .046, .074)	(.204, .232, .259)	(.204, .232, .259)	(.130, .158, .185)	(.167, .195, .222)
C_{29}	(.055, .082, .110)	(.037, .064, .091)	(.146, .174, .201)	(.018, .046, .073)	(.018, .046, .073)	(.037, .064, .091)
C_{30}	(.163, .187, .211)	(.000, .024, .049)	(.114, .138, .163)	(.098, .122, .146)	(.049, .073, .098)	(.033, .057, .181)
C_{31}	(.179, .212, .246)	(.045, .078, .112)	(.134, .168, .201)	(.112, .145, .179)	(.000, .034, .067)	(.067, .101, .134)
FW	(.111, .144, .176)	(.100, .132, .165)	(.144, .177, .208)	(.143, .175. .208)	(.086, .119, .151)	(.106, .139, .171)
Integral values	0.1438	0.1322	0.1765	0.1752	0.1188	0.1388
Rank the priority	**8**	**11**	**3**	**4**	**13**	**9**

Table 4.8 continued

WHATs↓	HOWs				$(\overline{xi})$	$(\overline{yi})$	w_i	W_i (Rank)
	AWS		WRD					
	A_{13}	A_{14}	A_{15}	A_{16}				
C_1	(.203, .241, .279)	(.051, .089, .127)	(.305, .343, .381)	(.102, .140, .178)	4.379	2.776	9.7389	0.0381 (5)
C_2	(.134, .175, .215)	(.081, .121, .161)	(.188, .228, .269)	(.188, .228, .269)	4.207	2.552	10.3	0.0403 (3)
C_3	(.101, .138, .176)	(.050, .088, .126)	(.302, .339, .377)	(.050, .088, .126)	4.543	2.879	9.6357	0.0377 (6)
C_4	(.093, .139, .186)	(.031, .077, .124)	(.340, .387, .433)	(.186, .232, .278)	4.302	2.241	11.8692	0.0464 (1)
C_5	(.145, .176, .207)	(.021, .052, .083)	(.249, .280, .311)	(.062, .093, .124)	4.198	3.103	7.9636	0.0311 (13)
C_6	(.206, .250, .295)	(.029, .074, .118)	(.354, .398, .442)	(.265, .309, .354)	4.31	2.379	11.2965	0.0442 (2)
C_7	(.076, .104, .133)	(.057, .085, .114)	(.227, .256, .284)	(.114, .142, .170)	3.793	3.086	7.2598	0.0284 (21)
C_8	(.022, .056, .089)	(.111, .145, .178)	(.134, .167, .200)	(.022, .056, .089)	4	2.862	8.552	0.0334 (9)
C_9	(.040, .070, .099)	(.000, .030, .060)	(.000, .030, .060)	(.040, .070, .099)	3.948	3.069	7.6236	0.0298 (16)
C_{10}	(.322, .363, .403)	(.134, .175, .215)	(.161, .202, .242)	(.269, .309, .349)	3.983	2.414	10.3	0.0403 (3)
C_{11}	(.022, .054, .087)	(.174, .206, .239)	(.000, .033, .065)	(.087, .120, .152)	4.06	2.948	8.3311	0.0326 (10)
C_{12}	(.045, .079, .113)	(.180, .214, .248)	(.000, .034, .068)	(.090, .124, .158)	3.745	2.689	8.6547	0.0338 (7)
C_{13}	(.043, .076, .108)	(.173, .206, .238)	(.065, .098, .130)	(.087, .119, .152)	4.198	3.017	8.3246	0.0325 (11)
C_{14}	(.000, .029, .058)	(.116, .145, .173)	(.000, .029, .058)	(.000, .029, .058)	3.767	3.034	7.4059	0.0289 (16)
C_{15}	(.018, .046, .073)	(.055, .082, .110)	(.055, .082, .110)	(.000, .027, .055)	3.838	3.172	7.0159	0.0274 (26)
C_{16}	(.026, .064, .103)	(.051, .090, .129)	(.026, .064, .103)	(.026, .064, .103)	3.845	2.431	9.8778	0.0386 (4)
C_{17}	(.000, .028, .057)	(.019, .047, .075)	(.019, .047, .075)	(.038, .066, .094)	3.848	3.121	7.2304	0.0283 (22)
C_{18}	(.082, .106, .131)	(.114, .139, .163)	(.049, .074, .098)	(.065, .090, .114)	3.787	3.345	6.2675	0.0245 (27)
C_{19}	(.039, .069, .098)	(.059, .088, .118)	(.000, .029, .059)	(.059, .088, .118)	4.298	3.25	7.5215	0.0294 (19)
C_{20}	(.019, .047, .075)	(.056, .085, .113)	(.038, .066, .094)	(.038, .066, .094)	3.895	3.147	7.2174	0.0282 (23)
C_{21}	(.081, .121, .161)	(.215, .255, .296)	(.188, .228, .269)	(.161, .202, .242)	3.854	2.327	10.3017	0.0403 (3)
C_{22}	(.139, .168, .198)	(.020, .050, .079)	(.119, .149, .178)	(.139, .168, .198)	3.467	2.81	7.5927	0.0297 (18)
C_{23}	(.042, .073, .105)	(.000, .032, .063)	(.084, .116, .147)	(.000, .032, .063)	3.538	2.724	8.0525	0.0315 (12)
C_{24}	(.062, .093, .124)	(.041, .072, .103)	(.000, .031, .062)	(.021, .052, .083)	3.745	2.879	7.9431	0.0310 (14)
C_{25}	(.019, .048, .076)	(.095, .124, .153)	(.038, .067, .095)	(.038, .067, .095)	3.629	2.983	7.3197	0.0286 (20)
C_{26}	(.061, .091, .121)	(.081, .111, .141)	(.000, .030, .061)	(.061, .091, .121)	4.188	3.147	7.7604	0.0303 (15)
C_{27}	(.056, .084, .112)	(.093, .121, .149)	(.000, .028, .056)	(.019, .047, .074)	3.767	3.103	7.146	0.0279 (24)
C_{28}	(.074, .102, .130)	(.056, .083, .111)	(.037, .065, .093)	(.019, .046, .074)	3.922	3.189	7.1027	0.0278 (25)
C_{29}	(.110, .137, .164)	(.018, .046, .073)	(.128, .155, .183)	(.055, .082, .110)	3.939	3.222	7.0035	0.0274 (26)
C_{30}	(.065, .089, .114)	(.049, .073, .098)	(.000, .024, .049)	(.033, .057, .081)	3.767	3.345	6.2344	0.0244 (28)
C_{31}	(.045, .078, .112)	(.089, .123, .156)	(.022, .056, .089)	(.022, .056, .089)	3.827	2.758	8.5801	0.0335 (8)
FW	(.077, .110, .142)	(.075, .107, .140)	(.101, .133, .166)	(.076, .108, .141)				
Integral values	0.1098	0.1072	0.1332	0.1082				
Rank the priority	**14**	**16**	**10**	**15**				

Step 7: Defuzzifying the fuzzy weights into crisp values to prioritize the HOWs

In the final stage, the fuzzy weight FW_j of each HOWs are converted to crisp values using Equation (1). Based on these values and the priority rules provided in Section 4.2.4.3., the rank of the HOWs for their order of implementation have been determined. The crisp values and the rankings are presented in Table 4.8. Table 4.8 presented the completed fuzzy QFD matrix.

The results showed top seven technical solutions for implementing JS improvement programs at LPMI. They are 'Developing a competitive and reasonable salary (A_4)', 'Holding sessions to correct payments (A_5)', 'Establish distinct reward and recognition systems (A_9)', 'Promote and help people to grow (A_{10})', 'Establish teamwork like 'quality circles' and involve them in decision makings and problem solving endeavors (A_1)', 'Holding periodical Q & A sessions (A_3)' and 'Enhance individuals' degree of empowerment (A_2)'. The findings in general showed that JS in the LPMI of Ethiopia can be predominantly derived from the provision of extrinsic factors, which reaffirms the finding obtained in Section 4.1 of this chapter.

4.2.6. Discussions

Successful implementation of JS improvement programmes must be provided with a solid foundation prior its introduction. The results from the fuzzy QFD showed an idea that the case industry should implement the JS solutions with attention focused first on remuneration packages (RPs), followed by incentive packages and then participating in decision-making environments.

'RPs' refers to basic wage and supplementary cash payments such as overtime pay [Heery and Noon 2008]. It is generally known that money is an important instrument to fulfil one's needs [Herzberg 1986]. Locke et al. (1980) went so far as to argue, 'No other incentive or motivational technique comes even close to money with respect to its instrumental value' (p. 379). In the present study also RP gets first rank to improve employees JS in ELPMI. Similar findings are often found in the literature, reporting pay as a significant determinant of JS [Nguyen et al. 2003; Abdulla et al. 2011; Ankudinov et al. 2015]. The result is also consistent with the findings of Judge et al. (2010) in which on the basis of meta-analysis the authors demonstrate the existence of a significant positive relationship between level of wage rate and JS. The findings in the present study may reflect the inadequate wage structure in Ethiopia [Desta 2008; Ume 2015]. For instance, workers in the leather industry of Ethiopia earn between US$1.5 and 2.0 per day, quite less than other comparable countries [Gebeyehu 2014]. This low-level payment can be reflected by the highly

rated JS attributes such as 'Chances of salary increment'. As noted by Abdulla et al. (2011), remunerations can be perceived differently in different contexts. For some, it may be perceived as a source of recognition, for others, it may mean security. It can be the reason that employees in the LPMI place a strong emphasis on pay because of its importance in providing a secured life, following the sharp increase of living costs in the country since the past few years [WFP 2016]. The recent research carried out in the Ethiopian cut-flower industry by Staelens et al. (2016) also reported a similar finding that explained extrinsic organizational rewards (wage and job security) as the most powerful determinant of JS. This finding together with the finding of the present study provides an important implication even though it is not original. It illustrates payment schemes as a commonly agreeable concern that may improve workplace satisfaction in Ethiopia significantly. The authors believe that it is the responsibility of the local governmental authorities to review wage rates and upgrade the rates in line with inflation and market wage rates in the country (and the world).

The 'incentive packages (reward, recognition systems and promotional opportunities)' is prioritised in second place. Consistent with the finding of the present study, research frequently reported that a formal incentive plan encourages and motivates employees to achieve the desired organisational outcomes [Das et al. 2008]. Ching and Yang (2000) reported that incentive packages inspire employees and make them committed to knowledge sharing. The financial and non-financial JS attributes incorporated in the survey questionnaire (e.g. 'Availability of benefit packages' and 'Opportunities for career growth') may reflect the importance of incentive packages in the ELPMI. The case industry should implement sufficient incentive packages in order to enhance employee perception towards their job. However, care should be taken when developing a reward system [Chen and Huang 2011]. A poorly structured reward system may have a danger when employees perform solely to earn rewards, without regard to the quality of products. Therefore, a reward system must be supplemented by clear policies focusing on an individual's contributions to quality and quantity [Chen and Huang 2011]. Implementation of QM may help to address this particular focus. According to Karia and Asari (2006), QM aims to improve quality and productivity by empowering employees and giving responsibilities. The basic idea with QM is to hold all employees accountable for quality.

The third issue associated with JS solution in LPMI is 'PDM'. Participation of employees in implementing ideas and solving problems within their level of responsibility results in

empowered employees [Prajogo and Cooper 2010]. Such kind of endeavors can increase the sense of recognition and satisfy self-actualisation needs of employees [Bhatti and Qureshi 2007]. Previous empirical studies reported that employees who participate in organisational issues help to enhance their satisfaction and quality of work life [Karia and Asaari 2006; Prajogo and Cooper 2010]. Organisations in Ethiopia are generally characterised by a working culture of 'top-down hierarchical structure'. This makes employees solely rely on orders and decisions forwarded from top managers without being involved in participation [Gebeyehu 2013]. This might be reflected by the highly rated JS attribute: 'Giving the opportunity to participate in important decision-making'. To encourage PDM, the industry should restructure organisational hierarchy and provide distinct communication channels so that employees can attain higher level of JS through improved perception towards their job.

4.3. Summary

The underperformances of the LPMI in Ethiopian is mainly attributed to extensive human resource (HR) problems in the manufacturing stage. Looking into research in the LPMI of Ethiopia, there is no study on the technical management of labor from the point of view of employee's well-being. The focus of this chapter is two folds. First, this chapter evaluated JS in the LPMI of Ethiopia and identify its determinants. The findings showed that JS can be derived from the provision of extrinsic factors such as pay, performance appraisal, promotional opportunities and communications. The second focus of the chapter was proposing JS improvement programmes using fuzzy QFD model. The results suggest top technical solutions for implementing JS improvement programs at LPMI.

In today's competitive environment, organizations need to adopt a modern management philosophy that helps for the technical management of labor forces and brings organizational wide change [Talib et al. 2011]. The research described in this thesis sought to tap into QM philosophy, in relation to JS of employees and then thrive quality improvement. QM is a management philosophy that aims to harness the human resources of an organization in the most effective way to achieve objectives of an organization. Despite the fact that QM and JS are very old concepts, their linking to the culture of an organization is a recent research area to be worked on. Based on general fact identified in this chapter, in following chapters, a knowledge on the interconnection between QM and JS will be thoroughly analyzed and discussed.

CHAPTER 5
QUALITY MANAGEMENT PRACTICES AS a TOOL FOR JOB SATISFACTION IMPROVEMENT OF SHOP FLOOR WORKERS

5.0. Overview

Following the road of QM, the branch of people-related QM practices emerged as being a current popular methodology to positively influence employees and then maximize their work potential. This chapter contains two broad sections. The first section presents an understanding of the link between people-related QM practices and JS from the perspectives of shop floor workers. In the first section, the selected practices of QM are discussed in relation to human attributes and research hypothesis are developed that underpin the study. The research model was developed and then structural equation modeling is conducted to test the proposed research model. The first section entirely focuses on merely relating the respective factors of QM and JS. The second section of this chapter mainly examines the mechanics of the relationships between QM and JS. This helps to understand how one is constituted in the corpus of the other. Data triangulation was used in the form of questionnaire survey and focus group interviews of shop floor workers. The findings are presented in models. At the end of the chapter, results are presented followed by discussions and chapter summary.

5.1. Quality Management and Job Satisfaction

5.1.1. Introduction

People are considered as organizational asset that cannot be easily imitated by competitors [Wright et al. 1994]. It is, therefore, imperative for organizations to build and preserve their human capacity more than ever before. Human resources and operations are intimately tied to each other in virtually all business scenarios [Yee et al. 2008]. Humans are part of operations systems, both as system operators and decision-making managers [Neumann and Dul 2010]. The importance of employee attitudes such as job satisfaction and commitment, and their impacts on operational performance is of paramount to the success, and even the survival of organizations [Yee et al. 2008]. Particularly, the impact of employee attributes on operations are essential in labor-intensive industries where value addition activities heavily rely on shop floor workers [Scott 2006]. Human

Parts of contents of this chapter are Under Review in journals.

resources issues have been extensively studied in the disciplines of psychology and organizational behavior for many decades with the premise that employee attributes are crucial to influence employee morale and commitment [Ellickson and Logsdon 2002]. Nevertheless, issues related to employee attributes seem to have extended history of separateness within the discipline of operations management [Yee et al. 2008] and its impact on operational performance has often been overlooked [Neumann and Dul 2010]. Neumann and Dul (2010) notes that operations management (OM) practitioners recognize the importance of humans implicitly and gives sections in OM textbooks, but the topic is rarely covered in OM research journals.

In their review on the evolution of quality, Schroeder et al. (2005) recommended that human attributes involved in QM should be an increasing interest in OM as it is crucial for quality improvement. QM is one of the most important and relevant research topic in the field of operations management. Jimenez-Jimenez and Martinez-Costa (2009) argued that the management of an organization's people and people's satisfaction are crucial elements, which suggests that the workforce influences not only total quality but also the total success of the organization. To that end, studies on the relationships between QM and JS have become an increasing interest to both academic scholars and practicing managers [De Menezes 2012; Kabak et al. 2014; Del Río-Rama et al. 2016]. Scholars have proposed that firms can integrate QM with JS to optimize operational outcomes and enhance effectiveness of organizational performance. However, as clearly presented in Section 2.6, the facts concerning the linkage between QM and JS remain largely unclear. Also, previous studies have not given a particular focus for shop floor workers who are directly involved in value addition activities [Ooi et al. 2008]. The motive of this study is to contribute to the theoretical foundation on QM-JS relationship from the perspectives of shop floor workers and to provide insights about human related issues in OM.

5.1.1.1. The present study

This research draws on the LPMI in Ethiopia. As justified in Chapter 1 and Chapter 2, the LPMI is very HR-intensive and the underperformances of the industry are mainly attributed to extensive HR problems. Given the fact that JS is considered as a road map to organizational success, studying its relationship with the QM will provide a valuable comprehension for managers in the efforts to gain a sustainable workplace performance through human resource perspectives [Mendes and Jesus 2016]. Such kind of research is particularly important for organizations characterized by a labor-intensive nature or low technological level. Sharma and Gadenne (2010)

argued that such QM research has been largely carried out in developed countries and capital-intensive companies. Further, they noted that labor-intensive manufacturing companies, which are using a labor force at large relative to capital equipment, in developing nations are currently vacant research areas. This is much true for manufacturing organizations in Ethiopia including LPMI, which are extensively labor-intensive in nature and characterized by low productivity [Belay et al. 2014]. It is understandable that such organizations need a change to enhance their labor productivity by adopting a manufacturing philosophy that helps for the technical management of labor forces. Many writers and researchers argue that one of the comprehensive management philosophies to attain these results and improve business performance is the realization of QM. QM is a management philosophy that aims to harness the human resources of an organization in the most effective way to achieve objectives of an organization. However, as described above, it has been sparsely researched from the perspectives of JS while it likely affects different aspects of employees' at workplaces. The purpose of this study is to provide a better understanding of the relationships between the practices of QM and JS by articulating two research questions as follows: Q1: In the specific conditions of low technological level, how QM practices are related to JS of shop floor workers in the LPMI of Ethiopia? Q2: If so, which QM practices are more associated to JS?

The outcome of this study provides important insights into the true worth of QM implementation in which it enforces the belief that its practices are the decisive factor in enhancing satisfaction of employees at workplaces. This is an essential contribution, given that human resource problems with Ethiopian workers, such as low productivity, often mentioned as a serious reason for the quality and productivity crisis in the manufacturing industry. Most of all, the findings will provide important empirical insights into the ongoing debates over the linkage between QM and HRM [Jimenez-Jimenez and Martinez-Costa 2009].

5.1.2. QM and JS

Literature about the relationship between QM and JS have been presented in Chapter 2 (Section 2.6).

5.1.3. Hypotheses development

In this sub-section, the linkages among the people-related QM practices and JS are proposed.

Top management commitment (TMC) and JS

According to Grover et al. (2006), discussions on QM is not complete without considering references for TMC. Commitment is an intellectual characteristic, a personal attribute that cannot be mandated or imposed from outside [Zhang 1997]. Several studies with different methodologies suggest that TMC is the most crucial factor for QM implementation [Hietschold et al. 2014]. It implies that top management must be personally involved in setting and monitoring quality policy, communicate it to employees and encourage employees to achieve their objectives [Sinha et al. 2016]. According to Chapman and Hyland (1997), top management is believed to play an important role in changing organizational climate by providing leadership role, which motivates employees and infuse them with positive values like perceiving meaning in their work [Ijaz 2012]. In such a way, TMC is believed to increase self-confidence and creates willingness among employees to invest their effort and enthusiasm for the task at hand [De Hoogh et al. 2005]. Except very few studies [e.g. Ooi et al. 2007a], extant researches recognized that TMC is significantly related to employees' positive work-related attitudes like JS and organizational commitment [e.g. De Hoogh et al. 2005; Ooi et al. 2013].

TMC may be even more important in Ethiopian organizations. Working culture in Ethiopia is characterized as a 'top-down hierarchical structure' in which employees tend to rely on top managers to make decisions [Gebeyehu 2013]. The lack of top management support is one of the critical reason that many Ethiopia companies have failed in implementing quality programs [Kitaw and Bete 2003; Kahsay et al. 2007]. In this context, the following hypotheses relating the TMC and JS is proposed.

H_1: TMC is positively related to JS of shop floor workers in Ethiopian organizations.

Participation of everybody (PE) and JS

The QM efforts in organizations should be fully supported by its organizational members [Talavera 2005]. Empowerment and involvement are the two key 'ingredients' of employees' participation in QM activities [Deming 1986]. Empowerment implies the granting of power-delegation of authority [Burke 1986]. As revealed by Prajogo and Cooper (2010), empowerment can be operationalized in two forms in QM. First, it encourages and delegates authority for employees to identify quality-related problems and allocating resources to solve them. Second, empowerment provides employees with the freedom to take responsibility for their ideas, decisions and outcomes. In general, participation of employees involves providing a communication channel

for employees to voice their concerns on issues related to quality [Daily and Bishop 2003]. Previous empirical studies revealed that employee's participation programs have a positive impact on employee's attitude and behavior, which ultimately leads towards higher loyalty and satisfaction at work places [e.g. Karia and Asaari 2006; Ooi et al. 2007a].

Ethiopia is characterized by collectivist culture, where organizations usually treat employees at a larger level such as departments, groups or sections [Vaughan and Tronvoll 2003]. Scholars argue that collectivist nature of work environment offers an opportunity for employee participation [Ooi et al. 2008; Abdulla et al. 2011], which in turn enhance group satisfaction and moral [Locke 1976]. Indeed, the association between PE and JS has not been studied for the Ethiopian organizations. However, it can be generally inferred that QM oriented PE is likely to increase employee satisfaction in the collectivistic characteristic of the Ethiopian culture. Thus, the following hypothesis is proposed:

H_2: PE is positively related to JS of shop floor workers in Ethiopian organizations.

Customer focus (CF) and JS

Customer focus is the degree to which organizations continuously satisfies the needs and expectations of customers [Zhang 1997]. Due to the fact that customer satisfaction determines the success or failure of a company [Kanji and Asher 1993], customer focus is often regarded as the most fundamental value of QM [Sarathy 2013]. The basic premise is that customer orientation sustains competitive advantage of organizations [Rao et al. 1997]. Customer focus is evident in the job design principle, which establishes client relationship and feedback and, in turn, is associated with more favorable perceptions of employees to the work outcome [Morrow 1997]. Many studies reported that customer focus was significantly related to employees' JS and involvement [e.g. Ooi et al. 2007a, b]. Though it has given less emphasis in the context of Ethiopia, the study carried out by Haile and Raju (2016) reported that manufacturing firms in Ethiopia generally considered customer-focused strategies as less important for their business performances and gives less attention for customers' involvement in manufacturing activities. In this context, the following hypotheses is proposed.

H_3: CF is positively related to JS of shop floor workers in Ethiopian organizations.

Teamwork (TW) and JS

Teamwork refers to the extent to which an organization allows employees to work together as a group and increase their responsibility over their work [Noorliza and Zainal 2000]. TW is believed to provide employees with an atmosphere of mutual relationship and greater sharing of information within the work group. Within the context of QM, teamwork in the form of quality circle and quality improvement teams is assumed as important to promote continuous improvement by promoting collaborative efforts in identifying and solving quality problems. According to Kirkman and Rosen (1999) and Jun et al. (2006), the successful TW provides employees with motivation, self-efficacy and fulfils social needs of bonding with people in the workplace. For instance, in their study on the link between teamwork and JS, Griffin et al. (2001) reported that teamwork causes to increase employee's JS and performances.

The positive association between teamwork and satisfaction can be expected in the context of Ethiopia. Ethiopia has initiated a '1-to-5' model to bring social reforms in workplaces. The model was designed to organize workers into groups of five, with a single monitor in each group being designated as group leader. Its objective is to develop team spirit, introduce collaborative working and improvement in working culture. Thus, the following hypothesis is proposed:

H_4: TW is positively related to JS of shop floor workers in Ethiopian organizations.

Continuous improvement (CI) and JS

TQM is the culture of an organization committed to total customer satisfaction through CI [Talib et al. 2011a]. CI is the philosophy of improvement initiatives that increases success and reduces failure [Sarathy 2013]. This denotes that managers should periodically assess existing products, process and systems against established criteria of excellence to identify areas of improvement [Sinha 2016]. Involvement of employees in CI is believed to provide a room for improvement in personal capabilities, moral and skill development, and obtain a sense of accomplishment by solving quality problems [Zhang 1997; Das et al. 2008]. According to Haile and Raju (2016), although manufacturing firm in Ethiopia have clear documented quality manual, procedures and instructions to guide and maintain consistency of activities, there is still a long way to go in the journey towards continuous improvement. Indeed, the association between continuous improvement and JS has not been extensively studied for the Ethiopian industry. However, it can be generally inferred from the literature that QM oriented CI is likely to increase employee satisfaction in Ethiopia. Thus, the following hypothesis is proposed:

H_5: CI is positively related to JS of floor workers in Ethiopian organizations.

5.1.4. Research model

The research model that was analyzed in the present study is shown in Figure 5.1. In this model, the QM practices are hypothesized to be related to JS. The proposed model allows to observe whether the QM practices can be considered as the background for employee JS. In particular, this model allows to contrast the influence of the different QM practices (TMC, PE, CI, TW and CF) on the level of employee satisfaction. Referring to the research model, the five QM practices are independent variables and the JS is the dependent variable. In this model, the first step is to measure the five QM practices and the JS using measurement variables (see Appendix I). The second step is to determine the level of influence of the five QM practices on JS using structural equation modeling, as well as the total variance explained on the dependent variable.

5.1.5. Methods

This section discussed the sample, data collection procedures, the research instrument and operational measures of the study variables. Also, the method of data analyses used to evaluate the relationships between QM and JS is discussed.

5.1.5.1. Sampling procedures

As described earlier, the LPMI of Ethiopia is the focus of the present research. For the survey, ISO 9001 registered companies were selected from Addis Ababa, capital of Ethiopia, where 98% of the total number of leather processing companies in the country are concentrated [Gebeyehu 2014]. Five representative companies, which comprises 66% of the companies in that city, were selected based on their sales revenue and number of employees engaged. The sampling units of this research were regular shop floor workers who had different job functions for the making of leather footwear. The job functions are leather cutting, stitching, lasting and finishing. Each operations in the production process are presented in Chapter 2 (Section 2.13.2.2).

The selected organizations were approached by the authors through a formal channel, seeking for permission to conduct the study. Through the assistance of HR managers, a random sample of employees was selected on the basis of simple random sampling procedures. The sample size was calculated using the item ratio as suggested by Hair et al. (1998). To achieve meaningful estimates, Hair et al. provided an adequate sample size to predictor ratio of 15:1 or preferable with

20:1. In this study, the parameter ratio is 15.23:1, indicating adequacy of the sample size. The sample was determined as two hundred nighty two (i.e. 61% of the population) shop floor employees. A covering letter explaining the purpose of research was attached with the survey instrument together, assurance of confidentiality, the usage of data for academic purpose and instructing them to complete the questions, seal and return the completed responses using the attached envelope. The surveys were completed through personal distribution of the survey instrument. After careful examination, 193 valid responses were selected, representing a response rate of 66%. This level of response rate is adequate considering the norm for response rate of 60 +/- 20 for conventional population as suggested by Baruch (1999).

5.1.5.2. The research instrument

Two research instruments are used in this study. The first is a survey of workplace practices based on self-completion structured questionnaire. A face-to-face interview is the survey's second instrument.

Questionnaire

Questionnaire is a popular data collection method in the study of QM [Khanna 2010]. To that end, a structured survey questionnaire was prepared that contains two major sections. The first section comprises the five dimensions assessing people-related QM practices (i.e. TMC, PE, CF, TW and CI) and the second section contains three items representing the general JS of employees. The instrument used a non-comparative-itemized rating scale [Talib et al. 2013] utilizing a five-point scale to indicate level of agreements ranging from (1) strongly dissatisfied /disagree to (5) strongly satisfied/agree, depending on the nature of the question.

Variable measurements

To further break down the characteristics of the five people-related QM practices, a sum of 27 items were initially adopted from Cua et al. (2001), Conca et al. (2004) and Das et al. (2008). These studies were selected because their measuring scales were developed based on a sound theoretical basis and provide a strong evidence for its reliability and construct validity. The measuring items were then vetted by experts in the field. Sample items utilized in the present study includes 'Managers are a good example regarding quality' (TMC), 'The goal-setting process for quality within the company is comprehensive' (PE), 'A program is established to maintain good customer communication' (CF), 'Workplace decisions are made through consensus' (TW), and 'The company established a database that provide information on internal operation' (CI). The

second section of the questionnaire was about the JS. The JS was queried with respect to three general JS (GJS) variables reflecting overall satisfaction of employees with their job. The items used to rate GJS were 'I feel personal satisfaction with the work of my job (JS_1)', 'My job fulfils my necessary needs (JS_2)' and 'This is the best organization for me to work for (JS_3)' [Jun and Shin 2006; Abdulla et al. 2011; Ooi et al. 2013; Mendes and Jesus 2016]. These unidimensional general items are believed to contain both affective and cognitive components of satisfaction at work places [Mendes and Jesus 2016]. The complete questionnaire can be seen in Appendix I.

To ensure the content validity of the questionnaire, the list of items were sent to five experts who are working in leather industry development institute in Ethiopia and five academicians who are undertaking research in the same field.

Face-to-face interviews

In addition to the questionnaire survey, face-to-face interviews were organized with employees. The purpose of the interview was to obtain a further understanding of workers' perceptions of their working life. A range of themes was discussed related to worker's perceptions towards the working conditions. Qualitative data were gathered through extensive notes that was analyzed qualitatively and enabled a deeper understanding and interpretation of the quantitative results.

5.1.5.3. Method of analysis

Structural equation modeling (SEM) has been chosen as a tool for analysis. It is a powerful tool to investigate hypothesis on relationships among observed and latent variables in a model [Psomas and Fotopoulos 2009]. The research model that was analyzed in the present study is shown in Figure 5.1, which depicts the study variables with their measuring items and the linkages among the QM practices and JS. The structural analysis is conducted based on the research model shown in Figure 5.1. To perform the SEM analysis, the present study applied a methodology often used in the previous research works [e.g. Kaynak 2003; Psomas and Fotopoulos 2009]. They recommended a four-step data analysis, which are:

a) Testing the assumptions of multivariate analysis.
b) Caring out an exploratory factor analysis (EFA) with varimax rotation to examine the underlying dimensions of the QM construct.

c) Applying confirmatory factor analysis (CFA) to test the measurement model extracted in the second step if it offered a good fit to the data.
d) Measuring the relationship between the QM practices and JS using structural analysis.

All these steps are discussed in detail in subsequent sub-sections. The statistical software packages SPSS Version 20.0 (for multivariate analysis and EFA) and Amos Version 23.0 (for CFA and structural analysis) have been used for the analysis.

5.1.6. Data analysis and results

5.1.6.1. Testing the assumptions of multivariate analysis

According to Hair et al. (2005), before performing multivariate data analysis, initially, the assumptions regarding sample size, scale of variables, normal distribution, multicollinearity and outliers of the data should be checked. Concerning the sample size, Hair et al. (1992) as cited by Forza and Filippini (1998, p. 10) suggested an adequate observation between 100 and 200. The sample size of 193 in the present study is, therefore, fairly adequate. The skewness and kurtosis of the study variables are within acceptable limits (±1), suggesting distribution symmetry [Kaynak 2003]. Note that two items (one in the TMC and one in the CF) were identified to outlie this limit and removed from the analysis. The correlations among the variables were checked and found less than 0.9, indicating multicollinearity was not a problem (Hair et al. 2005). Those basic assumptions of the multivariate model together implies that there are no statistical violations in the study.

5.1.6.2. Exploratory factor analysis (EFA)

Given the requirement of the study, EFA with varimax rotation was employed to assess unidimensionality of each construct [Psomas and Fotopoulos 2009]. EFA analyzed interrelationships among the study variables. During the validation process, an item with a factor loading of less than 0.55 were deleted [Comrey 1973, as cited in Talib et al. 2013]. Items deleted in the present study were the sixth item of participation of everybody (PE6), the third item of customer focus (CF3) and two items from teamwork (TW1 & TW2). The reliability of the factors were measured using the Cronbach's alpha coefficient [Nunnally and Bernstein 1978]. Cronbach's alpha is the most commonly used technique to measure internal consistency or homogeneity of the scale [Talib et al. 2013]. The alpha values of each factor were identified as TMC = 0.937, PE =

0.938, CF = 0.818, TW = 0.853 and CI = 0.946. These alpha values exceeded the minimum acceptable level of 0.70 [Nunnally and Bernstein 1978].

5.1.6.3. Confirmatory factor analysis (CFA)

In this step, the measurement model, which is refined during EFA, was tested by CFA. The measurement model consists of 21 items (i.e. after deleting six items in previous steps) characterizing the five practices of QM affecting the JS (i.e. TMC, PE, CF, TW and CI). The fit indices used to estimate the measurement model are the ratio of chi-square (X^2) to the degree of freedom (df), root mean square error of approximation (RMSEA), a consistent version of the Akaike's information criterion (CAIC), the parsimony goodness-of-fit index (PGFI), the parsimony normed fit index (PNFI), goodness-of-fit index (GFI), normed fit index (NFI) and comparative fit index (CFI). These fit indices were chosen because of their abilities to adjust for model complexity and degrees of freedom [Kaynak 2003]. As cited in Mulaik et al. (1989), Steiger (1987) revealed that parsimony and goodness of fit are logically interdependent dimensions and suggested that weighting them equally are the rational thing to do. According to Mulaik et al. (1989), however, the parsimonious normed-fit index provides a more realistic assessment of the model by combining the goodness of fit of the model and the parsimony of the model into a single index. The present study considered parsimonious normed-fit index to estimate the measurement model [Kanyak 2003]. Recommended values of the model fit indices are presented in Table 5.1. During the estimation of the measurement model, an examination of the modification indices and standardized residuals revealed an opportunity for a better-fitted model. A comparison of the final estimated model fit indices to the recommended values (see Table 5.1) reveals satisfactory fit of the measurement model to the data.

Table 5.1 Test results of the measurement models and structural model

Goodness-of-fit statistics	CFA model	Structural model	Recommended values for satisfactory fit of a model to data
X^2 test statistics/*df*	3.640	2.928	≤ 5[a]
RMSEA	0.083	0.100	≤ 0.100[b]
CAIC	428.280	541.584	$\leq$ saturated model and independence model [c]
CAIC for Saturated Model	569.905	851.726	-
CAIC for Independent Model	2239.350	2696.537	-
PGFI	0.515	0.594	≥ 0.50[d]
PNFI	0.629	0.694	≥ 0.50[d]
GFI	0.868	0.865	≥ 0.80[e,f]

NFI	0.909	0.895	≥0.80[e]
CFI	0.931	0.928	≥ 0.90[c]

[a]Schumacker & Lomax (2004); [b]Browne & Cudeck (1993, p. 144); [c] Kaynak (2003, p. 422); [d] Mulaik et al. (1989, p. 439); [e]Forza and Filippini (1998, p. 14); [f]Jun and Shin et al. (2006, p. 803).

In addition, convergent validity and discriminant validity was established by CFA. Recommended by Hair et al. (2005) and Molina et al. (2007), convergent validity was evaluated for the CFA model based on three criteria: (1) factor loadings (λ) of all indicators should be more than 0.50 to be acceptable; (2) composite reliability (CR) should exceed 0.70 and (3) average variance extracted (AVE) by every construct should exceed 0.50. As presented in Table 5.2, the λ-values for all items are well above 0.50, CR of every factor exceeded 0.7 and the AVE of each factor is more than 0.5, indicating a sound convergent validity of the model. According to Fornell and Larcker (1981), CR is a favorable indicator of convergent validity with the consideration of the actual factor loadings instead of assuming that every item was fairly weighted during composite load determination [Molina et al. 2007; Ooi et al. 2013]. CR of all of the latent constructs (see Table 5.2) are not only within the acceptable limits, but also greatly exceeded the benchmark of 0.7.The results in general provided a confirmation that the measurement of the latent constructs are internally consistent.

The discriminant validity was also assessed based on a method proposed by Fornell and Larcker (1981). They suggest that "the squared correlation between any two constructs should be less than the variance extracted by either of the individual constructs", i.e. AVE > correlation^2. This criterion is fulfilled in all cases (see Table 5.2) and hence, the discrimination validity was acceptable.

Table 5.2 Instrument reliability and validity

Latent constructs	Indicator	Loadings	Average variance extracted*	Cronbach's α	Construct reliability**	Correlation^2***
TMC	TMC1	0.883	0.744	0.937	0.935	0.719
	TMC2	0.911				
	TMC3	0.856				
	TMC4	0.768				
	TMC5	0.888				
PE	PE1	0.826	0.736	0.938	0.933	0.692
	PE2	0.821				
	PE3	0.947				

	PE4	0.789				
	PE5	0.899				
TW	TW3	0.837	0.718	0.853	0.836	0.710
	TW4	0.858				
CF	CF1	0.814	0.701	0.818	0.805	0.616
	CF2	0.641				
	CF4	0.716				
	CF5	0.874				
CI	CI1	0.888	0.762	0.946	0.941	0.664
	CI2	0.860				
	CI3	0.867				
	CI4	0.861				
	CI5	0.887				

Notes: $*AVE = \sum \frac{\lambda i^2}{n}$ (i = 1,… n, λ = standardized factor loadings, i = observed variables);

$**CR = \frac{(\sum \lambda i)^2}{[(\sum \lambda i)^2 + (\sum \delta i)]}$ (λi = standardized factor loading, i = observed variables, δi = error variance);

***: the highest squared correlation estimate between factor of interest and remaining factors

5.1.6.4. Test results of structural model

By using AMOS software Version 23, structural analysis was conducted to test hypotheses of the study. Figure 5.1 depicts the SEM results of the relationship between the QM practices and JS. The figure lays down the estimated standardized path coefficient (β) and the variance explained by the model (R^2) [Lopez et al. 2006; Ooi et al. 2013]. The goodness-of-fit statistics used to test the measurement model are the same as to that of the statistics used to assess the hypothesized model (see Table 5.1). Overall, the structural model depicts an acceptable fit to the data. The model depicted that 34.6% of the variance in the dependent variable (i.e. JS) is explained by the detailed explanatory factors (i.e. QM practices) (see Figure 5.1).The summary results of the structural model analysis are presented in Table 5.3, showing the standardized regression coefficients (β) of the structural parameters that enables to decide on the validity of the hypotheses. It can be seen that TMC (β = 0.416; p< 0.01), PE (β = 0.231; p< 0.01) and CI (β = 0.145; p< 0.05) are found to be significantly and positively related to JS, hence supporting H_1, H_2 and H_5. On the other hand, CF (β = 0.039; p> 0.05) was found to be insignificantly related with JS, hence H_3 was not supported. Contrary to expectations, TW (β = -0.312; p< 0.01) were significantly related to JS but in opposite direction to the hypothesis; hence $H_4$was not supported.

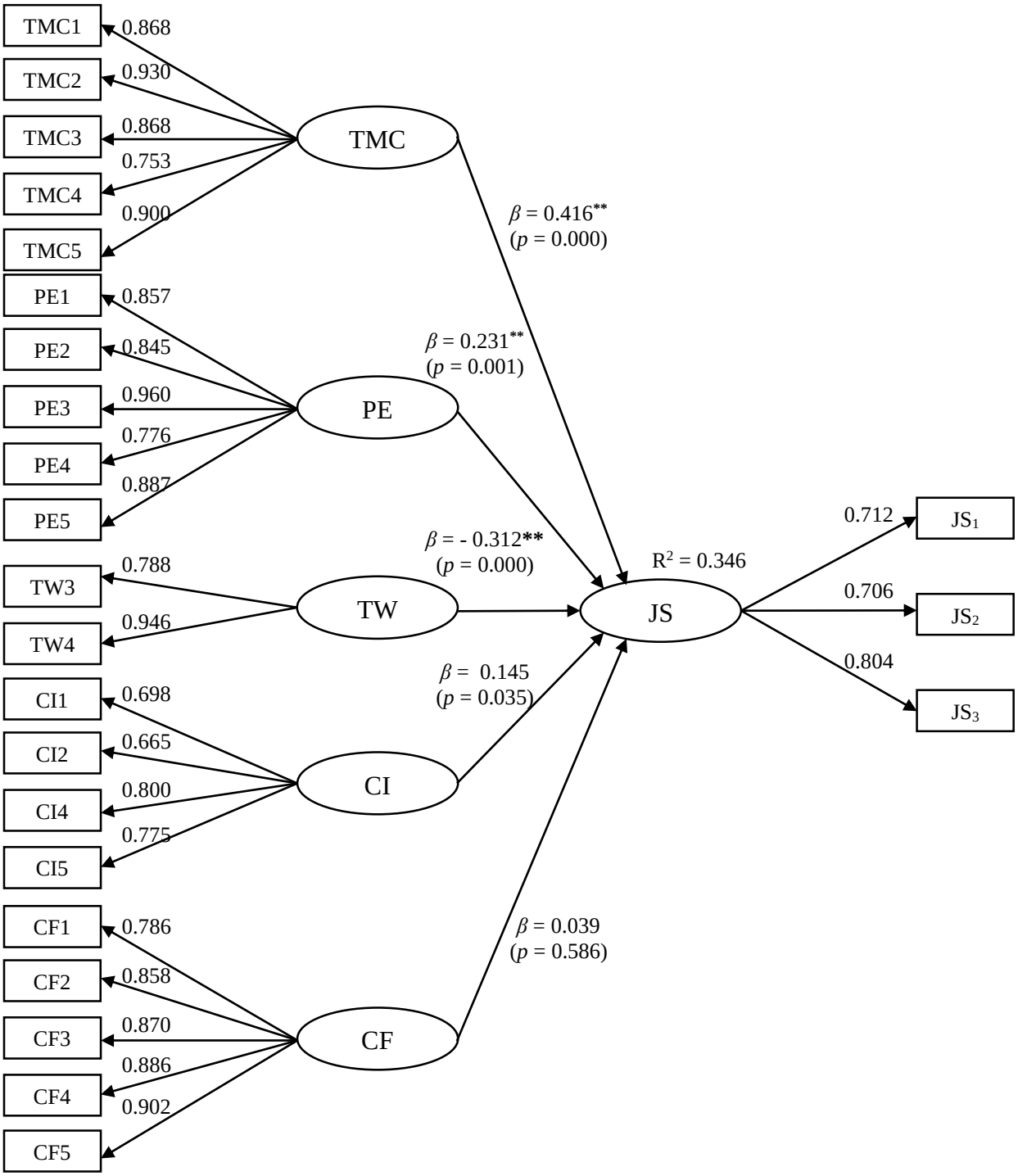

Figure 5.1. Model of the relationship between QM practices and JS

Notes: In the relationship diagram, the standardized parameters are shown and *p*-value statistics are presented in brackets. *****p < 0.05, ******p < 0.01.
TMC = top management commitment; PE = participation of everybody; TW = teamwork; CI = continuous improvement; CF = customer focus; and JS = job satisfaction.

Table 5.3 Structural modeling results

Hypotheses	Path	Path coefficient	SE	*p*-Value	Remarks
H_1	TMC ⟶ JS	0.416	0.074	0.000**	Supported
H_2	PE ⟶ JS	0.231	0.102	0.001**	Supported
H_3	CF ⟶ JS	0.039	0.126	0.586	Not supported
H_4	TW ⟶ JS	-0.312	0.086	0.000**	Not supported
H_5	CI ⟶ JS	0.145	0.091	0.035*	Supported

Note: *p< 0.05. ** p< 0.01.

5.1.7. Discussions

The finding of the study bear practical implications for OM in manufacturing organizations. According to the results, TMC, PE and CI significantly promote JS of shop floor workers in the LPMI of Ethiopia, while the influence of CF and TW are found as unimportant. The findings are consistent with and adds to existing QM theory. The three practices (i.e. TMC, PE and CI) combined are often mentioned as principles of QM (Dahlgaard et al. 2002). In another study, Lagrosen et al. (2010) identified these three QM practices having quiet high correlation with employee attributes in workplace. An explanation for the result is that when the practices of the three people-related QM practices are increased, the features of the JS are enhanced, which in turn, likely enhance work performance of employees in organizations (Cua et al. 2001, Del Río-Rama et al. 2016).

Specifically, the strongest influence on the satisfaction stems from TMC, indicating employees' satisfaction can be largely dependent upon the role of managers. This finding contradict the findings of Ooi et al. (2007a) and Ooi et al. (2008), who suggested weak relationship between them. Particularly, Ooi et al. (2008) identified that top management and leadership commitment was not significantly associated with JS of production workers' in Malaysian organizations. The finding regarding TMC, however, is consistent with the findings of extant studies (Ooi et al. 2013, De Hoogh et al. 2005, Robson et al. 2005). Particularly, Ooi et al. (2013) reported a positive relationship between leadership commitment and quality of work life of employees (JS and organizational commitment). De Hoogh et al. (2005) also revealed the importance of leadership who are charismatic within an organization to increase employees' effort and work-related attitudes. Given the results in the present study, leaders who appear to put more commitment in understanding working situation, supportive and giving an autonomy to solve problems can lead the workers develop a JS behavior. The finding that TMC strongly correlates

with JS of shop floor workers provides a meaningful inference. Managers in Ethiopian organizations have often attributed their quality program failures to human resource problems, such as lack of commitment to quality and high turnover rates, rather than to the root cause of those problems, such as employee dissatisfaction (Jun et al. 2006, Moynihan and Pandey 2008, Linley et al. 2009). Human capital theorists emphasized that organizations must protect themselves from the transferal of human capital to other organizations because experienced employees can be a source of competitive advantage (Jun et al. 2006).

The next dominant practice that has a positive association with JS is PE. The result indicates the importance of recognizing employees for superior quality performance, involving in quality-related decision-making process and giving an attention for their suggestions during participation. This finding is consistent with previous researches that reported employees who participate in organizations in the form of empowerment (Seibert et al. 2004) and job involvement (Ooiet al. 2013) helps to enhance satisfaction in their workplaces. In fact, as reported by Igbaria et al. (1994) and Guimareas (1996), participation of employees is an important aspect of QM that allows employees feel involved in their jobs and enhance a sense of accomplishment in job tasks (Karia and Asaari 2006).

CI was discovered to be the third dominant QM practices that has significant and positive relationship to JS. This findings is in agreement with previous research finding (e.g. Karia and Asaari 2006), reporting that CI enhances JS and organizational commitment of employees significantly. Furthermore, Lagrosen et al. (2007) found that implementing CI in organizations as a work process approach improves employees' health.

Surprisingly, unlike too many past studies, TW showed unexpected negative relationship with JS. Similar finding was observed in the study of Govindan and Ahmad (2003), in which they found TW to be negatively correlated with satisfaction. The finding, however, contradicts the belief and findings of many studies (e.g. Morrow 1997, Ooi et al. 2007a, Karia and Asaari 2006). They reported that teamwork has a significant and positive correlation with workplace attitude of employees as it facilitates their ability to work together as a team and achieve collaboration between employees and management. The finding of the present study reflect the usual social attitude in Ethiopia that the people gives less value for 'working together' as compared to other social collaborations. It is revealed from the face-to-face interviews that workers tend to focus intensively and exclusively on his/her task and perform to the best of their ability, considering

being rewarded is related to a particular reason associated in a single individual. One possible explanation of this may relate with educational level of employees. Majority of shop floor employees in the ELPMI are less educated (Gebeyehu 2014). Hence, they may lack consciousness on the importance of social relations and collaboration working while their work arrangement allows them to work cooperatively. For instance, workers in leather cutting section perform the same operation alongside (i.e. cutting of leather into pieces). A motivational quote stated by Ken Blanchard says, "None of us is as smart as all of us". Studies have also frequently reported that collegial work has a strong importance in improving working lives and attitude of employees' towards their job and create a livelier workplace (Abu Elanain 2009,Ooi et al. 2008). Therefore, the LPMI of Ethiopia should give an attention to create an awareness and make employees realize the importance of working cooperatively to create a livelier workplace.

The results show that CF has no significant impact on JS. This finding is not in agreement with several previous research works (e.g. Ooi et al. 2007a, Schneider and Bowen 1985). They reported that customer focus has an association with the positive perception of employees towards work-related attitudes such as job involvement and satisfaction. Given the findings of the present study, the shop floor workers believe that the responsibility of ongoing series of interactions with customers lies only on personnel' working at managerial positions. Scholars however consider that communications of workers with customers is an important dimension in organizations in terms of inspiring confidence, feeling as expertise and being courteous (Jamal and Adelowore 2008). It can be recommended that organizations should pay more attention to encourage higher level of job involvement of customers and establish a support relationship between employees and customers, which inspire employees to serve customers better(Karia and Asaari 2006, Ooi et al. 2013).

In summary, this section of the chapter (i.e. Section 5.1) provided empirical evidence that TMC, PE and CI can lead to a higher level of JS and thus implementing these QM practices does payoff for the LPMI of Ethiopia. The first section however has a limitation at it is merely focused on relating the respective factors of QM and JS, without establishing a knowledge about how one is constituted in the other. Scholars emphasized that while establishing a relationship between study variables, it is more useful to create an understanding of how one is constituted within the corpus of the other [Lagrosen et al. 2010]. Hence, the next section (Section 5.2) further elaborates TMC, PE and CI and creates an understanding of the mechanics of their relationships with JS.

5.2. Exploring the Underlying Dimensions of JS in TMC, PE and CI

5.2.1. Introduction

In Section 5.1, the relationship between QM and JS has been examined. Since this is one of the important area of study in the domain of operations and QM, researches that are more systematic are valuable to contribute to the theoretical foundation about how one is linked to the other [Lagrosen et al. 2010]. Accordingly, the purpose of this section is to examine the mechanics of the relationships between QM (i.e. TMC, PE and CI) and JS from the perspectives of shop floor workers.

5.2.2. Methodology

The present chapter has used the triangulation method through a combination of quantitative and qualitative methods. The reason for choosing the triangulation method is to get a rich and factual picture of the studied phenomenon [Lagrosen et al. 2010]. The quantitative part was carried out in the first section and proved three of the QM practices (i.e. TMC, PE and CI) are significantly important in promoting JS of shop floor workers in the LPMI of Ethiopia. In this section, the qualitative part was carried out. For the qualitative part, three focus groups were organized with five workers in each group [Staelens et al. 2016]. Focus-groups interview helps to obtain a deeper understanding of workers' perceptions of their working life and generate an extended useful data. A general question was asked for each of the three QM practices during the interview. For example, TMC was stated as: 'Describe how managers are working concerning quality in your company?' Follow-up questions were also asked about QM activities, their effects, JS of employees and regarding what is important for creating JS in the workplace. The qualitative data was analyzed using grounded theory approach, particularly the constant-comparison technique [Glaser and Strauss 1967]. This approach believes that theory and concepts could emerge through qualitative data analysis. It has proved its value in QM as well as in JS researches [e.g. Lagrosen et al. 2007; Lagrosen et al. 2010; Staelens et al. 2016].

5.2.3. Findings

The findings discussed in Section 5.1 are more elaborated by examining which aspects of the TMC, PE and CI give rise to the effect of promoting JS in the LPMI of Ethiopia. For this purpose, dimensions were extracted from the focus-group interviews regarding the practices. For the TMC, four dimensions were extracted, namely *manage through visibility, compensations, bottom-up communication and continuity.* For the practice of EP, three dimensions were found, namely *keep employees informed, belongingness and influence*. Similarly, three dimensions were found for CI: *appraisals & development, trial ability & innovation and thrust.* The descriptions of each of the dimensions are provided below. Then, a model is presented for the dimensions (Figure 5.2 – Figure 5.4).

5.2.3.1. The dimensions of 'TMC'

Manage through visibility

The manager's accessibility and their leadership is considered in this dimension. It was evident from the interviews that shop-floor level employees had low work morale for variety of reasons. For instance, they said that *'managers don't practice what they preach'*. It is understandable that if managers lead and teach by example, then employees will put an effort to share the same and develop a sense of loyalty for improvements. In this regard, being a role model, leading by example and manager's integration with employees was considered vital ingredients of the dimension.

Compensations

Incentive issues in the organizations are considered negative. One leather cutting machine operator said that *'there is less culture of praising efforts and achievements'.* It was perceived that developing a formal compensation system is important to encourage individuals for quality enhancement within the organizations. Managers need to make clear their expectations from a job and make employees aware about the penalty and reward system. In this regard, devising a clear incentive or encouragement plan was considered vital.

Bottom-up communication

This dimension considered communication from employees to managers. Shop floor employees said that *'we are only engaged in executing managerial orders; ideas from our side are not emphasized'.* It seemed organizations are characterized by a working culture of 'top-down hierarchical structure', which make employees to solely rely on top managers' orders and

decisions. It is perceived to be important and straightforward if employees able to communicate personnel's in managerial level. Managers must provide distinct channel to communicate employees and be alert to listen and understand their voice in relation to quality improvements.

Continuity

Management and supervisory turnover were perceived as influencing employee's attitude towards their job. For instance, employees said that *'what is said about compensation establishments are eventually forgotten or neglected when managers are changed'.* In addition, it was revealed that managers are motivating employees only for the execution of short-term objectives (e.g. short-term profits), while QM requires organizational changes through a long-term paradigm shift. A model for the dimensions of 'top management leadership commitment' can be shown in Figure 5.2.

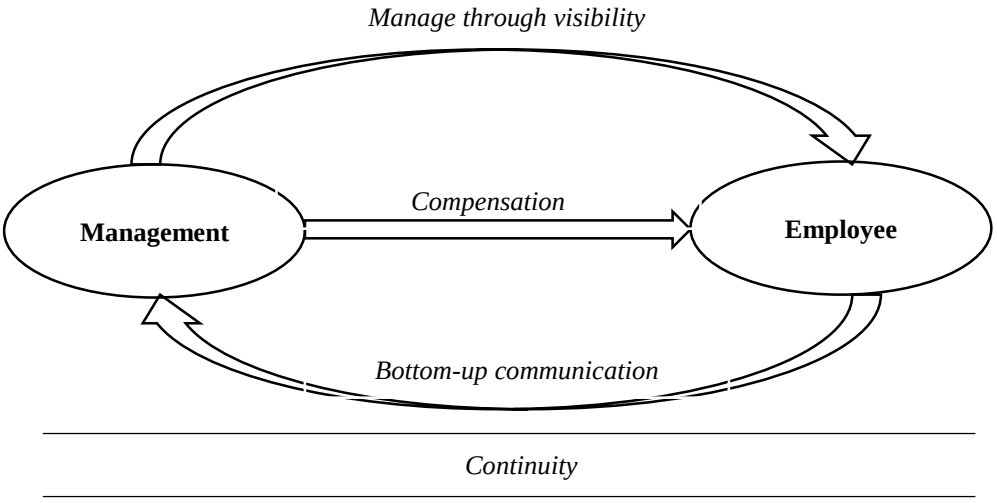

Figure 5.2 A model for the dimensions of 'top management commitment'

5.2.3.2. The dimensions of 'PE'

Keep employees informed

The extent of communication of managers to employees is considered under this dimension. The information forwarded from managers about their work priorities, successes of quality initiatives, etc. were considered an important part of the dimension. It was reported that managers are not alert to notify employees about important organizational issues. One of the shop floor workers said that *'managers notice us only when something goes wrong while keeping delightful moments like goal achievements with them'.*

Belongingness

The less complexity of the organizations under study provides an opportunity of involving employees in organizational issues. However, it was revealed that organizations are not focused to sustain employee involvement. Particularly, it was understandable that the level of participation of shop floor workers in organizational issues is at infant stage. Their attitude was expressed as *'I do my shift work and that is it'.*

Influence

This dimension deals with empowerment of employees to make decisions and solve problems. The logic behind this dimension is that the people closest to a problem are in the best position to make decisions for improvement. For the conditions to be perceived as being fair, it is required to delegate responsibilities to employees for their level and able to give advice for others who are facing similar problem they experience. According to the shop floor workers, work-related decisions are entirely lies with managers. In addition, lack of entrusting employees with resources are reported as affecting their contribution towards the effective running of the company's operation. A model for the dimensions of 'everybody's participation' can be shown in Figure 5.3.

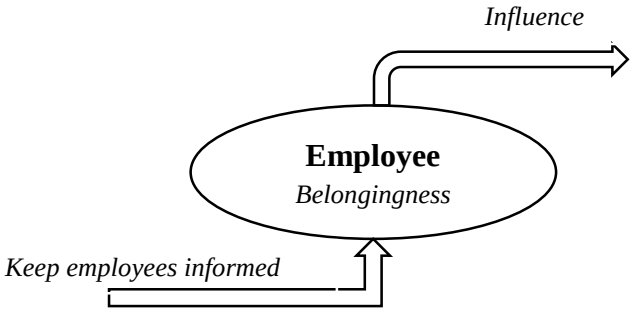

Figure 5.3 A model for the dimensions of 'everybody's participation'

5.2.3.3. The dimensions of 'CI'

Appraisals and development

Organizations seems do not recognized employees as being the life-blood of the company. It is reported that *'training is perceived as a quite rarely occurring phenomenon and even considered as not existed in the company'.* Appraisals and promotion from 'within' is also not the preferred approach in the organizations, with every position being advertised externally. One said that *'there is less/no opportunity for the development of workers in the shop-floor level'.* For the conditions in the company to be perceived fair, employees should be provided with the possibilities of performance appraisals and development.

Trial ability and innovation

It was revealed that encouragement and promotion of innovative thinking is not an integral part of the working culture throughout the organizations. According to the respondents, shop floor workers are not encouraged and motivated to introduce new ideas and find solutions, even for simple manufacturing problems within their responsibility. One of the worker said *'we keep doing the task assigned only and the rest is for technical managers'.* There is less belief in organizations that innovations can only flourish in an environment that encourages to foster it.

Thrust

This dimension considers an issue that demoralize employees not to put their full effort in their work. Employees reported that they have less freedom in their job and there is also annoying responsibility for their results. Effective management of people requires a high level of trust, because a fearful environment cannot make employees to be committed to their job. Although organizations claims that employees were empowered, some of the shop floor employees complained that the actual work environment did not provide a trustful environment. A model for the dimensions of 'continuous improvement' can be shown in Figure 5.4.

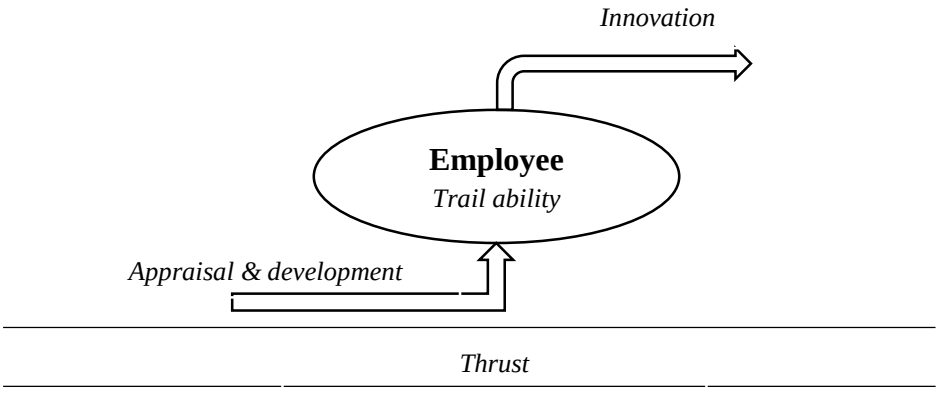

Figure 5.4 A model for the dimensions of 'continuous improvement'

5.2.4. Implications for the role of QM theory in JS

The implications of the study findings have been presented in this section. The findings of the study presented in the previous sections showed that the QM practices (TMC, EP and CI) are significantly correlated with JS. Then, the dimensions identified under these three QM practices are presented that are believed to result the effect of relationship with JS. To further explicate the role of QM in rising JS status, the identified dimensions were compared and crosschecked with

seminar works in the field of QM. In this section, each of the dimensions identified in the previous section are related to concepts found in QM literature.

5.2.4.1. The dimensions of 'TMC'

Manage through visibility

Ahmad and Yusof (2010) views that top management should sustain their commitment to quality improvement initiatives by taking an active role in all quality management activities. Managers need to create and sustain clear and visible quality values that guides company towards excellence. According to Zhang (1997), visible involvement of managers in leading total quality and sustain a consistent total quality culture are amongst the major aspects of TMC.

Deming (1986) said that leaders in organizations need to be trained and acquire more knowledge about quality tools to help workers to do a better job. Visibility of managers' commitment, according to Thiagaragan et al. (2001), require devoting a substantial portion of time to quality-related matters. For example, learn quality-related concepts and skills, teaching employees, attending training courses with employees, regular meetings with employees, arrange adequate resources for quality efforts, using quality tools in daily work, giving formal and informal recognition, celebrating successes. This concept also involves displaying data's at workstations [Seetharaman et al. 2006]. Several diverse organizations has underscored the critical role of TMC in providing visible leadership; for instance, Dunlop Ltd, Malaysia; Xerox Inc., USA; Asahi Breweries Ltd, Japan [Ahire et al., 1996].

Compensations

According to Das et al. (2008) and Talib et al. (2013), a QM initiative in organizations must be supported with a formal compensation system in order to encourage and motivate employees to achieve the desired performance. Compensation often consist of financial (e.g. salary promotions and bonuses) and non-financial rewards (e.g. recognitions) for members of an organization who contribute to QM efforts [Blackburn and Rosen 1993]. Zhang (1997) emphasized that organizations that are serious about achieving quality must integrate these aspects of QM into their incentive plans. The effective implementation of employee compensation system support organizations to create a strongly link between quality and customer satisfaction.

Bottom-up communication

Communication is considered as a cement that holds the bricks of total quality process together to support the principle of people-based management [Wali et al. 2003]. According to

Ahmad and Yusof (2010), in QM environment, managers are required to listen to what employees truly need and listen their concerns, views and suggestions, considering it as a starting-point of improvement planning process. As Prajogo and Cooper (2010) notes, bottom-up communication channels help employees to easily voice their concerns and enable them to participate in decision-making processes. This may involve face-to-face meetings [Daily and Bishop 2003], suggestion schemes [Baidoun and Zairi 2003] and using feedback from employee surveys [Thiagaragan et al. 2001]. Not only that, however, empathetic listening has also been indicated as an important feature in QM environment [Lagrosen et al. 2010].

Continuity

As Mohammad (2014) notes, management turnover is one of the obstacles for successful implementation of QM. Deming (1986) said that mobility of management is amongst the deadly diseases afflicting organizations in the Western world. Scholars often reported that high turnover of management level is hindrance for the successful implementation of quality programs in different organizations [Amar and Mohd 2002; Talib et al. 2012]. Frequent changes of managers may ruin thrust in organizations, which may take time to rebuild. For instance, in their survey-based study, Lagrosen et al. (2010) reported that promises like personnel development are forgotten when new manager joins organizations. TQM demands persistence throughout the organization in accordance with a clear and widely understood vision [Talib et al. 2011a]. One of the 14 principles of Deming (i.e. constancy of purpose) also requires organizations to emphasize long-term views like consistent improvement of products/services. This requires publishing a resolution in employees that makes them keep contributing to quality. Talavera (2005) also said that the quest for quality should be continuing.

5.2.4.2. The dimensions of 'PE'

Keep employees informed

According to Thiagaragan et al. (2001), keeping employees informed (about organizational objectives, the progress being made, developments, achievements made by individuals etc.) determine the enhancement of quality efforts. Powell (1995) and Jha and Kumar (2012) emphasized that QM success appears to depend critically on an ambience of open dialog about quality progress. For instance, in order to enhance the commitment to quality, managers must convey their priorities and expectations to their employees [Demirbag and Sahadev 2008]. Also, scholars indicate that difficulties in quality efforts may arise from information filtering. Zakuan et

al. (2012) said that when visions of quality set by top management filters down through the ranks, it will lose its clarity and momentum. Communication gaps can be widening steadily and may result in unbridgeable gulf of total misunderstanding within organizations [Drucker 1974]. As Baidoun and Zairi (2003) notes, employees need to be informed about quality initiatives, which is directly related to their satisfaction at workplaces.

Belongingness

Somers (1999) described belongingness as 'the perception of being involved with others at differing interpersonal levels which contributes to one's sense of connectedness (being part of and feeling accepted) and esteem (being valued and respected by others)'. Employee involvement is believed to promote job characteristics positively, such as prestige and self-respect (self-esteem) [Liu and Liu 2014]. Welikala and Sohal (2008) described that employee involvement in the QM program aims to create a sense of belonging, which in turn enhance employees' ownership in their jobs. As Liu and Liu (2014) notes, people who feel belongingness are more likely experience happiness and general well-being.

Influence

Participation of employees in decision-making and power delegation to control process improvements, implement ideas, solve problems within their level of responsibility results in empowered employees [Welikala and Sohal 2008]. Self-management is one of the tools of empowerment that involves employees being given responsibility and accountability about their job [Dimitriades 2002]. It assumes that once all employees are empowered to meet the inherent challenges in a quality environment they will put their effort for extra role performances. Ladrgson et al. (2010) noted, 'It is important that all employees feel that they can demonstrate initiative and that they have the responsibility to enact changes and influence activities in their own area of work'. Therefore, it is vital to empower employees to make them active participant in a quality environment, which is in fact intrinsically at the heart of the QM concept [Sun et al. 2000].

5.2.4.3. The dimensions of 'CI'

Appraisals and development

In the QM environment, everyone is required to gain additional capabilities on quality tools to work with continuous improvements [Eng and Yusof 2003; Welikala and Sohal 2008]. Soltani (2003) said that QM-oriented organizations mainly used performance appraisal for training and developmental opportunities. A case study carried out by Cowling and Newman (1995) reported

that QM-oriented appraisal systems offer personal development, which then improves satisfaction of employees. QM-oriented appraisals need to focus on how the performance of employees is evaluated for their selection [Evan and Lindsay 2002].

Trial ability and innovation

According to Talib et al. (2013), innovation is the most important element of QM that characterize continuous improvement. It deals about searching for never-ending improvements and developing processes to find new or improved methods of making useful outputs. Encouraging trial ability and creativity are mentioned as amongst the basic elements of QM [Guimaraes 1996; Mosadeghrad 2015]. According to Rogers (1983), trial ability is the degree to which an innovation can be experimented with on a limited basis. Through experimentation, employees can try out novel ways of handling problems in their organization (Sinha et al. 2016). Gouthier and Rhein (2011) revealed that employees need to be creative to propose innovative ideas and solutions for challenges occurred in their level of responsibility. In support of this, Naser et al. (2011) and Zakuan et al. (2012) views that continuous improvement in QM can be achieved by elevating the performance of an employee, not by blaming employees and offering threat of punishment. According to Dooley (2000), trial-and-error learning is a hallmark of TQM. One of the 14 principles of Deming also focuses on 'Drive out fear' so that people work more effectively. With openness, employees can share their ideas without the fear of being ridiculed and are not defensive about it [Sinha et al. 2016].

Thrust

Trust refers the extent to which the organization beliefs their employees' capabilities and abilities to have control over their work [Ooi et al. 2007a,b]. In QM effort, leadership, particularly charismatic leaders are expected to projects self-confidence and infuse their followers' with positive values so that they may perceive meaning in their work [Shamir et al. 1993]. According to Mohammad (2014), an organization oriented towards QM should develop a "corporate culture of quality" that aimed to promote high-trust relationships and motivation. This climate of openness and trust favors creativity and participation of employees [Bou and Beltrán 2005]. As Baidoun and Zairi (2003) notes, continuous improvement requires bottom-up thrust to promote commitment of employees.

It is revealed that all of the dimensions identified under TMC, PE and CI are founded in the main corpus of the QM literature. This provides an evidence for the importance of adopting

QM for employee JS improvement. Accordingly, the study strengthens the theoretical assumptions that QM is not only for enhancing quality but also for improving the JS status of employees.

5.3. Discussions

The finding of the study bear practical implications for OM in manufacturing organizations. According to the results, TMC, PE and CI significantly promote JS of shop floor workers in the LPMI of Ethiopia, while the influence of CF and TW are found as less important. The findings are consistent with and adds to existing QM theory. The three practices (i.e. TMC, PE and CI) combined are often mentioned as principles of QM [Dahlgaard et al. 2002]. In another study, Lagrosen et al. (2010) identified these three QM practices having quiet high correlation with employee attributes in workplace. An explanation for the result is that when the practices of the three people-related QM practices are increased, the features of the JS are enhanced, which in turn, likely enhance work performance of employees [Cua et al. 2001; Del Río-Rama et al. 2016].

Specifically, the strongest influence on the satisfaction stems from TMC, indicating employees' satisfaction can be largely dependent upon the role of managers. This finding contradict the findings of Ooi et al. (2007a) and Ooi et al. (2008), who suggested weak relationship between them. Particularly, Ooi et al. (2008) identified that top management and leadership commitment was not significantly associated with JS of production workers' in Malaysian organizations. The finding regarding TMC, however, is consistent with the findings of extant studies [Ooi et al. 2013; De Hoogh et al. 2005]. Particularly, Ooi et al. (2013) reported a positive relationship between leadership commitment and quality of work life of employees (JS and organizational commitment). De Hoogh et al. (2005) also revealed the importance of leadership who are charismatic within an organization to increase employees' effort and work-related attitudes. Given the results in the present study, leaders who appear to put more commitment in understanding working situation, supportive and giving an autonomy to solve problems can lead the workers develop a JS behavior. The finding that TMC strongly correlates with JS of shop floor workers provides a meaningful inference. Managers in Ethiopian organizations have often attributed their quality program failures to human resource problems, such as lack of commitment to quality and high turnover rates, rather than to the root cause of those problems, such as employee dissatisfaction [Jun et al. 2006; Moynihan and Pandey 2008]. Human capital theorists emphasized that organizations must protect themselves from the transferal of human capital to other

organizations because experienced employees can be a source of competitive advantage [Jun et al. 2006].

The next dominant practice that has a positive association with JS is PE. The result indicates the importance of recognizing employees for superior quality performance, involving in quality-related decision-making process and giving an attention for their suggestions during participation. This finding is consistent with previous researches that reported employees who participate in organizations in the form of empowerment [Seibert et al. 2004] and job involvement [Ooi et al. 2013] helps to enhance satisfaction in their workplaces. In fact, as reported by Karia and Asaari (2006), participation of employees is an important aspect of QM that allows employees feel involved in their jobs and enhance a sense of accomplishment in job tasks.

CI was discovered to be the third dominant QM practices that has significant and positive relationship to JS. This findings is in agreement with previous research finding [e.g. Karia and Asaari 2006], reporting that CI enhances JS and organizational commitment of employees significantly. Furthermore, Lagrosen et al. (2007) found that implementing CI in organizations as a work process approach improves employees' health.

Surprisingly, unlike too many past studies, TW showed unexpected negative relationship with JS. Similar finding was observed in the study of Govindan and Ahmad (2003), in which they found TW to be negatively correlated with satisfaction. The finding, however, contradicts the belief and findings of many studies [e.g. Ooi et al. 2007a; Karia and Asaari 2006]. They reported that teamwork has a significant and positive correlation with workplace attitude of employees as it facilitates their ability to work together as a team and achieve collaboration between employees and management. The finding of the present study may reflect the usual social attitude in Ethiopia that the people gives less value for 'working together' as compared to other social collaborations. It is revealed from the face-to-face interviews that workers tend to focus intensively and exclusively on his/her task and perform to the best of their ability, considering being rewarded is related to a particular reason associated in a single individual. One possible explanation of this may relate with educational level of employees. Majority of shop floor employees in the ELPMI are less educated [Gebeyehu 2014]. Hence, they may lack consciousness on the importance of social relations and collaboration working while their work arrangement allows them to work cooperatively. A motivational quote stated by Ken Blanchard says, "None of us is as smart as all of us". Studies have also frequently reported that collegial work has a strong importance in

improving working lives and attitude of employees' towards their job and create a livelier workplace [Abu Elanain 2009; Ooi et al. 2008]. Therefore, the LPMI of Ethiopia should give an attention to create an awareness and make employees realize the importance of working cooperatively to create a livelier workplace.

The results show that CF has no significant impact on JS. This finding is not in agreement with several previous research works [e.g. Ooi et al. 2007a; Schneider and Bowen 1985]. They reported that customer focus has an association with the positive perception of employees towards work-related attitudes such as job involvement and satisfaction. Given the findings of the present study, the shop floor workers believe that the responsibility of ongoing series of interactions with customers lies only on personnel' working at managerial positions. Scholars however consider that communications of workers with customers is an important dimension in organizations in terms of inspiring confidence, feeling as expertise and being courteous [Jamal and Adelowore 2008]. It can be recommended that organizations should pay more attention to encourage higher level of job involvement of customers and establish a support relationship between employees and customers, which inspire employees to serve customers better [Karia and Asaari 2006; Ooi et al. 2013].

5.4. Implications for practice

The theoretical implications of the findings are that three of the QM practices have been proven to be critical factors in enhancing the JS of shop floor workers working in the Ethiopian manufacturing industry. Those three QM practices have also been commonly recognized by scholars in relation to human behavior outcomes in workplaces [e.g. Dahlgaard et al. 2002; Lagrosen et al. 2010]. For OM researchers, the finding provides a testing ground in which to explore the ongoing debate on the connection between HRM and QM. From the managerial perspective, managing labor-intensive companies mean managing employees. This research gives an insight for managers in two ways. First, they can find empirical evidence into the true worth of people-related QM implementation in which it enforces the belief that TMC, PE and CI are the decisive factor in enhancing JS of shop floor workers within the manufacturing organizations in Ethiopia. While the authors do not claim that those QM practices are the only dimensions to improve the satisfaction of employees', the study finding supports the need to incorporate them in the HR management approach of the organizations. Second, the study provided a lesson that helps practitioners to precisely identify areas of concern and take corrective measures. For instance, two

QM practices identified in the present study (i.e. CF and TW) should be considered wisely by the organizations in relation to enhance satisfaction at workplaces considerably. According to Álvarez-García et al. (2016), JS behavior cannot be bought rather has to be created within organizations.

Furthermore, extending the importance of QM to a much wider sense may also be valuable. According to Dose (1997), the importance of the QM can be further enhanced through its impact on employee work attitudes such as JS. For instance, satisfaction at workplaces is likely testified to enhance a sense of ownership [Ooi et al. 2006] and then build organizational pride of individual employees and long-lasting commitment of employees [Mas-Machuca et al. 2016]. In this case, organizational pride refers a strong emotional attachment of individuals to an organization [Mas-Machuca et al. 2016]. As Tracy and Robins (2007) notes, the subjective experience of pride reinforce behaviors that promote and maintain individual's social status. Tracy and Robins (2007) further said that individual's pride is exceptionally important in driving life-changing social behavior. This in turn may echoes well-known results from early happiness studies that high satisfaction in one domain can spill over another domain to boost overall subjective well-being [Ha and Jang 2015]. For instance, national pride - a positive feelings to one's own country - is generally associated with happiness [Ha and Jang 2015]. Figure 5.5 depicts a conceptual model that links QM to prides of employees through its impact on JS. To date, there have been no attempts to analyze these relationships. Scholars are limited to examine the importance of QM to organizational level outcomes such as performance improvement. In future, the authors need to empirically assess the importance of QM in wider sense like national pride emotions, which is vital for emotional attachment to one's own country [Ha and Jang 2015].

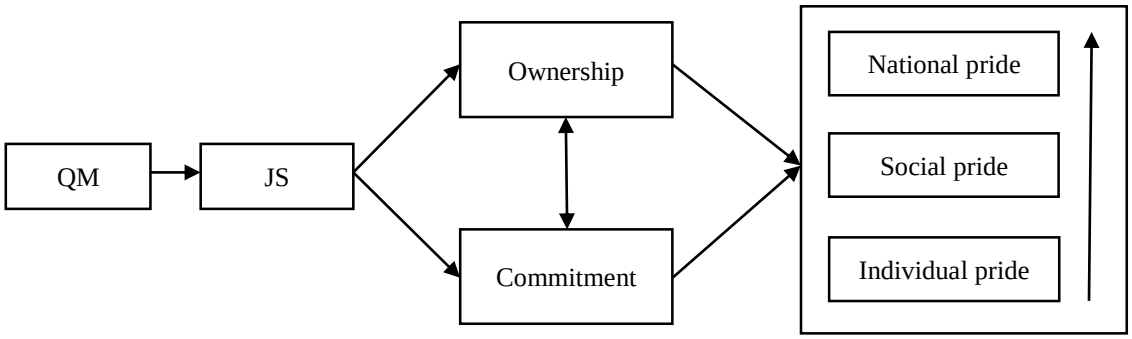

Figure 5.5 Conceptual model for linking QM to prides of employees through its impact on JS

5.5. Summary

Labor-intensive manufacturing companies in developing nations may consider QM as one of important philosophy in order to improve workplace behavior of employees. This chapter examined the transferability of QM practices to the Ethiopian leather industry by validating the relations between people-related QM practices and JS from the perspectives of shop floor workers. The findings provided empirical evidence that TMC, PE and CI can lead to a higher level of JS and thus implementing the selected practices does payoff. Further, this chapter examined the mechanics of the relationships between the QM practices (TMC, EP and CI) and JS. The study has contributed further understanding about the association between QM and JS by connecting the identified satisfaction dimensions with the QM theory. The underline dimensions discovered under the TMC were 'manage through visibility', 'compensation', 'bottom-up communication' and 'continuity'. The dimensions for EP are found to be 'keep employees informed', 'belongingness' and 'influence'. The underline dimensions for CI are 'appraisals and development', 'trial ability and innovation' and 'thrust'. These dimensions have then been cross-checked with the fundamental ideas in the QM theory and shown to be constituted in it. This study augments the existing unclear understanding of the connection between QM and JS. The finding provides a valuable comprehension for practitioners to use the outputs as a guideline in order to maximize organizational gains via human resource perspectives. The managers' capability to positively influence JS may rest jointly on the ten dimensions described in the three models.

Apart from the issues discussed about the relationships between QM and JS, it is important to examine further issues with regard to JS management. Today's world is dynamic and ever-changing. In this environment, JS is an integral factor and it has to be set in motion intervention effects that are sustained over time [Kabak et al. 2014]. In the next chapter, an approach for measuring JS-related QM is developed based on the findings of this chapter, i.e. Chapter 5 and Chapter 4. The measurement approach can be re-administered periodically in workplaces in order to identify changes associated with QM efforts and hence, bring sustainability of JS.

CHAPTER 6

A MEASUREMENT APPROACH OF JOB SATISFACTION-RELATED QUALITY MANAGEMENT

6.0. Overview

Traditional ways of measuring JS are seldom connected to QM. In this chapter, an approach for measuring JS-related QM is developed based on the findings of the previous Chapters. The measurement approach is exemplified in the LPMI of Ethiopia.

6.1. Introduction

Improved JS is typically viewed as a 'win-win' proposition, as it is worthy for both workers and organizations [Filketu et al. 2017]. Also, lack of JS results in work-related fatigue [Bo¨ckerman and Ilmakunnas 2009] and affects organizations from a holistic 360 degree point of view [Islam et al. 2012]. Studies revealed that productivity and performance significantly correlates with increased JS [Alsughayir 2014]. Hence, JS can be considered as a strategic issue for organizations and should always be improved, in searching for greater organizational performance [Mabasa and Ngirande 2015]. This paper concerns human attributes involved in QM as it is crucial for quality improvement. Scholars have proposed that firms can integrate JS with QM to optimize operational outcomes and enhance effectiveness of organizational performance [Prajogo and Cooper 2010]. Bäckström (2009) noted that research on health and stress offers a number of interesting clues for managers on how unpleasant work environment is blocked and thus operation can be improved. Traditionally, the emphasis in research has been limited to cope up with current challenges associated in work-related attitude of employees. However, scholars indicated that today's world is dynamic and ever changing. In this environment, JS is an integral factor in motivating employees to accomplish organizational goals and objectives [Adeoye and Fields 2014]. Lam (1995) said that JS is not static rather it is subjected to be affected by different forces at a time. According to Srivastava (2004), JS is dynamic; it can decline even more quickly than it developed because of different forces from the immediate working environment. Improvement is a process, which, once started, should never end and the same can be said of the research into JS [Dale 2003]. Therefore, the JS promotion should be set in motion intervention effects to bring its sustainability over time [Kabak et al. 2014]. Zairi (2002) defined sustainability

as the ability of an organization to adapt to change in the business environment. The positive attitude of employees to their job also needs to be evolved within a sustainable work system to maintain productivity and competitiveness in an organization [Docherty et al. 2002]. As mentioned earlier, the JS may decline shortly after being secured, yet it has been strongly suggested that JS only produce significant benefits if it is realized in a long-term basis [Lam 1995; Kabak et al. 2014]. The long-term perspective considers the positive progress of JS sustained over time. This is in line with the view given by Adeoye and Fields (2014). They said that to cope up with current changes and future challenges, organizations need to pay attention to rectify factors regularly that significantly influence JS. Managers, therefore, cannot establish the conditions leading to high satisfaction now and then neglect it, as employee needs may change suddenly.

The introduction of QM is likely to affect many different aspects of the human attributes at workplaces. The results of a QM programme are usually new organizational structures, new quality policies and new ways of evaluating performance outputs. These changes may have a direct effect on daily work of employees and their JS [Lam 1995; De Menezes 2012]. Developing a measurement approach of JS-related QM could help organizations to detect and resolve satisfaction issues at an early stage. Scholars argued that identifying the work-related attitude and its underlying dimensions are the most important part of QM [Lagrosen et al. 2010]. In Section 5.1 of this thesis, significant positive correlations have been found between perceptions of employees' about their satisfaction and the three practices of QM (i.e. TMC, EP and CI). Further, in Section 5.2, the underlying dimensions of these three QM practices are identified that are related to employee satisfaction. The development of the dimensions into a useable measurement tool is the remaining work that needs to be conducted. Accordingly, the present chapter described the research question as: how can the JS-related dimensions of QM be measured?

This study aims to develop a measurement approach of JS-related QM based on earlier research conducted in Chapter 5 and Chapter 4. The measurement approach can be used as a pre-test baseline measurement by administering periodically in workplaces in order to detect and resolve changes associated with QM efforts. This helps to bring sustainability of JS. The measurement approach was tested by carrying out a study at LPMI in Ethiopia.

6.2. Workplace satisfaction and QM

Literature about the relationship of QM and JS have been discussed and presented in Section 2.6.

This study has considered a set of practices that define the characteristics of people-related QM in three ways: TMC, EP and CI. In Section 5.2, the underlying dimensions of these three QM practices regarding their relation to employee satisfaction have been identified and discussed. The underlying dimensions have been identified as follows. 'Manage through visibility', 'compensation', 'bottom-up communication' and 'continuity' to be the underlying dimensions under "TMC". 'Keep employees informed', 'belongingness' and 'influence' were found to be the underlying dimensions under "EP". 'Appraisals and development', 'trial ability and innovation' and 'thrust' were found to be the underlying dimensions under "CI".

6.3. Measuring employee satisfaction

Managers can measure the dimensions presented above to understand the satisfaction status of employees in organizations, helping them to implement JS-related QM. Several scales for measuring JS have been developed [Abdulla et al. 2011]. However, researchers have mainly used objective measures such as certification schemes, labour regulations and codes of conducts to analyze and evaluate working conditions [Staelens et al. 2016]. Studies have neglected to include the voices of workers themselves rather they have much focused in analyzing the existing discrepancies between current work practices and benchmarks for working conditions. According to Bowling (2005), self-reported measurement is more important because what matters is how the workers themselves feels, rather than how professionals think he/she feels. Self-reported satisfaction has been shown to be a useful indicator of job-related attitudes of employees [Bowling 2005; Lagrosen et al. 2012]. Also, correlations have been found between subjectively graded employee satisfaction and various outcomes like intention to leave [Staelens et al. 2016]. The present study chosen to use self-reported satisfaction as a basis for measurement of workers' own perceptions towards their job.

6.4. Methodology of the approach

The aim of this study was to develop a measurement approach of JS-related QM. The measurement approach was developed based on the dimensions of the QM practices "top

management leadership commitment", "everybody's participation" and "continuous improvement". The dimensions were identified in Chapter 5. A survey was conducted using a structured questionnaire that was prepared to measure the extent of influence of the dimensions in the chosen company. Measuring items were formed for each of the dimensions based on earlier research presented in Chapter 4, Chapter 5 and literature. The content validity of the dimensions can be assumed as satisfactory, because the measuring items were created based on the detailed content domain of their corresponding dimensions [Lagrosen et al. 2012]. A convenience sample was chosen for the survey. A five-point scale, ranging from 1 (very disagree/dissatisfied) to 5 (very agree/satisfied), was used to measure to what extent respondents agreed with the measuring items. The internal consistency and reliability of the measuring items within each dimension was tested using Cronbach's α analysis. Then, Pearson correlation coefficient and its corresponding test statistics were calculated to observe the relationship strength between the dimensions and the JS measurement index.

For the dimensions of the practice of **"top management commitment"**, three measuring items were created. The dimension *"Manage through visibility"* concerns the manager's accessibility and their leadership ability. It was made up of three statements:

1. Managers are a good example regarding quality activities.
2. Quality-related information is displayed on the shop floor.
3. Major achievements stemming from the QM efforts are formally celebrated.

The *"Compensation"* dimension concerns a formal compensation system to encourage individuals for quality enhancement. It was made up of three statements:

1. Degree to which rewards and ample recognition are provided by managers for quality improvement/performance of employees
2. The company has a financial incentive schemes (e.g. salary promotion scheme) for encouraging employee participation in quality improvement.
3. The company considers work quality for position promotions.

The *"Bottom-up communication"* dimension concerns the ability of managers to communicate employees and be alert to listen and understand their voice. It was made up of the three statements:

1. The degree to which employees are encouraged for suggestions and innovation.
2. Employees are encouraged to report work problems in the company.

3. Management regularly sets up opportunities for face-to-face communication with employees to freely express their views about performance and functioning of company.

The *"Continuity"* dimension concerns issues related to management turnover and continuity and was made up of three statements:

1. Managers pursues long-term quality objectives.
2. Managers are not replaced too often.
3. Issues employees discussed and agreed upon are followed up.

For the dimensions of the QM practice "**Everybody's participation**", three statements were created.

The *"Keep employees informed"* dimension concerns the extent of communication of managers to employees. It was made up of the three statements:

1. The degree to which managers present and transmit important information to employees.
2. The degree to the company conducts departmental meetings at regular intervals to plan, implement and monitor quality improvement programs.
3. Effectiveness of communication process of the company in terms of timely and completeness.

The *"Belongingness"* dimension concerns involvement of employees in organizational issues. Three statements were used to measure this dimension:

1. I am always ready to put myself in a great deal of efforts beyond what is normally expected in order to help my organization be successful.
2. I feel valued in my organization.
3. I plan to make this company my own career.

The *"Influence"* dimension concerns empowerment of employees to make decisions and solve problems. It was made up of the three statements:

1. Extent of employees' empowerment to make decisions and initiate changes whenever they encounter a problem that will affect quality.
2. The motivation of the organization to formally document important lessons learned from the empowerment and integrate them into future organization development plans.

3. I feel that I can exert influence on my working situation.

Similarly, for each of the dimension of the QM practice "**Continuous improvement**", three measuring items were created.

The dimension *"Appraisals and development*" concerns opportunity for the development of workers. The items are:

1. Quality-related data are an important factor in evaluating job performances.
2. Quality awareness is formally introduced to employees through educational experience.
3. The organization designed and implemented career advancement opportunities.

The *"Trial ability and innovation"* dimension concerns encouragement and promotion of innovative thinking. It was made up of the three statements:

1. The environment encourages innovation, cross-department co-operation, and information and resource sharing.
2. The organization do not criticize and punish employees for unsuccessful quality improvement ideas.
3. Management routinely removes artificial barriers that would be detrimental to creating an open and innovative work environment.

The *"Thrust"* dimension concerns moral and freedom of employees in workplaces. It was made up of the three statements:

1. The organization highly valued and demonstrated openness and honesty as important organizational traits.
2. The core values and key beliefs in the organization are evident and real.
3. An organization's culture of quality promote high-trust relationships and motivation

The satisfaction index was queried with respect to three general JS (GJS) variables reflecting overall satisfaction of employees with their job [Jun et al. 2006; Abdulla et al. 2011; Ooi et al. 2013; Mendes and Jesus 2016]. The variables are believed to contain both affective and cognitive components of satisfaction at workplaces [Mendes and Jesus 2016]. These are:

(1) I feel personal satisfaction with the work of my job.

(2) My job fulfils my necessary needs

(3) This is the best organization for me to work for.

6.5. Findings

As described above, the LPMI of Ethiopia is the focus of the present research. A total of 144 useable responses were collected representing 61% response rate, which is considered to be adequate considering the norm for response rate of 60 +/- 20 for conventional population as suggested by Baruch (1999). A random sampling approach was used to draw the samples. Table 6.1 presents the descriptive statistics and Cronbach's α value for each of the dimensions. An α value of 0.6 or high is generally considered satisfactory and indicates the internal consistency reliability of a dimension [Hair et al. 1998]. The reliability coefficient tends to increase with the increment of the number of items or statements [Hair et al. 1998]. The dimension 'Keep employees informed' has the lowest α value of 0.640, but fits the recommendation to be over 0.6.

Table 6.1 The dimensions and the satisfaction-index at LPMI

Dimensions	Mean score	SD	Cronbach's α
Manage through visibility	2.96	1.09	0.696
Compensation	2.73	1.14	0.682
Bottom-up communication	2.88	1.10	0.813
Influence	3.16	0.96	0.694
Continuity	3.26	1.09	0.772
Keep employees informed	3.12	1.10	0.640
Belongingness	3.21	1.03	0.753
Appraisals and development	3.24	1.20	0.704
Trialability and innovation	3.42	0.96	0.688
Thrust	2.84	0.84	0.835
Satisfaction index	3.05	1.20	0.846

The Pearson correlation was also calculated to test the relationship strength between the dimensions and the satisfaction index (see Table 6.2). The four dimensions "compensation", "influence", "appraisals and development" and "manage through visibility" were positively significantly correlated with the satisfaction index. Organizational rewards and incentive or salary promotion schemes are considered in the "compensation" dimension. It must be very clear that workers place a strong emphasis on compensation because of its importance in providing a secured life (as briefly discussed in Chapter 4 (Section 4.2.6.)). Therefore, implementing a compensation packages are vital to improve workplace satisfaction in the LPMI of Ethiopia. The compensation

needs to be supplemented by clear policies focusing on an individual's contributions to organizational performance. Extent of employee's empowerment and possibilities to influence working situation are considered in the dimension "influence". In the "appraisals and development" dimension, performance evaluations and career advancement opportunities are covered. A significant correlation can also be seen between the dimension "manage through visibility" and the satisfaction index. The dimension manage through visibility was built from the following statements: setting good examples, displaying quality-related information and celebrating major achievements. In summary, "compensation", "influence", "appraisals and development" and "manage through visibility" were found to be significantly related to satisfaction of employees than the other dimensions.

Table 6.2 Correlation between the dimensions and the satisfaction index

Dimension	Pearson's correlation	Significance
Manage through visibility	0.278*	0.049
Compensation	0.374**	0.000
Bottom-up communication	0.132	0.114
Influence	0.268**	0.001
Continuity	0.228	0.317
Keep employees informed	0.058	0.492
Belongingness	0.145	0.084
Appraisals and development	0.314**	0.000
Trialability and innovation	0.126	0.257
Thrust	0.104	0.216

*Notes: **p<0.001; *p<0.05*

6.6. Discussions

The research described in this chapter found that two of the dimensions that show significant correlation with the satisfaction index are expounded in the practice of "top management leadership commitment". This once again underscores the crucial role of managers' commitment in promoting workplace attitudes among employees. Most of the QM constructs recognize the manager's commitment as the most important practice for the employees' own perception of their satisfaction and quality of life [De Hoogh et al. 2005; Ooi et al. 2013]. Ijaz et al. (2012) found in their investigation that the practice top management commitment is believed to play an important role in changing organizational climate by providing leadership role, which motivates employees and infuse them with positive values like perceiving meaning in their work.

Also, according to Grover et al. (2006), no discussion on QM is complete without considering references on manager's commitment, because it is considered as a supported and conditional for other practices of QM like "continuous improvement" and "customer focus" when working with work-related attitude of employee [Wreder 2008]. According to the findings of the present study, top management leadership commitment requires a leadership that is characterized by the dimensions "visibility management" and "compensation" to promote satisfaction among employees'. According to Lagrosen et al. (2012), visible involvement of managers in leading total quality is amongst the major aspects of leadership commitment to establish a positive work-related attitude among their employees. The dimension "visibility management" in this study was related to good satisfaction with the meaning of being a good example regarding quality activities, displaying data on shop floor and celebrating major achievements. This is in accordance with the argument of earlier studies that confirms that visibility of managers' requires devoting a substantial portion of their time to teach employees, attend training courses with employees and arrange regular meetings with employees [e.g. Thiagaragan et al. 2001]. The finding regarding compensation is also in line with Talib et al. (2013) who found that managers who have established a formal compensation system encourages and motivates their employees to achieve a desired performance.

The other dimension that shows significant correlation with the perception of employee satisfaction is "appraisals & development". This is in line with earlier findings of a research that showed QM-oriented organizations mainly uses performance appraisal for training and developmental opportunities [Soltani et al. 2003]. The dimension "appraisals & development" in this study was related to good satisfaction with the meaning of being evaluating job performances, creating quality awareness through educational experience and career advancement opportunities. This is in accordance with Welikala and Sohal (2008) who argue that everyone in QM environment is required to gain additional capabilities on quality tools to work with continuous improvements. Also, a case study carried out by Cowling and Newman (1995) reported that QM-oriented appraisal systems offer personal development, which then improves satisfaction of employees. In addition, the significant correlation of the dimension "influence" in this study indicates that managers have to make decisions, initiate changes, take suggestions from employees when a problem encountered and formally document it for future organization development plans. This is in line with the findings of Ladrgson et al. (2010) who noted that work-related attitude of employees is promoted

if they feel they can demonstrate initiative and have the responsibility to enact changes and influence activities in their own area of work. It assumes that once employees are empowered to meet the inherent challenges in a quality environment they will put their effort for extra role performances [Dimitriades 2002].

6.7. Summary

In contrast to the traditional ways of measuring satisfaction, the measuring approach developed in this chapter is connected to QM. In this chapter, four of QM dimensions were found to significantly correlate with the satisfaction index. The developed measurement approach is easy to administer periodically and enable to detect changes associated with QM efforts so that JS can be promoted over time. Managers can use the measurement approach to be more aware about employees' self-perceived satisfaction, to detect shortcomings within management and prioritize and decide improvement areas. This could lead to sustainable improvements in employee satisfaction and well-being. Managers may also use the measurement approach longitudinally to assess before and after working conditions carrying through an organizational change.

CHAPTER 7

FINDINGS AND CONCLUSIONS

7.0. Overview

The purpose of the research described in this thesis was to examine how JS can be attained and to generate a knowledge on the interconnection between JS and QM, with a focus of examining what it is within QM that influences JS of shop floor workers. Accordingly, the purpose was also to contribute to the understanding of the relation between sustainable JS and QM. In this chapter, the main findings of the research are presented in connection to the research questions that were formulated to fulfil the purpose of the research. This chapter also contains a presentation of the conclusions with some recommendations for further research.

7.1. Conclusions and reconnection to the research questions and purpose

7.1.1. RQ1

The RQ1 was: *What is of most important to improve organizational performance of the Ethiopian leather industry?*

In this thesis, the RQ1 was incorporated as a background for the main objectives of the research. The RQ1 was answered in Chapter 3, particularly in Section 3.4. As explained in the first and the subsequent chapters, there are wide spread reasons for the underperformance of the LPMI of Ethiopia in downstream to the manufacturing stage. One way to support the industry is to identify the most critical constraint downstream to the manufacturing stage that largely inhibit the performance of the industry. Then, the industry could improve performances tremendously and live up to the challenge of international competition. The first important contribution from Chapter 3 is the finding that quality related problems are the major obstacle for the performance of the industry. This indicates that the industry needs an improvement action plan to improve quality performances as it gratifies crucial values for the organization. The second most important contribution from Chapter 3 is that the underperformances of the LPMI in Ethiopia are related to HRM issues. This may indicates the need to focus on thriving quality improvement through changing technical management of labor. According to Yee et al. (2008), satisfied employees are more likely to have greater influence on quality. Enhanced work motivation can contribute to producing quality products [Imai 1986], which in turn contributes to the improvement of

operational performances [Yamfwa 2001]. This research chosen to study the LPMI of Ethiopia from the point of view of employee's well-being. Due to the highly labor-intensive nature of the industry, a motivated workforce is the most immediate and fundamental requirement for the industry. The RQ1 provided an idea of a research into this theme; particular addressing JS, which is an important dimension of employee well-being in its own right and is also a desired indicator of organizational success. The research, however, was not introverted with responding narrowly to workplace satisfaction issues. Rather, it has sought to tap into people-related QM, as a means of improving JS of employees and then thrive quality improvement.

7.1.2. RQ2

The RQ2 was: *How much organizations are successful in achieving high level of JS among shop-floor workers?*

The second research question was answered in chapter 4 and partly in Chapter 5 and 6. The fourth chapter aimed at identifying the contextual work factors in Ethiopia and evaluating the relative influence of each of these work factors on JS of shop floor workers. The work factors have been analyzed by means of surveys and focus group discussions. The analysis showed that the mean scores for most of the work factors were lied around medium level of the measuring scale. Data from the group discussion supported the findings of the quantitative analysis. It was clear that extrinsic factors are predominant factors to achieve workplace satisfaction in the investigated organizations. The factor 'Pay' was identified as the strongest determinant, influencing at least four times of the other study variables, followed by performance appraisal system, promotional opportunities and communications. These four factors seemed to be important for achieving JS in the investigated organizations. In this research, training opportunity and ethnic diversity were not found to have a significant relationship with JS. The HRM strategy of the organizations needs to incorporate the aforementioned important work factors in order to obtain a more satisfied employee. Tomaževič et al. (2014) said that "the feeling of satisfaction being shared by a larger number of employees is undoubtedly to the advantage of any organization". The answer to how this strategy can be devised is also presented in Chapter 4. Chapter 4 proposed the possible solutions for the improvement of JS in the LPMI of Ethiopia using Fuzzy QFD technique. The analysis was exclusively dependent on comparing the degrees of 'expectation' and 'perception' of employees towards the work factors of JS. The expectation degrees were measured to reflect the voice of the employees, whereas the perception degrees were measured to reflect the current

attitude of employees towards each work factors. It is found that the mean of expectation was significantly higher than the mean of perception at the 0.01 level of significance, indicating the need of improvements in JS. The findings described in Chapter 4 provided important technical solutions as improvement strategies for the improvement of JS. These solutions includes developing a competitive and reasonable salary, holding sessions to correct payments, establish distinct reward and recognition systems, promote and help people to grow, involve employees in decision-making and problem-solving endeavors, holding periodical Q & A sessions and enhance individuals' degree of empowerment. In general, it seemed extrinsic work factors are predominant factors to achieve workplace satisfaction in the LPMI of Ethiopia. The intrinsic work factors have not been found to significantly relate with JS. It can be argued that workers may care about intrinsic factors, only if they met basic needs such as pay, performance appraisals and promotions. Extrinsic factors are very much linked with meeting one's basic needs [Staelens et al. 2016].

7.1.3. RQ3

The RQ3 was: *What is of most important when practicing QM in order to promote job satisfaction amongst shop-floor workers?*

The third research question was answered in Chapter 5. Many organizations choose to use a systematic methodology to improve and sustain a high level of JS and then brings organizational-wide change. The intension of Chapter 5 was to explore the QM with the intention of identifying which of its practices are most significant to improve the working life of shop floor workers in the LPMI. The finding provides important insights into the true worth of QM implementation in which it enforces the belief that its practices are the decisive factor in enhancing workplace satisfaction. The analysis and the results indicated that some of the QM practices are more important in this respect than other practices. The results pointed to the strongest influence on achieving JS among shop floor workers stems from 'top management commitment'. Furthermore, the practice 'everybody's participation' and 'continuous improvement' were found to be related to JS improvement of shop floor workers. Surprisingly, unlike too many past studies, the research described in this thesis identified teamwork and customer focus having insignificant relationship with JS of shop floor workers.

Moreover, the results of Chapter 5 showed that there seemed to be underlying dimensions to the practices that affected JS of shop floor workers. Thus, the QM practices 'top management commitment', 'everybody's participation' and 'continuous improvement' were further elaborated.

Focus group interviews were used for the analysis and underlying dimensions that are important for sustainable JS were extracted. The results are presented below.

For the practice 'top management commitment', four dimensions were extracted. The results indicate that managers need to work in accordance with the practice 'top management commitment' that is characterized by the dimensions 'manage through visibility', 'compensation', 'bottom-up communication', and 'continuity'. According to the dimensions, managers have to avail themselves in workplaces and act as a leader, establish a formal compensation system to encourage individuals for quality enhancement, communicate employees and be alert to listen and understand their voice and stay long enough in their organizations to build up confidence and trust. A model is also developed for the dimensions.

Three dimensions were also extracted regarding the practice 'everybody's participation'. These dimensions were 'keep employees informed', 'belongingness' and 'influence'. The dimensions denotes the extent of communication of managers to employees, the involvement of employees in organizational issues and empowerment of employees to make decisions and solve problems. Also, the model is also developed for the dimensions.

Finally, for the practice of 'continuous improvement', three dimensions were extracted. These dimensions were 'appraisals and development', 'trial ability and innovation' and 'thrust'. These dimensions denotes the requirement of the organization to give concern for the evaluation and career advancement of workers, encouragement of innovative thinking, and keeping moral and freedom of employees in workplaces. These dimensions are also presented in a model.

If managers in the organizations need to improve and promote JS sustainably, they should measure the aforementioned dimensions regularly and control the progress of JS status over time. Measuring the dimensions help the organizations to detect shortcomings within the management and then identify improvement areas to promote shop floor workers satisfaction over time.

In this research, the QM practices 'teamwork' and 'customer focus' were not proven to be correlated with JS. This might be an indication that these practices are not as important in the achievement of JS among the shop floor workers of the LPMI as the other practices.

7.1.4. RQ4

The RQ4 was: *RQ 4. How can QM be measured within organizations in order to promote sustainable JS?*

The fourth research question was answered in Chapter 6. Based on the findings of the previous chapters, Chapter 6 developed an approach for measuring JS-related QM. The identified dimensions in Chapter 5 were transformed into relevant measurement approach. The measurement approach can be used to evaluate the extent to which the practices, 'top management commitment', 'everybody's participation' and 'continuous improvement' permeate an organization. Managers can point out to what extent the organization is practicing the JS-promoting practices of QM and detect shortcomings within management. Managers may also use the measurement approach longitudinally to assess before and after working conditions carrying through an organizational change. The measurement approach has been exemplified in the LPMI of Ethiopia. The findings showed that four of the dimensions were significantly correlated with the satisfaction index. These are 'compensation' and 'manage through visibility', which are derived from the practice of top management commitment; 'influence' derived from everybody's participation and 'appraisals and development' derived from the practice of continuous improvement. The findings presented in Chapter 6 substantiate the results of earlier studies indicating a relationship between the QM practices and employee satisfaction.

7.2. Reconnection to the theory

The research journey described in this thesis was expounded in the field of QM, particularly, in the people related aspects of QM. Looking back at the history of QM, many important fields of research were apparent, especially Human Relations [Schön 2007]. One trail within the Human Relations area that was attracting the interest of the present writer was the study of JS. After exploring how much organizations were successful in achieving JS, the author made a change of research fields. Following the road of QM, the branch of people-related QM practices emerged as being a current popular methodology to positively influence employees and then maximize their work potential. After taking that route, the author wanted to connect the selected practices with JS, which seemed to be living different lives in different fields of research but also highly attached through QM theories.

The way of practicing QM that is described in this thesis support the satisfaction and well-being of the shop floor workers. This in turn likely have influence the operational performance of

the organizations. This could be illustrated in a model describing a possible relationship in the studied organizations, see Figure 7.1. This model is similar to ‘‘satisfaction–quality–profit cycle’’ Yee et al. (2008). This cycle provide empirical evidence that employee satisfaction is an important determinant of operational performance of organizations. In addition, Yee et al. (2008) provided strong evidence to support the fundamental relationship showing that employee satisfaction leads to higher quality and that it influences customer satisfaction directly. Therefore, organizations should focus their effort to boost employee satisfaction, and satisfied employees will uphold the quality improvement and enhance the operational performance of organizations. The model presented in Figure 7.1 also has some connections to Human Relations and Scientific Management relationship model [Schön 2007], which are the important building blocks of QM.

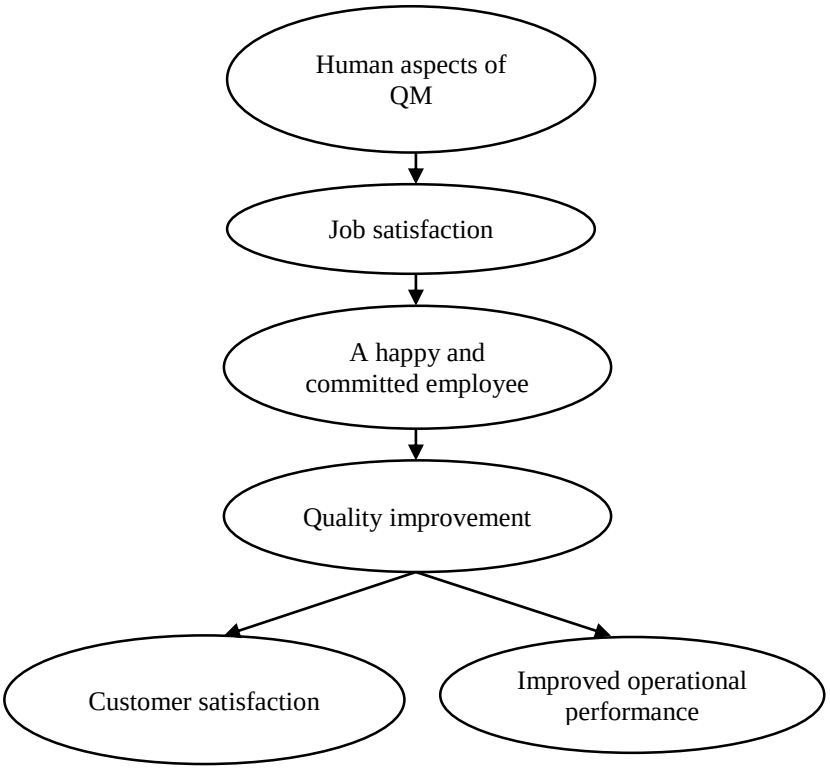

Figure 7.1 A possible relationship model for the investigated organizations in this thesis. It shows how the important aspects of QM can lead to the desirable results; happy & committed employees, quality improvement and, then operational performance and customer satisfaction.

7.3. Contribution of the Research

Employees are considered as organizational asset that cannot be easily imitated by competitors and regarded as source of competitiveness. It is, therefore, imperative for any organizations to build and preserve their human capacity. The growing concern that organizations in developing nations are facing series challenge to retain human capital has grabbed great

attention of researchers over the entire globe. The labor related problems such as low labor productivity and performance significantly contributes to the economic loss of industries in these countries. In order to facilitate the real goal of manufacturing industries, this research was carried out. This research generates a knowledge on how job satisfaction can be attained under the quality management environment, with a focus of examining what it is within quality management that influences job satisfaction of shop floor workers in the Ethiopian leather industry. In the following, the main contributions of the research list out:

- The identification and prioritization of key performance indicators of the Ethiopian leather industry was conducted using "Customer preference rating (CPR)" technique. Presenting the performance indicators in the form of CPR based model is a new effort in the area of performance measurement and analysis.
- A 'JS-related QM' measurement approach was developed to perform the identification of JS problems under QM environment. The measurement approach help organizations to detect shortcomings within the management and identify improvement areas, and then brings sustainability of JS over time.
- The relationship study between QM and JS opens various research avenues in HRM to use it for technical management of labor.
- An understanding about the mechanics of the relationship between JS and QM has been created. The finding augments existing understanding of the issue by establishing a knowledge about how one is constituted in the corpus of the other.
- The research contributes to the dearth of research on JS by addressing solution proposals for its improvement. Whereas past research has solely focused on problem identification, the present study has focused on proposing JS improvement programmes.
- The application of Fuzzy QFD is demonstrated in the domain of human resource development. The Fuzzy QFD has been used to make optimum decisions pertaining to JS improvement programmes.
- The empirical evidence enriches the JS literature by considering workers in low technological level in the developing world, particularly in the eastern part of Africa, where nations share similar cross-cultural norms and economic settings.
- The empirical results reveal JS in Ethiopia is exclusively derived from the provision of extrinsic work factors. This finding departs from the majority of studies in Western contexts

and most of the studies reported in the developing nation such as Middle-Eastern region. In these regions, JS is mainly derived from extrinsic, intrinsic work factors and demographic factors. The finding in the context of Ethiopia opens a research avenue to develop a different framework when examining the JS of employees, a framework that takes into consideration the interrelations between JS and the extrinsic factors mainly explained by economic factors.

- Important insights into the true worth of QM implementation has been provided, showing that some of its practices are the decisive factor in enhancing JS of shop floor workers in the leather industry of Ethiopia. The finding provides a valuable comprehension for practitioners to use the outputs as a guideline in order to maximize organizational gains via human resource perspectives.
- The findings of the research provides essential contribution, given that human resource problems with Ethiopian workers, such as low productivity, often mentioned as a serious reason for the quality and productivity crisis in the manufacturing industry. In particular, the findings of the research will support the 'labor law' in Ethiopia. The labor law was inaugurated in 2003 to safeguard the interests of sector workers and build a pleasurable working condition.
- The empirical findings in general highlight the importance of having policies that do not limit organizations to job creation as it would be a too narrow approach. Understanding what makes people (dis)satisfied with their jobs should be central to any employment-oriented development policy.

7.4. Future research

Aside its contributions, some limitations of the research must be recognized that can lead for future researches. First, the research is of the snapshot type, which might not capture the dynamic nature of employees' JS in different time zones. Future studies may use longitudinal approaches to ascertain the nature and direction of the causal relationships between the QM practices and satisfaction at different stages of QM implementation. Second, studies may add additional satisfaction factors and extract the corresponding QM dimensions following the dynamic nature of working environment. Furthermore, as the present research targeted the LPMI in Ethiopia, future research may include a wide range of organizations to ensure a more conclusive application of the results. Third, the generalizability of the study outputs needs to be interpreted

with caution as shop floor workers were only targeted in the study. In future, it would be worthwhile conducting surveys to investigate satisfaction issues of employees in different hierarchies. Four, further research may relate the QM practices with job performance and organizational commitment through its effect of JS.

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Appendix I

Questionnaire used in Chapter 5

Survey questionnaire

Dear participants,

Currently, I am doing a research on Ethiopian leather industry. The title of the research is **"Analyzing Job Satisfaction by Quality Management for Ethiopian Leather Industry"**. Now, I am highly in need of your cooperation to get appropriate data since your response is very crucial to accomplish my research successfully. For the sake of data collection, this questionnaire is designed in Indian Institute of Technology Roorkee (IITR).

Objective of the questionnaire: The objective of the study is to assess what it is within quality management (QM) that affect satisfaction in your work place. The questionnaire gives you a chance to tell how you feel about your present job and what factors affect your degree of satisfaction.

Benefits: As the study is expected to find out the main factors that affect your job satisfaction (JS), the findings of the study may help your organization to take corrective measures or labor law modifications, which will directly benefit by making you satisfied in your workplaces and even in your life.

Confidentiality: The information you give in the questionnaire will be kept confidential and used only for research purposes. Please do not write your name or anything, which may identify you on this questionnaire.

Where to fill the questionnaire: You can complete the questionnaire at your own convenient place and time. Completion of the questionnaire may take 7-10 minutes. I kindly ask you to give a true picture of your feelings for each question. After completing the questionnaire, you can place it in the box provided in your section or hand it to the person designated to collect questionnaires.

The questionnaire consists two parts. "Part A" is about your personal information and "Part B" is regarding the practices of QM and measures for JS. The questions are provided on the next page.

Finally, I should appreciate and like to express my gratitude for your participation, timely response and return of the questionnaire.

Sisay Addis Filketu
PhD research scholar
Indian Institute of Technology Roorkee
India

Part A: Personal Information (Demographic data)

Instruction: please complete the following information/data about yourself by marking "X".

Questions	Answer	
Gender	□ Male (1)	□ Female (2)
Age Range	□ 18-25 Years (1)	□ 26-30 Years (2)
	□ 31-40 Years (3)	□ 41- 50 years (4)
	□ Above 50 Years (5)	
Work Experience	□ Less than 1 year (1)	□ 1- 3 years (2)
	□ 3- 5 years (3)	□ 5- 10 Years (4)
	□ 10- 15 years (5)	□15- 20 years (6)
	□ More than 20 years (7)	
Educational background	□ Elementary Level (grade 1-8) (1)	□ High sch. Complete (grade 9-10) (2)
	□ Preparatory complete (grade 11-12) (3)	□ 10 +1 Certificate (4)
	□10+2 Certificate (5)	□10+3 (TVET-Diploma) (6)
	□ College Diploma (Non-TVET) (7)	□ BA/BSc and above (8)

Part B: The practices of QM and measures for JS

Instruction: When you read the questions, please keep the questions in mind and:

- If you feel that your job/organization gives/provides you **more than you expected,** circle number **"5".**
- If you feel that your job/organization gives/provides you **what you expected,** circle number **"4".**
- If you cannot decide on your feeling, circle number **"3".**
- If you feel that your job/organization gives/provides you **less than you expected**, circle number **"2".**
- If you feel that your job/organization gives/provides you **much less than you expected,** circle number **"1".**

QM practices	Measuring items	Agreement/satisfaction level				
Top management commitment	Managers actively participate in continuous improvement programs	1	2	3	4	5
	Managers are committed to review quality issues comprehensively	1	2	3	4	5
	Managers are a good example regarding quality	1	2	3	4	5
	Managers arrange adequate resources for employees' training	1	2	3	4	5
	There is an active and visible commitment from managers to understand a working situation within the organization	1	2	3	4	5
Participation of everybody	The goal-setting process for quality within the company is comprehensive	1	2	3	4	5
	Employees are empowered to solve quality problems	1	2	3	4	5
	Employees' suggestions on quality are seriously valued	1	2	3	4	5
	Employees are recognized for superior quality performance	1	2	3	4	5
	Employees are involved in quality-related decision making process	1	2	3	4	5
	Employees actively participate in quality audit process	1	2	3	4	5
Customer focus	A program is established to maintain good customer communication*	1	2	3	4	5
	Our company collects extensive complaint information from customers	1	2	3	4	5
	Quality-related customer complaints are treated with top priority	1	2	3	4	5
	Our company conducts a customer satisfaction survey regularly	1	2	3	4	5

	There is a marketing research to collect suggestions for improving products	1	2	3	4	5
Teamwork	All employees are involved in quality improvement teams	1	2	3	4	5
	Cross-functional teams are established for solving quality problems	1	2	3	4	5
	Resources are available for supporting quality-related teams	1	2	3	4	5
	Workplace decisions are made through consensus	1	2	3	4	5
Continuous improvement	The company established a database that provide information on internal operation	1	2	3	4	5
	The company established a database that provide information on its costs and finances	1	2	3	4	5
	Employee's performance evaluation aimed for improvement, not for criticism	1	2	3	4	5
	Production equipment is maintained well according to maintenance plan	1	2	3	4	5
	The company implements various inspections effectively	1	2	3	4	5
Job satisfaction	I feel personal satisfaction with the work of my job	1	2	3	4	5
	My job fulfils my necessary needs	1	2	3	4	5
	This is the best organization for me to work for	1	2	3	4	5

LIST OF PUBLICATIONS

[1]. **Addis, S.,** Dvivedi, A. and Beshah, B. (2017), "Identifying and prioritizing operational performance indicators of the Ethiopian leather industry", Int. J. Productivity and Quality Management, Vol.22 (3), pp.378–394.

[2]. **Addis, S**., Dvivedi A. and Abebe B. (2017), "Decision-making on job satisfaction improvement programmes using fuzzy QFD model: a case study in Ethiopia", Total Quality Management & Business Excellence, pp. 1-24. http://dx.doi.org/10.1080/14783363.2017.1354693 **(SCI, IF = 1.368)**

[3]. **Addis, S**., Dvivedi, A. and Beshah, B., "Quality management practices as a tool for job satisfaction improvement of shop-floor workers: Empirical evidence from the Ethiopian manufacturing organizations", Production Planning & Control. **(SCI, IF = 2.369). (Under review).**

[4]. **Addis, S**., Dvivedi, A. and Beshah, B., "Determinants of job satisfaction in Ethiopia: Evidence from shop-floor workers in the leather industry", African Journal of Economic and Management Studies. **(SCI, IF = 0.51). (Under review, first revision submitted).**

[5]. **Addis, S**., Dvivedi, A. and Beshah, B., "Exploring the underlying dimensions of job satisfaction in quality management practices", International journal of Productivity and Quality Management. **(Under review)**