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SERVICE QUALITY MEASUREMENT AND ENHANCEMENT APPROACH FOR BANKING SECTOR: - CASE OF DEVELOPMENT BANK OF ETHIOPIA.

BY

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Service Quality Measurement and Enhancement Approach for Banking Sector: - Case of Development Bank of Ethiopia

By

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A Thesis Submitted to School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Degree of Masters of Science in Industrial Engineering Stream

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DECLARATION

I hereby declare that the work which is being presented in this thesis entitle "**SERVICE QUALITY MEASUREMENT AND ENHANCEMENT APPROACH FOR BANKING SECTOR: - CASE OF DEVELOPMENT BANK OF ETHIOPIA**" is original work of my own, has not been presented for a degree of any other university and all the resources of materials used for the thesis have been accordingly acknowledged.

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(Thesis Co-Advisor)

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ABSTRACT

Service quality has stood on the very importance for the service industry. Service Quality has been identified as one of the most effective means of building a competitive position and improving organizational performance. With current status on the banks industry, competitions are becoming fierce which in turn clients are raising their expectations for high service quality. Beside to this, the usual core process of loan with the associated loan cycle time has a great influence on the service delivery. This research was conducted on service quality measurement and enhancement approach for bank sector and Development Bank of Ethiopia (DBE) selected as a case company.

For this study purpose, the research was mainly targeted interviewing and questioning the top management of the DBE to find the root causes of customer complaints. From the interview and post analysis, eight (8) main root causes of customer complaints were found within the selected case company. In finding the key solution for the raised root causes, understanding of the explicit loan process of the DBE was conducted which depicts that project financing and lease financing loan modalities prevails the most. In such a way, this research purely revolves on these processes to investigate the service quality.

This research used the integration of SERVQUAL-Kano with QFD for identifying the customer requirement and for the subject decision of the technical requirement of the Bank using the AHP approach. The researcher prepared a questionnaire in English and Amharic for SERVQUAL and KANO model, SERVQUAL model was used to measure the current service quality and identify the weak features but no prioritized features for service improvement. Therefore, Kano model was used for categorization and prioritization of the weak feature. From the results of SERVQUAL and KANO models, seven features were selected by DBE experts to service improvement into HOQ. Through the QFD method, adopt peer to peer has the best technical requirement and conducting relevant training has the second technical requirement to answer the customer needs. Therefore, Adopt peer to peer and conducting relevant training will improve in the case company 13.10% and 11.65% respectively.

The researcher recommended the case company to start with establishing of quality planning, quality control, and quality goals as per customer requirements and follow the continuous improvement of service quality.

Keywords: Service quality, Customer satisfaction, Bank, SERVQUAL model, KANO model, AHP, QFD.

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ABBREVIATION AND ACRONYMS

QFD _____Quality Function Deployment

SERVQUAL _____ Service Quality

DBE_____Development Bank of Ethiopia

AHP _____Analytical hierarch Process

MCDM _____Multi criteria Decision making

CS _____Customer satisfaction

CRs _____Customer Requirements

TR _____Technical Requirements

HOQ _____House of quality

NPL _____None preforming Loan

CHAPTER ONE

1. INTRODUCTION

Service quality has stood on the very prior importance for the service industry. It has been identified as one of the most effective means of building a competitive position and improving organizational performance. It's also focused on evaluation that reflects the customer's perception of specific dimensions of service, reliability, responsiveness, assurance, empathy, tangible and satisfaction. It is influenced by perceptions of service quality, product quality and price as well as situational factors and personal factors.

The term quality comes from the Latin word "quality" as it means an attribute or a property. However, a different scholar gives a different interpretation or definition. According to Crosby (1992), quality is defined as conformance to careful requirement or specification in the test of quality reliability. Quality is "fitness for use" which means the value concept varies from one customer to another (Juran, 1999). Quality is minimizing variation precision and accuracy of the production (Deming, 2005). On the other hand, quality is defined as meeting customer wants and providing larger worth (Moradi and Raissi, 2015).

Quality is the ability of any product to meet customers' hopes and wants. On the other concept, it is a set of features, characteristics, or attributes that are required or wanted by the customers. Several studies explain a relationship between the service quality offered by banks and their consequences as satisfaction level among customers (Mengistu, et al., 2018).

Quality in service is basic necessary particularly for the development and improvement of the service sector industry. More research indicates the relationship between service quality and customer satisfaction. To keep the customer's wants, several organizations need to enhance service to their customer (Abdissa, 2019). Service quality is one of the global judgments about the dominance of service; an organization to be competitive services globally must achieve quality service by considering customer expectations (Mengistu, 2018).

Belay (2014) explained that, all organization in Ethiopia do not have any trend to improve service quality, in building loyal customer and attract new customer into the bank industry. Such approaches sprang from limited knowledge especially on customer handling on sector, lack of

commitment and the adapted business tradition run by off the record traditional system which not prioritizes quality service to client. But today the organization's competition increases day, so the organization must work to improve the service quality.

In today's highly competitive environment, organizations and companies need an extra edge to enhance and build upon their relationships with customers. Many clients find that high-quality customer service can make the difference in winning and retaining customers or losing them. By determining which factors produce the highest perceived value by customers, customer satisfaction, and service quality study important for keeping an existing customer and attracting the new customer.

Depend on the above case, the researchers study service quality enhancement by using the integration of SERVQUAL-Kano with QFD with support by Multicriteria Decision making. First is building identified the customer requirement by using SERVQUAL-Kano. Thus identified customer requirement used for input to QFD, the second used AHP for subject decision to support the integration of SERVQUAL-Kano with QFD. Then the researcher made a composite matrix (house of quality), relation matrix is one a part of HOQ. This matrix is the relation between the customer requirement and a technical requirement.

Therefore, the integration of SERVQUAL-Kano model into QFD and MCDM (AHP) is very important to improve the service quality in the service sector.

1.1 BACKGROUND OF THE STUDY

According to Ramu and Anbalagan (2017), all consumers in the world have become more quality-aware, the customers demand to depend on the service quality when the quality is high level the customer demand also increases. Service operations are universal affecting the new wave of quality awareness and emphasis. Therefore, service-established industries like banks are compelled to afford excellent services to their customers to have a viable competitive advantage.

Service quality has an important role for clients in the comparative lowliness or advantage of the industry business and services. Customers in the current situation banking condition are knowledgeable and extremely demanding, because of fast-developing information technology and progressive communication channels. The current modest business situation enables

customers to switch banks easily seeking better options for developed satisfaction. (Hennayak, 2017)

The benefits of good delivery are increased profit through enhanced revenues reduce cost, lower customer price sensitivity, and reduced cost of customer service. Quality, satisfaction, and loyalty have interlinked ages in the bank industry (Mengistu, et al, 2017). Currently, the incredible globalization of the bank services sectors is changing the way bank services conducting, customers expect way, time saver, and want more conveniences (Felix R, 2017). On the other bank, industries have highly competitive and growth service conditions, In this case, service industries need to provide the customer with high-quality services, the customer demand for service quality depends on a point of view (Talib, 2012). The Total consumers in the world have become more quality-aware; the customers demand to depend on the service quality when the quality is high level the customer demand also increases (Ramu and Anbalagan, 2017).

The Ethiopian bank industry has many challenges that originate from very rivalry with an existing bank. Should a strategic plan need to develop the service quality to keep the customer and it measures the key success factor every day, currently allover have the awareness of service quality. Service quality is the main tool to keep the relation of the business organization and customer. At this time the Ethiopian bank has different challenges like network interaction, high waiting time to get a service, and the system of the bank also by itself affecting service quality (Kasim, 2018). Customer satisfaction provides a platform for the Bank to enhance relationships with its customers, thus enabling it to achieve its objective for long-term success. Ethiopian banks should enable different frameworks to enhance service quality and solve the above problem. Ethiopian Banks measured the satisfaction level of its customers and device, a mechanism for its improvement a critical task to avoid the dissatisfaction of the customer.

Development Bank of Ethiopia was established in 1909; the bank has been a significant role in promoting the overall economic development of the country. It is a specialized financial institution established to promote the national agenda development of financial and technical support of the priority area of the government. It has two types of financing programs such as project financing and lease financing. According to the report (September 30, 2020) indicated the total loan portfolio of the Bank consisted of 5,573 loans, with a total loan balance of birr 69.39

billion with commitment balances and birr 56.81 billion without commitment balances in project finance.

In terms of loaning units, of the total portfolio mentioned above, birr 38.84 billion (68.38%) without commitment balance is under the direct management of head office, whereas birr 17.96 Billion (31.62%) without commitment balance is under the direct management of districts. Regarding foreign borrowers, based on data obtained from 18 loaning units that submitted their reports, there are 47 loans with a portfolio amount of birr 11.34 Billion (19.97%) without commitment balance are loans extended to foreign borrowers in project financing (Report of September 30, 2020). Under DBE, customer satisfaction measures by service quality dimensions, dimensions such as Reliability, responsiveness, Assurance, and Empathy have been considered.

Therefore, the process was done in the case company used five (5) service quality dimensions, Assurance, Reliability, Responsiveness, Assurance, and Empathy to measure and improve the service quality in DBE.

1.2 STATEMENT OF THE PROBLEM

According to Brei. M, et, al (2018) The sub- Saharan country average, 8.4% loans have become non-performing loan and the bank competition increase by 15%, this competition is very important for economic development.

In the Ethiopian bank's industry, customers have no satisfaction due to measurement at five service quality dimensions and this shows that customers are unhappy with the bank service. In the Commercial bank industry service quality, customer satisfaction, and loyal were originate significantly connected (Abiyot and Gemechu, 2016).

The Ethiopian bank's performance is affected by internal variables and external variables. There is a direct relation to bank profitability. The Ethiopian bank's sector contribution to the economic growth GDP is only 2.7%. This indicates that the financial sector has a very low contribution to the economic Development bank of a country (Tesfay, 2014)

According to the DBE report on external customers satisfaction survey (July 2019- March 2020), the bank-level the overall average results of customers' satisfaction towards reliability,

responsiveness, assurance, and empathy dimension at head office level, district level, and bank-level are shown in table 1.1.

Table 1-1: service quality Dimension

Sr.NO	**DBE UNIT**	**Reliability (%)**	**Responsiveness (%)**	**Assurance (%)**	**Empathy (%)**
1	Head office level	64.1	70	76.5	66.2
2	District level	75	80	82.2	79.3
3	Bank level	73.2	78.5	82.5	77.2

Source: DBE report on external customer's satisfaction survey July 2019- March 2020

In connection with the loan process related to services, the average result at the bank level is 70.9% which can be considered a low result compared to the DBE standard, the DBE standard 95%. It is the average value at head office 62.1% external customer's satisfaction and the average result at the district level is 73.8 %.

The overall external customers' satisfaction at the head office level, district level, and bank-level are 66.1%, 71.3%, and 72.1% respectively. From these values, one can see that the overall average value of customers' satisfaction at the head office level is comparatively low to the value of district level (DBE, report survey July 2019- March 2020).

The Second Quarter Ended report (December 31, 2019), indicate the total loan portfolio of the Bank consisted of 5,384 loans, and the NPLs ratio of the bank as stood at birr 20.29 billion (39.51%). So the NPLs of the bank are very high with compared the National bank of Ethiopia Standard and International bank Standard.

The First Quarter Ended report (September 30, 2020), show that the total loan portfolio of the Bank consisted of 5,573 loans and the NPLs ratio of the bank as of September 30, 2020, is stood at birr 19.61 billion (34.51%), and still the bank NPLs are very high.

The report of External customer satisfaction (June 31, 2020) indicated that the bank's service quality related to loan process services at the bank is 62.1%. So, the head office should improve its loan process related to services by minimizing bureaucratic channels, shortening time to loan process, and making it easily understandable to the customers. The researcher investigated some

customers complaints by observation of the loan process of the bank such as the bank policy, the loan process takes a long time, loan return period, the bank manual and procedure, lack of understanding of the service quality of the management, and lack support the customer in time. So, this problem imitates the idea to use a multiple improvement approach to improve the service quality of the DBE.

Research Questions

The main objective of this study is focused on the development of an integrated and continuous improvement in the service delivery quality of DBE. Therefore, in order to conduct this study, the researcher endeavors to answer the following questions.

- What are the major root causes of the customer complaints about the loan process in DBE?
- What are the most significant Service quality dimensions in DBE?
- How could the service quality of DBE be improved?

1.3 . Objective

1.3.1. General objective

The general objective of this research is to investigate the main root cause of customer dissatisfaction and the factors of service quality to enhance Service excellence and to achieve improved of customer satisfaction in the case company.

1.3.2. Specific Objective

To address the main objective of this research study and basic research questions, the following specific objectives will be executed in detail through the whole work.

- To identify the root causes in the loan process by study the current loan process in the case company
- To exemplify systematic brightness of the inefficiency in the loan processes and identify the main customer needs in the case company.
- To develop an integrated and continuous service quality improvement model to attain high level of customer satisfaction in DBE.

1.4. SCOPE OF THE STUDY

This study comprehends only one policy financial institution, namely the Development Bank of Ethiopia (DBE). The scope excludes the analysis of the internal customer's satisfaction level and solely focuses on different types of external customers, including project and lease clients of the bank. For this study, the data is collected from all customers received loans from (July 01, 2019 G.C up to July 31, 2020, G.C only.

1.5. LIMITATION

This study is majorly based on the five service quality dimensions and the satisfaction level of customers is also measured on these dimensions. Because of this, the measurement criteria may not measure exhaustively clients' satisfaction at all. In addition to this, the current situation of the country is difficult to travel in customer's place and gather genuine data in person because of the pandemic outbreak. The data collections were conducted by telephone interview, email, Telegram, and addressing in person. Mekele District and Nekemete District both get fewer responses to their customers during current Security conditions.

1.6. SIGNIFICANCE

This study ultimately aims to contribute knowledge relating to how service quality influences customer satisfaction and how integrating QFD and multi-criteria decision-making techniques applied by the organization can achieve a high level of client satisfaction. Based on this perspective, this study is designed to provide indispensable benefits to the following parties.

- This study may help policymakers and academic theorists to understand country-specific challenges as well as formulate future policy options in relation to QFD and multi-criteria decision-making techniques to achieve a high level of client satisfaction.
- This study may contribute knowledge for researchers who want to undertake different studies about the QFD and multi-criteria decision-making techniques.
- Furthermore, it may also provide further insights for other Banks about the management of service qualities through QFD and multi-criteria decision-making techniques.
- Finally, this study may advance the knowledge of society towards QFD and multi-criteria decision-making techniques as a means to drive a high level of client satisfaction and quality service in organizations

CHAPTER TWO

2. LITERATURE REVIEW

2.1. THE CONCEPT OF SERVICE

According to Fonseca and Pinto (2014), the Concept of service is high complete and differentiated, it has changed in the time period depending on the knowledge area when the term service is used. Service is altered to depend on the use of a person, with considering an economic entity. For investigating and choose the best way in the Current condition market, the organization is important of customer-oriented business thinking and service quality management approaches help to manage the business Customer satisfaction facilitates. the main instrument to measure how services and products commentating the company within the customer requirement (Tazreen, 2012). It is a fulfillment of citizens' hope and most important in the service organization (Moradi and Raissi, 2015). The technology revolution has needed the improvement of new and high effective delivery systems and processing ways as well as highly innovative services in the bank industry, information, and communication technology has the main factor of the bank service sector (Rajanna, 2015).

2.2. SERVICE QUALITY

According to Zalatar (2012), Service quality is the first measurement of any service sector, it is not only the benefit of the organization, but service quality is also easily a requirement for service for the survival of the organization, for any service institution there are five dimensions to calculate service quality, thus are reliability, responsiveness, empathy, assurance, and tangible). Bank services are necessary for a human being activity, the bank activity updating every time with the effect of technology and customer expectation. Therefore, technology is the main tools for the derived finance industry (Vetrivel, et al., 2020). The bank has expected a variety of customers, it should mad a good way to save the customer and to attract a new customer (Ramu and Anbalagan, 2017). Service quality is the best way to keep the existing customers and to attract new customers, reduce costs, increase company image, make positive word-of-mouth references, and increase the profit of the company (Nachimuthu & Muthukrishnaveni, 2019)

In order to Mengistu,et al. (2017), indicated that service quality is determining customer satisfaction, the author’s uses the SERVQUAL model for improving the service quality. This

model measure the customer satisfaction level depending on the five dimension tangibility, responsiveness, reliability; accuracy, and empathy, good service delivery is very important for a company. The author's shows that, reliability and tangibility, a positive variance for customer satisfaction of the bank. It is a very effective tool for identifying the customer wants and designing the company's technical requirements (Moradi and Raissi, 2015). An increase in the service quality of the bank leads to an increase in the level of customer satisfaction, in the bank sector; all service quality dimensions have a significant influence on both service quality and customer satisfaction (Abdissa, 2019).

In the bank industry, Service quality, customer satisfaction, and loyal were originated significantly connected (Abiyot and Gemechu, 2016). Two types of service quality factors have in bank sectors. Thus are human factors and non-human factors. Human factors have more influence in the bank, especially, reliability and responsiveness more affected customer satisfaction (Hennayak, 2019). Service quality is the main factor affecting the bank sectors on customer satisfaction. Service quality has direct relationships with customer satisfaction. Especially, reliability and customer satisfaction have more interaction (Kasim, 2018).

In today's highly competitive environment, organizations, and companies need an extra edge to enhance and build upon their relationships with customers. Many clients find that high-quality customer service can make the difference in winning and retaining customers or losing them. By determining which factors produce the highest perceived value by customers, customer satisfaction, and service quality study very important for keeping an existing customer and to attract the new customer.

2.3. CUSTOMER SATISFACTION

Mengistu, et al (2017), customer satisfaction is Indicated the performance of the company to meet the customer expectation and how to product and service delivered the company, by measuring the customer satisfaction level depends on the five dimensions tangibility, responsiveness, reliability; accuracy, and empathy, good service delivery is very important for a company. Today everything is changing rapidly and the bank needs more time to understand customer expectations, customer satisfaction, and service quality have high inter-related in the bank industry, higher service quality has generated more customer satisfaction in the bank

service sector (Rajanna,2015). Customer satisfaction is the basic human experience and reflects the organization's business involvement, and a high level of customer satisfaction indicated high customer retention, customer loyalty, and product repurchase of the product of the company (Anjum, 2017). The five service quality dimensions tangibility, responsiveness, reliability; accuracy, and empathy strongly affect customer satisfaction in both public and private sector banks, customer satisfaction is used to promote improved performance (Nachimuthu & Muthukrishnaveni,2019).

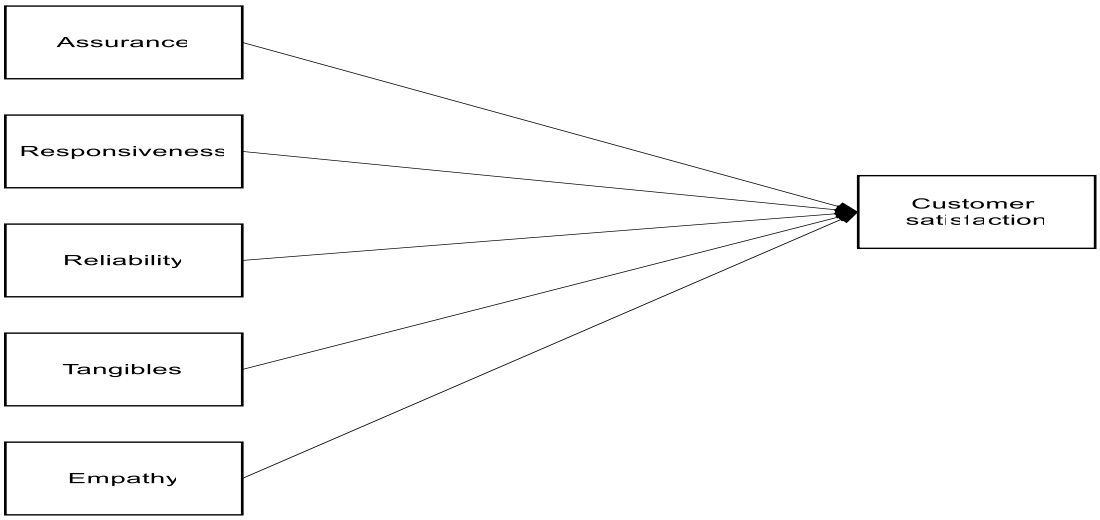


Figure 2-1: Relationship between Service Quality Dimensions and Customer Satisfaction (ERESIMADU, et al, 2020)

Customer satisfaction facilitates the measure of how to service, and products provided by the company meet customer expectations. The satisfying customer has the main role in the business area and is the driver of the loyal customer. The satisfying customer has a promotion without offering a cost. The tangibility and reliability dimensions are the main customer satisfaction parameters in the bank service sectors (Wendmu, 2020). Customer satisfaction is the basic option, which supports running the business and improving the company's profit, and keeping customer loyalty. It is the main tool to create the system of the external relations and the company and support the company’s competitiveness (Abdissa, 2019). In the bank business, customer satisfaction is the first principle used to evaluate the bank’s relationship with the external market (Hennayak, 2017). Customer satisfaction is helping to support the interconnecting the follow of the purchase and user with per purchase, thus are attitude alter, repurchase, and customer loyalty (Abiyot and Gemechu, 2016). (Abiyot and Gemechu, 2016)

identified different disconfirmation thus disconfirmation is classified into three types like Positive disconfirmation, Negative disconfirmation, and Zero disconfirmation.

In general, customer satisfaction facilitates indicated that the measure of how service and products provided by company meet customer expectation. So, it is main performance indicator in business terms. In other word customer satisfaction and service quality have a straight relationship.

2.4. Customer Loyalty

Customer loyalty means what a customer currently thinks or does. The real meaning of loyalty is a set of attitudes; loyalty can be developed by using a different approach (Abiyot and Gemechu, 2016). A satisfied customer has a good relationship with the organization and created customer delight. These delight customers indicate loyally (Kasim, 2018).

In other words, customer loyalty is one criterion of customer behavior through the process of the usage of products and services. Loyalty is the best strategy to increase customer retention and reduce the marketing cost of the organization (Ahmed, 2020). Customer satisfaction and service quality have great importance to developing customer loyalty in the bank industry (Abdissa, (2019).

2.5. Relationship between service quality and customer satisfaction

The relation of service quality and customer satisfaction received substantial educational consideration in the previous year (Hennayak, 2017). Customer satisfaction and service quality are the main factors in the current globalization. The current globalization basically determined by its competitiveness (Abdissa, (2019). An increase in the service quality of the bank leads to an increase in the level of customer satisfaction, in the bank sector; all service quality dimensions have a significant influence on both service quality and customer satisfaction (Abdissa, 2019). The relationship between service qualities with customer satisfaction indicated a positive relation in the bank sectors (Abiyot and Gemechu. 2016). Customer satisfaction depends on the customer requirement of service quality. Service quality is extremely important in the service organization for competition (Kasim, 2018).

In the bank industry service quality, customer satisfaction, and customer loyalty have a relationship. The first relationships focus on customer satisfaction and customer loyalty.

Customer satisfaction affects customer loyalty when customer satisfaction is the result of customer perception where the value equal received, customer loyalty value is perceived as equal service quality comparatively (Abiyot and Gemechu, 2016). The conceptual model of customer satisfaction, service quality and customer loyalty

2.6. Service quality and process enhancement

Growth the quality of product/service is the main method to save the customer and to attract the new customer of the company when increasing the company service quality, it makes a difference to other comparison companies, the measurement of service quality by different approaches the main role to increase the level of service quality (Dinçer, et al, 2019). Service quality is more essential in the bank service sector, must improve the service quality stage day to day to save themselves benefit from the competition (Maswadeh, 2015). Service quality measurement has many important to improve the service quality level of the company, measure the level of the service quality help to identify the challenge and evaluate the customer satisfaction (Abdissa, 2019).

Continuous improvement is one of the strategic methods to a competent condition of the organization to survive in the market, the solution for continuous improvement of the organization evaluate the service quality (Ijadi Maghsoodia, et al, 2019). Therefor service quality improvement is important with in the service industry to survival a global market.

2.7. Tools of Customer Orientation Approach

Customer orientation is important to evaluate customer perception and service quality of the company developed on the consequence of employee's (Shams, 2015). Many researchers indicate that the voice of the customer is very important for the service sector to improve service quality and change the service delivery method as using a guide by receiving the customer comment as well as to complain (Coleman, 2015; Mengistu, et al, 2017, Ramu and Anbalagan, 2017). The bank sector in Ethiopia has started a market-oriented system around the 90s, there is some change the bank sector like increasing the capital base, increasing the number of banks, increasing the awareness of the bank system the population but less developed compared to another African counter (Habtamu, 2013). The measurement of service quality is significant to help the companies more competency and high relevant specially in the bank industry, it is important keep the existing customer and to attract the new customer to the company (Dinçer,et

al, 2019)..

The customer Suggestion is very important for design the operational manual and procedure. Currently, there are many customer oriented approaches to design the best service quality of the organization such as: SERVQUAL Model, Kano Model and Quality Function Development (QFD).

2.7.1. SERVQUAL Model

The SERVQUAL model has measured the level of service quality, it was developed by Bitner and Zeithaml (1996), this model indicated different service quality dimensions namely Tangibles, Reliability, Responsiveness, Empathy, and Assurance (Akram and Jinnah, 2009). SERVQUAL is a widespread and reliable method for measurement of the service quality of the indifferent service industry, the main function of this approach is to benchmark the service performance of the organization with respect to customer requirements (Dinçer, et al, 2019). It is used to evaluate the gap between the customer satisfaction level and service producer (Alam & Mondal, 2018). SERVQUAL model is a common instrument in the world to measure the level of service quality in the bank industry and identify the gap between the customer and the management (Maswadeh, 2015). SERVQUAL model is the first choice to measure service quality to improve exactly to measure the level of service quality (Abdissa, 2019). It is the first chosen and influential service quality measurement in the world, still helping to improve service quality in different service provider industries (Ijadi Maghsoodia, et al, 2019). SERVQUAL be considered in both public and private banking sector which supported to increase the service quality and also increase overall customer satisfaction (Nachimuthu & Muthukrishnaveni, 2019).

The SERVQUAL model use improving the service quality, This model measure the customer satisfaction level depending on the five dimension tangibility, responsiveness, reliability; accuracy, and empathy, good service delivery is very important for a company (Mengistu, et al,2017). Reliability and tangibility have a positive variance for customer satisfaction of the bank. Quality, satisfaction, and loyalty have interlinkages in the bank industry, examines this purpose SERVQUAL model is important for test interlink of the bank. Oliveira de Silva (2010), Quality improvements in the bank services medium and large corporate client have to try to improve by SERVQUAL model. The model uses six dimensions interpreting the joint of a large

company. The researches indicated that service quality positive relation with customer loyalty but it is not have always a positive important impact on customer perception, for data analysis use Servqual to measure checking the five dimensions and service performance measured using Servperf Scale. Both the Servqual and Servperf Scale Substitute approach (Vera and Trujillo, 2013). According to Parasuraman et al. (1988) SERVQUAL model, the includes five service quality dimensions.

Tangibles: it is the appearance of physical facilities, equipment, personnel and communication material (Abdissa, 2019). According to Gupta & R. Sriavastava (2012) Service industries tangibility dimension is very use full in SERVQUAL model for comparison between customer expectation and customer perceptions in service industry.

Reliability: the reliability dimension of the service quality refers the service sectors must be process the product dependability and accurately, this stats reflects the service organization strong part (Bonar & Sacchi, 2011). Reliability is the main dimension to measure the customer perceptions of the service quality (Abdissa, 2019).

Responsiveness: it is the willingness to help customer and addresses to prompt service**,** thus dimension considering the customer requests, questions, and problems, the organization responses the value of time the customer and give attention to customer (DM Sheaba & Sekata Kenea, 2017)

Assurance: It is the ability of the company employees to inspire belief and confidence in the company through their awareness and consideration. It is a merge of items designed initially to evaluate competence, courtesy, credibility, and security (Abiyot and Gemechu, 2016).

Empathy: It is one of the service quality dimension, as a modified concentrate given to customer and it compose items to design initially evaluate, communication, and considering the customer, given individualized attention the secure suggestions its customers (Abiyot and Gemechu, 2016).

Many researchers indicated the effect of the dimensions of service quality directly relationship to the customer satisfaction and customer loyalty, by measuring the service quality of the company interpreted the current states of the organization (Lee & Moghavvemi, 2015).

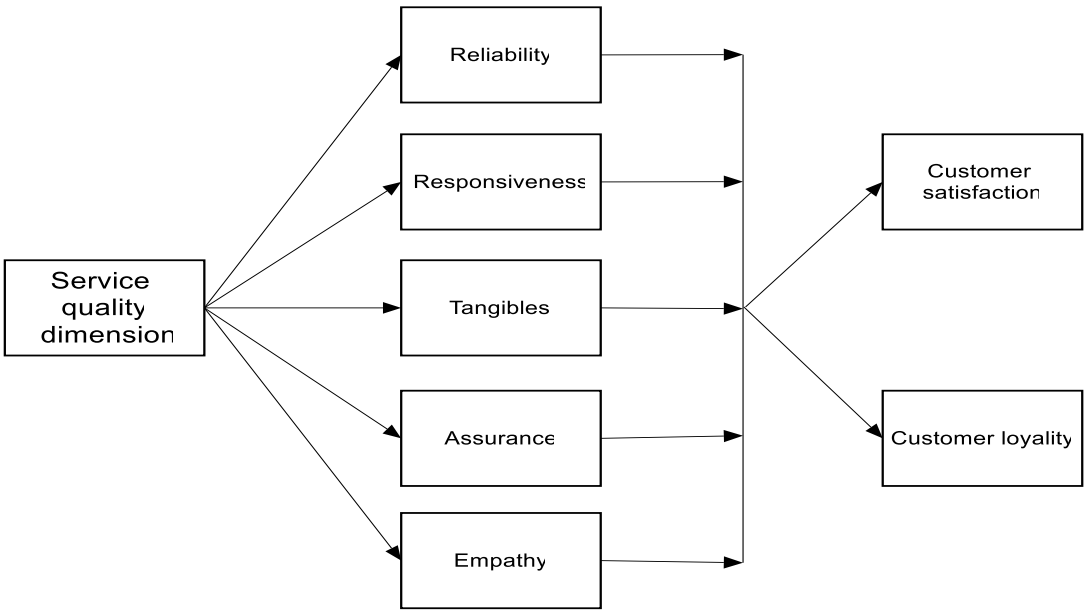


Figure 2-2: impact of service quality on customer loyalty and customer satisfaction (ahmed. b et al, 2020).

2.7.2. Kano Model

Kano model is a theory of product improvement and customer satisfaction and it was developed in 1984 by Noriaki Kano, This model is used for classifying and ordering customer requirements and helps as a guideline in the manufacturing for product development and provides improved customer satisfaction (Rotar &Kozar, 2017). Kano model is supportive the integrating the VOC into the subsequent process of for improvement of the product, the model considering different attribute, attribute considered a must attribute the product is indicated absolute dissatisfaction and the customer satisfaction is decrease, the attribute considering One-dimensional its overall supports increase the customer satisfaction, An attribute is considering an attractive attribute it is indicated the customer satisfaction is very high, An attribute considering Indifferent attribute does not affect the customer satisfaction and the last attribute is Reverse attribute, it indicated the presence causes dissatisfaction and vice versa, the integration of VOC and the subsequent process is used for identified Keep must-be attributes, one-dimensional and Attractive Attributes, Indifferent attributes, and Revers Attributes (Ullah & Tamaki, 2011)

The integrating Kano model into other customer satisfaction measurement model and tool help to develop product and determine the market strategies, Kano model contains the combination of the two-axis graph, the X-axis, and the Y-axis, where the X-axis indicated the customer need was met and the Y-axis indicated the level of customer response to the product (Rotar &Kozar,

2017).

According to Mote et al (2016) Kano model is one of the satisfaction models to predicate the product/service quality feature, using a nonlinear way to measure customers insight, it is used to categorize customer delight and customer disgust when attribute, the following figure indicated the requirement of the model, all categories of attributes can be observed on the graph. Kano model is very important for stating the customer satisfaction, by constructing a Kano model used to analyze the whole factors such as the strong drivers, or predicator, repeat purchase using many regression analyses (Rotar &Kozar, 2017).

The original Kano model has two types, non-linear categories such as attractive and must-be, on the other direction indicated that the linearity of the relationship between under the fulfillment requirement and dissatisfaction must be described by one-dimensional requirement (Madzík et, al, 2018). The customer easily understands the category of the product such as basic, good, excellent products by observing the Kano model, sometimes this model is complex because there is a different understanding from one location to another and the is the difference expect one culture to another, the second important factor is time, during the time variation the customer requirement of a product/service changed (Rotar &Kozar, 2017).

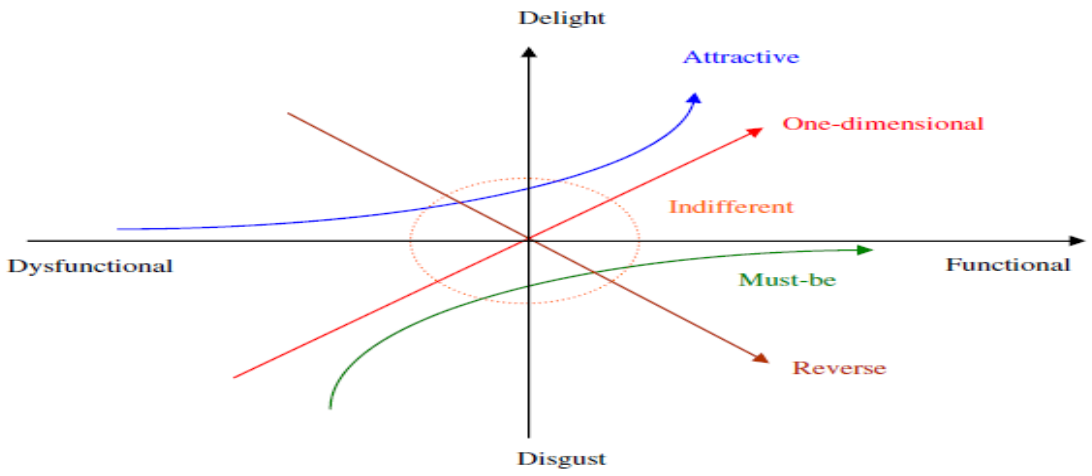


Figure 2-3: Kano model (source: Kano model application in new service development and customer satisfaction, mote et al, 2016)

1. **Must-be (M):** This attributes category contains the first criteria of the product**,** then customer become unhappy or dissatisfaction when the product quality is very low. These attribute show customer satisfaction decrease, in generally these attribute category is

called basic requirements (Rotar &Kozar, 2017).

2. **One-Dimensional (O):** In this category the customer satisfaction is show linear function in the performance of the product which means increase the satisfaction of customer that means decrease the level of customer dissatisfaction; its overall supports increase the customer satisfaction, these categories gives more loyalty of customer (Zacarias, 2016)..
3. **Attractive (A):** An attribute category considering Indifferent attribute do not affected the customer satisfaction, this category more attractive by customer, when absence attractive attribute there is no any harm the customer satisfaction, it is called delighters (Terzakis et al., 2012).
4. **Reverse (R):** In this attribute category must be absence from the attribute there is harmful in customer satisfaction, these are show that the occurred dissatisfaction when present and satisfaction when absent (Terzakis et al., 2012).
5. **Indifferent (I):** in this category customer do not consider there is nothing if present or absent, the customer satisfaction is a neutral (Rotar &Kozar, 2017).
6. **Questionable (Q):** in this final result indicated the question is wrong or answer is illogical. Questionable attribute is not a real type of Kano model category, it is act an item of the questionnaire but it help evaluated the Kano model table (Zacarias, 2016).

Depending on the organization function used to a Kano model in different methods, this model is very important to attaining customer loyalty and to attract a new customer needs to purchase the product (Rotar &Kozar, 2017). Stueber & Wurth, (2016) states that the Kano model is simple theoretically than in actual work conditions, depending on the Kano model investigation the organization can identify the major attribute.

According to Mote et al, (2016) explain the Kano model methodology, focus on the group interviews accepted and insight by using qualitative survey, this survey was used to collate and easily understand, simply used to formulate the Kano questionnaire, this questionnaire was used for contracted through pair of customer need of the two alternative questions (functional and dysfunctional), The possible answer of the Kano questioners are the following: I like it, It must be there, neutral, I can live with it and I dislike.

Figure 2-4: Kano methodology (source: Kano model application in new service development and customer satisfaction by mote et al., 2016).

Borgianni (2018), states that the Kano model indicated more reliable information about customer satisfaction or dissatisfaction by using qualitative portraying, these models also measure the variations of Kano –related construct fore predicate the future customer requirement of the company product/service, this possible prediction more important and have the main role for design task swiveling on VOC-based approach. Kano model is the most useful method to identify the customer requirement product/service element and to differentiate the variation between group customers; The Evolution table used to combine the two responses (functional and dysfunctional) the combination of the two answers functional in its rows and dysfunctional in columns to get to the Kano categories mention above, the last classification criterion of the Kano model known as "frequencies" for a single answer categorization (Gailevičiūtė, 2011).

Table 2-1: Kano evolution table (source: kano model application in new service development and customer satisfaction by mote et al., 2016).

Customer Requirements		**Dysfunctional (Negative Question)**				
		1.like	**2.Must-be**	**3.Neutral**	**4.Like with**	**Dislike**
Functional (Positive Question)	**1. like**	**Q**	**A**	**A**	**A**	**O**
	2.Must-be	**R**	**I**	**I**	**I**	**M**
	3.Neutral	**R**	**I**	**I**	**I**	**M**
	4.Like with	**R**	**I**	**I**	**I**	**M**
	5.dislike	**R**	**R**	**R**	**R**	**Q**

A: Attractive **O:** One-dimensional

M: Must-be **Q:** Questionable

R: Reverse **I:** Indifferent

Gailevičiūtė (2011) indicated that the combination of the question in the Kano evaluation table produce category A. this attribute show that edge grip is an attractive customer need, it is a very important situation. Category I show that the customer is indifferent in this product type; she/he

does not consider the product feature and missing the product feature. Category Q is a questionable result, this category indicates the answer is always dos, not access. Category R indicates that the product feature is not only wanted by the customer but the customer expects the reverse. For analysis of the above, the final results of approach results between categories can be used for marketing segmentation, and thus the variation of product/service depends on deferent market segmentation, final the result of the overall integrations given this formula: M>O>A>I (Gailevičiūtė, 2011, Putra &Priyanto,2020).

According to Putra & Priyanto (2020), stated the satisfaction and dissatisfaction coefficients scores reflected, the user satisfaction coefficient for calculating the average influence of user satisfaction. Depending on the Pair of user satisfaction and user dissatisfaction coefficient making the feature can be plotted on a two on a two-dimensional graph, the formula help to calculate user satisfaction and user dissatisfaction is as follows(Gailevičiūtė, 2011).

$$\text{User satisfaction} = \frac{A+O}{A+O+M+I}$$

$$\text{User dissatisfaction} = -\frac{O+M}{A+O+M+I}$$

In this case, the minus sign set in the formula to indicate negative value has an impact on customer satisfaction if the product quality or not fulfilled the customer requirement when satisfaction has a positive value the range from zero to one; if the value approach to one, the influence of customer satisfaction more, when the positive value closer to zero, there is a little impact customer satisfaction. If the value is closer to a negative one, it indicated a very strong customer dissatisfaction, when the approach to zero, it indicated certain property does not affect customer satisfaction but have a high level of dissatisfaction.

2.7.3. Quality Function Deployment (QFD)

Quality functional deployment was developed in Japan around 1996s used as translated the customer needs into the technical product design in the manufacturing sector for time-saving, decrease cost of startup and improve quality of product, it is also very important in the service industry for improving the service quality (Erdil & Arani, 2018). QFD is the best instrument with descriptive information of customer requirements and expert assistance for examining customers' wants and translating them into the design of a required product for production (Apornak, 2017). As indicated (Na, et al, 2012), QFD is an established composite matrix (HOQ). This matrix is

used as a transistor to transfer customer requirements to service conditions. QFD is indicated more customer requirement in service development and show a new direction for service quality improvement. Based on QFD is the customer requirement transfer to the design process in a systematic way within a supply chain, helps in the service industry for more customer attraction, and to help to create the best customer satisfaction (Chandra and Rashed, 2007).

According to Baran & Yıldız, (2015), Currently, QFD is a common method that helped to develop the design of product/service with respect the customer need, the major factor for using QFD is a strategy that gives an advantage to customer satisfaction, specifically at the decision-making process and enabling using the management performance capably. The measurement of customer satisfaction is very important in the company for identifying the satisfaction of customers. QFD is the main instrument to measure customer satisfaction for descriptive information and expert guidance for analysis the customer requirement (Apornak, A2017). The main application of the QFD is collecting the voice of the customer to design a new product/service to make specifications for re-design considering the customer's need (Erdil & Arani, 2018).

QFD is used as a planning frame of achieving customer wants and it is a mostly helped instrument examination of service quality improvement, QFD leads a combination of seven matrices with WHATS and HOWs is recognized. The integration of the matrices looks like the following figure (Terzakis et al., 2012.).

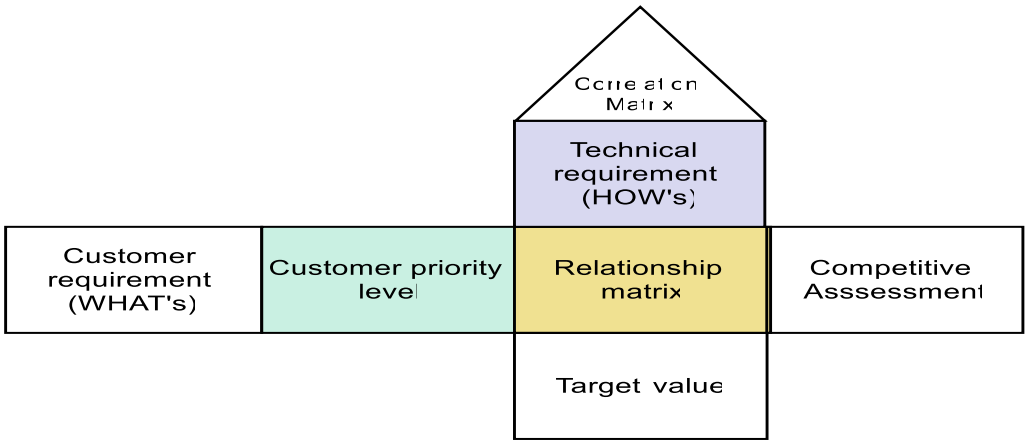


Figure 2-5: House of quality (translating the service quality gaps into strategy formulation, terzakis et al., 2012)

The QFD approach first improves house quality in joining the customer voice with definite product or service, technical requirement, the process of planning control, and manufacturing operation (Muda & Mat Roji, 2015). QFD implementation contains a set differently of the matrix. The first one is known as the House of Quality, House of Quality is used to support the implementation of QFD but does not helpfully implement HOQ help to translate the customer requirement into a technical design specification. Generally, HOQ is the main parts of QFD implementation as it controls the voice of the customer and indicated the right pathway of constructing QFD (Erdil & Arani, 2018). QFD has the ability to indicate the gaps which purpose as a factor in related to service quality and to register specific action/measures to develop service quality (Terzakis et al., 2012). QFD is a tool that collects information about the customer demands and contains the expected features in the final product (Apornak, A2017).

Mazur (2014) states that QFD is a tool that can be used to new and existing products/services to improve quality; it is the best method to obtain customer satisfaction. The implementation of QFD to found has much operative communication between purpose, it also the implementation need an effective team. QFD is a process that helps to make work through between the managerial and the team at working the project for easily understanding the workflow of a new product/service or a new version of a product (Apornak, A2017). QFD application has three major goals to such as to prioritize customer wants, and which was stated or unstated, to translate the customer demand into operating characteristics, and to afford good quality product/service supply all of the department, it manly attention to customer satisfaction. (Baran & Yıldız, 2015).

Generally, QFD is a common tool in service and product quality improvement that helped to develop the design of product/service with respect the customer need and used to new and existing products/services to improve quality.

2.7.4. Multiple Criteria Decision-Making Method

Multiple criteria decisions –making method is used to select the best probable different way and to avoid compline in the choice, MCDM is a highly complex method, it has high range dependent and independent factors for identify the gap and considering the factors, it is used to combine the MCDM technics and technology (Sivakumar et, al,2020). MCDM approach aims to choose the best option from a series of conflicts, this is the most common approach in a

statistical method, there are many technics in MCDM: ANP, AHP, fuzzy TOPSIS, etc (Büyüközkan et, al 2017,). MCDM approaches are the most flexible method to providing the integration of quantitative and qualitative characteristics; this method is considering the relationship between the criteria and weighting the priorities for the best possible decision by considering the whole involved criterion (Pineda et, al, 2017). In another word, multiple criteria decision-making are a type of operational study, the main function to find the best solution in a complex problem with including variance indicator, war objective (Kumar et al, 2017). From the above technics, AHP is the most popular and common MCDM process in the service industry.

2.7.4.1 Analytical Hierarchy Process - AHP

The analytical hierarchy process is one of the methods to support a decision-making process; it was developed in 1970 by Thomas Saaty (Bhola et al., 2017). It is fundamentally focused on the pairwise comparison-based method, the method formulates the problem as a hierarchy in different levels (Bhole & Deshmukh, 2018). AHP is the most common Multi-Criteria Decision Making (MCDM) system used to support operational management; it is used in both manufacturing and non-manufacturing industry (Sarjono et al, 2020). AHP is a useful tool that supports preparing a decision with different decision criteria and several objectives, AHP), Determines the order of options from multiple options (Jain et al, 2014). The structured approach obtainable by the AHP method gives an equal decision-making process for Individual contribute, it is enabled with a critical link of developing trust and true contribution (Singh & Grover, 2013). According to Singh & Grover (2013), Analytical Hierarchy Process is applicable in a bank, this process has five phases.

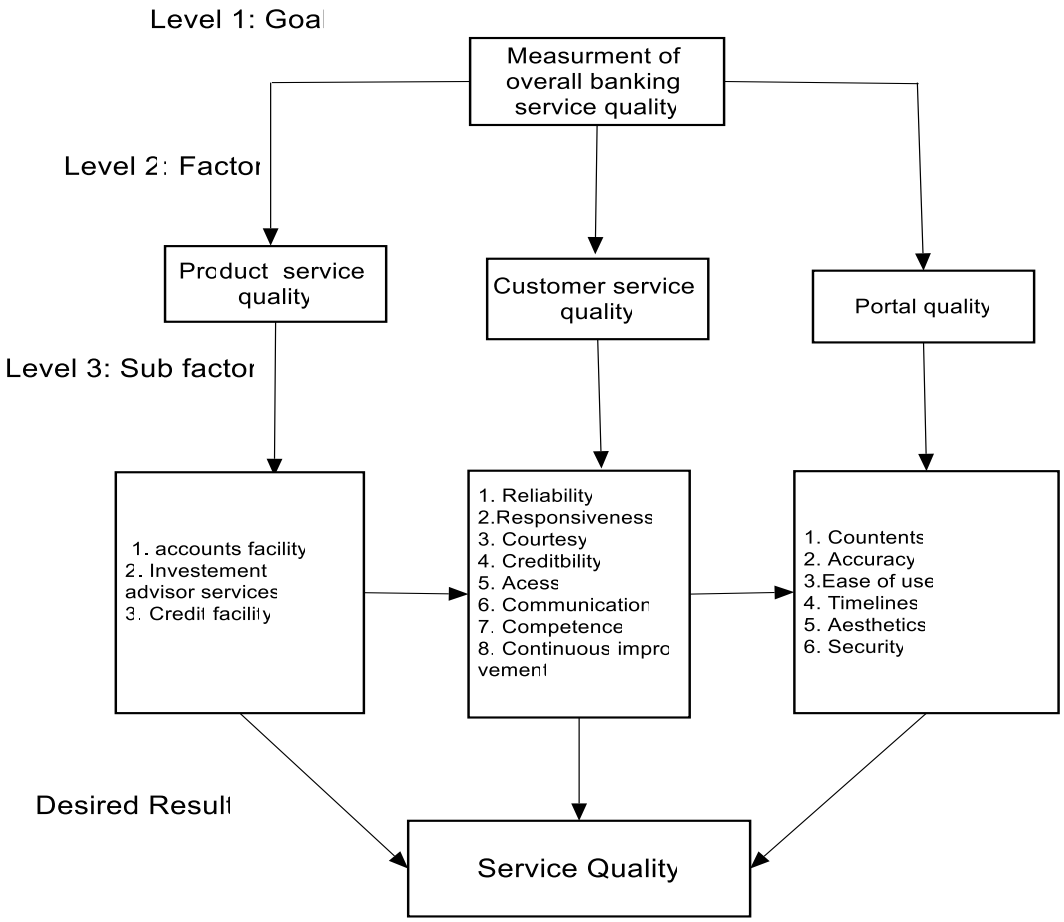


Figure 2-6: decision hierarchy for banking service quality (source: singh & grover, 2013

Table 2-2: Satty's nine point scale (source: singh & grover, 2013)

Intensity of Importance	Definition	Explanations
1	Equal importance	Two activities contribute equally to the objective
3	Weak importance of one over other	Experience and judgment slightly favor one activity over another
5	Essential or strong important	Experience and judgment strongly favor one activity over another
7	Demonstrated importance	An activity is favored very strongly over another; its dominance demonstrated in practice
9	Absolute importance	The evidence favoring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgments	When compromise is needed

Determining the Normalized Weights, determined the priority weight from the main factor and sub factor by employing pairs –wise contrasts and Saaty's nine-point scale, the result of priority weight indicated useful of the individual factor and sub factor, For checking the consistency of

the decision making judgment calculate Consistency Index (CI) using the following formula (Sarjono et al, 2020.).Determining the Normalized Weights, determined the priority weight from the main factor and sub factor by employing pairs –wise contrasts and Saaty's nine-point scale, the result of priority weight indicated useful of the individual factor and sub factor, For checking the consistency of the decision making judgment calculate Consistency Index (CI) using the following formula (Sarjono et al, 2020.).

$$CI = \frac{h\ max\_n}{n}$$ where h_{max} = the average of Consistency vector

n= number of element

Then calculate the consistency ratio CR=CI/RI where RI=Index Random Consistency, the value of RI show below table.

Table 2-3: List of index random consistency (source: sarjono et al, 2020)

Size of matrix (n)	1	2	3	4	5	6	7	8	9	10
Random Consistency(IR)	0.00	0.00	0.58	0.9	1.12	1.24	1.32	1.41	1.46	1.49

If the value of CR is less or the same as 0.1 is acceptable in practice and the rankings are consistent (Sarjono et al, 2020).

2.7.4.2 Fuzzy TOPSIS

The TOPSIS technique was developed by Hwang and Yoon (1981), it is used to majorly apply in a few decades, this method doing subjective decision making by setting the ranking on the similarity in different options(Rashidi &Cullinane, 2018). The Fuzzy TOPSIS (Technique for order of preference by similarity to ideal Solution) is provided a rank of different suppliers for choosing the best or effective supplier for an organization based on weight standards (Mohammad Javad, et al, 2020). The fuzzy TOPSIS method was used for ranking the company strategies due to delivery channel management bases, so it indicated the effective distribution strategy of the organization (Paksoy, et al, 2012). This method used to evaluated and improve the service quality of hospitals within various alternatives to give rank a similarity for the same reason that human judgments are usefully for subjective decisions (Büyüközkan & Çifçi, 2012).

2.7.4.3 Analytical Network Process (ANP)

The Analytical network process method is the main MCDM tool to evaluation new service

concepts; it can accommodate interdependency among the decision attribute and this approach measure the new service concepts in term of strategy, technology, market, implementation, and operation(Lee, et al, 2010). This approach improve service quality and evaluated multiple-criteria and sub-criteria electronic service quality with considering interdependency perspective (Ho Hsu et, al, 2012). The analytical network process (ANP) approach is used to evaluate of interdependence relationship from the criteria and attributes of the house of quality in a different way of the product-service (Fargnoli & Haber, 2018).

2.7.4.4 Multi-Attribute Utility Theory (MAUT)

MAUT was developed by Churchman in 1957, this method was developed by considering quasi-additive and multi-linear utility functions, it is the method a basically an operating method (Bhole & Deshmukh, 2018). Multi-attribute utility theory was used for identifying the most comfortable dispatching rule for dynamic job shop conditions (Pergher, Teixeira de Almeida, 2018). MAUT is the best method to analyze of risks and benefits associated with a subjective decision–making and for enhancing effectively the service (Zhu, 2016).

2.8. The Integration of Customer Oriented Tools for Improving Service Quality

In the global world market competition is increasing, Industries should apply continuous development to maintain and improve their competitive edge, the integration of SERVQUAL, Kano method, and QFD is very important for improving the service quality (Rahmana et al., 2014.). The priority area of SERVQUAL and Kano model is the most useful method to improve service quality (SQ) to consider SQ dimension was located to be facilities/services (Terzakis et al., 2012.). The integration between QFD and Kano model was used for analyzing the customer satisfaction level. It indicated that, the integration is more important for design service quality than QFD. It strongly answers the customer satisfaction level (Chandra and Rashed, 2007), and Appling QFD helps for transforming Qualitative customer requirements to qualitative parameters, to deploy quality service, It is a very effective tool for identifying the customer wants and to design the company technical requirement (Moradi and Raissi, 2015). QFD is a basic instrument with evocative information and used for analyzing the customers' needs and

translating to the main requirement of the specification for production, Kano model used for categories of customer demand, the integration QFD AND Kano are the most important things for identification customer demands (Apornak, A. 2017).

On the other side, the integration SERVQUAL- Kano model into QFD rated the most useful framework of the WHATs, identifying the gap and determining the main customer requirement of the service quality, used to support for construction SWOT matrix, this is the main strategy for service to generated feeding HOWS in the QFD (Terzakis et al., 2012.). Rahmana et al. (2014) state incorporated SERVQUAL- Kano model into QFD, this integration is important for developing service quality of simulation-based training implementing project management and proposing the basic integrated approach that is sustainable in manufacturing/non-manufacturing. The conceptual frame of the integration of the SERVQUAL-Kano model with QFD shows that in the figures 2.8 and 2.9. These two figures help too easily to analyze and understand the integration above models.

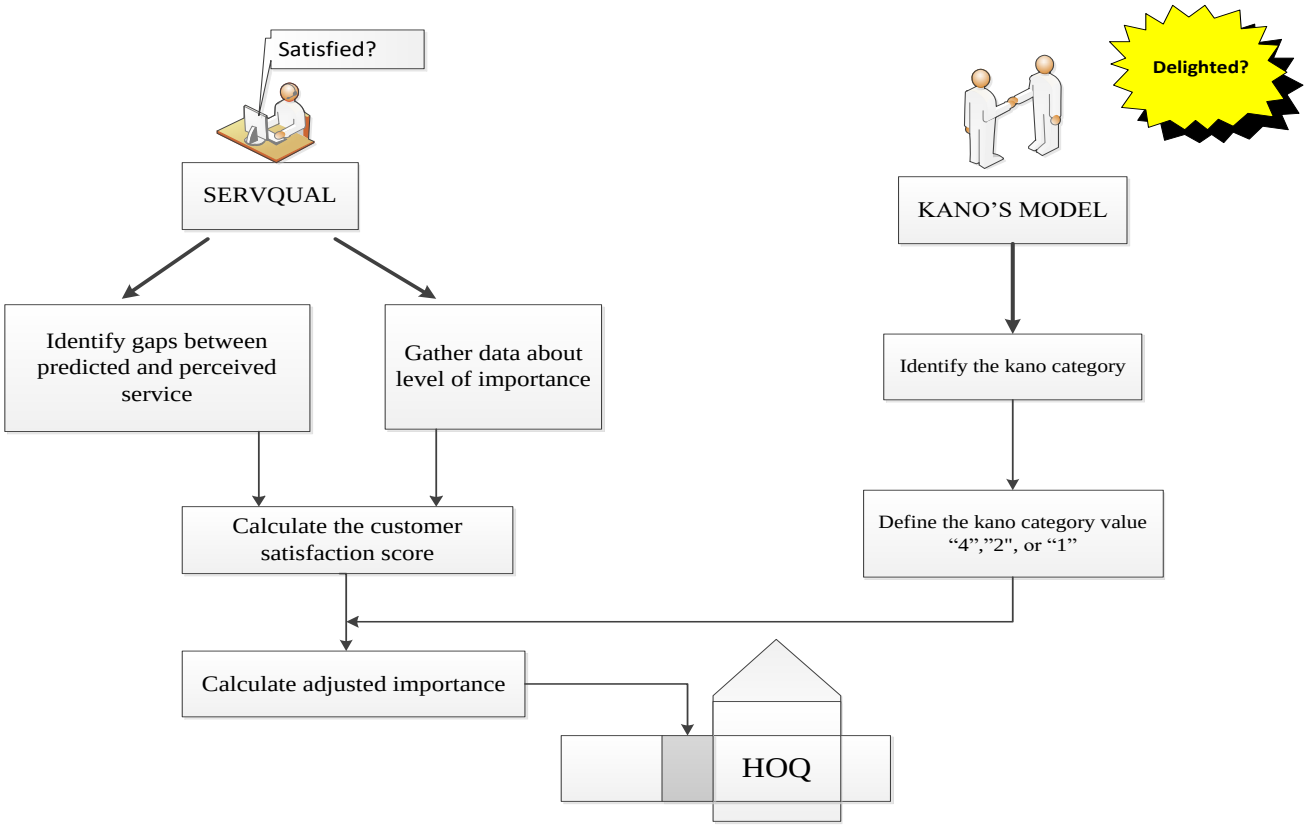


Figure 2-7: The incorporation of servqual-kano into qfd (source: (terzakis et al., 2012

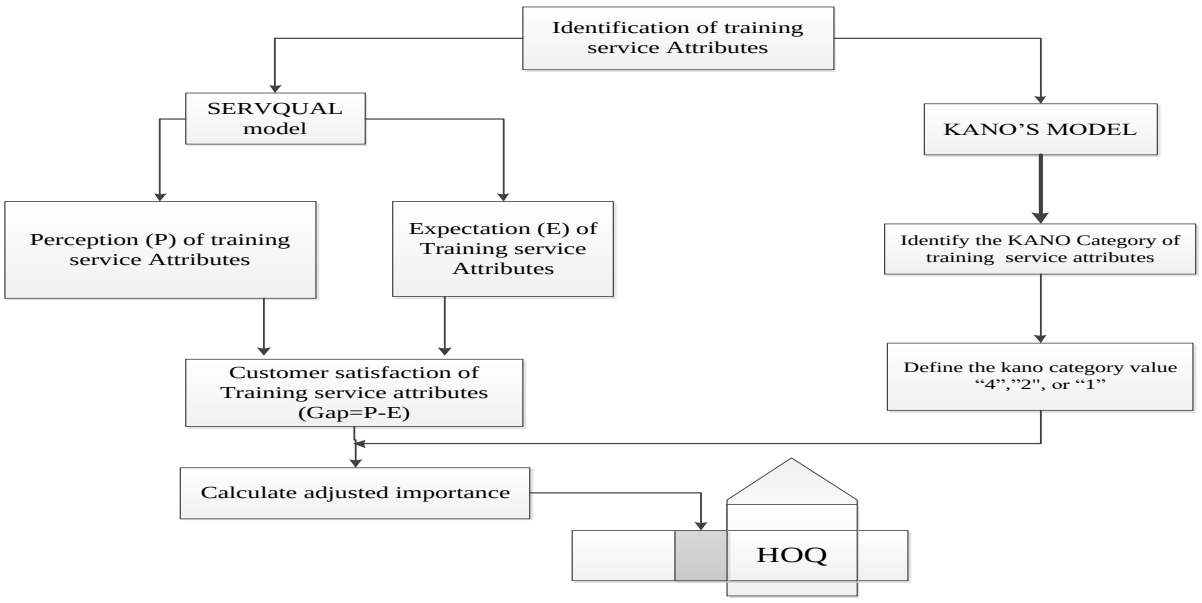


Figure 2-8: Conceptual framework of integrated servqual, Kano and QFD (source: source: rahmana et al., 2014)

Many researchers propose the AHP technics method with integrated different customer-oriented models like QFD, Kano, and SERVQUAL models for improving the service quality of the organization. Vahdat et, al (2018) states incorporated SERVQUAL and AHP, first identify the measurement criteria and attributes the hotel service quality with respect to SERVQUAL that measures the customer satisfaction level, after identification and constructing the main criteria hierarchy of the service quality, their weight must be calculated by using AHP method for Multiple criteria decision making. Pakizehkar et, al (2106) show that the combination of Kano, AHP, and QFD in the bank industry, the first phase identification of the main customer demands by using Kano model, the second prioritized using AHP method, then finally identify customer demand priority and the main technical requirement in QFD to construct a house of quality.

Generally, most of the above authors improves the service quality used different model and approaches. All authors indicated service quality and customer satisfaction have a positive relationship and in the current global world service quality is more important survival in the market. All authors show that the integration of different methods has the power full for improving the service quality. SEROQUEL model is not important for improving service quality it is used to identify attributes and classify the attribute but not solve all the problems of the service quality. Kano model also used to categories the attribute for prioritizing the customer needs but still the service quality improvement, not strength. The integration of the two

customer-oriented approaches the linear assumptions eliminated in the case of the Kano model, the Kano model by itself nonlinear assumption follows. QFD is important to model to translate the customer requirement to design the production by making a house of quality. So the integration of the SERVQUAL-Kano model with QFD has a more powerful full answer to continuous service quality improvement. But these ways are not sufficient to solve the customer satisfaction problem and no strong answer to give the customer's requirement or want. AHP method is used for identification and construction of the main criteria hierarchy of the service quality to calculate weight for multiple criteria decision making of the technical requirement. There for, the integration of the above three method relationship matrixes in the house of quality should be supported by the MCDM -analytical hierarchy process (AHP) for continuous service quality of the organization. The researcher selects the AHP method from the above MCDM approach because of AHP method is easy to use, handle multiple measure and perspectives, is scalable, hierarchy, the structure can easily adjust to fit compared to the other MCDM approach.

The researcher first measures the service quality dimension of the case company by SERVQUAL model. This model identifies good and weak service quality dimension, and good service quality is a wait but weak service quality need improvement. Therefore, weak service quality thought to Kano model to categorize and identify the main customer requirement. After categorizing the main feature, the expert identifies the priority area and also identified indifferent attributes, the case company only focused on the priority factors, these priority factors was thought to QFD for improvement. Additionally for subjective decisions used technical requirements. This technical requirement identifies by using the analytical hierarchy process (AHP). Finally identified technical requirements thought to QFD. Then QFD designs and plans the service quality improvement strategy by making HOQ.

2.9. Empirical study in bank industry

Moradi and Raissi (2015) used QFD to identify the customer wants and to design the company's technical requirements and for service quality improvement. An increase in the service quality of the bank leads to an increase in the level of customer satisfaction, in the bank sector; all service quality dimensions have a significant influence on both service quality and customer satisfaction (Abdissa, 2019). Two types of service quality factors occurring in bank sectors are human factors and non-human factors. Human factors have more influence in the bank, especially, reliability

and responsiveness more affected customer satisfaction (Hennayak, 2017). Service quality has direct relationships with customer satisfaction; especially reliability and customer satisfaction have more interaction in the bank sector (Kasim, 2018). Mesay (2012) indicated that empathy and responsiveness have the main for customer satisfaction in the bank industry and show that high-quality service has high customer satisfaction, which indicated a high level of customer commitment and loyalty. By applying the SERVQUAL model the service quality improvement in the bank sector is more focused on empathy and responsiveness dimensions (Ahmed. B et al, 2020). (Dawit and Adem, 2018) Applied the SERVPERF approach, determine the value of the mean score of service quality and customer Satisfaction attributes, the mean score varies between 3.57 and 4.17. The integration of the Kano model, QFD, and AHP matrix help to identify the bank customer's requirement, the model show the basic requirement, middle priority, and motivational requirement, from these requirements the basic requirement is more important to improve the service quality of the bank, so the level customer satisfaction of the bank industry depends on the basic requirement, the customer, the basic requirement fulfill service quality is high and increase the customer satisfaction (Pakizehkara et, al, 2018).

Most of the above authors improve the service quality using different models and approaches. All authors indicated service quality and customer satisfaction have a positive relationship and in the current global world service quality is more important survival in the market but the Author uses the model or approaches applied on services quality dimension. This is way not enough to solve the service quality problem. The researcher considers all root factors of the case company to improve service quality. On the other side, some of the Authors use one approach. The other integrates two approaches and some of the use integrates three approaches. They are done good start-up work but no strong answer to give the service quality of the bank. So there is a gap to improve service quality in the bank sector. The researcher used the integration of SERVQUAL-Kano with QFD for service quality improvement and for the subject decision of the technical team of the Bank used the AHP approach. This integration is very important to solve the gap and to continuous service quality improvement of the case company.

Table 2-4: Summery of empirical study in bank industry

Sr. NO	Authors	objective	Method	Finding
1	Moradi and Raissi (2015)	Service Quality Analysis to Improve Customer Satisfaction	Used to QFD for identifying the customer wants	To design the company technical requirement
2	Abdissa (2019)	Impact of service quality on customer satisfaction	Used SPSS Version23	All service quality dimensions have significant impact one service quality and customer satisfaction
3	Hennayak (2017)	Identify human factors and non-human factors	SPSS 20	human factors and non-human factors, Human factors have more influence in the bank, especially, reliability and responsiveness
4	Kasim (2018).	Identify factors that affecting customer satisfaction	SERVQUAL model	reliability and customer satisfaction have more interaction in the bank
5	Mesay (2012)	service quality improvement in the bank sector	SERVQUAL model	Empathy and Responsiveness have the main for customer satisfaction in the bank industry
7	Dawit and Adem, (2018)	Study relationship service quality on customer satisfaction	Used SPSS Version23	Five service quality have significant on the relation of service quality and customer satisfaction
8	Pakizehkara et, al (2018)	Identify customer requirement and technical requirement	Kano model, QFD, and AHP	Communication with client is the most technical requirement

Most of the above author improves the service quality used different model and approaches. All authors indicated service quality and customer satisfaction have a positive relationship and in the current global world service quality is more important survival in the market but the Author uses the tools or approaches of a single. This is way not sufficient to solve the customer satisfaction problem and no strong answer to give the customer's requirement or want.

So there is a gap between the customer requirement and the decision of the technical team of the Bank. Therefore, the integration of QFD and multi-criteria decision making is important to solve the above gap.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Research Design

Under this section, the description of the research procedure, which was employed in this study was discussed. This research focuses on the service quality improvement in the Loan process in the Development Bank of Ethiopia and the study analysis on focus the loan process of the bank in depth. This study followed the descriptive research type.

3.2. Research Methods

The research design was made in such a manner to adequately touch the quality-of-service delivery and the response of customers through their satisfaction by applying SERVQUAL-KANO into QFD. In order to carry out the whole investigation of this study, the researcher has employed a descriptive research study because the method is often applied for case study investigations.

Finally, the researcher was scope out the nature and extent of a certain research problem. A case study can be an ideal strategy for descriptive research (Bhattacherjee, 2012). Based on this perspective, the researcher conducted a case study to investigate the extent of how the service quality influences clients' satisfaction in DBE.

3.3. Population of the Study

The target population of this study is the external customers who received the bank service for one-year duration, specifically; all customers who received loans from (July 01, 2019 G.C up to July 31, 2020 G.C). The population of the study was selected based on a study objective, which means the external customers have a target to know how the service quality of DBE influenced their satisfaction. The Total population size for this research is 439.

3.4. Sampling

3.4.1. Sampling techniques

The sampling techniques employed in this study were purposive and the multi-stage stratified quota sampling to select the target audience. This sampling technique is selected to minimize the variance and effectively represent the population. Additionally, it helps the researcher have a stratified classification of respondents at head office and districts who have direct involvement in

the service delivery operation. The target populations for this study were all the external customers who get credit services from the bank in the long term and medium-term priority areas.

3.4.2. Sample Size Determination

Accordingly, there are different methods of sample size determinations used in different researches. To get a representative sample for the study, the researcher used purposive and multi-stage stratified quota-sampling techniques, which help to have stratified classification of respondents at Head Office and Districts. Accordingly, the External Customer satisfaction report (July 31, 2020) of there are 439 [N] external customers from Head Office and 11 Districts' of the bank those who get loan service in the year July 2019 G.C – July 2020 G.C. The researcher used the formula of Taro Yamane (1967) for calculating the sample size (Kasim, 2018). In the determination 95% confidence level and 5% level of precision assumed. The formula is $n = \frac{N}{1+N(e)^2}$.....(1)

Where: N = the population size,

n = the sample size and

e = the level of precision

$$n = \frac{439}{1+439(0.05)^2}$$

n= 209

Therefore, the total number of the sample size is 209 from head office and Districts. But the number of population at each Districts and Head office not equal. So calculate the sample size at each District and Head office.

$$n1 = \frac{nN1}{N} \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Where n= total number of samples

N= total number of population

N1= total population number in each District and Head office

n1= number of samples in each District and Head office

The study is conduct on 11 district and head office of the bank

Table 3-1: Sample size at each district and head office

No.	Name of Loaning units and District	Project Financing	Lease Financing	Total Number [N1]	Sample Size [n1]
1	CRMD I	14	-	14	7
2	CRMD II	13	-	13	6
3	CRMD III	19	-	19	9
4	CRMD IV	11	-	11	5
5	PRLR II	7	-	7	3
6	EFCM	21	-	21	10
7	AA District	6	39	45	22
8	Adama District	10	36	46	22
9	Dire Dawa District	4	11	15	7
10	Jima District	19	3	22	10
11	Wolayita District	5	14	19	9
12	Nekemete	27	13	40	19
13	Gonder District	2	14	16	8
14	Dessie District	4	15	19	9
15	Bahire Dar	6	14	20	10
16	Hawassa	5	43	48	23
17	Mekelle District	31	33	64	30
	Grand Total	**204**	**235**	**439**	**209**

Source: Report of External Customer satisfaction, June, 31, 2020

3.5. Types and Sources of Data

To address the research questions optimally and to meet the research objectives effectively the essential data for this study was collated from primary and secondary sources.

3.5.1 Primary Data Sources

For this study, primary data were collected through questionnaires and interviews for external customers where in-person interviews were conducted for DBE Top management Twenty six

(26) staffs Thirteen (13) from project finances, and Thirteen (13) from lease finances. The data was collected through structured questionnaires which comprise both open-ended and close-ended. The researcher conducted the data collection through telephone interviews, emails, telegrams, and addresses in person with sample respondents to fill out the questioner. The questioner was prepared in both Amharic and English versions. Hence, all alternatives were availed to customers to choose the best to fill out the questionnaire. Finally, the primary data were obtained through questionnaires and interviews.

3.5.2 Secondary Data Sources

The secondary data for this study was obtained from archival records and document reviews such as legislations, manuals, financial reports, journals, articles, and other sources, to get reliable data from the right source of information. Secondary documents were collected to have knowledge about the quality service and customer satisfaction in theory and with practical examples and best practices.

3.6. Method of Data Collection

To conduct the collection of relevant and valid data for this study, the researcher used the following steps.

Step 1: Start of an observation on the current loan process of the DBE.

Step 2: Investigated the source of the customer complaints by conducted an interview with management of the loan unit whilst understanding the loan process executed by the bank.

Step 3: Investigated and outlined the root cause of the customer complaints about the bank. In generally, from the loan unit management interview, the researcher gets the root cause of the customer complaints from on management interview.

Step 4: Another methodology the researchers have used to prepare the questionnaires is by reading different articles which then the researchers proceed with the selection of the format of the questionnaires which can coincide with the root causes the researchers have outlined earlier.

Step 5: prepared the SERVQUAL questionnaires for data collection.

Step 6: Kano's model questionnaires for data collection.

Step 7: Final the researcher create a team in DBE expert, and then the team propose the solution of the root causes of customer complains. From the propos solution the expert team select the main technical requirement for input AHP to build relation matrix. Generally, the

methodological framework of the research was constructed as follows.

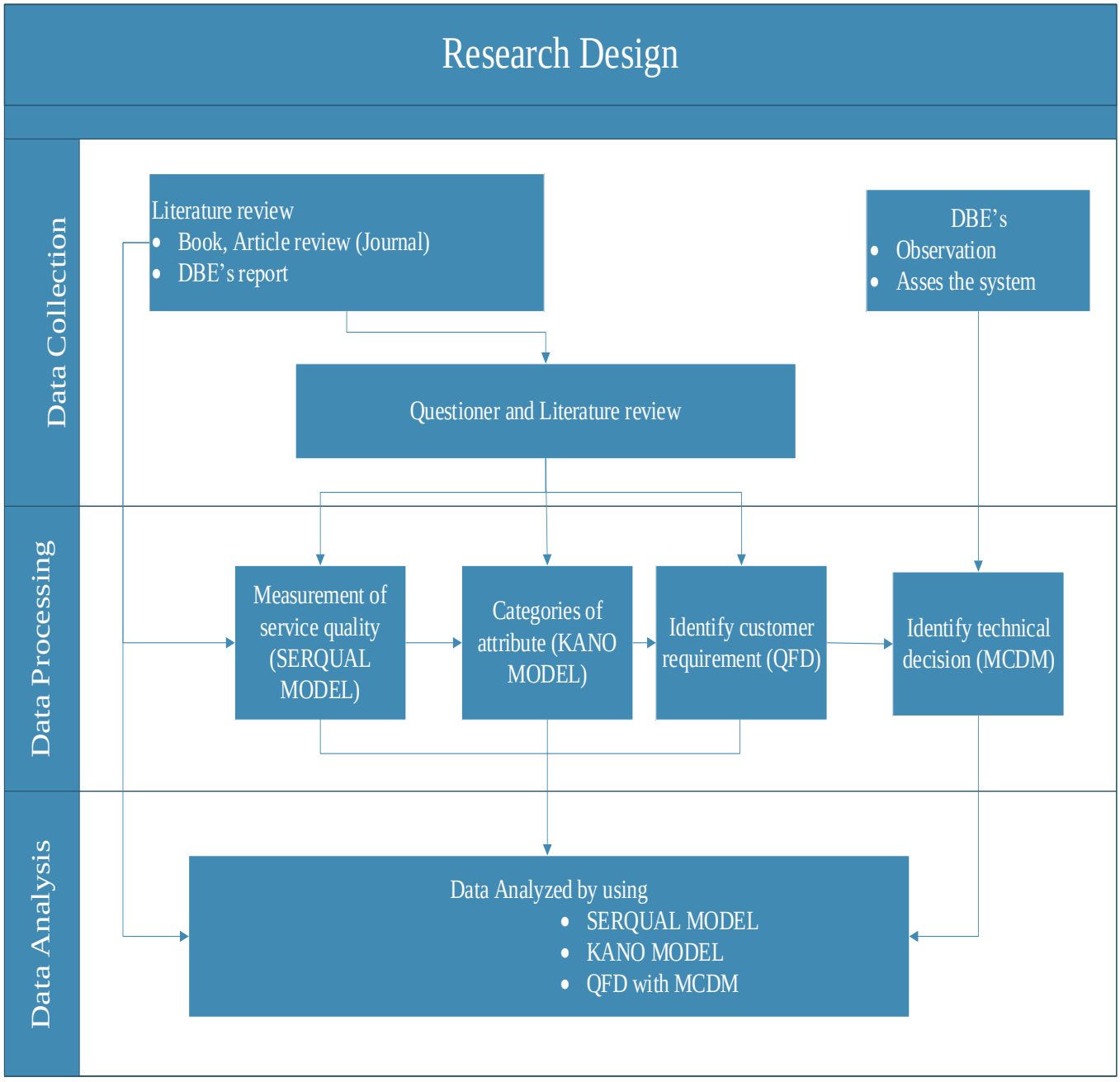


Figure 3-1: Research methodological frame work.

3.7. Data Reliability

The reliability analysis was conducted in order to determine the internal consistency of the statements. The researcher 20 customers were selected to fill out the questionnaires to analyze the data reliability. The reliability was indicted based on the value of Cronbach's alpha coefficient

Table 3-2 Check data reliability

Service quality dimension	Question No.	Code	Mean of Expectation	Cronbach' s Alpha
Tangibility	policies and statement should clear and well explained	**T1**	4.91	0.823
	Criteria stated/ Requirement are adequate	**T2**	4.86	
	Clear and reasonable process cycle time	**T3**	4.90	
Reliability	Promises services dependable and accurate	**R4**	5.08	0.853
	Promises do by a certain time	**R5**	4.86	
	the loaning unit shows a sincere interest	**R6**	5.16	
	Less error free document record	**R7**	4.80	
Responsiveness	Recognizes the customer value	**Rs8**	5.20	0.910
	Customer prompt Service	**Rs9**	5.82	
	Positive and willing to help the customers	**Rs10**	5.39	
	Employees give priority to your any request	**Rs11**	5.81	
Assurance	Good behavior of staff	**A12**	5.23	0.899
	Feel safe in the Transaction	**A13**	5.54	
	Employees consistently courteous	**A14**	5.88	
	Enough Knowledge and skill of staff	**A15**	5.58	
Empathy	Personal attention	**E16**	5.13	0.828
	Operating hours convenient	**E17**	5.95	
	Care and attention	**E18**	5.12	
	best interests at heart	**E19**	5.46	
	employees of has easily understand	**E20**	5.98	

The reliability analysis, all service quality dimensions in case company Tangibility, Reliability, Responsiveness, Assurance, and Empathy obtained values 0.823, 0.853, 0.910, 0.895 and 0.828 respectively, this value is acceptable with compared to the standard value of Cronbachs alpha coefficient 0.7, this value was indicated all dimensions have high reliability. Therefore, data collection methods (questionnaires) are acceptable.

3.8. Method of Data Analysis

In the data analysis part of the study, the researcher used a mixed research approach, which includes both qualitative and quantitative data analysis techniques. Under the analysis section of this study, the result of quantitative data analysis techniques is supported by the qualitative data analysis for raw data gathered from external customers. In addition to this, the data were analyzed us SERVQUAL and Kano's model in the QFD to identify the customer satisfaction level. But, to integrate two models with QFD not strongly related to the subjective decision.

After collecting the data, first, the researcher uses five variables namely tangibles, responsiveness, reliability, assurance, and empathy, these all are the service quality dimension of the bank (DBE) by using the SERVQUAL model. This model helps to identify the service quality gap which means good and weak service attributes of the bank which clearly states, good service attributes of the bank kept for continual improvement, where the main goal of the researcher focus on weak service attributes for improving the current service quality. Then service attributes are prioritized by the Kano model, this model help to prioritize and category attributes. This also helps to identify must be an attribute, one dimensional, attractive category, and indifferent. The researcher focus first on must be attributed, the second on one dimensional, and the next attractive but not considered indifferent, this service category is not important to improve the service quality of the bank. By integration the SERVQUAL model and Kano model, the researchers identify the customer requirement of the case company.

In addition to the integrating tools, subjective decisions were used (AHP). First, the researcher identified the technical requirements. Then, the follows of analyze the customer requirement and technical requirements to suit for the relationship matrix in AHP. This technical requirement identifies by using the analytical hierarchy process (AHP). Finally, identified technical requirements thought to QFD. Then QFD designs and plans the service quality improvement strategy by making HOQ. This is overall the researcher applicable integrated part.

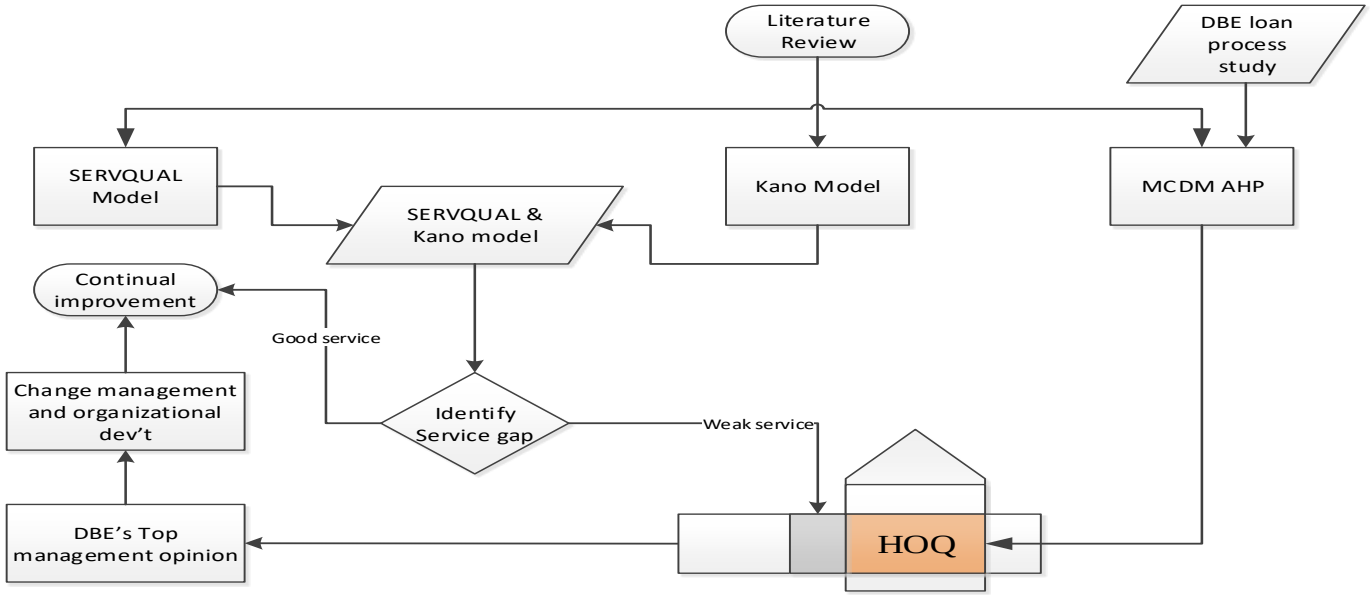


Figure 3-2: Research conceptual model

CHAPTER FOUR

4. Data Collection, Analysis and Discussion

4.1. Process Study of the Case Company

DBE was established in 1909; the bank has been playing a significant role in promoting the overall economic development of the country. It is a specialized financial institution established to promote the national development agenda through development finance and close technical support to viable projects from the priority areas of the government by mobilizing funds from domestic and foreign sources while ensuring its sustainability. This bank has been supporting various business promoters in its project financing modality from the date of establishment and its newly launched capital goods lease financing Scheme since 2016. Hence, Major types of Loans Extended by DBE are New Loans, Expansion Loans, Additional Loans, Special Working Capital Loans, and Lease Loans. DBE has two financing programs systems. Thus are:

- Project Financing System
- Capital Goods Lease Financing

4.1.1 Project Financing System

As per the Bank's Project Financing procedure manual, the Project Financing Process has six independent stages, one supplementary for the other. The process includes customer identification (sourcing) & due diligence (KYC), project appraisal, project approval, project follow-up, project disbursement and project collection, rehabilitation, and recovery. Workflow maps and formats, the importance of activities, time, and profession/competence required for accomplishing each activity are considered in the manual.

To conduct project financing in the first instance the bank officials focuses on the recruitment of the potential customer through promotion and persuading investment loan applicants. After the potential customer is recruited, document screening will follow. Then, the potential customer requested to submit a loan application letter. This step is performed to verify the completeness of loan documents, signing of the disclaimer agreement. The basic milestone of the project financing process is started by conducting the third step which is due diligence assessment of the selected customer. Basically, this step is conducted to know the creditworthiness of the applicant. To make sure the requested loan is being continued the bank officials applied the next step which

is a follow-up of the loan appraisal process. On the other hand, the bank officials especially appraisal team members conducted appraisal reports to verify the requested loan is eligible. After the first draft document is finalized the discussion with a customer is made. This discussion was made mainly to aware the customer about the conditions and terms set for loan provision. After, agreements are made with the customer loan granting step will follow. Basically, the activity performed to the ready mortgage contract.

Next to the above necessary steps, the customer requested to make blocking and utilization of equity contribution as a pre-disbursement condition stated in the appraisal document. The step is considered as equity contribution and compliance check. Then, the customer is blocked the requested amount of money. Then, the bank officials will affect the first loan disbursements. After the first loan disbursement was made the bank officials were required to inspect project implementation progress. This step of the credit process is performed to make sure the proper utilization of the disbursements and implementation progress in terms of schedule set.

Finally, project implementation completion follow-up, loan repayment follow up and all entire projects follow-up will be conducted to ensure timely loan collection and sustainability of the project. In the end, loan settlement will be made for settlement of the loan and release of collateral after the loan is fully repaid. The following step of project financing or credit process details

- Customer Sourcing: It is first step of the Loan process that focuses on the recruitment of potential customer through promotion and persuading investment loan applicants.
- Document Screening: It is the second step of the credit process. It focuses on screening loan documents forwarded by customer.
- Loan Application Receiving: This is third step of the credit process focuses on: Verifying completeness of loan documents, Singing disclaimer agreement and Receiving Loan application.
- Due Diligence Assessment: These steps of the Loan Process focus on undertaking due diligence assessment on a loan applicant. At this step all applicant related information are assessed and analyzed to know credit worthiness of the applicant.

- Follow up Loan Appraisal Process: These steps of the Loan Process ASP for appraisal and follow-up of the appraisal process.
- Discussion on Draft Appraisal Report with Customer: At the appraisal step of the loan process, the appraisal team communicates the customer & discusses on the appraisal report and aware the customer about conditions and term set for loan provision.
- Loan Granting: This step of the loan process prepares loan and mortgage contract and make ready for signature and documentation.
- Equity Contribution and Compliance Check: This step of the Credit process requires blocking and utilization of equity contribution as a pre-disbursement condition.
- Effecting Disbursements: This step of the credit process undertakes disbursements by checking the implementation progress of a project.
- Inspecting Project Implementation Progress: This step of the Credit process sees about proper utilization of the disbursements and implementation progress in terms of schedule set.
- Project Implementation Completion Follow up: This step of the credit process helps to know completeness of project implementation.
- Loan Repayment Follow up: This step of the process helps to assure timely loan repayment after project follow up is carried out.
- Project Follow up: This step of the credit process helps to undertake continuing project follow-up to ensure timely loan collection and sustainability of project.
- Loan Settlement: These steps of the credit process help for settlement of the loan and release of collateral after the loan is repaid.

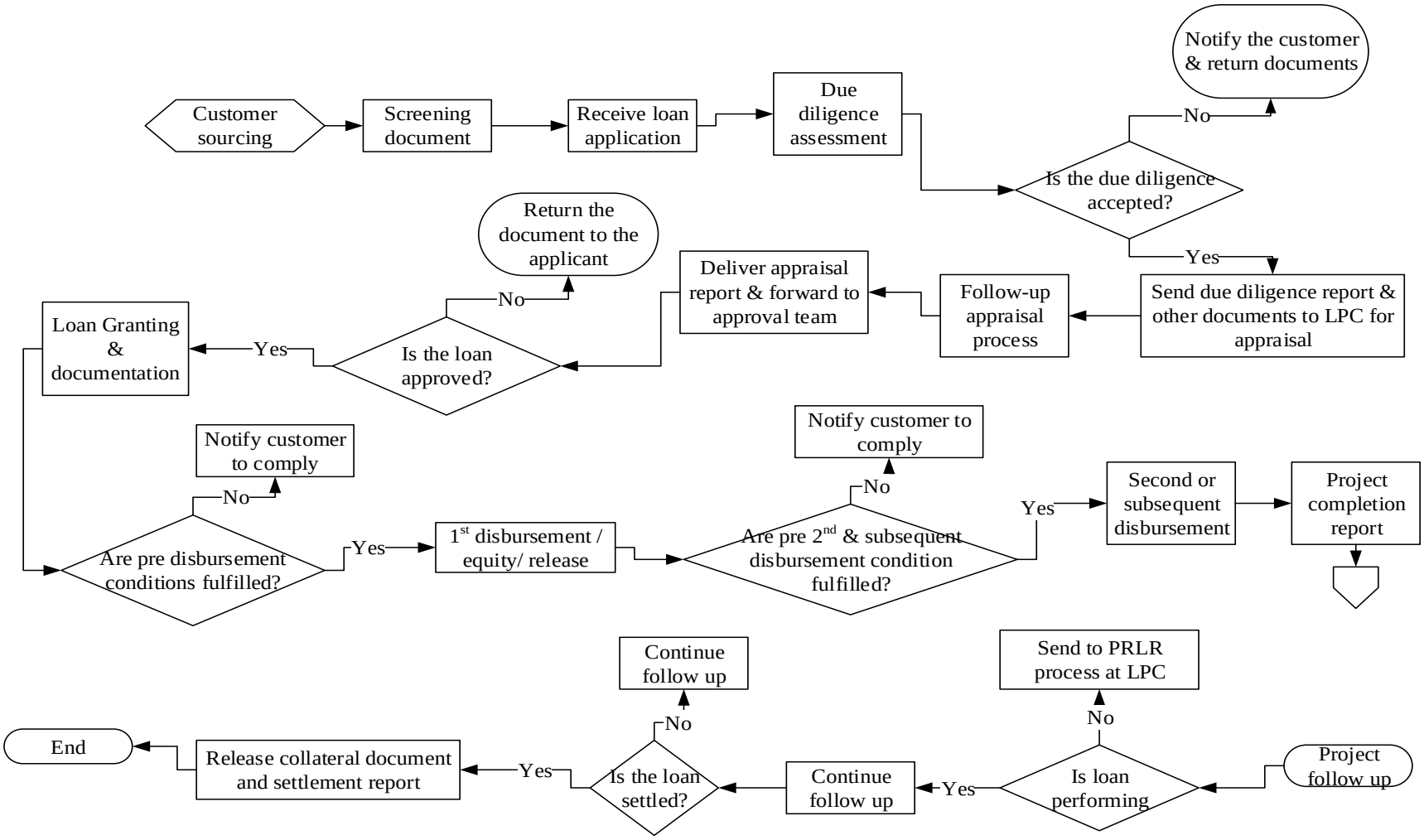


Figure 4-1: project financing follow Diagram (Source Project Finance Manual)

4.1.2 Capital Goods Lease Financing Service

In general, lease financing of DBE was employed as an alternative means of financing small and medium enterprises which cannot purchase or own capital goods on their own. It is an alternative means of financing for SMEs to become owners of capital goods/machinery, of their choice through installment payments during the service life of the machinery. Lease financing is an alternative financing scheme, the bank intends to support the structural transformation objective currently aims, promote import substitution, create employment opportunity, promote export & support foreign exchange earnings and create access to finance for SMEs particularly the missing middle.

According to the Bank's lease financing procedure manual, the lease financing process has six independent stages, this is listed below.

- Customer identification (sourcing) & due diligence (KYC)
- Lease appraisal
- Lease approval
- Capital goods procurement and delivery
- Lease disbursement and lease collection
- Rehabilitation and recovery.

The input-process-output model was used to understand and explain the LF services, where major milestones of the LF service were outlined to visualize the coherent integrations among processes. Such mechanisms provide a way to understand how process owners perform and maximize the performance.

Table 4-1: Input-process-Output model LF process

Inputs	Activities/processes	Outputs
Customer inquiry for lease financing service	KYC/due diligence: after screening potential customers, branch offices undertake due diligence or KYC assessments to identify the integrity and creditworthiness of the customers	Creditworthy and reliable customer identification for further process
Bankable customer document with all the capital goods requirement	Appraisal work: project appraisal is done to assess the technical, market, financial and managerial viabilities as well as socio-economic benefits of the project	An evaluated document which goes through numerous evaluation criteria's within the sanction limit
Finalized appraisal document	Approval work: Once lease appraisal is finalized; Lease Approval Team at Branch and/or at District makes approval or rejection on the appraised lease amount based on sanction limits.	An approved document which is ready for procurement process
Capital goods procurement request	Procurement process: this is the stage of purchasing & delivering the capital good requested by the lessee, by presenting three alternative pro-forma invoices, which is being done by capital goods procurement & supply directorate.	Procure and handover the capital goods to the branches and clients after all the necessary installation works are done
Installed and operational manufacturing plants at the client premises	Monitoring and Evaluation /Follow up: At this stage, the client is required to engage in full production and the branches will closely monitor the operation and clients repayment status	Payment collection

This diagram shows that, the lease work flows of the development bank of Ethiopia.

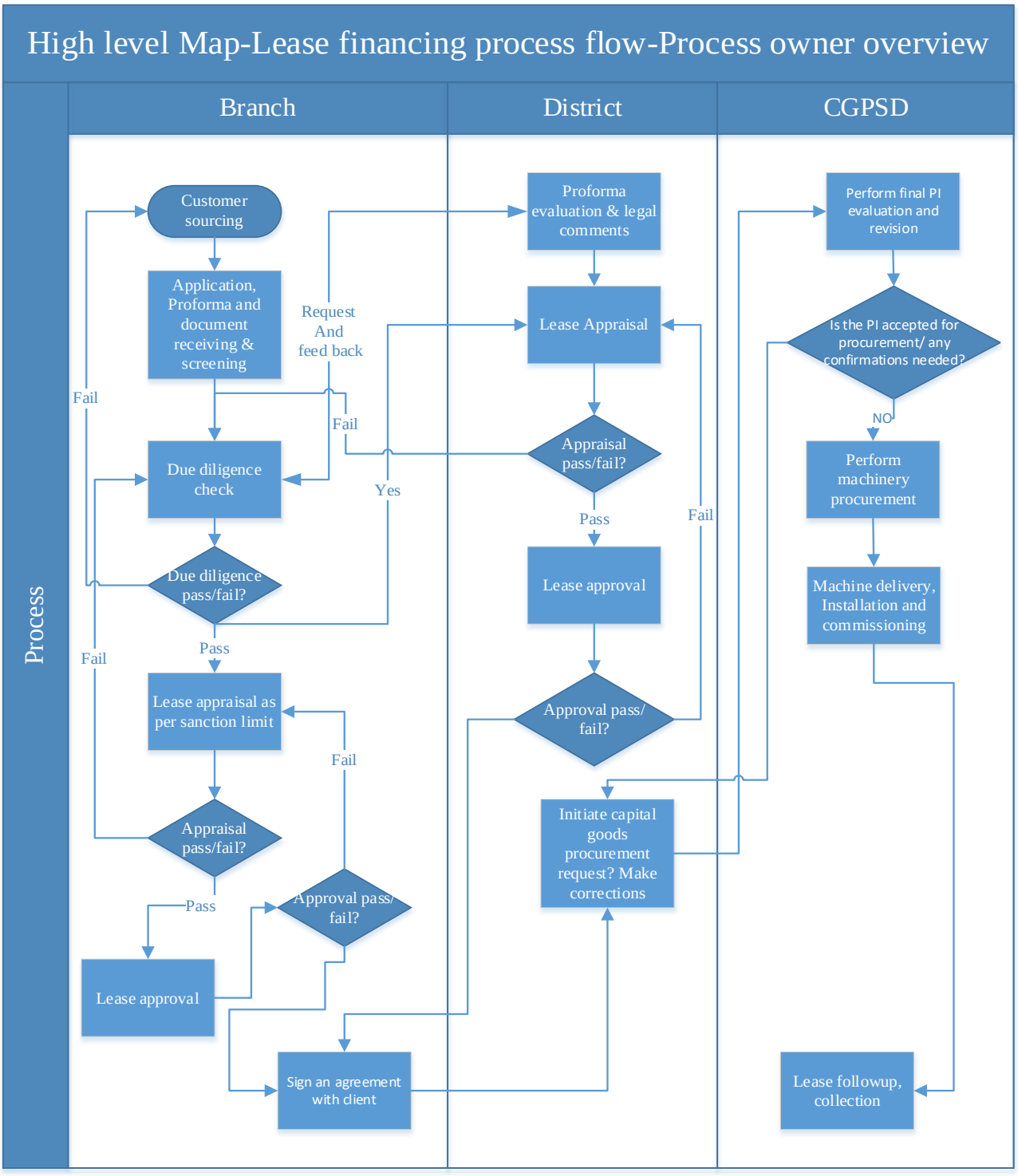


Figure 4-2: Input/output lease Financing Process (source Own)

The researcher has done the interview from 26 top managements to identify the root causes of customer complaints. Generally, from top management interview, 78 types of customer complaints were collected. To find the solution of the root cause of customer complaints in the case company, two teams were created one team from project finance and the other team from lease finance. The two teams contain the directors, team managers, senior loan officers, senior Engineers, and loan officers who have five years and above experience in DBE and the researcher categorized those complaints by root causes with discussion of the experts and 78 customer complaints categorized by eight (8) root causes on DBE. These eight root causes of customer complaints are the bank policy, working procedure or guidelines, Asset valuation, Customer over expectation, project cycle time, professional skill, Information flow gaps and disbursement schedule.

From the above process, the major root causes of customer complaints were identified. However, the existing service delivered should be measured to find the level of service features depending on the customer-focused approach. Therefore, the existing service quality of the DBE was measured by the SERVQUAL model in order to evaluate customers' perception of the quality of services provided in DBE.

The data used for this analysis were collected from the respondents through structured questionnaires. Accordingly, 209 customers were selected to fill out the questionnaires within the specified scheduled date. However, out of these customers, only 159 (76.08%) customers were responded to fill out the questionnaires

From 159 respondents, 10.95% female and 89.5% men, 32.6% respondents ages 31-40 years, 40.6% respondents ages 41-55 years, 8.6% respondents ages 18-30 years, and 18% respondents ages above 55 years. 62.7% respondents are completed degree, and 13.3% respondents Masters, 36.8% respondents sole Proprietorship, 42.7% Private Limited Company, and 20.5% Share Company.

DBE is providing financial service to its customers in two modalities. These are project financing and lease financing modalities. As can be seen from figure 4-3 below, out of the total respondents 159 willing to fill out the questionnaires, 42.3% from project financing while 57.7%

were from lease financing modality. This implies more than half of them were from lease financing sector which is 57.7%.

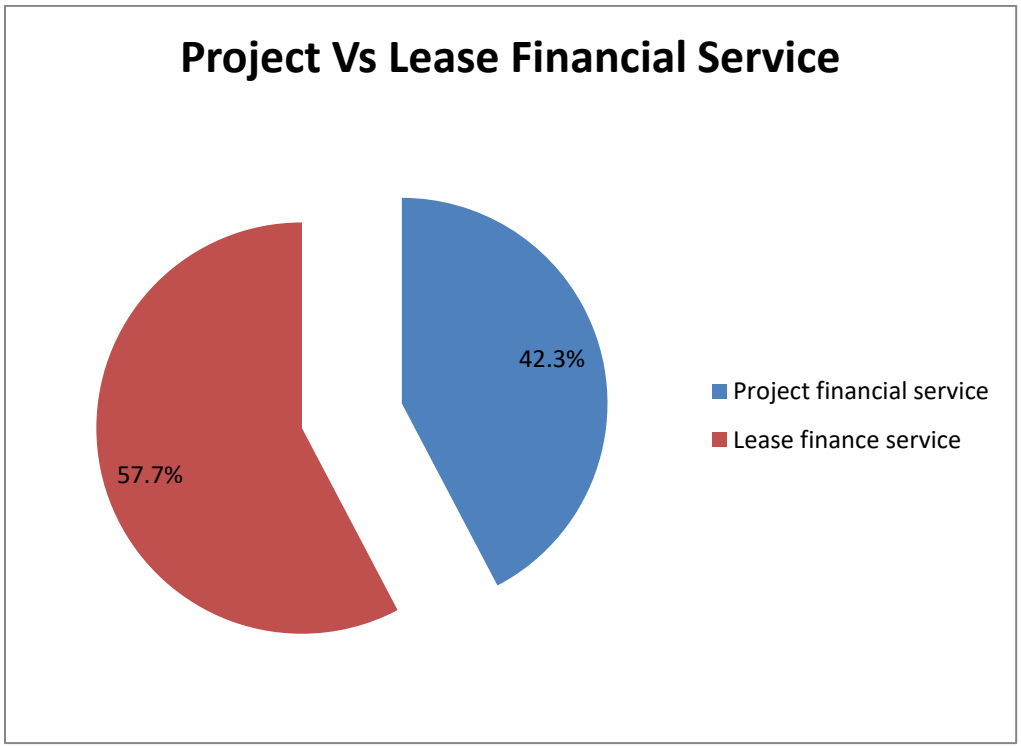


Figure 4-3: Respondents by loan type (July 01, 2019 G.C up to July 31, 2020 G.C: own source)

DBE is a specialized financial institution which is providing technical and financial services to different economic sectors for those identified as priority areas by the government. Accordingly, the priority areas of the bank and those that contribute to job creation, value addition, import substitution, export promotion, and know-how transfer are commercial agriculture, agro-processing, manufacturing, microfinance, mining and quarries, and other sectors.

In figure 4-4, the percentage of customers from Commercial Agriculture is 7.6% Agro-Processing sectors is 16.2%, and manufacturing sector is 68.3%, Mining and Quarries 3.6%, and Other 5.3%. This implies that more than half of the customers availed to fill out the questionnaires were from the manufacturing sector which is 68.3%.

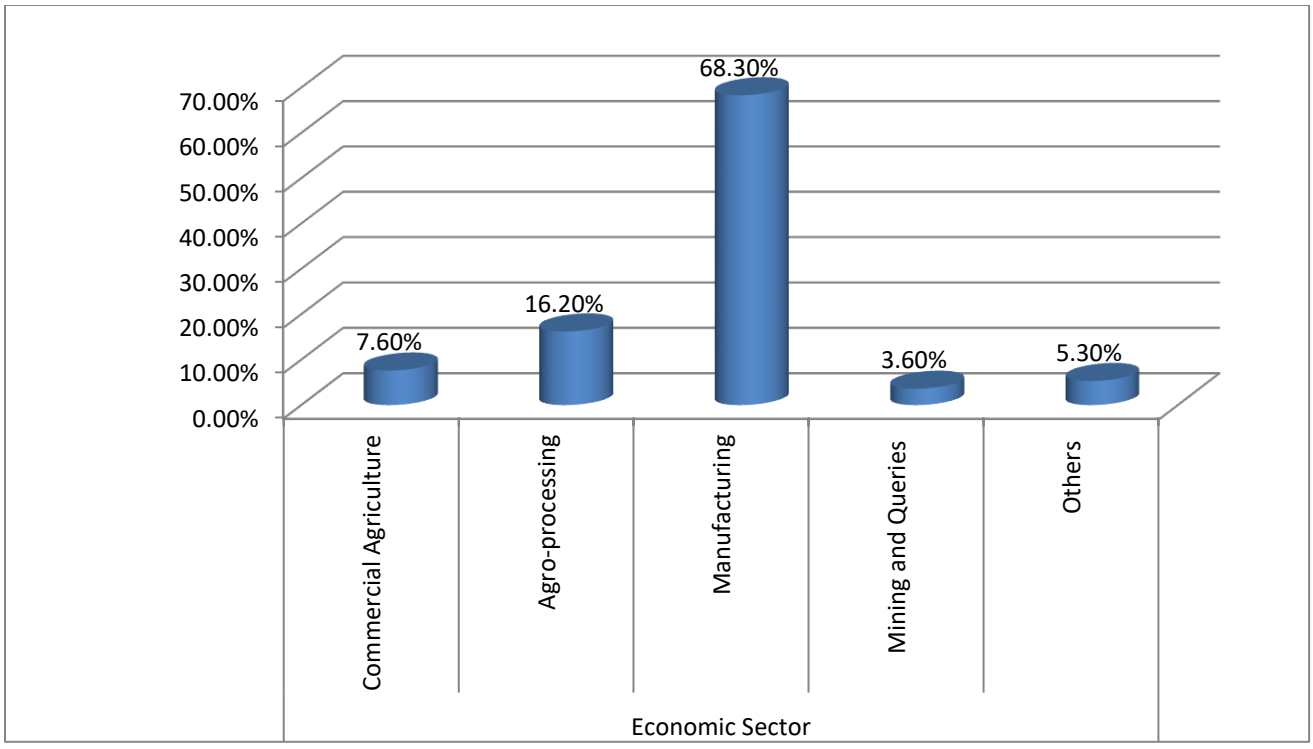


Figure 4-4: Respondents by Economic Sectors (July 01, 2019 G.C up to July 31, 2020 G.C: own source)

4.2. SERVQUAL Model

SERVQUAL model is used to evaluate the customers' perception of the quality of services provided by DBE. Here, the model used five service quality dimensions in measuring the existing level of the customers' service quality given by the bank. Accordingly, the five dimensions considered under this model are the tangibility, reliability, responsiveness, assurance, and empathy dimension. The researcher's two type questionnaires were prepared for the SERVQUAL model, which means one question set for customer expectation before receiving a loan and the other question set for perception the client in the case company after receiving the loan. Indicated the two questionnaires are attached in annex 2, part A and part B.

In doing so, from 159 answered questionnaires 16 questionnaires were not valid because some missing answers occurred in the questionnaires. Hence the researcher used 143 answered questionnaires.

The researcher done the descriptive analysis where it was conducted to determine the convenience and homogeneity of the reply attitude witnessed the statement that measures the

service quality dimension of the case company. From descriptive statistical analysis, arithmetic mean indicated the convenience and standard deviation was indicated homogeneity of the response attitudes.

Table 4-2: Descriptive statics and reliability analysis of SERVQUAL model

Service quality dimension	Question No.	Code	Mean of Expectation	Standard Deviation	Importance Weight
Tangibility	policies and statement should clear and well explained	**T1**	4.97	1.82	5
	Criteria stated/ Requirement are adequate	**T2**	4.88	1.73	6
	Clear and reasonable process cycle time	**T3**	4.91	1.78	7
Reliability	Promises services dependable and accurate	**R4**	5.05	1.44	5
	Promises do by a certain time	**R5**	4.83	1.73	3
	the loaning unit shows a sincere interest	**R6**	5.06	1.84	2
	Less error free document record	**R7**	4.79	1.38	5
Responsiveness	Recognizes the customer value	**Rs8**	5.17	1.59	5
	Customer prompt Service	**Rs9**	5.37	1.66	7
	Positive and willing to help the customers	**Rs10**	5.38	1.43	3
	Employees give priority to your any request	**Rs11**	5.78	1.45	4
Assurance	Good behavior of staff	**A12**	5.13	1.38	7
	Feel safe in the Transaction	**A13**	5.56	1.52	6
	Employees consistently courteous	**A14**	5.90	1.60	6
	Enough Knowledge and skill of staff	**A15**	5.68	1.58	5
Empathy	Personal attention	**E16**	5.03	1.54	4
	Operating hours convenient	**E17**	5.92	1.36	6
	Care and attention	**E18**	5.00	1.74	7
	best interests at heart	**E19**	5.46	1.43	6
	employees of has easily understand	**E20**	5.97	1.49	3

The researcher obtained the value of each statement of the case company arithmetic means and standards deviations for those measure dimensions of the SERVQUAL model. The great value of arithmetic means indicated that for statements employees in the case company was nice to customer. For SERVQUAL model questionnaire used a seven-point Likert scale, this scale is important for measuring the level of expectation and perception of the customer with each service quality dimension of the DBE. The first step is to apply the SERVQUAL model calculation of the difference from perception score to expectation score. Then continue the calculation mean of each statement and mean of difference for each service quality dimension.

Table 4-3: Both Questionnaires of SERVQUAL model

Statement of Expectation	Strongly Disagree…….Strongly Agree						
A. DBE policies and the statement are clear and well explained	1	2	3	4	5	6	7
Statement of Perception	**Strongly Disagree…….Strongly Agree**						
A. DBE loan process cycle times are clear and reasonable	1	2	3	4	5	6	7

For calculating the mean difference between each statement and service quality, first set the difference between perception to expectation example from the above table perception score 5 and the expectation score 7.

Difference= Perception –Expectation, 5-7=-2, then -2 is indicated the gap between perception and expectation. That means the case company service quality performance could not meet the customer expectation. Hence, the researcher calculated the whole statement of the mean difference and service quality dimension. Finally, the result is summarized in the table form.

Table 4-4: Unweight SERVQUAL score

Service quality dimension	Question No.	Mean difference of each statement (P-E)	Mean difference of each SQ dimension
Tangibility	**T1**	0.307692308	0.1002331
	T2	-0.132867133	
	T3	0.125874126	
Reliability	**R4**	0.139860140	-0.073426596
	R5	-0.083916084	
	R6	-0.139860140	
	R7	-0.209790298	
Responsiveness	**Rs8**	-0.167832167	-0.194055944
	Rs9	-0.195804196	
	Rs10	-0.188811189	

Service quality dimension	Question No.	Mean difference of each statement (P-E)	Mean difference of each SQ dimension
	Rs11	-0.223776223	
Assurance	**A12**	-0.223776224	-0.286206294
	A13	-0.391608392	
	A14	-0.083916084	
	A15	-0.445524476	
Empathy	**E16**	-0.405594406	-0.247552465
	E17	-0.209790298	
	E18	-0.188811189	
	E19	-0.104895105	
	E20	-0.139860140	

This table analysis shows that the case company average gap scores between the customer expectation and customer perception. Also, it indicates the highest negative gap scores were assurance and empathy. The next negative gap score has responsiveness and reliability. The other service quality dimension has a positive gap score. So responsiveness, reliability and tangibility have lesser customer dissatisfaction. The tangibility service quality dimension in the bank is good but not indicated sign positive for satisfaction. The researcher allocated the point from each service dimension and allocated a point for each for all features to like knows how much each feature is important for customers in the case company. The total sum allocated point is one hundred (100) were set for all features. This point is called SERVQUAL important weight.

Upon calculating the gap of each service quality dimension and SERVQUAL importance weight allocated, the researcher calculated the weighted score by using the following formula. Weighted Score = (mean difference each SQ Dimension) *(SERVQUAL important weight) in correspondingly. There are three features in Tangibility. The customer allocated a point for each feature. The sum of each feature is Tangibility Dimension important weight. Therefore, the tangibility important weight is 26 and gap 0.1, weighted scores: 0.1*18=1.8 for tangibility. The value important weight indicated in table 4.2.

Table 4-5: SERVQUAL weighted Scores

Rater	Rater Gaps(P-E)	Importance Weights	Weighted Scores
Tangibility	0.100	18	1.8
Reliability	-0.0734	15	1.1
Responsiveness	-0.194	17	3.3
Assurance	-0.286	24	6.9
Empathy	-0.248	26	4.5

This weighted score of the service quality dimension for DBE shows that the high score was assurance then followed by empathy, responsiveness, tangibility, and reliability. SERVQUAL model was used to measure the current customer satisfaction level and to identify good and weak service quality dimensions. But this study objective was focused to improve the service quality rather than identifying the weak service. But it is impossible to avoid all problems at once. So the researcher used another mechanism to identify prioritized features in the case company. Since, the researcher used the Kano model and to identify the prioritized features by Kano category (must be, operational, attractive and indifferent). From this categorized help to Identifying indifferent activities in DBE that may not improve customer satisfaction is important before investing on. So this research service's features were categorized using Kano's model as follows.

4.3. Kano Model

Kano model is used for categorizing the service quality features; this model uses nonlinear (two-dimension) ways to measure the customer's perception of a case company. The model is important for identifying customers' delight and customers' insight by checking the attribute is present or absent respectively. The first step is to prepare the Kano model to construct the questionnaires for the target customers. The questionnaires for the Kano model are formulated basically on qualitative answers from the targeted customers. This model questionnaire was constructed through the pair's customer wants to question. All questions have two parts. The first part question: How do you feel if that attribute exists in the service (This type of question is a functional form of a question) and the second part of the question: how do you feel if that feature does not exist in the service (This type of question is a dysfunctional form of a question). Each question has five alternatives out of this one alternative is to be selected by targeted customers.

Accordingly, 209 customers were selected to fill out the questionnaires by availing on the scheduled date. However, out of these customers, only 159 (76.08%) customers were availed to fill out the questionnaires but 13 questionnaires were not evaluated. Therefore, 146 (69.9%) completely answered by customers used for analysis and 50 questionnaires were not return from 209 distributed for customers. Therefore, 146 questionnaires are used to analysis of Kano model.

Kano's model questionnaire is formulated based on qualitative answers from these targeted external customers of the case company. This questionnaire is constructed through pairs of customer wants questions. Each question in the Kano model has two parts: How do you feel if that attribute is present in DBE service (this is a type of questions functional form.) and how do you feel if that feature is absent in the service (this is a type of questions dysfunctional form.). The researcher prepared functional and dysfunctional question types here. The above two questions type example constructed below;

Functional Question: How would you feel if DBE loan criteria stated/requirement are adequate or reasonable, how do you feel? Answers: "I like it"; "It must be there"; "Neutral"; "I can live with it"; "I dislike it".

Dysfunctional Question: How would you feel if DBE loan criteria stated/requirement are not adequate or reasonable? Answers: "I like it"; "It must be there"; "Neutral"; "I can live with it"; "I dislike it".

Table 4-6: Functional question and Dysfunctional question

No.	Question	Answers (write (√) in the box you select)
1a	If DBE loan criteria stated/ requirement are adequate or reasonable, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
1b	How would you feel, if DBE loan criteria stated/ requirement are not adequate or reasonable?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it

If the first question the customer answers "I like it" and, "the second question-answer "I must be" Then the combination of the two question answer category is Attractive Category (A). But if

the first question the customer answer is “I like it” and “the second question-answer “I dislike“. Then the combination of the two questions answers the category is One-dimensional (O). The general evaluated method into all quality dimensions of the service quality on the basis of responses of customers on functional and dysfunctional questions connected to different features are summarized in Table 4.7.

Table 4-7: Kano Evaluation method

Customer Requirements		**Dysfunctional (Negative Question)**				
		1.like	**2.Must-be**	**3.Neutral**	**4.Like with**	**Dislike**
Functional (Positive Question)	**1. like**	**Q**	**A**	**A**	**A**	**O**
	2.Must-be	**R**	**I**	**I**	**I**	**M**
	3.Neutral	**R**	**I**	**I**	**I**	**M**
	4.Like with	**R**	**I**	**I**	**I**	**M**
	5.dislike	**R**	**R**	**R**	**R**	**Q**

A: Attractive **O:** One-dimensional

M: Must-be **Q:** Questionable

R: Reverse **I:** Indifferent

The researcher combined all customers’ responses of Functional (positive) dysfunctional (negative) each service feature is summarized in table 4. 8. All features must be categorized by the amount of customers' response and depend on the leftmost wins’ rule: Must-be > Performance > Attractive > Indifferent **(M>O>A>I)** was used to analyze the answer of the customers to categorize.

From the source of the customer response indicated in the case company has no one service attributes were categorized in the questionable and reverse category, five service features were categorized as operational category, two service features were categorized in must be a category, three service features were categorized as attractive, and three service features categorized in the indifferent category. The researcher was identified indifferent service features. The case company should have not focused on indifferent service features, in this category the case company does not consider there is anything is it presents or absent. The case company first focus on must be a category, then, Then operational or one dimensional categorized service feature, finally focused on attractive category service feature, Hence, table 4.8 was ordered

depending on left most win rule of Kano category of all service feature the case company and easily understand all service attribute category.

Table 4-8: Prioritized service feature depending on Kano model category

Customer Requirement for DBE		A	O	M	I	R	Q	Total	Category
1	Less error free document record	32	30	**47**	31	5	0	145	**M**
2	Clear and reasonable process cycle time	29	28	**42**	37	6	2	144	**M**
3	Recognizes the customer value	44	**50**	18	32	1	1	146	**O**
4	Promises services dependable and accurate	30	**47**	29	34	1	4	145	**O**
5	Customer prompt Service	32	**48**	28	33	2	3	146	**O**
6	Feel safe in the Transaction	34	**61**	22	27	0	0	144	**O**
7	Criteria stated/ Requirement are adequate	31	**64**	27	20	2	2	146	**O**
8	Personal attention	**56**	26	24	33	7	0	146	**A**
9	Enough Knowledge and skill of staff	**48**	39	27	26	5	0	145	**A**
10	Promises do by a certain time	**62**	36	26	17	4	0	145	**A**
11	Good behavior of staff	31	25	34	**55**	1	0	146	**I**
12	Positive and willing to help the customers	30	43	22	**51**	0	0	146	**I**
13	Care and attention	31	42	21	**49**	1	2	146	**I**

The summer of prioritized features in the case company is here

Table 4-9: prioritized features in the case company

Sr. No.	Customer Requirement for DBE	category
1	Less error free document	Must be
2	Clear and reasonable process cycle time	Must be
3	Recognizes the customer value	operational
4	Promises services dependable	operational
5	accurate Customer prompt Service	operational
6	Feel safe in the Transaction	operational
7	Criteria stated/ Requirement are adequate features	operational
8	Enough Knowledge and skill of staff	attractive
9	Promises do by a certain time features	attractive
10	Personal attention	attractive
11	Positive and willing to help the customers	indifferent
12	Care and attention	indifferent
13	Good behavior of staff	indifferent

In this research ten services featured were obtained for help to improve the service quality of a DBE or the input of the house of quality to improvement the service quality.

1. Criteria stated/ Requirement are adequate (Category O)
2. Promises services dependable and accurate (Category O)
3. Less error free document record (Category M)
4. Customer prompt Service (Category O)
5. Feel safe in the Transaction (Category O)
6. Enough Knowledge and skill of staff (Category A)
7. Personal attention, Category (A)
8. Clear and reasonable process cycle time(M)
9. Promises do by a certain time(A)
10. Recognizes the customer value(O)

The other three features are categorized in Indifferent not important to improvement the service quality the case company.

4.3.1 Customer Satisfaction Coefficient

Customer's satisfaction and dissatisfaction coefficients scores reflect that, the Customers satisfaction coefficient for calculating the average influence of user satisfaction. Customers satisfaction coefficient indicated the satisfaction level of the customers increase if service preconditions are met or otherwise which level of customers satisfaction decrease if a service precondition is not met, the formula help to calculate user satisfaction and user dissatisfaction is as follows:

$$\text{Customer's Coefficient satisfaction } (CS) = \frac{A+O}{A+O+M+I}$$

$$\text{Customer's Coefficient dissatisfaction } (CD) = -\frac{O+M}{A+O+M+I}$$

In this case, the minus sign set in the formula to indicate negative value has an impact on customer satisfaction if the service quality or not fulfilled the customer requirement when satisfaction has a positive value the range from zero to one; if the value approach to one, the influence of customer satisfaction more, when the positive value closer to zero, there is a little impact customer satisfaction. If the value was closer to a negative one, it indicated a very strong customer dissatisfaction, when the approach to zero, it indicated certain property does not affect

customer satisfaction but have a high level of dissatisfaction.

Table 4-10: Calculation of CS and CD

Service requirements		Category	$\frac{A+O}{A+O+M+I}$	$-\frac{O+M}{A+O+M+I}$
1	Criteria stated/ Requirement are adequate	O	0.669	-0.640
2	Clear and reasonable process cycle time	M	0.418	-0.514
3	Promises do by a certain time	A	0.695	-0.439
4	Promises services dependable and accurate	O	0.546	-0.543
5	Less error free document record	M	0.443	-0.550
6	Recognizes the customer value	O	0.653	-0.472
7	Customer prompt Service	O	0.567	-0.539
8	Positive and willing to help the customers	I	0.506	-0.452
9	Good behavior of staff	I	0.386	-0.407
10	Feel safe in the Transaction	O	0.659	-0.576
11	Enough Knowledge and skill of staff	A	0.621	-0.471
12	Personal attention	A	0.589	-0.359
13	Care and attention	I	0.510	-0.440

A positive customer satisfaction value range is from zero to one; if the value approaches one, the higher the influence on CS, when the positive value is closer to zero, there is little impact on customer satisfaction. If the value is closer to a negative one, it indicates very strong customer dissatisfaction, when approaching zero, it indicated certain property does not affect customer satisfaction but has a high level of dissatisfaction.

This table calculated the value of CS and CD. The interval of positive CS value is from zero to one. The analysis shows that good behaviors in the DBE have a small customer satisfaction coefficient of 0.386. Criteria stated/requirement are adequate, promises done by a certain time, recognizing the customer value, and feeling safe in the Transaction was the feature with high customer satisfaction coefficient, 0.669, 0.695, 0.653, and 0.659 respectively.

The integration of SERVQUAL and KANO model used to identify the main customer requirement but the researcher's main objective to improve the service quality. To improve service quality, first constructed a HOQ. These customer requirements are used to the input QFD to calculate adjusted improvement and constructed relation matrix in HOQ. To construct a

relation matrix, a customer requirement is not sufficient. So the researcher investigated the technical requirement. Then, the researcher has constructed a relation matrix by using the AHP approach. Generally, The result of integration SERVQUAL-Kano model used to the input of QFD for continuous service quality improvement.

4.4. Integrating SERVQUAL AND KANO'S MODEL INTO QFD

The researcher basically used a questionnaire of SERVQUAL and KANO model. These two models have been used as the basic research tool for the case study. A SERVQUAL model was used to measure the current customer satisfaction level and to identify gaps in the service quality dimension of DBE. Kano model was used to categorize the attribute for prioritizing the customer needs. The integration of the two customer-oriented approaches the linear assumptions eliminated in the case of the Kano model and by itself nonlinear assumption follows. So the integration of the SERVQUAL model and Kano model were conducted to identify the basic root cause of customer requirement in DBE. Based on SERVQUAL and KANO model are to identify the customer requirement in DBE and conduct possible reactions to decrease the existed root of customer complaints from bank professionals. In general, the measured service quality of the case company from SERVQUAL, prioritized and categorized service from Kano model used the identified attribute (must-be, operational, attractive and Indifferent) were used as the input data of quality QFD that used as service quality improvement design/planning tool within the DBE.

QFD is an important to model to translate the customer requirement to design the production by making a house of quality. The integration of the SERVQUAL-Kano model with QFD has helped to make continuous service quality improvement. But these ways are not sufficient to solve the customer satisfaction problem but the part is only used for customer requirements. The researcher also identifies the main technical requirement of the case company.

The integration of the SERVQUAL-Kano relationship matrix in the HOQ should be supported by MCDM -analytical hierarchy process (AHP) for standard subjective judgment for the relationship matrix of HOQ to determine the importance of How's. The researcher selects the AHP method from the above MCDM approach because of AHP method is easy to use, handle multiple measure and perspectives, is scalable, hierarchy, the structure can easily adjust to fit compared to the other MCDM approach. Hence the researcher first calculated the whole statement of the mean expectation and perception in each service quality dimension then

calculated the difference between customer perception and customer expectation or the service quality gap in the case company.

The researcher allocated to all features from each service dimension and assigned a point for each feature to know how much each feature is important for customers. The total sum allocated point is one hundred (100) were set in the all features within the external customer. The researcher prepared questionnaires for the weight to allocate to the feature and distributed the external customer of the bank.

The case company Service quality provided was measured in the SERVQUAL model, which the researcher used to distribute twenty statements to external customers as a questionnaire. The result is analyzed in table 4.11. From the result of SERVQUAL model calculated weighted score and mean of external customer expectation and perception. These results are used as the importance of what's and target in the house of quality in the analyzed part of QFD respectively.

Table 4-11: Mean customer expectation and Perception regarding features of the DBE

Service Quality Dimension	Question No.	Mean of Expectation	Mean of Perception	Mean of Gaps (P-E)	Importance Weight	Weighted Score |Gaps*Importance weight|
Tangibility	T1	4.97	5.27	0.3	5	1.5
	T2	4.88	4.48	-0.4	6	2.4
	T3	4.91	5.035	0.12	7	0.84
Reliability	R4	5.05	5.2	0.13	5	0.65
	R5	4.83	4.75	-0.084	3	0.252
	R6	5.06	4.92	-0.14	5	0.70
	R7	4.79	4.57	-0.209	7	1.46
Responsiveness	Rs8	5.17	5	-0.17	5	0.85
	Rs9	5.37	5.17	-0.2	7	1.4
	Rs10	5.38	5.19	-0.19	3	0.57
	Rs11	5.78	5.56	-0.22	4	0.88
Assurance	A12	5.13	4.91	-0.22	3	0.66
	A13	5.56	5.16	-0.4	6	2.4
	A14	5.9	5.82	-0.084	4	0.336
	A15	5.68	5.24	-0.44	5	2.2
	E16	5.03	4.63	-0.4	4	1.6
	E17	5.92	5.71	-0.21	6	1.26

Service Quality Dimension	Question No.	Mean of Expectation	Mean of Perception	Mean of Gaps (P-E)	Importance Weight	Weighted Score |Gaps*Importance weight|
Empathy	E18	5	4.81	-0.19	7	1.33
	E19	5.46	5.35	-0.11	6	0.66
	E20	5.97	5.65	-0.14	5	0.7

For this research, the customer requirement was prioritized and categorized by the applied Kano model. From this feature selected, the focused experts' teams of DBE inputs seven features to the input data in HOQ of "What's." These customers' voices selected are, adequate Criteria stated/requirement (category O), promises services dependable and accurate (category O), less error-free document record (category M), customer prompt Service (category O), feel safe in the transaction (category O), enough knowledge and skill of staff (category A), and personal attention, Category (A). These priority factors or root factors of the customer complaint are thought to QFD for improvement. Additionally, a matrix of QFD Supported by Multi-criteria decision was used for making subjective decisions. In this case, analytical hierarchy process (AHP) is used for the technical requirement identified. Finally, the identified technical requirements input data to QFD. Build QFD to design and plan the service quality improvement strategy by making HOQ.

From the above, the root causes of the case companies are identified. After identifying the root cause of the consumer's compliant in the case company, the researcher focus on how to minimize the gaps that source of these root cause customer complaints and focuses on how to improve the service quality in DBE by reducing customer complaints. To find the solution of the root cause of customer complaints in the case company, two teams were created where one team from project finance and the other team from lease finance. The researcher gives full information about the research objective and then, each member finds the solution of the root cause complaints the DBE.

Then, the team had a clear objective of the study and collects the data from the file. Each team gives a proposed possible solution for each root cause of the case of company customer dissatisfaction with group discussion. After the group discussion, the researcher summarized the team proposed solution in table 4.12

Table 4-12: The expert team proposes solution the root cause of customer claim.

Sr. No.	**Root cause of Customer Complaints in DBE**	**Two teams Proposals**
1	The bank policy	➢ Updating the bank policy (depend on customer requirement and related to time)
		➢ Conduct relevant trading for customer and employee
		➢ Clarify the bank policy to customer
2	Working procedure or guidelines	➢ Updating the bank working guidelines (depend on customer requirement and related to time)
		➢ Distributes working procedure in the same time interval for all district and loan Unite.
		➢ Clarify the bank Working procedure or guidelines to customer
		➢ Conducting relevant training for employee about Working procedure or guidelines
3	Asset valuation rate	➢ Set clear rate about Asset valuation
		➢ Conduct relevant training about asset valuation
		➢ Clarify the bank rate to customer
		➢ Updating the rate (depend on customer and technology)
4	Customer over expectation	➢ Conduct relevant training
		➢ Game changers setting
		➢ Aware customer about the bank policy and working procedure
		➢ Fast response to client request
5	Project cycle time	➢ Process cycle time Revision
		➢ Bank should minimizing and short this activities
		➢ Clarify the whole activity to customer
		➢ The bank needs to improve/simplify its loan process steps.
6	Professional skill	➢ Implement Outlining KPI for performance
		➢ Adopt peer to peer teaching
		➢ Conducting relevant training to the whole employee
		➢ The bank must be Follow technology approach
		➢ Create experience sharing habit
7	Information flow gaps	➢ Provide appropriate training and awareness creation and updated new information to the concerned staffs
		➢ Just on time information flow line (info. only from concerned person).
		➢ Create experience sharing habit
		➢ Conduct relevant training
		➢ Exchange feedback
8	Disbursement schedule	➢ Clarify to customer
		➢ Conducting relevant training
		➢ Set clear Working schedule

From the above table 4.12 the bank expert's proposals, the researcher discussed with a focused group from the two teams and prioritize ten proposed solutions for this researches. These were clarifying policy to a customer, outlining KPI for performance, updating working guidelines JIT information flow, process cycle time revision, adopt peer to peer, conducting relevant training, game changers setting, create experience sharing habit, and Exchange feedback.

This research develops a matrix in AHP. The analytical hierarchy process was followed five steps for this study.

Step 1. Identifying customer requirements and technical requirements
Step 2. Identifying technical requirements
Step 3. Construct pairwise comparison matrix n×n, normalize the matrix
Step 4. Calculate criteria weight/priority vector
Step 5. Check to consistency.

A. Identifying customer requirements

The case company Customer voice was identified by the applied SERVQUAL and Kano's model, this customer's voice was used to develop a matrix in AHP and input data for HOQ. For this research seven (7) Customer's voice was identified by focused experts from created teams aided.

1. Criteria stated/ Requirement are adequate
2. Enough Knowledge and skill of staff
3. Promises services dependable and accurate
4. Customer prompt Service
5. Less error free document record
6. Feel safe in the Transaction
7. Personal attention

B. Identifying technical requirements

In these research ten (10) technical requirements was identified by focused experts from created teams aided by process study of the DBE.

1. Clarify policy to customer
2. Update working guidelines
6. Outlining KPI for performance
7. JIT information flow

3. Process cycle time revision
4. Conduct relevant training
5. Create experience sharing habit
8. Adopt peer to peer
9. Game changers setting
10. Exchange feedback

C. Construct pairwise comparison matrix n×n, normalize the matrix

The researcher pairwise comparison constructed by 10×10 matrix, where n is representation number of technical requirements (CTQs) of the case company. A verbal scale measures the element of either quantitative or qualitative criteria within the case company. For this research pairwise comparison matrix "Z" makes with each technical requirement was filled by AHP ranking. The scale ranges value of pairwise comparison matrix 1 - 9. Which is the value indicates each scale range is different such as 1 means that technical requirements X and Y both elements are equally important. 3 mean X is slightly more important than Y, 5 means X is essential and slightly important than Y, 7 means X is more important than Y, and 9 means X element absolutely more important than Y element. There are other ranges in a variable scale 2,4,6,8 which means both elements (X & Y) being compared is closed to each other in customer requirement criteria.

Table 4-13: Construct pairwise comparison 10x10 matrix

customer requirement criteria	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10
TR1	1.00									
TR2		1.00								
TR3			1.00		Quantitative Evaluation area					
TR4				1.00						
TR5					1.00					
TR6						1.00				
TR7		Qualitative Evaluation area					1.00			
TR8								1.00		
TR9									1.00	
TR10										1.00

This scale of the range indicates which technical requirements were more or less important for customer requirements in the case company. The important ranking between the same technical requirements in the criteria was scale range was the same (number one). In table 4.11 clearly indicated qualitative important raking and qualitative ranking. Frist the qualitative important rank

was given by created focused groups, and then quantitative important raking was calculated, the quantitative important raking is the inverse of qualitative ranking. In table 4.14 the constructed pairwise comparison matrix for clarifying policy to customers in the case company. Finally, added the value of each column in the matrix up to get the sum for all technical requirements.

Table 4-14: Pairwise comparison matrix for clarify policy to customer

clarify policy to customer	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10
TR1	1.00	0.20	0.33	0.33	0.20	5.00	0.33	3.00	0.14	0.33
TR2	5.00	1.00	5.00	0.33	7.00	3.00	0.20	5.00	0.33	7.00
TR3	3.00	0.20	1.00	0.11	0.33	7.00	3.00	0.33	5.00	3.00
TR4	3.00	3.00	9.00	1.00	5.00	0.20	3.00	0.14	3.00	0.14
TR5	5.00	0.14	3.00	0.20	1.00	7.00	3.00	0.11	5.00	3.00
TR6	0.20	0.33	0.14	5.00	0.14	1.00	3.00	5.00	0.20	5.00
TR7	3.00	5.00	0.33	0.33	0.33	0.33	1.00	9.00	0.33	3.00
TR8	0.33	0.20	3.00	7.00	9.00	0.20	0.11	1.00	3.00	0.20
TR9	7.00	3.00	0.20	0.33	0.20	5.00	3.00	0.33	1.00	7.00
TR10	3.00	0.14	0.33	7.00	0.33	0.20	0.33	5.00	0.14	1.00
Sum	**30.53**	**13.21**	**22.33**	**21.63**	**23.53**	**28.93**	**16.97**	**28.91**	**18.14**	**29.67**

D. Normalize Pairwise Comparison Matrix and Calculate criteria Weight "W"

The comparisons of the paired comparison are very important to obtain the overall priority vector in the case company. It can be made the process follow three steps

Step 1. Added the value of each column in the matrix up to get sum for all technical requirements

Step 2. Divided each element value by the total value of the respective column in the matrix, the total value was obtain the normality of the matrix.

Step 3. Added the value of each row in the matrix and divided the total value of the row by the number of elements to obtain the average value.

Table 4-15: Normalize pairwise comparison matrix for clarify policy to customer.

clarify policy to customer	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.03	0.02	0.01	0.02	0.01	0.17	0.02	0.10	0.01	0.01	**0.04**
TR2	0.16	0.08	0.22	0.02	0.30	0.10	0.01	0.17	0.02	0.24	**0.13**
TR3	0.10	0.02	0.04	0.01	0.01	0.24	0.18	0.01	0.28	0.10	**0.10**
TR4	0.10	0.23	0.40	0.05	0.21	0.01	0.18	0.00	0.17	0.00	**0.13**
TR5	0.16	0.01	0.13	0.01	0.04	0.24	0.18	0.00	0.28	0.10	**0.12**

clarify policy to customer	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR6	0.01	0.02	0.01	0.23	0.01	0.03	0.18	0.17	0.01	0.17	**0.08**
TR7	0.10	0.38	0.01	0.02	0.01	0.01	0.06	0.31	0.02	0.10	**0.10**
TR8	0.01	0.02	0.13	0.32	0.38	0.01	0.01	0.03	0.17	0.01	**0.11**
TR9	0.23	0.23	0.01	0.02	0.01	0.17	0.18	0.01	0.06	0.24	**0.11**
TR10	0.10	0.01	0.01	0.32	0.01	0.01	0.02	0.17	0.01	0.03	**0.07**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

E. Check to consistency

For measuring the consistency of the decision-making, first, calculate the average of consistency (λmax). There are steps to conduct the average consistency. First multiplying each value of the first column by the priority vector of the first element, it continues the rest of the column, the second step added the value of each row, the third step the added value each row divided by the respective value the relative priority element, finally added the result of division with the number of the element. Depending on this calculation the value of λmax is 10.02.

$$\text{CI} = \frac{h\ \max\_\text{n}}{\text{n}} \qquad \text{where } h_{\max} = \text{the average of Consistency}$$

n= number of element

$$\text{CI} = \frac{10.02\_10}{10} = 0.002$$

Then calculated the consistency ratio CR=CI/RI where RI=Index Random Consistency, the value of RI is 1.49 from table 2.3.

If the value of CR is less or the same as 0.1 is acceptable in practice and the rankings are consistent and if CR is more 0.1 the judgments are untrustworthy and the comparisons should be repeated (Sarjono et al, 2020).

$$\text{CR} = \frac{0.002}{1.49} = 0.0013,$$

The value of CR is less than 0.1. Therefore, the pairwise matrix for clarifying policy to customers is consistent and acceptable. Accordingly, the above steps computed the rest of the customer requirements related to ten technical requirements. Depending on the steps calculated

and checked comparison matrix (C), normalized matrix, priority vector, and consistency check were computed for the left six customer requirements. Finally, the summarized result of all customer requirements relating to the technical requirement in Table 4.16.

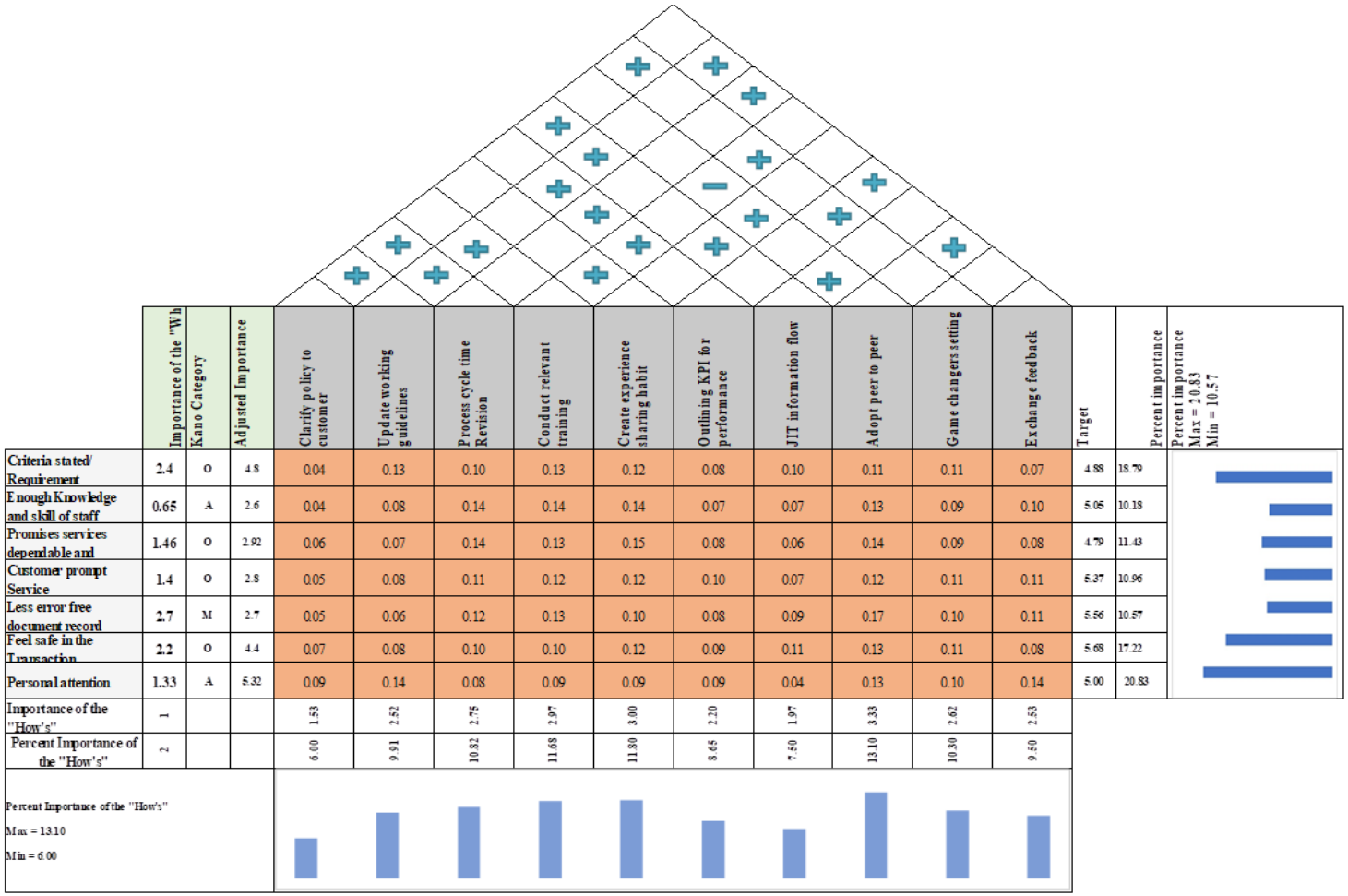
Table 4-16: Relationship matrix between customer requirements and technical requirements

clarify policy to customer	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.03	0.02	0.01	0.02	0.01	0.17	0.02	0.10	0.01	0.01	**0.04**
TR2	0.16	0.08	0.22	0.02	0.30	0.10	0.01	0.17	0.02	0.24	**0.13**
TR3	0.10	0.02	0.04	0.01	0.01	0.24	0.18	0.01	0.28	0.10	**0.10**
TR4	0.10	0.23	0.40	0.05	0.21	0.01	0.18	0.00	0.17	0.00	**0.13**
TR5	0.16	0.01	0.13	0.01	0.04	0.24	0.18	0.00	0.28	0.10	**0.12**
TR6	0.01	0.02	0.01	0.23	0.01	0.03	0.18	0.17	0.01	0.17	**0.08**
TR7	0.10	0.38	0.01	0.02	0.01	0.01	0.06	0.31	0.02	0.10	**0.10**
TR8	0.01	0.02	0.13	0.32	0.38	0.01	0.01	0.03	0.17	0.01	**0.11**
TR9	0.23	0.23	0.01	0.02	0.01	0.17	0.18	0.01	0.06	0.24	**0.11**
TR10	0.10	0.01	0.01	0.32	0.01	0.01	0.02	0.17	0.01	0.03	**0.07**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

customer requirement criteria	**Technical Requirements**									
	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10
CR1	**0.04**	**0.13**	**0.10**	**0.13**	**0.12**	**0.08**	**0.10**	**0.11**	**0.11**	**0.07**
CR2	0.04	0.08	0.14	0.14	0.14	0.07	0.07	0.13	0.09	0.10
CR3	0.06	0.07	0.14	0.13	0.15	0.08	0.06	0.14	0.09	0.08
CR4	0.05	0.08	0.11	0.12	0.12	0.10	0.07	0.12	0.11	0.11
CR5	0.05	0.06	0.12	0.13	0.10	0.08	0.09	0.17	0.10	0.11
CR6	0.07	0.08	0.10	0.10	0.12	0.09	0.11	0.13	0.11	0.08
CR7	0.09	0.14	0.08	0.09	0.09	0.09	0.04	0.13	0.10	0.14

These results are used as input data into QFD. The criteria weight value was used in the relationship matrix of HOQ. These values were used in the subjective decision part of HOQ, and the value indicated the level of importance of technical requirements ("How's"). Therefore, all data used to input the QFD are done by using the SERVQUAL-Kano model and AHP approach. Then the researcher constructed HOQ to improve the service quality of the case company.

Kano Category & Value	
Must-be (M)	**1.0**
Operational (O)	**2.0**
Attractive (A)	**4.0**
Correlation symbols	
Positive Correlation	+
Negative Correlation	−



	Importance of the "Wh	Kano Category	Adjusted Importance	Clarify policy to customer	Update working guidelines	Process cycle time Revision	Conduct relevant training	Create experience sharing habit	Outlining KPI for performance	JIT information flow	Adopt peer to peer	Game changers setting	Exchange feedback	Target	Percent importance
Criteria stated/ Requirement	2.4	O	4.8	0.04	0.13	0.10	0.13	0.12	0.08	0.10	0.11	0.11	0.07	4.88	15.79
Enough Knowledge and skill of staff	0.65	A	2.6	0.04	0.08	0.14	0.14	0.14	0.07	0.07	0.13	0.09	0.10	5.05	10.18
Promises services dependable and	1.46	O	2.92	0.06	0.07	0.14	0.13	0.15	0.08	0.06	0.14	0.09	0.08	4.79	11.43
Customer prompt Service	1.4	O	2.8	0.05	0.08	0.11	0.12	0.12	0.10	0.07	0.12	0.11	0.11	5.37	10.96
Less error free document record	2.7	M	2.7	0.05	0.06	0.12	0.13	0.10	0.08	0.09	0.17	0.10	0.11	5.56	10.57
Feel safe in the Transaction	2.2	O	4.4	0.07	0.08	0.10	0.10	0.12	0.09	0.11	0.13	0.11	0.08	5.68	17.22
Personal attention	1.33	A	5.32	0.09	0.14	0.08	0.09	0.09	0.09	0.04	0.13	0.10	0.14	5.00	20.83
Importance of the "How's"	1			1.53	2.52	2.75	2.97	3.00	2.20	1.97	3.33	2.62	2.53		
Percent Importance of the "How's"	2			6.00	9.91	10.82	11.68	11.80	8.65	7.50	13.10	10.30	9.50		

Percent Importance of the "How's"
Max = 13.10
Min = 6.00

Percent importance
Max = 20.83
Min = 10.57

Figure 4-5: House of Quality

The researcher also done the adjusted importance for each customer requirement by using multiplying the KANO category and importance of “What’s”. The importance of “What’s” for each customer requirement weighted score done from table 4.11. The rate of each service quality dimension within the Kano category is represented by: Attractive (A) =4, Must-be (M) =1, and One-dimensional (O) =2. These adjusted important values are used to compute the percent importance for each customer’s requirements and the Importance of the “How” for the technical requirements in HOQ.

The researcher computed target value, percent importance for each customer’s requirements, adjusted importance “How,” and percentage of adjusted importance. The target value is calculated from the SERVQUAL model based on the customer’s expectation of the DBE customer attribute.

The second stage of the analysis was computed percentage of improvement for each customer requirement. To calculate this percentage determines the relative percentage of adjusted importance each customer needs. The third analysis was calculated percentage improvement “How” for the technical requirements. The researcher first calculated the adjusted improvement

Then, the technical requirements were determine the percentage improvement. So adjusted improvement “How” was computed based on the sum of the multiply adjust importantly by each score weight value in relation matrix that was calculated by analytical hierarchy process.

The last stage of the analysis was computed percentage improvement “How” for the technical requirements. To calculate this percentage determines the relative percentage of adjusted importance “How” each technical requirement.

In the figure 4-5, the present improvement is analyzed, which shows that personal attention has the highest weighted score. Criteria stated/Requirement is adequate has the second weighted score. So, personal attention and criteria stated/requirement are adequate was improved in the case company by 20.83% and 18.79% respectively. The lowest improvement indicated at less error recording documents was improved 10.75%. Therefore, personal attention and criteria stated/requirement are adequate was improved in the case company by 20.83% and 18.79%

respectively. Thus, adopting peer to peer and conducting relevant training was improved in the case company 13.10% and 11.65% respectively. The clarify policy to customers has a minimum percent of improvement, was improved by 6.00%.

The other part HOQ indicated correlation among technical requirements, in figure 4-5 seen that technical requirement correlation, for example updating working guidelines and process cycle time revision have strong relation, JIT information flow and adopt peer to peer has a positive relation and updating working guidelines and exchange feedback.it is seen adopt peer to peer and conduct relevant training has a negative relation. In general, the importance of build HOQ is to indicted that clearly the relative weight score of relationships, customer needs, technical requirements, and correlation with the technical requirements in the case company.

All requirement of service quality improvement in the case company is known from the above analysis. The next steps show how the case company used this approach to the service quality improvement continuously. First, discuss the top management about the approach and the top managements of the case company set service quality goals and planned the best way to use the approach method as per customer needs. Then develop change management and organization to control the system. Finally, the case company should follow are the entire above service quality improvement requirement properly, the standard goal of the company, and control mechanism.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

In today's highly competitive environment, organizations, and companies need an extra edge to enhance and build upon their relationships with customers. Currently, the bank industry competitions are high. Many clients find that high-quality customer service can make the difference in winning and retaining customers or losing them. Determining which factors produce the highest perceived value by the customer, customer satisfaction, and service quality study is very important for keeping an existing customer and attracting the new customer. This research focused on service quality measurement and enhancement approach for bank sector, case in Development Bank of Ethiopia. The researcher used the integration of SERVQUAL-Kano with QFD for service quality improvement and for the subject decision of the technical team of the Bank used the AHP approach. This integration is very important to solve the gap of the service and to continuous service quality improvement of the case company.

Process study was conducted on twenty-six (26) staffs where thirteen (13) from project finances and Thirteen (13) from lease finances in DBE top management interview to identify the root cause for customer complaints. The researcher found major eight (8) main root causes of customer's complaints in the DBE, and then made service quality improvement in the DBE by integrating four different approaches.

First, the researcher measures the existing service quality of the DBE within the SERVQUAL model in order to evaluate customers' perception of the quality of services provided in DBE. The researcher prepared twenty (20) questions for customer expectation and perception. In conducting the study, 209 external customers were selected from a total of 439 external customers using the purposive stratified sampling method, and out of these customers, only 143 (68.4%) customers were availed to fill out the questionnaires and the team did analysis using the responses of these customers. This model used five dimensions in measuring the current level of the customers' service quality given by the bank. From the five service quality dimensions, the highest weighted score of the service quality dimension for DBE shows that assurance then followed empathy, responsiveness, tangibility, and reliability respectively.

The researcher used Kano's model to identify the prioritized features. This categorization helps to identify indifferent activities in DBE. The researcher prepared thirteen service quality measurement questions prepared and distributed them to 209 DBE customers. From these service quality features, No service attributes were categorized in the questionable and reverse category, five service features were categorized as operational category, two service features were categorized in must be the category, three service features were categorized as attractive, and three service features were categorized in the indifferent category.

The result of integration SERVQUAL-Kano model used to the input of QFD for continuous service quality improvement. From the integration result, the SERVQUAL-Kano model selected seven (7) features by the focused experts to impute data in HOQ of "What's". These Customers' voice is criteria stated/ requirement are adequate (category O), promises services dependable and accurate (category O), less error-free document record (category M), customer prompt Service (category O), feel safe in the transaction (category O), enough knowledge and skill of staff (category A), and personal attention (category A).

In addition, the matrix HOQ is supported by AHP. This approach needs technical requirements. The DBE expert's selected ten (10) technical requirements, these technical requirements are clarify policy to a customer, outlining KPI for performance, update working guidelines, JIT information flow, process cycle time revision, adopt peer to peer, conduct relevant training, game changers setting, create experience sharing habit, and exchange feedback. Finally, build HOQ to know percent improvement, percent of importance of "How's," and technical requirement in DBE.

From the information HOQ, personal attention has the highest present of improvement and criteria stated/ requirement has the second present improvement, weighted score improvement in the case company 20.83% and 18.79% respectively. The less error recording document has a low percent improvement, was improved by 10.75%. On the other information found from HOQ percent of importance of "How's". From ten technical requirements, adopt peer to peer has the highest present improvement "How's" and conducting relevant training has the second present improvement, was improved by 13.10% and 11.65% respectively. Clarify policy to customers have a low percent of improvement "How's", was improved by 6.00%. HOQ shows that the

relation between the technical requirements, which means the improvement of one technical requirement, affects another technical requirement in the case company in a positive or negative way. Updating working guidelines and process cycle time revision have strong relation, JIT information flow and adopt peer to peer has a positive relation and updating working guidelines and exchange feedback. But adopting peer to peer and conduct relevant training has a negative relation.

Generally in this study root causes of customer complaints were identified, external customer wants are identified, and attributes were categorized by using the SERVQUAL-Kano model. The technical requirements of the case company were also selected by DBE experts. Finally, know the percent improvement for selected customer requirements and percent of importance of "How's for each technical requirement of the DBE. Accordingly, this model used to increase the external customer's satisfaction and improve the service quality continues in DBE.

5.2. RECOMMENDATION

Based on the findings of the study, the researcher would like to recommend the following major recommendations to the case company.

- The Bank should give training to its employees so as to develop their technical skills and know-how about the loan process so that they can provide quality services to the customers which in turn increases the satisfaction level of the clients.
- Special recommendation attributes to adopting peer to peer teaching where it contributes the major improvement for service quality delivery with the help of AHP.
- The company should continuously do investigate customer expectations and perceptions, to control the service quality level.
- The company should collect the customer's complaints; this is used for a customer-focused approach for significant continuous process improvement.

5.3. FUTURE RESEARCH AREAS

After conducting the study and analyzing the different features to help improve in service delivery of DBE, the researcher recommended the following future research area.

- Future researches could use only one of the two financial system data's (project finance or lease finances) to realize the relationship between customers' wants and technical requirements to improve the bank loan service delivery.
- This study focuses on External customers of the bank. Future studies use the internal customer data's to service delivery improvement of the bank.
- This research focuses on the government's policy bank. Future research may take into account other commercial banks and microfinance loan processes with a conceptual model integrated approach.

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Annex 1: INTERVIEW QUESTIONS

The main purpose of this interview is to collect data on the main root causes of customer compliant to improve the service quality in the Development Bank of Ethiopia. Without getting real information from you, these studies are not reliable. So please give me real information. These interview questions are prepared for Top management of DBE.

1. What types of finance modality do you work in? There are two types of finance in DBE, these are project finance and lease finance.
2. What kind of communication mode you use to contact your customer? Informal letter, physical contact or telephone
3. Is there any customer complaints received? If it is yes what are they and what are the major cases of customer compliant.
4. How much customer compliance do you receive in a month?
5. In which stages of loan process are customer complaints usually occurred?
6. What is the main root cases customer complains?
7. Do you have any suggestion or mechanism to avoid customer compliance?
8. Which types of projects have more customers compliant?
9. Which loan process has more customer compliances in your work area?
10. Is there any established Department to receive the customer compliants at a Bank level?

Thank you very much for your cooperation

Annex 2: SERVQUAL Model QUESTIONNAIRE

Part A: Customers Service Expectation Questionnaire

Questionnaire	Strongly Disagree…….Strongly Agree						
A. DBE policies and the statement are clear and well explained	1	2	3	4	5	6	7
B. DBE loan criteria stated/requirement are adequate or reasonable	1	2	3	4	5	6	7
C. DBE loan process cycle times are clear and reasonable	1	2	3	4	5	6	7
D. The DBE perform the promised service dependably and accurately	1	2	3	4	5	6	7
E. DBE planned to do something by a certain time, it does so	1	2	3	4	5	6	7
F. DBE has able to solve the problem, when happed the problem related to Customer.	1	2	3	4	5	6	7
G. DBE manages error free document record	1	2	3	4	5	6	7
H. Employees of the bank recognizes the customer value	1	2	3	4	5	6	7
I. Employees in the DBE give the customer prompt service	1	2	3	4	5	6	7
J. Employees in the DBE are positive and willing to help the customer	1	2	3	4	5	6	7
K. Employees in the DBE give priority to the customer any request	1	2	3	4	5	6	7
L. The behavior of employees in the DBE instills confidence in the customer	1	2	3	4	5	6	7
M. Customer feel safe in the transactions with the bank	1	2	3	4	5	6	7
N. Employees in the DBE are consistently courteous with Customer	1	2	3	4	5	6	7
O. Employees in the DBE have the knowledge and skill to answer the customer questions	1	2	3	4	5	6	7
P. The DBE gives care and individual attention to customer	1	2	3	4	5	6	7
Q. Employees have operating hours convenient to its customers	1	2	3	4	5	6	7
R. DBE has employees who give the customer personal attention	1	2	3	4	5	6	7
S. DBE employees have the customer best interests at heart	1	2	3	4	5	6	7
T. The employees of the DBE have easily understand specific needs of the customer	1	2	3	4	5	6	7

Part B: Customers Service Perception Questionnaire

Questionnaire	Strongly Disagree……Strongly Agree						
A. The loan policies and statement should clear and well explained to you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
B. The loan criteria stated/requirement are adequate or reasonable to you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
C. The loan cycle times are clear and reasonable to you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
D. The loaning unit perform the promised service dependably and accurately	**1**	**2**	**3**	**4**	**5**	**6**	**7**
E. When the loaning unit promises to do something by a certain time, it does so	**1**	**2**	**3**	**4**	**5**	**6**	**7**
F. When you have a problem, the loaning unit shows a sincere interest in solving it	**1**	**2**	**3**	**4**	**5**	**6**	**7**
G. The loaning unit manages error free document record	**1**	**2**	**3**	**4**	**5**	**6**	**7**
H. Employees of the loaning unit recognizes you as valued customer	**1**	**2**	**3**	**4**	**5**	**6**	**7**
I. Employees in the loaning unit give your prompt service	**1**	**2**	**3**	**4**	**5**	**6**	**7**
J. Employees in the loaning unit is positive and willing to help you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
K. Employees in the loaning unit give priority to your any request	**1**	**2**	**3**	**4**	**5**	**6**	**7**
L. The behavior of employees in the loaning unit instills confidence in you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
M. You feel safe in your transactions with the bank	**1**	**2**	**3**	**4**	**5**	**6**	**7**
N. Employees in the loaning unit are consistently courteous with you	**1**	**2**	**3**	**4**	**5**	**6**	**7**
O. Employees in the loaning unit has the knowledge and skill to answer your questions	**1**	**2**	**3**	**4**	**5**	**6**	**7**
P. The loaning unit gives you individual attention	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Q. The loaning unit has operating hours convenient to its customers	**1**	**2**	**3**	**4**	**5**	**6**	**7**
R. The loaning unit has employees who give your personal attention	**1**	**2**	**3**	**4**	**5**	**6**	**7**
S. The loaning unit has your best interests at heart	**1**	**2**	**3**	**4**	**5**	**6**	**7**
T. The employees of the loaning unit has easily understand your specific needs	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Part C: Feature importance weight

Very unimportant 1 2 3 4 5 6 7 very important	
STATEMENT	**Answer**
A. Policies and the statement are clear and well explained	
B. Loan criteria stated/requirement are adequate or reasonable	
C. Loan criteria stated/requirement are adequate or reasonable	
D. Perform to promised service dependably and accurately	
E. plane to do something by a certain time	
F. Able to solve the problem, when happed the problem related to Customer	
G. Manages error free document record	
H. Employees of the bank recognizes the customer value	
I. Employees give the customer prompt service	
J. willingness to help to customers and provide prompt service	
K. Employees give priority to the customer any request	
L. The behavior of employees instills confidence in the customer	
M. Customer feel safe in the transactions with the bank	
N. Employees are consistently courteous with Customer	
O. The knowledge Employees in the DBE have ability to convey trust and	
P. Care and individual attention the DBE provide customer	
Q. Employees have operating hours convenient to its customers	
R. Employees who give the customer personal attention	
S. employees have the customer best interests at heart	
T. employees of the DBE have easily understand specific needs of the	

Annex 3: KANO Model QUESTIONNAIRE

Part A: Demographic Information about client

Please take your precious time and answer the following few questions by putting a √ mark on the space provided.

1. What is your gender

   Male ☐ Female ☐

2. What is your age

   18-30 years ☐ 31-40 years ☐ 41-55 years ☐ above 55 years ☐

3. What is your education level

   Under High school ☐ High school Complete ☐ Diploma ☐

   Degree ☐ Masters ☐ Above masters ☐

4. Respondent's form of business

   Sole Proprietorship ☐

   Private Limited Company ☐

   Share Company ☐

5. Type of loan you did get from DBE?

   Public Enterprise ☐ Project financing ☐ Lease Financing ☐

   Other_____

6. Type of economic sector of your project

   Commercial Agriculture ☐ Manufacturing ☐ Agro-Processing ☐

   Mining & Extractive Industries ☐ Others ☐ √

7. Name of the Bank's loaning unit where you have gotten the services?

   A. Customer Relationship Management Directorate I ☐

   B. Customer Relationship Management Directorate II ☐

   C. Customer Relationship Management Directorate III ☐

   D. Customer Relationship Management Directorate IV ☐

   E. Project Rehabilitation and Loan Recovery Directorate ☐

   F. External Fund and Credit Management Directorate ☐

   G. If it is found at District: - Name of the District _____

8. Length of your relationship with the loaning unit:

   Short or less than 1 year ☐

Medium 1 to 5 years ☐

Long More than 5 years ☐

Part B: Kano Model Functional and Dysfunctional Question

No.	Question	Answers (write (√) in the box you select)
1a	If DBE loan criteria stated/ requirement are adequate or reasonable, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
1b	How would you feel, if DBE loan criteria stated/ requirement are not adequate or reasonable?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
2a	How would you feel, if you have clear and reasonable loan process cycle time?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
2b	If you are not able to get clear and reasonable loan process cycle time, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
		☐. I like it
		☐. I expect it

3a	How do you feel, if DBE loan unit promises to do something by a certain time, it does so?	☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
3b	If you are not do something by a certain time, it does so, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
4a	How would you feel, if DBE perform the promised service dependable and accurately?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
4b	If you don't have performed the promised service dependable and accurately with the DBE, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
5a	If DBE manages less error free document record, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
5b	How would do you feel, if DBE has error document record?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it

		☐. I dislike it
6a	How do you feel, if Employees of the bank recognizes the customer value?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
6b	If you are not able to have recognizes the customer value, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
7a	How would you feel, if Employees of the bank give the customer prompt Service??	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
7b	If you are not able to have given the customers prompt Service, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
8a	How would you feel, if Employees of the bank is positive and willing to help the customer?	☐.I like it
		☐.I expect it
		☐.I'm neutral it
		☐.I can tolerate it
		☐.I dislike it
		☐.I like it

8b	If you are not positive and willing to help the customer, how do you feel	☐I expect it
		☐I'm neutral it
		☐I can tolerate it
		☐I dislike it
9a	How would you feel, if you have good behaviors of Employees in DBE that instill confidence in you?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
9b	If you are not able to have good behaviors of Employees, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
10a	If you have to feel safe in the transactions with the bank, how do you feel?	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
10b	How do you feel, if you are not able to safe in the transactions with the bank.	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it
11a	How would you feel, if DBE employees has the knowledge and skill to answer the customer questions?	☐. I like it
		☐. I expect it
		☐. I'm neutral it

		☐. I can tolerate it
		☐. I dislike it
11b	If you are not able to have enough knowledge and skill to answer the questions, how do you feel?	☐.I like it
		☐.I expect it
		☐.I'm neutral it
		☐.I can tolerate it
		☐.I dislike it
12a	If you have employees give the customer personal attention, how do you fell	☐.I like it
		☐I expect it
		☐I'm neutral it
		☐I can tolerate it
		☐I dislike it
12b	How do you fell, if you are not give personal attention, how do you fell	☐.I like it
		☐.I expect it
		☐.I'm neutral it
		☐.I can tolerate it
		☐.I dislike it
13a	How would you feel, if Employees of the bake give care and individual attention to customers	☐.I like it
		☐.I expect it
		☐.I'm neutral it
		☐.I can tolerate it
		☐. I dislike it
13b	If you are not able to have given care and individual attention from the bank employees, how do you feel	☐. I like it
		☐. I expect it
		☐. I'm neutral it
		☐. I can tolerate it
		☐. I dislike it

Annex 4: Response Rate by DBE Loaning Units

No.	Name of DBE Loaning Units	Proposed Sample Size	No. of respondent	Response Rate (%)
1	Customer Relationship Management Directorate I	7	6	85.7
2	Customer Relationship Management Directorate	6	6	100
3	Customer Relationship Management Directorate	9	8	88.8
4	Customer Relationship Management Directorate	5	4	80.0
5	Project Rehabilitation and Loan Recovery Directorate	3	3	100.00
6	External Fund and Credit Management Directorate	10	9	90.00
7	Addis Ababa District	22	16	72.2
8	Adma District	22	22	100
9	Dire Dawa District	8	8	100
10	Jima District	10	9	90.0
11	Wolayita District	9	5	55.6
12	Nekemete District	19	6	31.6
13	Gonder District	8	8	100
14	Dessie District	9	9	100
15	Bahire Dar District	10	10	100
16	Hawassa District	23	20	86.96
17	Mekele District	30	10	33.33
Grand Total		**209**	**159**	**76.08%**

Annex 5: AHP process for HOQ relationship matrix

1. Criteria stated/ Requirement is adequate

clarify policy to customer	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.03	0.02	0.01	0.02	0.01	0.17	0.02	0.10	0.01	0.01	**0.04**
TR2	0.16	0.08	0.22	0.02	0.30	0.10	0.01	0.17	0.02	0.24	**0.13**
TR3	0.10	0.02	0.04	0.01	0.01	0.24	0.18	0.01	0.28	0.10	**0.10**
TR4	0.10	0.23	0.40	0.05	0.21	0.01	0.18	0.00	0.17	0.00	**0.13**
TR5	0.16	0.01	0.13	0.01	0.04	0.24	0.18	0.00	0.28	0.10	**0.12**
TR6	0.01	0.02	0.01	0.23	0.01	0.03	0.18	0.17	0.01	0.17	**0.08**
TR7	0.10	0.38	0.01	0.02	0.01	0.01	0.06	0.31	0.02	0.10	**0.10**
TR8	0.01	0.02	0.13	0.32	0.38	0.01	0.01	0.03	0.17	0.01	**0.11**
TR9	0.23	0.23	0.01	0.02	0.01	0.17	0.18	0.01	0.06	0.24	**0.11**
TR10	0.10	0.01	0.01	0.32	0.01	0.01	0.02	0.17	0.01	0.03	**0.07**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

2. Enough Knowledge and skill of staff

Enough Knowledge and skill of staff	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.03	0.01	0.01	0.02	0.01	0.17	0.02	0.12	0.01	0.01	**0.04**
TR2	0.09	0.04	0.01	0.02	0.30	0.10	0.01	0.20	0.01	0.00	**0.08**
TR3	0.22	0.20	0.06	0.01	0.01	0.24	0.14	0.01	0.21	0.27	**0.14**
TR4	0.09	0.12	0.53	0.05	0.22	0.01	0.24	0.01	0.12	0.00	**0.14**
TR5	0.22	0.01	0.18	0.01	0.04	0.24	0.24	0.00	0.21	0.27	**0.14**
TR6	0.01	0.01	0.01	0.23	0.01	0.03	0.14	0.20	0.01	0.09	**0.07**
TR7	0.09	0.20	0.02	0.01	0.01	0.01	0.05	0.20	0.01	0.09	**0.07**
TR8	0.01	0.01	0.18	0.33	0.39	0.01	0.01	0.04	0.37	0.01	**0.13**
TR9	0.15	0.12	0.01	0.02	0.01	0.17	0.14	0.00	0.04	0.21	**0.09**
TR10	0.09	0.28	0.01	0.33	0.00	0.01	0.02	0.20	0.01	0.03	**0.10**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

3. Promises services dependable and accurate

Promises services dependable and accurate	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.04	0.11	0.01	0.02	0.01	0.17	0.02	0.10	0.01	0.09	**0.06**
TR2	0.01	0.04	0.01	0.02	0.30	0.10	0.01	0.17	0.01	0.01	**0.07**
TR3	0.26	0.25	0.07	0.01	0.01	0.24	0.14	0.01	0.21	0.21	**0.14**
TR4	0.11	0.11	0.46	0.05	0.22	0.01	0.24	0.00	0.12	0.01	**0.13**
TR5	0.26	0.01	0.20	0.01	0.04	0.24	0.24	0.00	0.21	0.28	**0.15**
TR6	0.01	0.01	0.01	0.26	0.01	0.03	0.14	0.17	0.01	0.15	**0.08**
TR7	0.11	0.18	0.02	0.01	0.01	0.01	0.05	0.17	0.01	0.00	**0.06**
TR8	0.01	0.01	0.20	0.36	0.39	0.01	0.01	0.03	0.37	0.01	**0.14**
TR9	0.18	0.11	0.01	0.02	0.01	0.17	0.14	0.00	0.04	0.21	**0.09**
TR10	0.01	0.18	0.01	0.26	0.00	0.01	0.02	0.31	0.01	0.03	**0.08**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

4. Customer prompts Service

Customer prompts Service	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.04	0.01	0.01	0.02	0.01	0.17	0.01	0.10	0.01	0.13	**0.05**
TR2	0.12	0.04	0.01	0.02	0.30	0.10	0.01	0.17	0.02	0.01	**0.08**
TR3	0.19	0.20	0.05	0.01	0.01	0.24	0.13	0.01	0.25	0.01	**0.11**
TR4	0.12	0.12	0.35	0.05	0.21	0.01	0.22	0.00	0.15	0.01	**0.12**
TR5	0.19	0.01	0.15	0.01	0.04	0.24	0.22	0.00	0.25	0.13	**0.12**
TR6	0.01	0.01	0.01	0.26	0.01	0.03	0.13	0.17	0.01	0.38	**0.10**
TR7	0.12	0.28	0.02	0.01	0.01	0.01	0.04	0.17	0.01	0.00	**0.07**
TR8	0.01	0.01	0.15	0.36	0.38	0.01	0.01	0.03	0.25	0.01	**0.12**
TR9	0.19	0.12	0.01	0.02	0.01	0.17	0.22	0.01	0.05	0.29	**0.11**
TR10	0.01	0.20	0.25	0.26	0.01	0.00	0.01	0.31	0.01	0.04	**0.11**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

5. Less error free document record

Less error free document record	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	W
TR1	0.03	0.01	0.15	0.02	0.01	0.26	0.02	0.01	0.01	0.01	**0.05**
TR2	0.15	0.03	0.01	0.02	0.01	0.09	0.01	0.24	0.02	0.01	**0.06**
TR3	0.01	0.30	0.05	0.01	0.01	0.20	0.18	0.02	0.27	0.14	**0.12**
TR4	0.09	0.10	0.45	0.05	0.25	0.01	0.18	0.01	0.16	0.01	**0.13**
TR5	0.15	0.17	0.15	0.01	0.04	0.01	0.18	0.01	0.27	0.01	**0.10**
TR6	0.00	0.01	0.01	0.15	0.18	0.03	0.18	0.24	0.01	0.00	**0.08**
TR7	0.09	0.17	0.02	0.02	0.01	0.01	0.06	0.43	0.02	0.14	**0.09**
TR8	0.20	0.01	0.15	0.36	0.32	0.01	0.01	0.05	0.16	0.41	**0.17**
TR9	0.20	0.10	0.01	0.02	0.01	0.14	0.18	0.02	0.05	0.23	**0.10**
TR10	0.09	0.10	0.02	0.36	0.18	0.26	0.02	0.01	0.01	0.05	**0.11**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

6. Feel safe in the Transaction

Feel safe in the Transaction	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	W
TR1	0.03	0.01	0.16	0.01	0.01	0.00	0.02	0.01	0.42	0.07	**0.07**
TR2	0.20	0.04	0.01	0.01	0.01	0.09	0.01	0.19	0.02	0.22	**0.08**
TR3	0.01	0.20	0.05	0.01	0.01	0.21	0.21	0.01	0.23	0.00	**0.10**
TR4	0.08	0.20	0.16	0.04	0.30	0.01	0.21	0.01	0.01	0.00	**0.10**
TR5	0.14	0.20	0.16	0.01	0.04	0.01	0.21	0.00	0.23	0.22	**0.12**
TR6	0.25	0.01	0.01	0.13	0.21	0.03	0.01	0.19	0.01	0.00	**0.09**
TR7	0.08	0.20	0.02	0.01	0.01	0.27	0.07	0.35	0.02	0.07	**0.11**
TR8	0.20	0.01	0.16	0.31	0.39	0.01	0.01	0.04	0.01	0.22	**0.13**
TR9	0.00	0.12	0.01	0.22	0.01	0.15	0.21	0.19	0.05	0.17	**0.11**
TR10	0.01	0.00	0.26	0.22	0.00	0.21	0.02	0.00	0.01	0.02	**0.08**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

7. Personal attention

Personal attention	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10	**W**
TR1	0.05	0.02	0.01	0.01	0.01	0.12	0.10	0.20	0.40	0.01	**0.09**
TR2	0.14	0.06	0.01	0.20	0.01	0.12	0.01	0.33	0.13	0.36	**0.14**
TR3	0.14	0.29	0.04	0.01	0.01	0.01	0.10	0.02	0.22	0.01	**0.08**
TR4	0.14	0.01	0.26	0.04	0.01	0.01	0.10	0.01	0.01	0.26	**0.09**
TR5	0.24	0.29	0.11	0.12	0.03	0.00	0.10	0.01	0.01	0.01	**0.09**
TR6	0.02	0.02	0.26	0.12	0.30	0.04	0.16	0.02	0.01	0.01	**0.09**
TR7	0.02	0.29	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.01	**0.04**
TR8	0.02	0.01	0.11	0.28	0.30	0.12	0.16	0.07	0.01	0.26	**0.13**
TR9	0.01	0.02	0.01	0.20	0.10	0.20	0.10	0.33	0.04	0.02	**0.10**
TR10	0.24	0.01	0.18	0.01	0.23	0.36	0.16	0.01	0.13	0.05	**0.14**
Sum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**