ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

FACTORS AFFECTING CUSTOMER'S SATISFACTION OF MOBILE APPLICATION BASED TAXI SERVICE (THE CASE OF RIDE)

A THESIS SUBMITTED TO: DEPARTMENT OF MARKETING MANAGEMENT SCHOOL OF COMMERCE COLLEGE OF BUSINESS AND ECONOMICS

PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN MARKETING MANAGEMENT

BY

TESFANESH ZEMENE

JULY 2021

ADDIS ABABA, ETHIOPIA

Declaration

I hereby declare that the thesis entitled "Factors Affecting Customers Satisfaction of Mobile Application Based Taxi Service: The Case of RIDE" is my original work submitted by me for the award of Master's degree of Marketing Management from Addis Ababa University, School of Commerce and that all sources of materials that have been used for this research have been properly acknowledged.

Name: Tesfanesh Zemene

Signature: _____

Department: Marketing Department

Date of Submission: _____

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

Assessing Factors affecting customers satisfaction of mobile application based taxi service: the case of Ride

Prepared by: Tesfanesh Zemene

ID-GSE/3322/11

Approved by Board of Examiners

Advisor	**Signature**
Internal Examiner	**Signature**
Shimmels Zewdie (PhD)	
External Examiner	**Signature**

Acknowledgement

First of all, my thanks go to the Almighty God for the strength, courage, and inspiration he gave me from the beginning to the end of this study. I would like to express my deep and sincere gratitude to my advisor Dr. Beza Libeyesus (PhD) for her continued, tireless advice and objective comments throughout this research period. I would also like to thank my classmate Tigist Wubseht who have helped me without hesitation to complete this study.

Last but not least, I am extremely grateful to my husband Estifanos Tadesse for his support and my dear son Alador Estifanos. I would also like to thank my parents Zemene Woreta and Nigist Digafe for their encouragement and contribution for my success. I also want to thank my brothers Abiy Zemen, Yohannes Zemene and Kassahun Sisay for their help in distributing the survey and for their support and encouragement throughout the study.

Tesfanesh Zemene

Acronyms and Abbreviations

App: Application

GPS: Global positioning system

FIFO: First in first out

MTB: Mobile taxi booking

SD: Standard Deviation

SPSS: Statistical Package for Social Science

VIF: Variance Inflation Factor

Table of Contents

LIST OF TABLES

Abstract

This study deals with factors that affect customer satisfaction of mobile application based taxi service regarding Ride taxi which is the first and number one mobile application based taxi service provider in Ethiopia. A questionnaire was used to collect the data from 369 respondents who were selected using a purposive or deliberate sampling technique. The collected data was analyzed using SPSS version 25, employing statistical tools such as mean, correlation, and multiple regression analysis. The findings of the study discovered satisfaction affecting factors, Price, Application Convenience, Call Centre employees Responsiveness & Car condition have a positive relationship and effect to customer satisfaction except two variables i.e Time and drivers' profession. All six hypotheses were tested to examine the effect of these variables have on customer's satisfaction. The Multiple regression analysis result proved that four of the factors namely Price, call center responsiveness, car condition & app convenience have a positive and a significant effect on customer's satisfaction while the rest two factors Time reliability and Driver's professionalism have insignificant effect on taxi passenger's satisfaction. The result shows that customers are satisfied with timely performance of ride however, it has not become a factor to influence their level of satisfaction currently. Overall, 78% of them are satisfied with the service that Ride has to offer. Furthermore, the results of the analysis showed that these independent variables collectively contribute to the 48% variation in customer satisfaction indicating that there are other unspecified variables (52%) that have influence on the satisfaction of customers. Recommendations are also forwarded to Ride company based on the findings.

Key words: Customer satisfaction, app based taxi service, service quality factor

CHAPTER ONE

1.1 Background of the study

Customer satisfaction is expressed in different ways by different scholars. Francis, (2009) explained customer satisfaction as it is a fulfilment response that we get after experiencing something which is a positive and pleasurable fulfillment response. He suggests that the satisfaction evaluation can be directed at any or all elements of the customer's experience. This can include product, service, process, and any other components of the customer experience.

Authors like Kotler & Killer (2009) described satisfaction as it is a result that will end up with pleasure or disappointment after a person compares the performance of a product with his or her expectation. They also explained the definition in detail that when a products or services performance exceeds customers expectation, customer will feel very satisfied or delighted, when it meets their expectation, they will fill satisfied and when it doesn't meet their expectation, they will be disappointed.

The existence of many companies on the market is conditioned with a number of satisfied customers. Customers are the key factor of the existence and company development on the market. It is obvious then, that firms, which want to face the competition, need to provide valuable and unique terms to their customers, that will satisfy their needs. This satisfaction includes not only the feelings associated with the purchasing process, but also the atmosphere. Biesok, & Jolanta. (2011)

Biesok, & Jolanta. (2011) further explained that customer satisfaction is often associated with the customer gratification. Products or services, that are a source of satisfaction, provide the desirable value to their customers, at least in a sufficient degree. All decisions, made by the consumer, are affected by many factors, including economic ones, such as: incomes, price, savings, loans, the impact of marketing instruments, and noneconomic factors, such as: demographic, social or psychological ones. Recognizing and satisfying customer's needs, expectations, preferences, and behavior is not easy and what is more knowing it does not guarantee success on the market. The reason of this is the fact, that consumer behavior is not rational. Consumers, who make a purchase of a certain good, usually have already clarified requirements referring to its quality, purpose,

or use. They do not pay for the product in a physical sense, but they pay for value or what they expect from the product.

Taxi apps are a recent phenomenon, which have the potential for positive impacts on urban transportation. A taxi carries out an important task of offering personalized service in the urban transportation system. The disparity between the taxi supply and passenger demand is one of the challenges of running an effective taxi service these days (Shen et al., 2015). This makes it difficult for travelers to be picked up on time, and available taxis must waste lots of time to get customers, which worsens the existing traffic congestion and the air pollution problem. Mobile taxi booking (MTB) Apps have been developed in cities as a bridge to connect passengers and taxis (Shen et al., 2015). The passengers use the MTB App to request a ride. With an MTB App, passengers can search for available taxis around them and make an order. They fix their locations by GPS or typing the target location, by which drivers can easily reach them. The app sends the request to the nearest available driver who then either accepts or declines the trip. (Chan et al., 2016)

This study tried to investigate factors that affects commuters' satisfaction of Ride application based taxi service. It analyses the relationship between independent variables (price fairness, time reliability, car condition, application easiness, call center employees responsiveness and Driver's professionalism) and the independent variable (customer satisfaction)

1.2 Statement of the problem

Addis Ababa is the capital city of Ethiopia which has become the biggest city which has expanded rapidly given the fact that there is high growth of population that seem to cause problems of public transportation in the city. Commuters face daily transport challenges and traffic congestion. The city has become a jam-packed place since, the population is increasing through time to time. The population of Addis Ababa in 2020 is 4,794,000, a 4.4% increase from 2019 (According to worldpopulationreview.com). Hence, the city is experiencing public transport shortage especially during rush hours, when on average one needs to wait for at least 15 to 20 minutes to get into a bus or tax. (www.urbanafrica.net) This does not only waste one's time but also makes the day unproductive for one as to spend most of his/her time on the transportation to get something done especially for work that requires travel throughout the city. There are various factors for the cause of

congestion in the city. The fact that Addis Ababa has one dominant center and various other weak sub centers has led to a higher degree of specialization of such land use patterns in the core area of the city. Markets, corporate offices, educational institutions are located in this area and hence it has high inbound and outbound traffic at peak hours which results in congestion. Moreover, the continued growth of the urban population which is largely due to rural-urban area migration or the pull effect of the city and changes in land use patterns such as development of business activities in previously residential areas, are generating a continuous demand for travel. (Meron, 2007)

The city administration has shown efforts to reduce this problem in the past ten years by adding additional buses, constructing railways, and arranging blue public buses for people who work in government offices. Currently, there is a big gap between public transport demand and supply. The transportation of the city of Addis Ababa has been marked by lack of adequate transport system with a periodical increment of transport fees. Moreover, it lacks a good infrastructure for pedestrians and smooth traffic flow on daily bases. (www.urbanafrica.net)

Recently application based taxi services has emerged. There are about thirteen application based taxi service out of which six are well known by most taxi users and are competing to fulfill the needs of transportation commuters. It is important to match service quality with customer perception. As Berry and Parasuraman (1991) explained, retaining, and attracting new customers in a competitive environment is very important and needs the provision of superior quality of services. Companies that are engage in the objective of delivering service quality that is superior, have a strong possibility to achieve company goals regarding their market share growth, brand loyalty and retention of customers.

According to Horsu & Yeboah (2015), factors which affects a satisfaction of taxi passengers are the quality of service, comfort, safety, reliability, price fairness and driver's professionalism. Additionally, a study conducted in Washington by Ross (2015) came in to a conclusion that drivers behavior, easiness of online cab booking, adequate travel time, waiting time for arrival, car condition, convenience of accessibility and drop off at destination, are factors that have a contribution to service quality and has a significant effect on customer satisfaction of taxi users.

Thus, the above mentioned problems has motivated the researcher to look at the factors that affects commuters' satisfaction of Ride taxi users and figure out the factor that most contributes to their satisfaction. Given the fact that it is a new service that has emerged few years back in the country, the researcher has intended to know how the service really solved the problem of commuters in satisfying their needs in terms of the identified factors.

Per the researcher's review and understanding, there is lack of empirical research undertaken on application based taxi services in Ethiopia, since application based taxi services are new and emerging business. Thus, the aim of this study is to generate empirical evidence that may bridge the gap and provide some insight in the area regarding the relationship between the independent variables and the dependent variable (customer satisfaction) towards Ride service.

This study has tried to investigate the satisfaction level of customers application based taxi service with reference to RIDE company, by identifying factors that contribute towards commuter's satisfaction through assessment of their core needs from the service. the research evaluated the overall service delivery of RIDE, how customers evaluate the price charged, their satisfaction with the picking time, the drivers' professionalism, the swiftness of application or the call center and the effect of car condition on their satisfaction.

The study also intends to understand commuters' concern and shows areas that needs improvement which will have an impact on increasing their level of satisfaction & in turn will create an opportunity to correct shortcomings & ease the way to attract more customer base to the service provider as well.

1.3 Research Question

1.3.1 Main research question

- How do customers evaluate the overall service delivered by RIDE?

1.3.2 Sub research questions

- How do RIDE customers evaluate the fairness of the price charged?

- Are customers satisfied with the mobile application easiness of RIDE?
- How does call center employees responsiveness is related to customer's satisfaction?
- Are customers satisfied with pick-up time reliability of RIDE?
- How does driver's professionalism contribute to customer's satisfaction?
- How does the car condition contribute to customer's satisfaction?

1.4 Objective of the study

1.4.1 General Objective

- The General objective of this study is to assess & identify the factors that influence the satisfaction of RIDE customers

1.4.2 Specific objectives

•To examine the effect of price fairness on customer's satisfaction

•To investigate pick-up time reliability of RIDE is as per customer's expectation

•To examine if call center employees of RIDE are responsive

•To determine if driver's professionalism is satisfactory

•To examine mobile application convenience of RIDE

•To determine if car condition contributes to customers satisfaction

1.5 Significance of the study

The result of the study has a practical significance. The findings of this study indicate the major factors that affect the satisfaction of customers in the sector and suggest on improvements. This research will help readers understand commuters concern and clarifies areas that needs improvement which will have an impact on increasing commuters' level of satisfaction. It will be an input for RIDE to acquire good awareness about the perceptions of their customers, evaluate current performance and develop a strategy effectively. Moreover, it will be enhancing the knowledge of the researcher and will lay a ground for future researchers to rely on it for further studies on similar topics.

1.6 Scope of the study

Geographically the study is delimited to the city of Addis Ababa where RIDE, one of the few available mobile application based taxi service providers currently operates. Conceptually issues studied as independent variables include, application convenience, price fairness, vehicle condition, driver's professionalism, time reliability and responsiveness of Call center employee's & the dependent variable, customer's satisfaction. Methodologically, the study is delimited to survey.

1.7 Limitation of the study

The study is limited to those customers who have a travel experience with Ride taxi. Therefore, the selected customers may not be ideal representative of other customers who uses similar services of such types from other companies. The use of deliberate sampling will compromise the representativeness of the data. The research is also limited to assessing the opinions of external customers satisfaction level which excludes the opinions of internal customers or employees to avoid biased results. Since few research are done related to this topic in the country, the unavailability of adequate reference materials regarding the topic will be another expected limitation.

Definition of terms

CUSTOMER

- Customer is an individual or business that purchases the goods or services produced by a business.

CUSTOMER SATISFACTION

- "Customer Satisfaction is a person's feelings of pleasure or disappointment that results from comparing a product's perceived performance or outcome with their expectations" (Kotler & Keller, 2009).

MOBILE PHONE APPLICATION BASED TAXI SERVICE

- A taxi service provided through a mobile application which requires a smart phone that can track the user's location.

1.8 Organization of the study

The paper will have five chapters. The first chapter dealt with background information, statement of the problem, basic research questions, objective of the study, significance of the study, and scope of the study. The second chapter contains review of literatures & the proposed hypothesis. The third chapter discusses on the utilized methodology. In the fourth chapter, analysis, presentation & interpretations were discussed. The last chapter consists summary of major findings, the conclusion and recommendation.

CHAPTER TWO

2. Review of related literature

2.1. Introduction

In this chapter, the review of literatures in the study area that provide a theoretical framework is presented. The chapter begins with the presentation of literatures on service, service quality, customers satisfaction, Taxi service, factors affecting Mobile application taxi service, the conceptual framework, and the hypothesis.

2.2. Theoretical Review

2.2.1. Definition of service

Scholars have defined the service concept in different ways. Most scholars consider services to be activities, deeds or processes, and interactions (Edvardsson et al., 2005). According to Hill (1977), services can be defined as changes in the condition of a person or something in the possession of the customer.

Generally, service is intangible in nature the involves all economic activities that is consumed at the time it is produced and provide added value in forms such as convenience, amusement. timeliness, comfort and health. (Zeithaml, Betner and Gremler, 2000).

According to Gronroos (2001) service is viewed as a series of activities that are provided as a solution to customer problems, more or less intangible in nature and take place in the interaction between the customer and employees, physical resources, goods and systems of the service provider. The three core dimensions in this definition are: activities, interactions (which we could say are what separate services from physical products) and solutions to customer problems. (Edvardsson et al., 2005)

Moreover, the nature of a service is further explained that it is intangible in nature and does not result in the ownership of anything but is offered to one another which may or may not be tied to a physical product. (Kotler, 2000)

2.2.2. Taxi service

According to Salanova et al, (2011) taxi services are referred as ride-sourcing services where they reduce the waiting time of point to point transportation. They are cars used for public transport services providing door to door personal transport services. They divide taxi market service into three broad categories:

- **Rank market** - Rank places are designated places where taxi can wait for passengers and vice versa. Taxis and customers are forming queues regulated by a FIFO system
- **Hail market-** hail market clients hail a cruising taxi on the street. There is uncertainty about the waiting time and the quality/fare of the service customers will find
- **Prebooked market**- In the pre-booked market consumers telephone a dispatching center asking for an immediate taxi service or for a later taxi service. Here, consumers can choose between different service providers or companies. This market is a competitive market where larger companies can offer smaller waiting times.

2.2.3 Mobile application taxi service

Nowadays, mobile applications on smart phones are playing important role in daily life. Taxi calling app is one of the most popular and revolutionary kinds among them. Mobile app-based taxi service has become a well-known and widely used service in many parts of the world including our country. They have potential for positive impacts on urban transportation. They have become a right choice as the efficient service available all the time. These apps are pieces of software installed onto personal phones to attain the services like entertainment, communication, transportation, shopping, mapping etc. These smart apps operate in such a way that users can search for the available taxi around them or make a pre-order. They can fix their locations by GPS or typing in the target location, by which drivers can easily reach them, can drop them to their destinations and according to fare structure based on time and distance collect money from passengers. (Rasheed et al. 2018).

2.2.4. Service Quality

According to Landari (2008) service quality for firms has been very important factor to give due care and is a significant point of survival of a firm in this competitive global economy. Companies which provide the best quality service becomes a challenge for other firms operating in the same market. Hence, service quality becomes a tool that is considered to be important for companies that struggle to differentiate their service from others. Moreover, Lewis and Booms, (1983) stated that service quality is a measurement of how well a delivered service matches the customer expectation.

Service quality is generally considered to be the difference between customer expectations and customer perceptions of the service. Rust and Oliver (1994) assert that the perception of service quality is based on comparison with the customer's experience of excellence in service encounters. Service quality is therefore seen as a comparison between perceived quality of the current service and previous encounters where excellent quality was experienced. Bitner and Hubert (1994) considers service quality perceptions as a consumer's judgment of, or impression about, an entity's overall excellence or superiority. Essentially, they define service quality as the consumer's overall impression of the relative inferiority or superiority of the organization and its services. Central to most definitions of service quality is relativity. The customer or consumer perception of the quality of service is based on previous experience of a similar type of service.

There are variety of approaches for the measurement of service quality out of which The SERVQUAL methodology, developed and refined by Parasuraman et al. (1988), has been used extensively by researchers to study and measure service quality. SERVQUAL was presented as a multi-item scale developed to assess service quality that is defined as 'the degree and direction of discrepancy between customers' service perceptions and expectations. The refined SERVQUAL instrument is based on two sets (measuring perceptions and expectations) of 22 items, grouped in five dimensions of service quality: reliability, assurance, tangibility, empathy, and responsiveness. The SERVQUAL methodology is the most widely used approach across various industries to compare and measure customers' perceived service quality expectations with their perceptions of actual service experience. (Parasuraman et al. 1988)

2.2.5. Customer satisfaction

Customer satisfaction is the key factor for successfulness and depends highly on the behaviors of frontline service providers. Customers should be managed as assets and should be noted that customers vary in their needs, preferences, and buying behavior. (Yu-Cheng, 2016)

Kotler (1996) defined customer satisfaction as a positive outcome that results from comparing a products performance with that of customer's expectation of the performance of a product or service.

Customer satisfaction is the level of one's feelings after comparing products performance that gets along with his expectations (Kotler and Armstrong 2012). It is a great concern for all industries and has a great attention for researchers to measure the customer satisfaction in different fields since the customer is a core element in any field and the customer satisfaction affects the reputation of the organization. (Murad et al, 2019)

Hill and Brierley (2017) stated the measure of customer satisfaction could be done by calculating adding the overall attitude developed by customers for every experience they have while using a product and services. If their expectations are met by the service providers, then it can be said that customers are satisfied. If performance is much better than expectation, then customer satisfaction level is very high. (Kotler & Keller, 2009)

According to Hokanson,(1995), many factors can influence customer satisfaction in the service sector such as friendliness of employees, courteousness of employees, knowledgeableness of employees, helpfulness of employees, accuracy of billing, timeliness, competitive pricing, service quality, good value, billing clarity and quick service. Manly, this paper will seek to discover how customers evaluate the overall service delivered.

2.2.6. Relationship between Service Quality and Customer Satisfaction

A study by Chao and Kao (2009) proved that all elements of service quality directly influence customer satisfaction. Moreover, Parasuraman et al. (1985) indicated that customer satisfaction will increase when perceived service quality is high. In line with Lee et al. (2000) who recognized that customer satisfaction is based upon the level of

service quality provided by the service provider, Parasuraman et al. (1985) endorses the fact that service quality leads to customer satisfaction. Customer will have a positive desire to purchase again when the service quality is high which improves satisfaction. (Su, 2011).

Negi (2009) carried out a study on the relevance of customer perceived service quality in determining customer's overall satisfaction in the context of mobile phone services and as a result, he found out that reliability of network quality is the key factor for overall service quality in addition to tangibles, empathy and assurance when evaluating perceived service quality and customer satisfaction and concluded that the idea of linking service quality and customer satisfaction has existed for a long time.

According to Parasuramen et al,(1988), customer satisfaction level can be determined by the performance of the quality of service that a firm offers. There exists a direct relationship and customer satisfaction. as the service quality gets higher and become superior, the level of customer satisfaction gets higher. (Spreng and Singh,1993)

Moreover, Cronin and Taylor, (1992) has further explained that service quality is an outcome of a service provided by a service provider firm that it is very much connected to customers experience and is an important determinant of customer satisfaction that is more likely to occur after a customer experiencing a service of several times.

Jham and Khan,(2008) studied and found that aspects like conventional facilities, attitude of employees, convenience and atmosphere has a significant affect the level of customer satisfaction. Till date numerous research papers are presented on the subject. Hence, the above scholars confirmed the strong relationship that existed between service quality and customer satisfaction.

2.3 Empirical review

According to a study made by Horsu & Yeboah (2015) service quality factors; comfort, reliability, safety, price affordability and driver's attitude highly influence the taxi passenger satisfaction and proved that high quality service can increase customer satisfaction. It was also described that service quality includes vehicle quality, driver behavior, waiting time for taxis. (Houston and Ray 2014)

Key factors that have influence over customer satisfaction are satisfaction with drivers, the ability to speak with dispatchers in a timely manner, the politeness of dispatchers and satisfaction with experiences during the journey along with value for money. (Erin, 2014)

Rasheed (2018) found that there is a significant relationship between customer satisfaction and service quality parameters such as convenient use of mobile app, drivers' behavior, time reliability, safety, price affordability and vehicle condition.

2.3.1. Service Quality factors in Mobile application taxi service

There are factors that have major effect on the service quality of mobile application taxi services. These are said to be car condition, driver's professionalism, waiting time till drivers arrive, easiness of cab booking, and adequacy time of the trip. (Ross, 2015)

Similarly, a study conducted by Rabiul Islam et al. (2014) the main and most important cause of customer satisfaction of the taxi service has found to be waiting time until the cab arrives and reliability of the service. aspects such as physical quality which related to the tangibleness aspect of the service like car condition, interactive quality that implies the level of flow of communication between a company that provides a service and customer and corporate image which is in concern with the image and perception have strong contribution to service quality. (Hussain et al. 2015)

A study by Watchareebhorn (2016) has shown that main factors influencing consumer brand choice of mobile applications taxi includes process, security, convenience, reasonable price, cash payment, credit payment, availability in business area, availability in residential area, car condition, cleanliness, online booking, driver's friendliness and politeness, driver's knowledge and skill, drivers trust and credibility and lifestyle.

2.3.2. Studies conducted on Uber

Uber is an application that connects passengers with drivers who have a contract with Uber. It is required to own a smartphone to order a vehicle and register within the mobile application by entering a name, e-mail address, a cell phone number and a credit card number that is to be billed automatically at the end of the ride. The ride order appears on the nearest driver's smartphone application, and he/she can accept or reject the ride. Uber is controversial because of its UberPop service that connects passengers with unlicensed

drivers, people that own a four door car and a smartphone and have passed a background and employment history check. (Slavul et al, 2016)

Uber app can benefit commuters in so many ways. it connects the driver and passengers using smartphone so that passengers can know and evaluate their driver before they agree to use the service and calculate price easily based on the given tariff per kilometer. (Brazil and Kirk, 2016)

According to Ngo (2015) Convenience is the main reason why customer choose Uber service. uber provides better service that other taxi service with faster time and reduce cost of money. Based on a study made in Pakistan by Rasheed (2018) service quality parameters such as convenient use of Mobile App, Driver Behavior, Time Reliability, Safety, Price Affordability and Vehicle Condition has significantly impacted application based taxi users.

According to a study made in India by Khan et al(2016) Driver professionalism and convenience were found out to be having a significant impact on overall satisfaction. The outcome shows driver professionalism and convenience of booking significantly impact the overall satisfaction of commuters.

Based on the above literatures, the following most frequently mentioned constructs (quality factors) were selected in this study as independent variables that are considered to contribute foremost to taxi passenger's satisfaction by the researcher: Time reliability, price fairness, driver's professionality, car condition, call center employees responsiveness, mobile application convenience/easiness.

Mobile application convenience/easiness

Online taxi mobile app is a value-added service provider that utilizes mobile technology (Kuo et al, 2009). (Chae et al, 2002) proposed that the criteria for the information quality of mobile-based services are connection, content, and interaction quality. Kuo argues that IT-based service providers must response fast and must have rapid compliance responses and Frequently Asked Question (FAQ) features so that customers can easily and quickly find solutions to their common problems. Another feature that makes a good online taxi mobile app is the ability to make estimation such as the destination location, the distance and travel time, as well as the fleet availability (Alexander and González 2015). Customers need assurance, especially whether or not they are going to get the ride.

Online taxi mobile app must be equipped with a detection facility that shows available vehicle in the closest proximity. Other things being equal, each of these factors will contribute to the overall customer satisfaction. Satisfaction affects loyalty and make customers return and repurchase (Park et al, 2008). Thus, based on this the first hypothesis is developed.

H1: Mobile application convenience/easiness has a positive and significant effect on the satisfaction of Taxi Passengers.

Time reliability

Reliability is defined as the ability to deliver the service in accordance with the schedule and usually is defined as the ratio of "lost" mileage due to factors like traffic intensity or vehicles' mechanical failures (Yaakub and Napiah 2011). Rabiul, et al.(2014) concluded that reliability of services as well as waiting time seems to be the most important cause of customer satisfaction. According to Murad et al.(2019) reliability is the most service quality dimension that affects customer satisfaction in Uber service which includes arrival time, driver ability and others. This leads to the generation of second hypothesis.

H2: Time reliability Mobile application convenience/easiness has a positive and significant effect on the satisfaction of Taxi Passengers.

Price Affordability

Price is an important factor which persuades the customers' decision for buying products and services. It is also one of the main reasons people choose one service provider over the other. According to Khan et al(2016) Price attribute in taxi service includes the discounts given, waiting charges, per km charges & nighttime charges levied. Rasheed (2018) verified that customers always seek affordable price whenever they want to use some service. They feel comfortable when they have to pay reasonable taxi fare to service providers which calculate trip cost based on predefined formula. Hence, third hypothesis is formed.

H3: Price Affordability has a positive and significant effect on the satisfaction of Taxi Passengers.

Car condition

Horsu & Yeboah (2015) proved that Comfort is the most highly correlated factor that influences customer satisfaction according to their study. In essence commuters‟ seek comfort whenever they board taxis. They gain satisfaction when the taxi service provides comfortable seats, clean and good conditioned vehicles, reasonable entertainment, and enough air circulation. Based on this the fourth hypothesis is generated.

H4: Car condition pleasantness has a positive and significant effect on the satisfaction of Taxi Passengers.

Responsiveness of employees at call center

Call centers have become the main contact channel between companies and customers, and at the same time, they have become a massive employment generator (Aksin et al, 2007). Call center responsiveness in app taxi signifies the ability of employees to check via the app for the availability of nearest taxi and inform customers the expected time of taxi arrival for a pickup, the promptness for answering calls for enquiries, courteousness, and helpfulness of staff. This directed to the proposal of.

H5: Responsiveness of employees at call center has a positive and significant effect on the satisfaction of Taxi Passengers.

Driver's professionalism

According to Khan et al(2016) driver professionalism is found out to be having a significant impact on overall satisfaction. And also stated that professionalism attribute includes driving skills, soft skills & etiquette of driver. Moreover, Horsu and yobah, (2015) proved that driver behavior is an influencing factor on customer satisfaction. Based on their study commuters usually felt safe in using the taxi services when cars mostly fitted with functioning seat belt and the drivers drove cautiously, had excellent knowledge of route, communicate, and handled payment transactions well. This directs to the following hypothesis.

H6: Driver's professionalism has a positive and significant effect on the satisfaction of Taxi Passengers.

Conceptual Framework

Conceptual Framework describes the relationship between the main concepts of the study and aid to provide a picture or visual display of how ideas in a study relate to one another. The Framework displays the independent variables: price, time, driver's professionalism, application convenience/easiness, vehicle condition, responsiveness, and the dependent variable: customer's satisfaction.

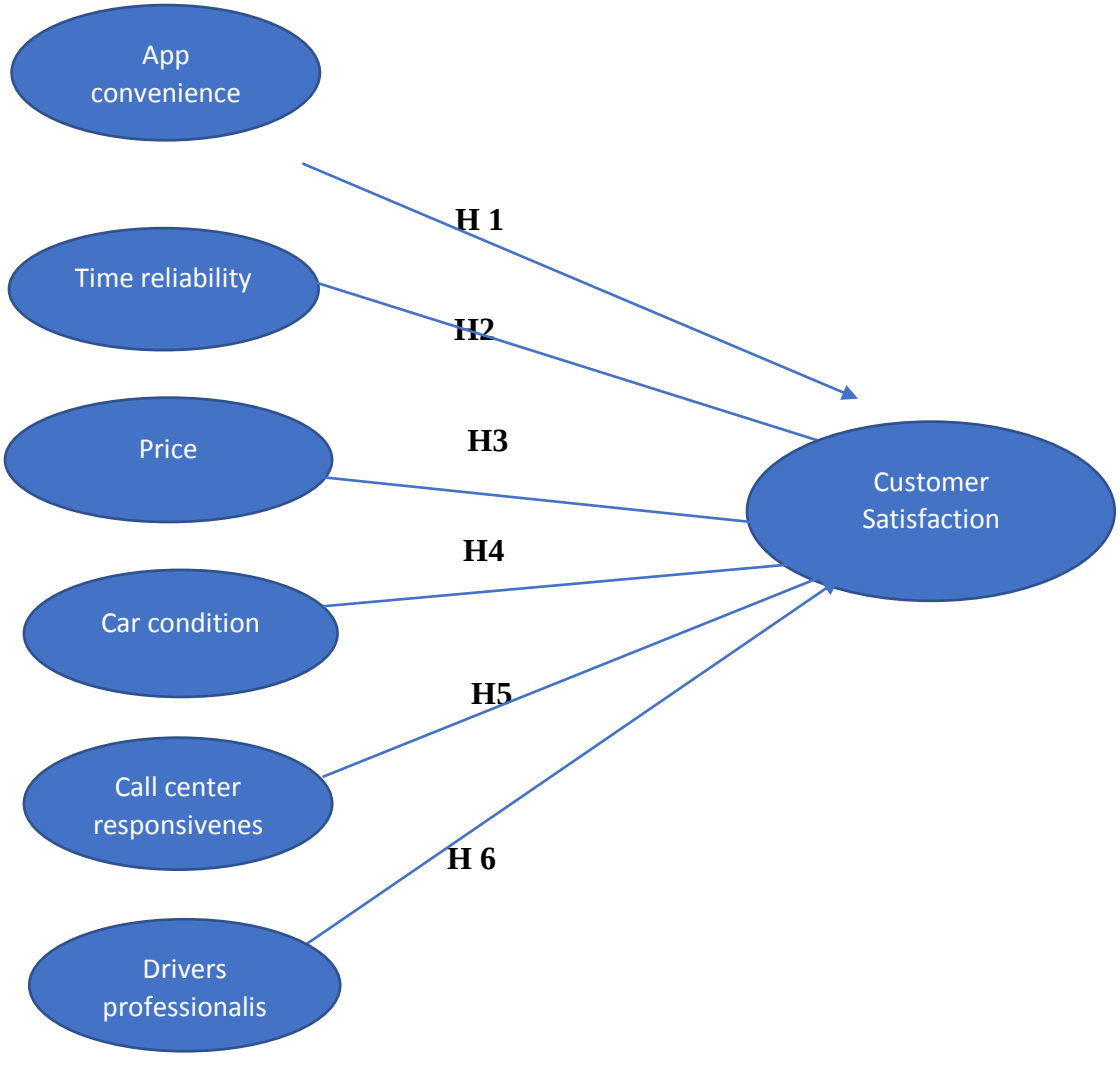

Fig. 2.1 Conceptual framework combined from Khan et al (2016) and Rabiul et al (2014)

CHAPTER THREE

3. Research Methodology

3.1 Research Approach

This study has applied a quantitative method to investigate the causal relationship between the variables in line with the main aim of the research which was testing the developed hypothesis. The goal of quantitative research is to determine the relationship between an independent and a dependent variable and is used in research that have measuring and counting attributes which largely depends on the measurement device often concerned with finding evidence to either support or contradict a hypothesis that contains concepts to be measured. Hence, quantitative research approach has found to be appropriate to this study.

3.2 Research Design

The study employed explanatory research method that describes any causal link between independent and dependent variables that pertains to the research problem. Since the intention of this study is to evaluate the effect of independent variables over the dependent variable, the method has found to be suitable and helpful in examining the relationship from the findings.

3.3 Population and Sampling

3.1.1. Target population

Addis Ababa is the only target location where the RIDE service is available to obtain the respondents data. So, target population of the study comprised all individual customers who occasionally and/or regularly use RIDE, which are either men or women aged 18 and more years old and has at least a foundation education.

3.1.2 Sampling technique

Due to large number of the sample unit, time and cost constraint, the sample was drawn from the targeted population by using a non-probability sampling. This sampling method will involve purposive or deliberate selection of particular units of the universe for

constituting a sample which represents the population. Thus, in using purposive sampling technique, the population elements were selected in the sample based on the criteria if they have used RIDE at least twice. The researcher contacted the target element in Addis Ababa, who were willing to participate.

3.1.3 Sample size

The following sampling formula for infinite population was used to come up with the sample size.

$$n = \frac{Z^2 Pq}{e^2}$$

where,

n = sample size

Z = the value on the Z table at 95% confidence level =1.96

e = Sampling error at 5%

p = maximum variability of the population at 50%. i.e. (0.5)

q = 1-p = 0.5

Which is valid where n0 is the sample size, Z2 is the abscissa of the normal curve that cuts off an 18 area α at the tails (1 – α) equals the desired confidence level, e.g., 95%), e is the desired level

To illustrate, It is assumed there is a large population that that varies on daily bases with an unknown variability in the proportion that adopted the practice; therefore, assumed p=.5 (maximum variability). Furthermore, it was desired to have a 95% confidence level and ±5% precision

$$n = \frac{Z^2 Pq}{e^2} = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2} = 384$$

3.4 Method of Data Collection

The method of data collection was done by distributing questionnaires to some ride drivers so that customer fills the survey while they are on the trip. And the rest

questionnaires were distributed to other customers that are nearly found by the researchers surrounding that are users of Ride taxi services.

3.5 Sources of Data Collection

In order to achieve the objectives of the study, primary data were obtained through questionnaire which were developed for target customers of ride to make a quantitative measurement. The questionnaire has two parts. The first part deals with collecting the personal information of respondents using a nominal scale. The second part consists of the perception of respondents that measures the dimensions of the hypothesized factors via Likert scale rating technique. In the questionnaire a 5 points Likert scale rating technique were used which will with 1= strongly disagree to 5= strongly agree.

3.6 Data Analysis Methods

Data was gathered through a constructed questionnaire and was analyzed using a Statistical Package for the Social Science (SPSS). Demographic data of respondents that includes age, gender, education level, occupation and income level was organized, summarized, and analyzed using descriptive analysis method. On the other hand, to check whether there is a linear relationship between the independent and dependent variables, correlation analysis was used. Moreover, a multiple regression analysis was employed in order to show the influence of independent variables over the dependent one.

CHAPTER FOUR

4. Data presentation, Analysis & Interpretation

4.1. Introduction

This chapter is concerned with data presentation of the findings obtained through the study. The findings are presented in tabular form after being analyzed with SPSS version 25 to facilitate readings and understanding. First the results of descriptive analyses are presented followed by the results of Pearson's correlation coefficient and regression results.

4.2. Samples and Response rate

A total of 384 questioners were distributed, and 377 were received back. 8 were invalid questionnaires, a total of 369 valid questionnaires were accepted for a response rate of 98.1%. Thus, out of the 384 questionnaires distributed, 96% of the subjects returned valid questionnaires.

4.3. Demographic Profile of respondents

The samples of this study have been classified according to three demographic background information collected during the questionnaire survey. The purpose of the demographic analysis in this research is to describe the characteristics of the sample such as the number of respondents proportion of males and females in the sample, range of age, and academic qualification of respondents. The demographic composition of the respondents is summarized in Table 4.1

As it can be seen from the table that the majority of Ride customers are between the ages of 18-29 (41.2%). The major participants were males (50.7%), whilst 49.3% of the participants were females. Moreover, the academic qualification of the respondents dominated by bachelor's degree, masters and above degree and diploma holders which consist of 48.8%, 37.7%,10.3% respectively. Over 50% of the respondents have a monthly income above 10,000. Briefly, the majority of the respondents were males within the age group 18-29 having predominantly bachelor's degree, master's degree, and diploma with an income above 10,000(54.5)

Table 4.1: Demographic Profile of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	18-29	152	41.2	41.2	41.2
	30-39	148	40.1	40.1	81.3
	40-49	59	16	16	97.3
	50 and above	10	2.7	2.7	100
	Total	369	100	100	
Sex	male	187	50.7	50.7	50.7
	female	182	49.3	49.3	100
	Total	369	100	100	
Monthly	5000 and below	66	17.9	18.1	18.1
	5001-7500	46	12.5	12.6	30.7
	7501-10000	52	14.1	14.2	44.9
	10000 and above	201	54.5	55.1	100
	Total	365	98.9	100	
Missing	System	4	1.1		
Total		369	100		
Education level	certificate and below	12	3.3	3.3	3.3
	diploma	38	10.3	10.3	13.6
	First Degree	180	48.8	48.8	62.3
	Master's Degree	139	37.7	37.7	100
	Total	369	100	100	
Occupation	private	72	19.5	19.5	19.5
	non-governmental organizations	107	29	29	48.5
	Government office	126	34.1	34.1	82.7
	other	64	17.3	17.3	100
	Total	369	100	100	

Source: Own survey (2021)

Table 4.2: Descriptive statistics summary of the respondents on waiting time and travel per week

The frequency use of ride taxi per week	1-3 times	160	43.4	43.4	43.4
	4-6 times	38	10.3	10.3	53.7
	7-10 times	15	4.1	4.1	57.7
	I cannot limit my usage per week. I use it sometimes	156	42.3	42.3	100
	Total	369	100	100	
The waiting time until ride taxi arrives	2-4 minutes	57	15.4	15.4	15.4
	5-7 minutes	151	40.9	40.9	56.4
	8-10 minutes	102	27.6	27.6	84
	11 minutes and above	59	16	16	100
	Total	369	100	100	

Source own survey (2021)

Per the above Table, more than 40% of the respondents waiting time fall within the range of 5-7 minutes while 27.6% of them waited between 8-10 minutes. Regarding the frequency of travel, 43.4% of commuters travelled 1-3 times per week, 42.3 use the service sometimes. The rest 10.3 and 4.1% of commuters use ride 4-6 times and 7-10 times per week, respectively.

4.4. Reliability test

Reliability concerns with the extent to which a measurement of a phenomenon provides stable and consistent result. It is also concerned with repeatability that a repeat

measurement made by a test under constant conditions will give the same result (Carmines and Zeller, 1979).

Reliability is considered high, when α is greater than 0.7 and reliability is low, if α is less than 0.3. (Hair, et al.,2010). Thus, based on the test, the result items are reliable and acceptable.

Table 4.3: Cronbach`s Alpha of data reliability

Measurement items(Interval scale)	**Items Cronbach's alpha**	**Reliability**
Price	4	0.837
Drivers professionalism	6	0.815
Time	4	0.826
Car condition	4	0.796
Call center	4	0.838
App based	5	0.818
Overall customer satisfaction	1	0.819
No. of items	28	

Source: own survey (2021)

4.5. Descriptive Statistics of the level of agreement of the respondent's perception towards variables of the research

A five point Likert scale was used to assess Ride customer's satisfaction. within which four Items were used to represent variables Price reasonableness, time reliability, car condition, and call center employee's responsiveness. Five and six items were used to represent application easiness and drivers' professionality, respectively.

The analysis of the study was done using descriptive statistic or through using central tendency, from these the researcher used the mean scores of each variable to demonstrate the average responses of respondents for each question that was included under each dimension of the predictor variable and to reach the grand mean of each dimension. Lastly, the interpretation is made through using the grand mean of each independent dimension for the aim of achieving partial research objectives of the study. The grand mean scores that are above 3 confirms respondents somehow shows an agreement to the questions raised during the survey. On the other hand, high Standard Deviation score indicates, the data is widespread as for the reason that respondents have relatively diverse opinion whereas, the low standard deviation score mean to be respondents have relatively similar responses to items under the study.

3.5.1 4.5.1. Customers Perception on price of Ride

This part of the survey has tried to test the perception that commuters have towards the affordability of price attached to the service of Ride. There were four statements presented to respondents and respondents and they were asked to rate their level of agreement with each statement. Table 4.4 indicates the mean and standard deviation for each item.

As table 4.4 shows the respondents agreed with reasonableness of Ride fare with mean score of 3.51. They also agree that there is no extra charge by the driver other than displayed by the app with mean score of 3.68. Respondents have agreed for the fairness of the price charged to waiting time during the ride by 3.13 score. They disagreed on the statement that ride charges high fare that they use it when there only a discount available with a mean score of 2.67. The overall mean for the perception of price of Ride is 3.25, indicating that the majority of respondents agreements towards the statements specified in the study is low.

Table 4.4: Customers Perception on price

	Mean	**N**	**Std. Deviation**
RIDE charges reasonable price	3.51	366	1.082
No extra charges by the driver as I can calculate per the RIDE fare structure	3.68	367	1.043
The price for waiting time during the ride is fare	3.13	369	1.187
RIDE fare is high. I use it only when it provides discounts	2.67	363	1.035
Overall perception on price	**3.25**	**366.25**	**1.09**

Source: own survey (2021)

4.5.2. Customers Perception on Driver's Professionalism

This section deals with the perception ride customers have towards the behavior of drivers, here a sequence of six questions were presented to respondents and they were asked to show their agreement or disagreement with all the statements presented.

The data illustrated in table 4.5 shows that respondents agreed that drivers are clean and well groomed & that they are polite and courteous with a mean score of 3.69 and 3.53 respectively. In addition, respondents agreed that drivers have knowledge of routes & good driving skill with a mean score of 3.2 and 3.51 respectively. Respondents also agree that drivers are willing to help with luggage and askes only the exact amount of payment for the ride with a mean score of 3.15 and 3.56, respectively. The overall mean perception on the driver is 3.44, implying that the majority of respondents are towards the agree level with the statements specified on the study.

Table 4.5. Customers Perception on Driver

	Mean	**N**	**Std. Deviation**
Drivers have good driving skills	3.51	369	1.063
Drivers are clean and well groomed	3.69	369	1.034
Drivers have good knowledge of the routes	3.20	366	1.058
Drivers are polite & courteous	3.53	369	1.005
Drivers are willing to help with the luggage	3.15	363	1.075
Drivers asks the exact calculated payment of the trip	3.56	369	0.931
Overall perception regarding the driver	**3.44**	**367.50**	**1.03**

Source: own survey (2021)

4.5.3. Customers perception on time reliability

This section of the questionnaire tested customers perception on time regarding Ride service. A series of four statements were presented to respondents and they were asked to rate their level of agreement with each statement. The mean and standard deviation of each of them are presented on Table 4.6.

Based on the illustrated data concerning the perception of respondents on how Ride service helped them save their time, they agreed with a mean score of 3.74. regarding the timeliness of drivers to destinations and Cab booking for a later use option, respondents agreed that with a mean score of 3.5 and 3.66 respectively. Moreover, respondents have an agreeing attitude when asked if drivers of use alternative roads in case of traffic jam to save time with a mean score of 3.4. The overall mean for the perception of time is 3.57, indicating that the majority of respondents have agreed with the statements specified in the study.

Table 4.6: Customers Perception on Time

	Mean	**N**	**Std. Deviation**
The service of RIDE has helped me save time	3.74	366	0.893
Drivers arrive at the pickup location per the promised range of time	3.50	369	1.016
Cab booking for a later use option helped me use my time efficiently	3.66	369	1.020
Drivers use alternative roads and routs in case of traffic jam	3.40	369	1.035
Overall perception on time	**3.57**	**368.25**	**0.99**

Source: own survey (2021)

4.5.4. Customers perception regarding the car condition

This section of the questionnaire tested the attitude and views of the condition of cars of Ride taxi. A series of four statements were presented to respondents and respondents were asked to rate their level of agreement with each statement. Table 4.7 indicates the mean and standard deviation for each item.

As illustrated on table 4.7, respondents have agreed on latest car model and periodic maintenance with a mean score of 3.3 and 3.1, respectively. The majority of respondents have agreed towards the statements regarding comfort and cleanness of the cars with mean scores of 3.64 and 3.7, respectively. The overall mean for the perception towards the condition of RIDE cars is 3.44 indicating that the majority of respondents are towards the agree level with the statements listed in the questionnaire.

Table 4.7: Customers Perception on Car Condition

	Mean	**N**	**Std. Deviation**
RIDE uses latest car models	3.30	369	1.075
RIDE cars are properly serviced	3.11	369	0.957
RIDE cars are comfortable	3.64	363	0.945
RIDE cars are clean	3.70	369	0.918
overall perception on car condition	**3.44**	**367.50**	**0.97**

Source: own survey (2021)

4.5.5. Customer's perception on call center employees

This section of the questionnaire tested the attitude and views of respondents towards the call center service of Ride. A series of four statements were presented to respondents and they were asked to rate their level of agreement with each statement.

The illustration of data in table 4.8 shows, the agreement level of respondents on the service that the call center employees give is low. Respondents have agreed to the questions asked on the employees' provision of accurate information & in their phone pickup efficiency with mean score of 3.36 & 3.27. Respondents agree that call center employees are happy to help, and they notify them immediately if there are no cabs on the area with a mean score of 3.39 and 3.08.

The overall mean for the perception of call center is 3.28, showing that majority of the respondent's agreed the statements specified in the study.

Table 4.8: Customers Perception on Call Centre

	Mean	**N**	**Std. Deviation**
Call center employees provide accurate information to enquiries	3.36	369	1.179
Call center employees are fast to pick up and answer calls	3.27	369	1.246
Call center employees are always happy to serve customers	3.39	369	1.130
Call center employees calls back immediately and notify me when there are no cabs around my area.	3.08	369	1.242
overall perception on call center	**3.28**	**369.00**	**1.20**

source: own survey (2021)

4.5.6. Customers perception on application

This section of the questionnaire tested the attitude and views of the mobile application of Ride. There were five statements presented to respondents and they were asked to rate their level of agreement with each statement. Table 4.9 shows the mean and standard deviation for each item.

The illustration of the data on the table shows that respondents have agreed that the Ride mobile application is easy to use and that it shows them relevant information regarding cars available around their area with a mean score of 3.81 and 3.94 respectively. Respondents also agreed that the application helped them to get the estimated amount of payment of their trip before the trip started with a mean score of 3.63. Furthermore, they moderately agreed the questions asked if the application supports F&Q and if provides different modes of payments with mean scores of 3.28 and 3.09 respectively. The overall

mean for the perception of application is 3.55, signifying that the view of the respondents is towards agree level with the statements specified in the study.

Table 4.9: Customers Perception on Application Convenience

	Mean	**N**	**Std. Deviation**
Ride application is easily made to enable customers to ask question and get feedback	3.28	368	1.078
Ride app provides different payment modes	3.09	368	1.123
Ride app helped me to get the estimated payment of the trip before booking the cab	3.63	368	1.08
Ride application is easy to use	3.81	368	0.889
App helped me to easily see available cars around my area.	3.94	368	0.802
overall perception on the application	**3.55**	**368**	**0.99**

Source: own survey (2021)

4.5.7. Customer's perception on their overall experience.

This section of the questionnaire tested the over all satisfaction of the customers generally. As their response implies the majority of them has agreed that their overall experience with ride service is very satisfying with a mean score of 3.67. Generally, 78% of them are satisfied with the overall service that Ride has to offer. Out of them 11% are found to have a strong agreement with the statement provided.

	N	Mean	Std. Deviation
My overall experience was very satisfying	369	3.67	0.917

Source: own survey (2021)

3.5.2 4.5.8. Comparison of customers Perception on factors affecting overall customer satisfaction

The overall means of all variables in the customer satisfaction of Ride customers are shown on table 4.10. According to the findings of the means Time reliability of drivers represented the highest overall mean score of 3.57.

Table 4.10: Customers Perception on Overall Customer Satisfaction

Construct	Mean score	Standard deviation	Rank
Time	**3.57**	**0.99**	1st
Application convenience	**3.55**	**0.99**	2nd
Driver professionalism	**3.44**	**1.03**	3rd
Car condition	**3.44**	**0.97**	4th
Call center responsiveness	**3.28**	**1.2**	5th
price	**3.25**	**1.09**	6th

Source: own survey (2021)

4.6. Correlation Analysis: Relationship between the study variables

This study has used Pearson's correlation coefficient to determine whether there is a relationship between price, time, driver, application, car, and call employees with satisfaction of customers. Pearson's coefficient of correlation is the most widely used method of measuring the degree of relationship between variables. This coefficient assumes there is a linear relationship between the two variables.

This section presents the results of correlation on the relationship between independent variables and dependent variable. Table 4.11 as seen below, indicates that the correlation coefficients for the relationship between independent variables (price, time, Driver, application, car & call employees) and the dependent variable (overall satisfaction of customers) is linear and positive ranging from moderate to strong correlation coefficients.

Table 4.11: Summary of Pearson Correlation

		Satisfaction
Price	Pearson Correlation	.404**
	Sig. (2-tailed)	0
	N	369
Drivers' professionalism	Pearson Correlation	.375**
	Sig. (2-tailed)	0
	N	369
Time	Pearson Correlation	.314**
	Sig. (2-tailed)	0
	N	369
Car condition	Pearson Correlation	.547**
	Sig. (2-tailed)	0
	N	369
Call center	Pearson Correlation	.463**
	Sig. (2-tailed)	0
	N	369
Application	Pearson Correlation	.623**
	Sig. (2-tailed)	0
	N	368

Source: own survey (2021)

According to Evans (1996), a correlation result, which is zero, shows zero relationship. A result between 0.1 to 0.19 demonstrates very weak relationship among variables, a result from 0.2 to 0.39 indicates weak correlation between variables, a result which is between

0.40 to 0.59 indicates a moderate correlation, a result from 0.6 to 0.79 shows strong correlation among variables and a result from 0.8 to 1 shows very strong. correlation between factors.

As it is clearly indicated in Table 4.11 that the independent variables are positively correlated to the dependent variable from weak to strong correlation. A moderate relationship was found between price and overall customer satisfaction ($r = .404$, $p < .05$), weak relationship between time and overall customer satisfaction ($r = .314$, $p < 0.05$), weak relationship between drivers profession and overall customer satisfaction ($r = .375$ $p < 0.05$), moderate correlation between car condition and overall customer satisfaction ($r = .547$, $p < 0.05$), moderate correlation between call center and overall customer satisfaction ($r = .463$, $p < 0.05$), and strong correlation between application to overall customer satisfaction ($r = .623$, $p < 0.05$) which are statistically significant at 95% confidence level.

4.7. Multiple Linear Regression

This research is based on linear regression, which means identifying the relationship between one dependent variable and many independent variables, to identify the most influential factors affecting customer satisfaction in using taxi services of Ride.

4.7.1. Assumptions Testing in Multiple Regression

In maintaining data validity and strength of the regressed result of the research under the multiple regression models, basic assumptions should be satisfied. Therefore, this study has conducted the assumption tests such as, multi-Collinearity, outliers, auto-correlation, homoscedasticity, linearity, and normality.

4.7.2. Sample size

In calculating the number of cases required for multiple regression, different authors tend to give different guidelines. Different authors tend to give different guidelines concerning the number of cases required for multiple regressions. According to Green (1991), the sample size of the research that has multiple regression model is determined by following formula: $N \geq 50 + 8*m$ (m is number of independent variables of multiple regression model and N is number of participants). This study has six independent variables and 384 cases. Hence, the study has satisfied sample size assumption. In this study six

independent variables had existed, and cases were 384. Therefore, the study satisfied sample size assumption.

4.7.3. Multi Collinearity

Multicollinearity occurs when there are high correlations between two or more predictor variable meaning that one predictor variable can be used to predict the other. This also creates redundant information, skewing the result in a regression model. The detection of multicollinearity is done by calculating correlation coefficients(r) for all parts of independent variables. Based on this study all independent variables namely price, driver's profession, car condition, call center responsiveness, and application easiness correlate considerably with customer satisfaction with a correlation coefficient of r=0.404, 0.375, 0.314, 0.547, 0.463 and 0.623 respectively.

Collinearity implies two variables are near perfect linear combinations of one another. The diagnostic on the variables is done using Tolerance and Variance Inflation Factor (VIF). In order to measure how much the variability of a stated independent variable is not explained by the other independent variable, tolerance is used as the best indicator. Multiple correlation with variable is considered high if the value is very small which entails less than 0.10 and that it suggests the possibility of multicollinearity. (Pallant,2007), VIF is defined as the actual inverse of the tolerance value, one divided by the tolerance value. Thus, VIF values above 10 would be a concern, indicating multi Collinearity. The result of the study shows that the tolerance value for each independent variable Price, Driver's professionalism, Time, Car condition, Call center responsiveness, and App convenience are 0.587, 0.421, 0.559, 0.388, 0.664 and 0.633 respectively.

Therefore, multi Collinearity assumption is not violated. The result is also maintained by the VIF value, which is 1.703, 2.374, 1.790, 2.574, and 1.579 respectively which is way below the cut-off value of 10.

Table 4.12 Multicollinearity test

Collinearity Statistics		
variables	Tolerance	VIF
price	0.587	1.703
Drivers' professionalism	0.421	2.374
time	0.559	1.790
car condition	0.388	2.574
call center	0.664	1.506
App	0.633	1.579

Source: own survey (2021)

4.7.4. Normality and Linearity

In order to check these assumptions, the regression standardized residuals of scatter plot and nominal probability plots was requested and inspected on the analysis. They are presented in normal P-P plots of regression standardized residual graph. If the points of the plots lie in a straight diagonal line from bottom left to top right, it is considered as a normal probability and suggests that there is no major deviation from normality. Thus, as the study observed from the P-P plot there is no violation of normality assumptions.

The assessment is done using both methods; graphically and numerically. On the appendix section Figure 4.1 shows that the scores are normally distributes using normal probability plot P-P The study used both methods of assessing normality; graphically. Numerically Skewness and Kurtosis were used.

The value of skewness is a measure of symmetry of the distribution of the data more precisely, the lack of symmetry. On the other hand, Kurtosis measures whether the data are heavy-tailed or light-tailed relative to a normal distribution. That is, data sets with high kurtosis tend to have heavy tails, or outliers. When the distribution is normal, 0 value of skewness and kurtosis is obtained indicating a relatively flat distribution.

According to (Hair et al., 2010), The values for skewness and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution. Therefore, as it can be seen in the following table, the kurtosis and skewness values of the variables fall within the range.

Table 4.13 Skewness and Kurtosis

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
price	369	-0.404	0.127	0.052	0.253
Drivers professionalism	369	-1.037	0.127	0.680	0.253
time	369	-0.885	0.127	0.837	0.253
Car condition	369	-0.811	0.127	0.963	0.253
Call center	369	-0.710	0.127	-0.220	0.253
App	368	-0.575	0.127	1.450	0.254

Source: own survey (2021)

4.8. Multiple Regression Analysis

Multiple regression analysis is the extension of simple linear regression and is used when we want to predict the value of dependent variable based on the values of two or more other independent variables. On the study a multiple regression analysis was employed to examine the influence of the independent variables namely, price, time reliability, driver's professionalism, call center employees responsiveness, car condition and application easiness over the dependent variable which is customer satisfaction.

Table 4.14 Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.698[a]	0.487	0.478	0.660	1.857
a. Predictors: (Constant), app, time, price, call center, Driver's professionalism, car condition					
b. Dependent Variable: My overall experience was very satisfying					

Source: survey result (2021)

The regression model summary presents how much of the variance on customer's satisfaction is explained by the predictor variables. The adjusted R square indicates 48% of the variation in customer satisfaction is explained by the combined effect of the six predictor variables, i.e. price, Time, car, driver, Call & Application.

Table 4.15 ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	149.399	6	24.900	57.083	.000[b]
	Residual	157.470	361	0.436		
	Total	306.870	367			
a. Dependent Variable: My overall experience was very satisfying						
b. Predictors: (Constant), app, time, price, call center, Drivers professionalism, car condition						

Source: survey result (2021)

The ANOVA expresses whether the overall model is statistically significant and is suitable in predicting the outcome variable. In this case (F) Value is (57.083) at 0.000 indicates that the regression model is fit and significant.

Table 4.16 Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.080	0.227		0.351	0.725		
	price	0.223	0.065	0.169	3.428	0.001	0.587	1.703
	Drivers professionalism	-0.077	0.075	-0.059	-1.016	0.310	0.421	2.374
	time	-0.069	0.061	-0.057	-1.139	0.256	0.559	1.790
	Car condition	0.256	0.074	0.209	3.463	0.001	0.388	2.574
	Call center	0.188	0.042	0.206	4.449	0.000	0.664	1.506
	App convenience	0.530	0.063	0.402	8.482	0.000	0.633	1.579

a. Dependent Variable: overall customer satisfaction

Source: survey result (2021)

As it can be seen from the above coefficient table, the level of the effect that each variable has on the dependent variable is clearly stated. Application convenience has the highest beta value of 0.530 which implies it has a strongest degree of importance for customer satisfaction relatively. Variables with second & third degree of importance are car condition & price with beta values (0.256& .0223) respectively.

The regression equation would take the following form to measure customer's satisfaction

$$Y = \beta° + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \beta6X6 + \varepsilon°$$

$CS = \beta° + \beta1 (P) + \beta2 (T) + \beta3 (D) + \beta 4 (App) + \beta 5 (C) + \beta 6 (CL)$

$$CS = 0.080 + 0.223 (P) - 0.069 (T) - 0.077 (D) + 0.530 (App) + 0.256 (C) + 0.188(CL)$$

Where.

CS = Overall Customer Satisfaction

P = Price

T = Time

D=Driver

App = Application convenience

C = Car condition

CL = Call center

$\beta°$= intercept of equation

$\varepsilon°$= Error term &,

β1, β2, β3, β4, β5, and β6 = The Regression unstandardized coefficient of each variable

As we can observe form the multiple regression analysis four of the six independent variables are significant statistically which are Price, car condition, responsiveness of call center and easiness of the app with 0.23, 0.256, 0.188 and 0.530 beta value, respectively. They are positively correlated with customer satisfaction and are found to be significant. The rest two independent variables, Time and driver's professionalism have showed a negative effect on customer satisfaction with beta value of -0.069 and -0.077 respectively. They also have a p- value greater than 0.05 which implies they are insignificant for this study.

Since beta coefficient measures the degree of change in the outcome variable for every 1-unit of change in the predictor variable, it shows the valuableness of the independent

variables to affect the dependent one. Based on the findings the variables are classified by their importance level using their beta value in the following order. The first one became application convenience with the highest beta value of 0.53 followed by car condition, price, and call center with beta value of 0.256,0.223 and 0.188 respectively.

Therefore, as the beta value indicates the level of effect that those independent variables stated has on the independent one. For example, we can consider application convenience which has the highest beta value, and the result can be expressed in the following term. For every additional standard deviation (SD) unit of application easiness, there will be a 0.530 unit increase in customer satisfaction, other variables are held constant.

As it is stated above application convenience contributes a strong effect to customer satisfaction than other variables, Ride company should maintain the service regarding application and even try to improve its content by adding different kinds of features in order to make it easier and more convenient to use by its commuters.

Finally, those two namely driver's professionalism and time reliability are insignificant and has negative beta value. This shows they do not contribute to the regression model, so they are removed from the equation and the final equation became as follows.

$$CS= \alpha + \beta1\ (P) + \beta2\ (App) + \beta3\ (C) + \beta4(CL)$$

$$CS=0.080+0.223\ (P) + 0.530(App) + 0.256\ (C) + 0.188(CL)$$

4.9. Hypothesis Testing

Hypothesis test specifies which outcomes of the study may lead to rejection of the null hypothesis at the prespecified level of significance and that the alternative hypothesis represents the significance difference on the outcome variable. Thus, the following results have been obtained.

Table 4.17: Hypothesis testing

Hypothesis	Result	Reason
H1: Mobile application convenience/easiness has a positive and significant effect on the satisfaction of Taxi Passengers	H1supported	B=0.530 t=8.482 P <0.05
H2: Time reliability has a significant and positive effect on customers satisfaction.	H2 rejected	B=-0.069 t= -1.139 P >0.05
H3: Price Affordability has a positive and significant effect on the satisfaction of Taxi Passengers.	H3 supported	B=0.223 t=3.428 P >0.05
H4: Car condition pleasantness has a positive and significant effect on the satisfaction of Taxi Passengers.	H4 supported	B=0.256 t=3.463 P <0.05
H5: Responsiveness of employees at call center has a positive and significant effect on the satisfaction of Taxi Passengers	H5 supported	B=0.188 t=4.449 P <0.05
H6: Driver's professionalism has a positive and significant effect on the satisfaction of Taxi Passengers.	H6 rejected	B=-0.077 t= -1.016 P >0.05

Source: survey result (2021)

4.10. Discussion of Results

As per the multiple regression result, among the six independent variables, four of them (car condition, call center responsiveness, price affordability, & App Convenience) showed a positive & statistically significant result. However, Time and Drivers Professionalism showed a negative relationship and insignificant impact. Thus, this leads to the acceptance of the four hypotheses developed and the rejection of the rest two. The results of the hypotheses test are discussed in detail below.

As presented on Table 4.17 H1 is supported since it has a beta value of 0.530 at $P<0.05$. The easiness of the application is one of the major reasons that commuters will be happy to use since in our country, most people are not exposed to technology as that of the people of developed countries. Application convenience in this study is the first important factor influencing customer satisfaction. The result proved that this factor is significantly different from zero, therefore, the null hypothesis is rejected, and the alternative is accepted. The easiness of the application has a strong impact on customers satisfaction through maintaining a great connection interface, useful contents, and good interaction quality. The application provides information needed by commuters such as estimation of payment before starting the trip, drivers profile, available cars around the area and the exact fare of the ride at the end. A Similar study conducted by Rasheed (2018) shows the importance of mobile application easiness on customer satisfaction and that it is a very important factor especially when the app comprises different kinds of features that can increase its easiness to use by commuters.

Regarding the second hypothesis as it is shown on Table 4.17, H2 is Time reliability factor which showed a negative impact and is not statistically significant and is not important in the model. Thus, the null hypothesis is accepted, and the alternative hypothesis is rejected. The researcher assumes that the reason for this result is not because the majority of Ride customers thinks the service doesn't save them time but is not a factor for their satisfaction anymore other factors are more important than time currently. A research coherent to this by Yodit (2019) found that time reliability is the first significant factor that has the highest influence on commuter's satisfaction. According to this study,

As indicated on Table 4.17, H3 is supported as Price fairness factor is significantly different from zero & is important in the model. So, the study rejects the null hypothesis and accept the alternative. As customers always seek a affordable price whenever they want to use a service. they feel comfortable when they have to pay reasonable taxi fare to service providers with calculates the trip based on the predefined price per kilometer. As this study implies customers feel satisfied when taxi services provide a reasonable taxi fare with transparency of the fare they are paying since the application calculates it based on the predefined fare structure. Moreover, they are happy to use the service whenever there is a discount offered. The study is in coherent with the results of researchers Horsu & Yeboah (2015) who concluded that the affordability of price is a major factor to a high quality service that increases customers satisfaction. Also, Rasheed (2018) proved that fairness of the price and inability of the commuters to calculate it themselves with the predefined formula gives them comfort to use the service.

H4 is found to have a significant and positive effect on customer satisfaction as per the results of the regression indicated on Table 4.17. This indicates, customers give much attention to the car model, the cleanliness, and the comfort of the car. Thus, we reject the null hypothesis and accept the alternative. A study consistent with this study by Mundy (2014) came out in a conclusion that vehicle condition is one of the factors that contribute to service quality which is a prerequisite to taxi passengers' satisfaction. However, this result is in contrary to this Rasheed (2018) found that commuters didn't bother about the car condition that it isn't their prime concern while traveling.

Per the result on Table 4.17, H5 is supported since B=0.188 & P>0.05. Call center Employee's Responsiveness factor is significant and has positive effect on customer satisfaction. Hence, we may reject the null hypothesis and accept the alternative. According to Anton (1997) in providing and controlling customers satisfaction, call center responsiveness plays a great role. Some customers may not have to use the call center as they can communicate with drivers with the help of the application but from the findings it can be concluded that respondent use both the application and the call center interchangeably. Respondents have assumed call center employees to be responsive enough to pick up and answer calls, able to connect them with the nearby driver, willing and happy to answer queries.

Table 4.17 indicated that H5 is rejected since B=-0.077 & P > 0 05. The driver factor is not significantly different from zero & is not important in the model. Thus, the null hypothesis is accepted, and the alternative is rejected. This could indicate customers might not care if the driver is well groomed, polite & if he is willing to help with luggage or not. However, regarding the help with luggage, respondents must have believed that drivers should improve their willingness to help. Although this result is in consistent with a study that Horsu & Yeboah (2015) conducted and got a result of a negative beta, indicating a negative relationship with customer satisfaction, it contradicts with that of Rasheed (2018) which ended up getting a result of driver's profession having a positive and strong impact to customer satisfaction.

Generally, this study indicates that customers in Addis Ababa have a positive overall perception to the mobile application based taxi service provided by RIDE. Customer satisfaction is an important measure to know how well services are provided. The majority of consumers in this study were satisfied with the extents of taxi service characteristics that answers the main research question of this study. Also, this study indicated that there is a positive relationship among all of the factors except two of them having statistically in significant effect to customers satisfaction.

CHAPTER FIVE

5. Summary, Conclusions and Recommendations

5.1. Introduction

Since the results of the analysis of this study has been discussed in the earlier chapter, this chapter will focus on the summaries of the findings, conclusions, and recommendations.

5.2. Summary of findings

The study was conducted to investigate the factors affecting customers satisfaction in mobile application based taxi transport sector specifically Ride. Six affecting factors were selected after reviewing different studies and literatures regarding application based taxi services. Those factors were examined, and investigation was done on each factor to their effect on customer satisfaction.

Application easiness, Price fairness, Time reliability, Driver's professionalism, Car condition and responsiveness of Call center employees were the six satisfaction affecting factors in this study. Hence, a conceptual framework was developed, hypothesis formulated, and appropriate research designs were implemented to reach at the conclusions.

The study was conducted on customers of Ride geographically in Addis Ababa with a total of 369 respondents participating in answering a structured questionnaires distributed throughout the different service giving points. Descriptive and inferential statistical techniques were used to examine the primary data collected. Based on the demographic profile it was found that the majority of RIDE customers were males (50.7%) followed by (49.3%) females. Regarding their age, (41.2%) of the respondents were youths aged between (18-29) followed by 40.1% of age range between 30-39 years old. The rest 36 (29.8%) of them were above 35 years old. Over 50% of them have monthly income above 10,000(54.5). The rest 36 (29.8%) of them were above 35 years old. with (42.5%) of respondents falling in the age range of 30-39 years. In addition, most of them are

bachelor's degree holders (48.8%,) that 34.1% and 29% works at government offices and nongovernmental offices respectively.

About the waiting time, majority of commuters (40%) waited for only 5-7 minutes which is a good indicator that Ride has managed to handle the time reliability and that the majority of users are satisfied with the timely performance of the service provided by RIDE. Their frequency of travel lays on the range of 1-3 times per week with 43.4% followed by 42.3% of respondents traveling sometimes as needed. The most frequent users were found to be around 4.1% that traveled 7-10 times per week meaning that they used the service on daily basis. This indicates some of them are loyal to the service that RIDE should work hard not to lose such commuters and even collect their feedback to improve.

The result of the study indicated the effect of these satisfying factors (Price affordability, Time reliability, Driver's professionalism, Application easiness, Vehicle condition, Call center Responsiveness) as perceived by Ride customers is presented using descriptive statistics.

The Pearson correlation result indicates that all the independent variables were significant and except two variables all are positively related and has an effect on customer satisfaction. The most positively correlated variable being Application convenience, car condition, price and call center with (r = .623), (r= .547), (r =.404) and (r=.463) followed by drivers professionalism and time reliability (r= 375) and (r = .314) respectively. Based on the regression analysis it was revealed that the most important factors that influence customer satisfaction are application, car condition, price and call center with beta value of (B=0.530), (B=0.256), (B=0.23) and (B=.188) respectively with sig=.000 which is consistent with the higher ranked scores observed in the Pearson correlation coefficient followed by drivers profession and Time with none significant beta value of (B-0.077) and (B = -0.069) respectively.

Generally, the results of this study indicate that application based taxi service has a positive and significant influence on customer satisfaction. based on the finding about 78% of them are satisfied with the overall service that Ride has to offer. Among the six

factors application easiness, car condition, price and responsiveness of call center seems to be important to have an effect to their satisfaction.

5.3. Conclusion

Passengers who use taxi service through mobile apps were found to be 78 % satisfied. The study found a significant impact of service quality parameters such as convenient use of Mobile App, car condition, price and responsiveness of call center showed significant impact on customer satisfaction in both correlation and regression analysis while Driver Behavior and Time Reliability indicated a negative impact, which might be due to these variables have not become an issue anymore to the customers because they are already improved so customers will be satisfied if the service of other variables are improved.

5.4. Recommendation

It is well known that mobile application based taxi services are new services in Ethiopia that have been emerged few years before but has shown tremendous growth. According to the study most of the respondents are satisfied with the services that Ride provides. Given the fact that that some of the variables are correlated and some are not, the following recommendation are forwarded to better direct Ride to work towards customer satisfaction by stating problem areas that needs improvement.

- As the study implies commuters are satisfied with the application and considers it to be an influence on their satisfaction, Ride should maintain the easiness of the application and periodically update its contents in order to satisfy its customers and increase their level of loyalty to the company.
- Since this study has shown that the accessibility of different modes of payment is one of the determinants of a good service quality, Ride has to improve the current application by adding different kinds of features such as options on modes of payment. As there are easy payment systems already operating in the country such as Telebirr and Mbirr, Ride could benefit in making its brand different from same service providers by adding this feature.
- As the study implies, the price is mostly affordable by its users. However, Ride must work on ways to lower fare charges using different kinds of options that can

benefit commuters such as utilizing medium to bigger sized vehicles that could solve for those of face trouble in finding suitable transportation service during rush hours & for those who thinks the current Ride fare is a bit higher and could not afford it. This will benefit both Ride and commuters.

- Since the study proved that Car condition has a significant effect on commuters, Ride should plan to give due care when inspecting cars that fits to the service that has comfort, full functionality and other important characteristics contributing to commuter's satisfaction because there are new competitors entering in to the market with a brand-new cars.
- As respondents are not very satisfied with call center responsiveness, Ride has to improve its responsiveness of call center employees on the area of swiftness. They must be fast enough to quickly pick up calls and connect drivers with commuters. Moreover, they must be able to immediately notify commuters when there are no available cabs on the area that the commuter is placed with politeness.
- The study shows that most respondents, 78% of them are satisfied with the service however 22% of them are dissatisfied. Thus, Ride should work on continually assessing its customers concerns and work on price, driver's behavior, call center responsiveness and the application easiness of its service. Moreover, it should figure out if there are other variables that exists and have an influence to commuters satisfaction through R&D department and work on them.
- Advertisement is a powerful means of communication with targeted users. Ride has to use advertisement adequately to encourage application usage that help implement loyalty programs and attract new customers with coupons, gifts, and discounts to increase customer base.
- It is well known that other mobile application based taxi services have emerged in the country. Thus, Ride should take an improvement measures on all variable tested in this study knowing that Ride is not the only app based taxi provider in Ethiopia and customer may shift if they ever get better offer.

5.5. Limitations and directions for future research

The study is limited to the opinion of those customers who have a travel experience with only Ride taxi. Hence, the result of the study is not representative of other customers who uses similar services of such types from other companies. In addition, since the study used a nonprobability sampling method, the results of the study may not be generalized to the population. The study is also limited to the specified variables.

The research will also be limited to assessing the opinions of external customers satisfaction level which excludes the opinions of internal customers or employees to avoid biased results. Since few research are done related to this topic in the country, the unavailability of adequate reference materials regarding the topic will be another expected limitation.

Future researchers can make an investigation on new factors that can influence customer satisfaction of commuters. Thy can also compare and contrast other mobile based taxi service providers since there are many entering to the market. Moreover, they can do deep research on the company by also assessing the problems from the driver's side in order to make an input for the company to be aware and realize improving areas. It is also better to use larger sample size.

References

Aksin, O. & Armony, Mor & Mehrotram, V. 2007. *The Modern Call-Center: A Multi-Disciplinary Perspective on Operations Management Research, Production and Operations Management*. Special Issue on Service Operations in Honor of John Buzacott. 16. 655-688.

Anderson, Eugene & Fornell, Claes & Mazvancheryl, Sanal. 2004. *Customer Satisfaction and Shareholder Value*. Journal of Marketing. 68. 172-185. 10.1509/jmkg.68.4.172.42723.

Biesok, G & Wyród-Wróbel, J 2011. Customer satisfaction — Meaning and methods of measuring. In: H. Howaniee,W. Waszkielewiez(ed.), *Marketing and Logistic Problems in The Management of Organization*(23-41).

Bitner, M. J. & Hubbert, A. R., 1994. Chapter 3: Encounter Satisfaction versus Overall Satisfaction versus Quality: *The Customer's Voice. In: Service Quality: New Directions in Theory and Practice.* London: Sage, pp. 72-94.

Brazil, N., & Kirk, D.S. (2016). *Uber and Metropolitan Traffic Fatalities in the United States*. American Journal of Epidemiology, 184(3), 192-198.

Buttle, F. 2009, *Customer Relationship Management: Concepts and Technologies*, 2nd Ed. USA: Elsevier Ltd.

Carmines, E. G. & Zeller, R. A. 1979. *Reliability and Validity Assessment*, Newbury Park, CA, SAGE.

Chae.M, Kim .J, Kim. H & Ryu. H, (2002) *Information Quality for Mobile Internet Services:* A Theoretical Model with Empirical Validation, Electronic Markets, 12:1, 39-45, Chao, V., & Kao, Y. (2009). Bridge over troubled water or long and winding road? Gap-5 in airline service quality performance measures. *Managing Service Quality*, 114-134.

Chan, J.W., Chang, V.L., Lau, W.K., Law, L.K., Lei, C.J., 2016. *Taxi App market analysis in Hong Kong*. J. Econ., Bus. Manage. 4 (3), 239–242.

Cronin, J.J. and S.A. Taylor, 1992. *Measuring service quality*: a re-examination and extension. Journal of Marketing, 56(July), 55-68

https://worldpopulationreview.com/world-cities/addis-ababa-population

Elias.M, 2014, New city rail hoped to ease Addis' transport problems, accessed 21 December 2020, < https://www.urbanafrica.net/news/new-city-rail-hoped-ease-addis-transport-problems/>

Erin Roulston, 2014.Random digit dialing using a Computer Assisted Telephone Interviewing System, Leger. p.7

Edvardsson,B, Gustafsson,A and Roos I.(2005) *International Journal of Service Industry*

Management Vol. 16 No. 1, 2005pp. 107-121 Emerald Group Publishing Limited

Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences.* Thomson Brooks/Cole Publishing Co.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26,* 499-510.

Hair, j. f., Black, w. c., Babin, b. J. & Anderson, r. e., (2010). *Multivariate Data Analysis*. 6th ed. s.l.:Pearson prentice Hall.

Hill, N., & Brierley, J. (2017). *How to measure customer satisfaction*. Routledge. DOI: 10.4324/9781315253107

Horsu, E. N., & Yeboah, S. T. (2015). *Influence of service quality on customer satisfaction*: A study of minicab taxi services in Cape Coast, Ghana. International Journal of Economics, Commerce and Management, 3(5), 1451-1464.

Jham, V. & K.M. Khan, (2008). *Determinants of performance in retail banking*: Perspectives of customer satisfaction and relationship marketing. Singapore Management Review 18(3): 361- 369.

Khan, A. Jangid,A. Bansal, A& Chaudhary.S, Tyagi.V, Maruthappan. S, Purba. A. (2016). *Factors Affecting Customer Satisfaction in the Taxi Service Market in India*. Journal of Entrepreneurship and Management. 5. 46-53.

Kotler, P. & Keller, K. L. 2009. *Marketing Management*, 13th, Edition, New Jersey: Pearson Education Inc, Upper Saddle River.

Kotler,P. and Amstrong, G (2012). *Principles of marketing*. 15 th edition. Global edition, Pearson. Kotler. P and Armstrong, G (1996), *Principles of Marketing*, Prentice-Hall, New Jersey.

Kuo, Ying-Feng & Wu, Chi-Ming & Deng, Wei-Jaw. (2009). *The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services.* Computers in Human Behavior. 25. 887-896. DOI: 10.1016/j.chb.2009.03.003.

Ladhari, R. (2009). *A review of twenty years of SERVQUAL research*: International Journal of Quality and Service Sciences, Vol. 1, No. 2.PP.172-198.

Yu-Cheng, L &, Yu-Che, W, Shu-Chiung, L, Yi-Fang, H, Chih-Hung, C, Sang-Bing. T & Weiwei, D. (2016). *An empirical research on customer satisfaction study: a consideration of different levels of performance.* Springer Plus. DOI: 10.1186/s40064-016-3208-z.

Lewis, R.C., & Booms, B.(1983). *The Marketing Aspects of Service Quality* in AMA Proceedings, American Marketing Association, Chicago, pp. 99-104.

L. P. Alexander and M. C. González, (2015). '*Assessing the Impact of Real-time Ridesharing on Urban Traffic using Mobile Phone Data*', Proc. UrbComp, pp. 1–9.

Meron, K 2007, '*Public transportation system and its impact on urban mobility:* The case of Addis Ababa' Master's Thesis, Addis Ababa University

Murad,S, Al-Kayem,A, Manasrah A, Abu Halemah, N & Qusef A., (2019). *The Correlation between Customer Satisfaction and Service Quality* in Jordanian Uber & Careem. International Journal of Innovative Technology and Exploring Engineering (IJITEE)ISSN: 2278-3075, Volume8 Issue-12,

Ngo, V. (2015). Transportation Network Companies and the Ride sourcing Industry: *A Review of Impacts and Emerging Regulatory Frame*. City of Vancouver, October, 1-100

Negi, R. (2009). *Determining Customer Satisfaction through Perceived Service Quality*: A study of Ethiopian mobile users, International Journal of Mobile Marketing, 4(1), 31-38.

Pallant, J. (2007). SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS for Windows (3rd ed.). England: McGraw Hill Open University Press

Parasuram, A. & Berry, Leonard & Zeithaml, Valarie. 1991. *Refinement and reassessment of the SERVQUAL instrument.* J Retailing. 67.

Parasuraman, A., Zeithmal, V.A. and Berry, L.L. (1988). SERVQUAL: *a Multiple- Item Scale for Measuring Consumer Perceptions of Service Quality,* Journal of retailing, vol. 64, (1) pp. 12-40.

Parasuraman, A., Zeithmal, V.A. and Berry, L.L. (1985). *Conceptual Model of Service Quality and Its Implication for Future Research,* Journal of marketing, vol. 49, pp. 41-50.

Rabiul I, Mohammed S, Chowdhury, Mohammad S.S. and Salauddin A.(2014). *Measuring*

Customer's Satisfaction on Bus Transportation. American Journal of Economics and Business Administration. 6 (1):31-41

Rasheed, R., Mazhar, F., Shahid, M., (2018). *Mobile App-based Taxi Services and Customer Satisfaction:* an empirical review from Lahore city, Pakistan.

Ray A. Mundy, (2014). Houston Taxi Study, By Tennessee Transportation & Logistics Foundation. P92

Ross, H. (2015). *Ridesharing's House of Cards*: O'Connor V. Uber Technologies, Inc. and the viability of Uber's labor model in Washington. Wash. L. Rev., 90, 1431

Rust, R. T. & Oliver, R. L., 1994. *Service Quality. New Directions in Theory and Practice.* London: Sage.

Slavulj, M, Kanižaj, K & Đurđević, S. (2016). *The Evolution of Urban Transport* - Uber.

Salanova, J . (2014). Introduction. *Aggregated modeling of urban taxi service*, 352-361.

Salanova J, Estrada, M, Aifadopoulou,G & Mitsakis, E. (2011). *A review of the modeling of taxi services. Procedia* - Social and Behavioral Sciences. DOI 10.1016/j.sbspro.2011.08.020.

Shen, J., Qiu, F., Li, W.,&Feng, P., 2015. *Exploring the Effect of the Telephone/Online Booking System on Taxi Service: Case Study of Suzhou City in China*. In: 15th COTA International Conference of Transportation Professional.

Y.-J. Park, P.-S. Heo, M.-H. Rim, and D.-S. Park,(2008) '*Customer Satisfaction Index Measurement and Importance*-Performance Analysis for Improvement of the Mobile RFID Services in Korea', pp. 2657–2665.

Yaakub, N & Napiah, M 2011. *Quality of Service and Passenger's Perception* – A Review on Bus Service in Kota Bharu

Yodit, B 2019, '**Factors affecting app based taxi services:** The case of ride, Master's Thesis, Addis Ababa University

Zeithaml, V.A., and Bitner ,M.J. (2000). *Service Marketing: Integrating Customer Focus Across the Firm*, New York; MC Graw-Hill/Irwin.

Appendix 1: Survey

Addis Ababa University School of Commerce

Department of Marketing Management

Post graduate program

Customer's satisfaction Questionnaire

Dear respondents,

I am a student of Marketing Management in Addis Ababa University School of commerce. I am conducting a research on a topic of Factors Affecting Customers Satisfaction of Mobile Application Based Taxi services: The case of RIDE for a partial fulfillment of the requirements for the award of an MA degree. I kindly request you to spend some minutes of your time in answering this questionnaire designed to assess the satisfaction level of RIDE customers. Your responses will be used only for academic research and any information which you provide will be kept confidential. Your genuine response will have significant effect on the result of the study. Writing your name on the questionnaire is not mandatory. Thank you very much for your valuable opinion & time.

Part one

Instruction:

Please put a tick ("√") mark in the box relating to the opinion that identifies your response.

1. Age

☐ **1=** 18-29 ☐ **2=** 30-39 ☐ **3=** 40-49 ☐ **4=** 50 years and above

2. Gender

☐ 1= Male ☐ 2= Female

3. monthly income

☐ **1=** 5,000 and below ☐ **2=** 5001 – 7,500 ☐ **3=** 7,501 – 10,000 ☐ **4=** 10,000 and above

4. Education level

☐ **1**=certificate and below ☐ **2=** Diploma ☐ **3=** BA degree ☐ **4=** master's degree and above

5. Current occupation

☐ **1**=self-employed ☐ **2=**private sector ☐ **3=** NGO ☐ **4=** Government office

6. How many times have you traveled by this transport per week?

☐ **1=** 1 -3 times ☐ **2=** 4-6 times ☐ **3=** 7-10 ☐ **4=** 11 and above ☐ 5 = I cannot limit my usage weekly, I use it sometimes

7. About how long did you wait for your ride (from the time you made the request to the time the vehicle arrived)?

☐ **1=** 2- 4 min ☐ **2=** 5-7 min ☐ **3=** 8-10 min ☐ **4=** 11 & above 52

Part II: factors affecting customers' satisfaction

Instruction:

Please respond to each item by putting a tick ("√") mark in the box relating to the opinion that identifies your level of agreement:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Price					
1. RIDE charges reasonable price					
2. No extra charges by the driver as I can calculate per the RIDE fare structure					
3. The price for waiting time during the ride is fare					
4. RIDE fare is high. I use it only when it provides discounts					
Driver's professionalism					
5.Drivers have good driving skills					
6.Drivers are clean and well groomed					
7.Drivers have good knowledge of the routes					
8.Drivers are polite & courteous					
9.Drivers are willing to help with the luggage					

10.Drivers asks the exact calculated payment of the trip					
Time Reliability					
11. The service of RIDE has helped me save time					
12. Drivers arrive at the pickup location per the promised range of time					
13. Cab booking for a later use option helped me use my time efficiently					
14. Drivers use alternative roads and routs in case of traffic jam					
Car condition					
15. RIDE uses latest car models					
16. RIDE cars are properly serviced					
17. RIDE cars are comfortable					
18. RIDE cars are clean					
Call center employee's responsiveness					
19. Call center employees provide accurate information to enquiries					

20. Call center employees are fast to pick up and answer calls					
21. Call center employees are always happy to serve customers					
22. Call center employees calls back immediately and notify me when there are no cabs around my area.					
Application convenience					
23. Ride application is easy to use					
24. Ride app provides different payment modes					
25. Ride app helped me to get the estimated payment of the trip before booking the cab					
26. Ride application is easy to use					
27. App helped me to easily see available cars around my area.					
Overall Satisfaction					
28. My overall experience was very satisfying					

አዲስ አበባ ዩኒቨርሲቲ የንግድ ስራ ትምህርት ቤት

ማርኬቲንግ ማኔጅመንት ዲፓርትመንት

ድህረ ምረቃ ፕሮግራም

ውድ የመጠይቁ ተሳታፊዎች;

ክፍል አንድ: አጠቃላይ መረጃ;

መመሪያ;: ስሜ ተስፋነሽ ዘመነ ይባላል:: በአሁኑ ሰዓት በማርኬቲንግ ማኔጅመንት የትምህርት ዘርፍ የሁለተኛ ዲግሪ ተመራቂ ተማሪ ስሆን፣ ለዚሁ የድህረ-ምረቃ ትምህርት ማሟያነት የሚውል ጥናት በመስራት ላይ እገኛለሁ፡፡ ስለሆነም ውድ ጊዜአችሁን ሰውታችሁ ለምታደረጉልኝ ትብብር በቅድሚያ እያመሰገንኩ መጠይቁን በመሙላት ትተባበሩኝ ዘንድ በአክብሮት እጠይቃለሁ:: የጥናቱ ዓላማ በአዲስ አበባ በሚገኙ የራይድ ታክሲ ተጠቃሚዎች ድርጅቱ በሚሰጠዉ አገልግሎት የደንበኞች እርካታ መጠን ምን ያህል እንደሆነ ማወቅ ነው፡፡ በተጨማሪም የምትሰጡት ምላሽ ሚስጥራዊነቱ የተጠበቀ መሆኑንና ከላይ ከተገለፀው የመመረቂያ ጽሁፍ ማሙያነት ውጭ የማልጠቀምበት መሆኑን አረጋግጥላችኋለሁ:: ስለዚህ ውስን ደቂቃዎችን ሰጥታችሁኝ ይህን መጠይቅ ትሞሉልኝ ዘንድ እና በተቻለ መጠን ትክክለኛና የተሟላ መረጃ በመስጠት ትተባበሩኝ ዘንድ በትህትና እጠይቃለሁ:: ስም መፃፍ ግዴታ አይደለም አመሰግናለሁ ::

ክፍል አንድ: አጠቃላይ መረጃ;

ከታች በምትመለከቷቸው ቁጥሮች ላይ ለቀረቡት ጥያቄዎች የእናንተን ሃሳብ የበለጠ ገላጭ የሆነውን አማራጭ በያዘው የምርጫ ሳጥን ውስጥ የ (√) ምልክት ያድርጉ;

1. ዕድሜ

☐ **1**= 18-29 ☐ **2**= 30-39 ☐ **3**= 40-49 ☐ **4**= 50 እና በላይ

2. ፆታ

☐ **1**= ወንድ ☐ **2**= ሴት

3. የወር ገቢ

☐ **1**= 5,000 እና በታች ☐ **2**= 5001 – 7,500 ☐ **3**=7,501–10,000 ☐ **4**= 10,000 እና በላይ

4. የትምህርት ደረጃ

☐ ሰርተፊኬት እና በታች ☐ **2**= ዲፕሎማ **3**= ዲግሪ ☐ **4**= ማስተርስ ዲግሪና በላይ ☐

5. ስራ

1= የግል ☐ መንግስታዊ ያልሆነ ድርጅ **3**= መንግስታ☐ ጅት **4**= ሌላ ☐ ☐

6. የራይድ ታክሲ ትራንስፖርት አገልግሎትን በሳምንት ምን ያህል ጊዜ ይጠቀማሉ?

1=1 -3 ጊዜ **2**=4- ጊ **3**=7-10 ጊዜ **4** ጊዜና በላይ **5**=በሳምንት አይገደብም(አልፎ አልፎ)

7. የራይድ ታክሲ ትራንስፖርት አገልግሎትን ከጠየቁበት እስከሚያገኙበት ድረስ ለስንት ደቂቃ ያህል ይጠብቃሉ?

= ከ 2-4 ደቂቃ 5-7 ደቂቃ **3**= ደቂቃ **4**= ደቂቃና በላይ

ክፍል ሁለት; የአመለካከት ጥያቄዎች

መመሪያ; ከታች ለቀረቡት ጥያቄዎች የዕናንተን እይታ የበለጠ ገላጭ የሆነውን አማራጭ አረፍተ ነገር የያዘው የምርጫ ሰንጠረዝ ውስጥ የ(√) ምልክት ያድርጉ:: በተጨማሪም 1=በጣም አልስማማም 2 =አልስማማም 3= ገለልተኛ ነኝ 4= እስማማለሁ 5 = በጣም እስማማለሁ የሚል ውክልና የያዙ መሆኑን ልብ ይበሉ:

	በጣም አልስማማም	አልስማማም	ገለልተኛ ነኝ	እስማማለሁ	በጣም እስማማለሁ
ዋጋን በተመለከተ					
1. ራይድ የሚያስከፍለው ክፍያ ከአገልግሎቱ ጋር ተመጣጣኝ ነው					
2. የክፍያዉን ዋጋ ራሴ ማስላት ስለምችል አልጭበረበርም					
3. በጉዞ መሃል ለሚኖር የመቆያ ጊዜ ክፍያ በደቂቃ ተመጣጣኝ ነዉ፡					
4. የራይድ አገልግሎት ክፍያ በጣም ከፍ ያለ ስለሆነ ቅናሽ ሲኖር ብቻ እጠቀማለሁ					
የአሽከርካሪው ስነ ምግባርና ቅልጥፍና					
5. የራይድ አሽከርካሪዎች በቂ የመንዳት ችሎታ አላቸው					
6. የራይድ አከሽርካሪዎች ንጽህናቸውን የጠበቁ ናቸው					
7. የራይድ አሽከርካሪዎች መንገዶችንና አካባቢዎችን በደንብ ለይተው ያውቃሉ					
8. የራይድ አሽከርካሪዎች ጨዋና ሰው አክባሪ ናቸው					
9. የራይድ አሽከርካሪዎች የተሳፋሪን ቫንጣ ለማገዝ ዝግጁ ናቸው					
10. የራይድ አሽከርካሪዎች በትክክል አገልግሎቱ የሚጠይቀዉን ክፍያ ያስከፍላሉ					

ሰአትን በተመለከተ	በጣም አልስማማም	አልስማማም	ገለልተኛ ነኝ	እስማማለሁ	በጣም እስማማለሁ
11. መተግበሪያው ሰአቴን በአግባቡ እንድጠቀም ረድቶኛል					
12. አሽከርካሪው ለደንበኛው እደርሳለሁ ባለው ሰአት ይደርሳል					
13. የታክሲ አገልግሎቱን ቀድሞ የማዘዝ አማራጭ ሰአቴን የበለጠ በአግባቡ እንድጠቀም ረድቶኛል					
14. የራይድ አሽከርካሪዎች መንገዶች በሚጨናነቁበት ጊዜ አማራጭ ክፍት መንገዶችን በመጠቀም ሰአቴን በአግባቡ እንድጠቀም ረድተውኛል					
የመኪናውን ሁኔታ በተመለከተ					
15. ራይድ ዘመናዊ ሞዴል መኪናዎችን ይጠቀማል					
16. የራይድ ተሽከርካሪዎች ደህንነት በየወቅቱ ይረጋገጣል					
17. የራይድ ተሽከርካሪዎች ምቾት አስተማማኝ ነው					
18. የራይድ ተሽከርካሪዎች ጽዳት በጣም ጥሩ ነው					
የጥሪ ማእከል ሰራተኞችን በተመለከተ					
19. የጥሪ ማእከሉ ሰራተኞች በቂ መረጃ ይሰጣሉ					
20. የጥሪ ማእከሉ ሰራተኞች ፈጥነው ስልክ በማንሳት ቀልጣፋ አገልግሎትና መረጃ ይሰጣሉ					
21. ጥሪ ማእከሉ ሰራተኞች ሁሌም ተገልጋዮችን ለማገልገል ዝግጁና ደስተኞች ናቸው					
22. ጥሪ ማእከሉ ሰራተኞች በሰአቱ					

በአቅራቢያዬ የሚገኝ የራይድ መኪና ከሌለ ሌሎች አማራጮችን እንድጠቀም በፍጥነት ያሳዉቁኛል					
የሞባይል መተግበሪያን ምቹነት በተመለከተ	በጣም አልስማማም	አልስማማም	ገለልተኛ ነኝ	እስማማለሁ	በጣም እስማማለሁ
23. የራይድ የሞባይል መተግበሪያ ከ ድርጅቱ ጋር ለሚኖረኝ ማንኛዉም ጥያቄ እና ግብረ መልስ ምቹ ሆኖ የተሰራ ነዉ					
24. የራይድ የሞባይል መተግበሪያ የተለያዩ የመክፈያ አማራጮች አሉት					
25. የሞባይል መተግበሪያው የጉዞ ዋጋ ግምት ከጉዞ በፊት በቀላሉ እንዳገኝ ረድቶኛል					
26. የራይድ የሞባይል መተግበሪያ ለመጠቀም ቀላል እና ፈጣን ነው					
27. የሞባይል መተግበሪያው በአቅራቢያዬ የሚገኙ መኪኖችን በስልኬ ላይ በቀላሉ እንድመለከት ረድቶኛል					
አጠቃላይ እርካታን በተመለከተ					
28. ለድርጅቱ ያለኝ አጠቃላይ እይታ አርኪ					

Appendix 2: Figures

Fig 4.1 Histogram of Regression Standardized Residual

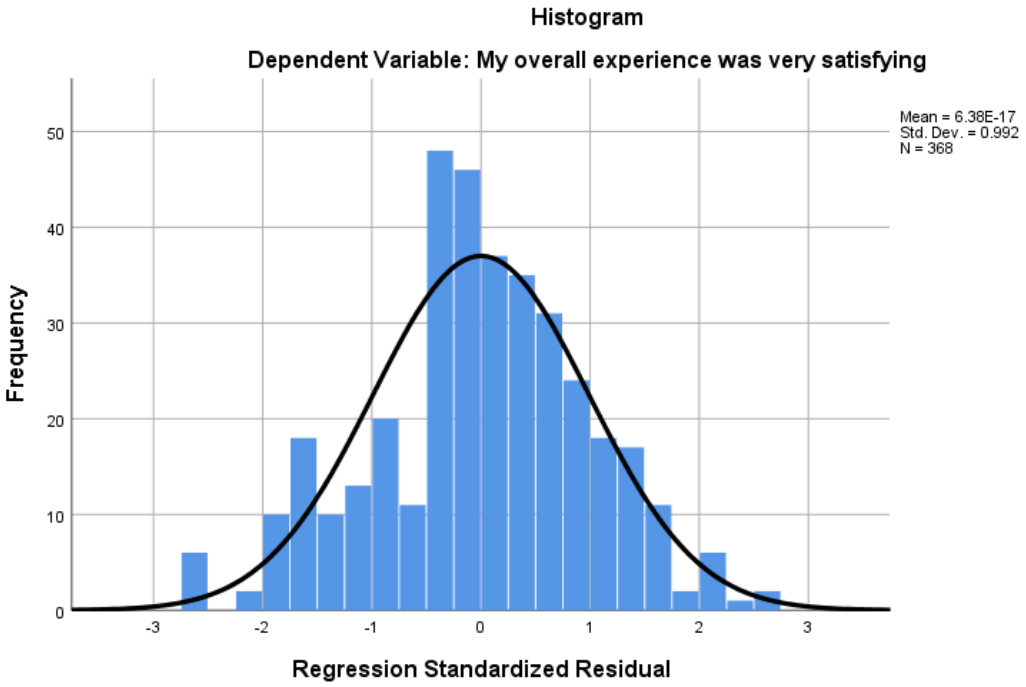

Fig. 4.2 Linearity scatter plot of regression standardized residual

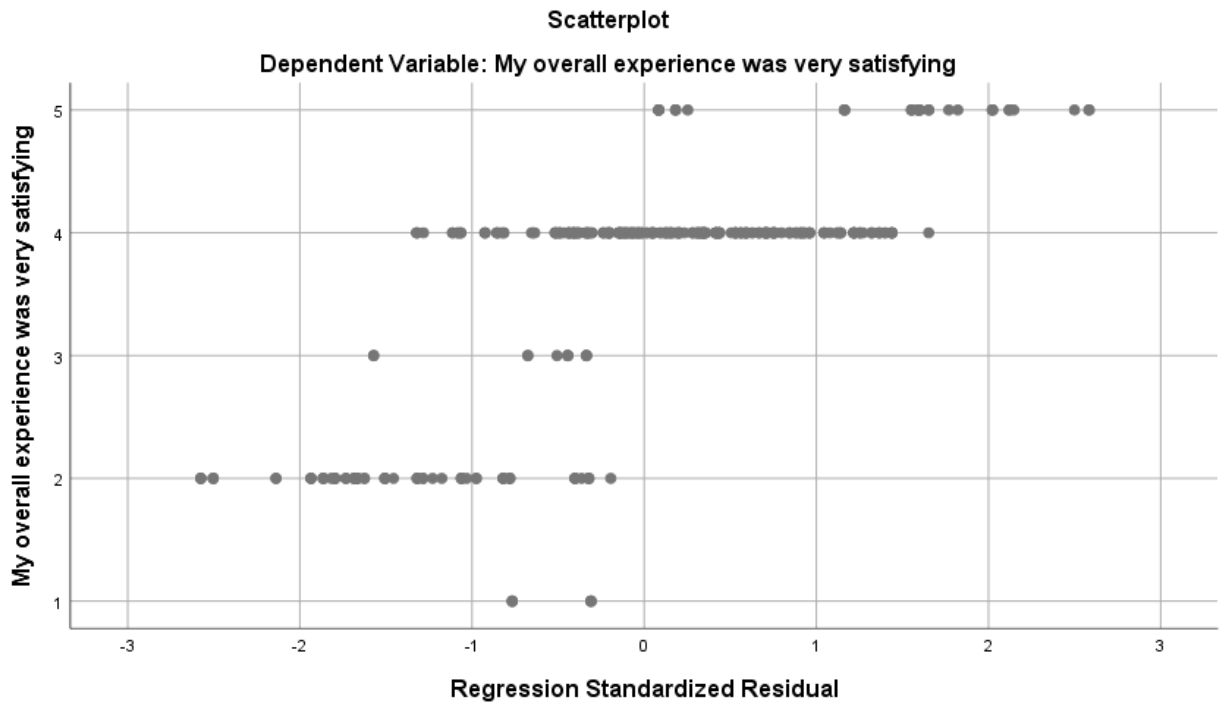

Fig. 4.3 P-Normal P plot of Regression standardized residuals

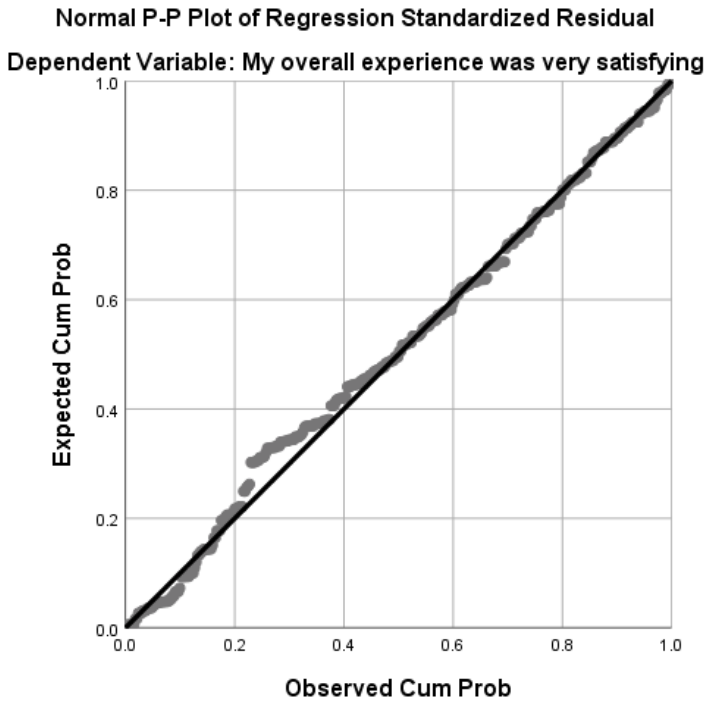

Fig. 4.3 Correlation

Correlations								
		price	Drivers professionalism	time	car condition	call center	App based	My overall experience was very satisfying
price	Pearson Correlation	1	.599**	.251**	.404**	.175**	.415**	.404**
	Sig. (2-tailed)		0.000	0.000	0.000	0.001	0.000	0.000
	N	369	369	369	369	369	368	369
Drivers professionalism	Pearson Correlation	.599**	1	.546**	.625**	.345**	.407**	.375**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000
	N	369	369	369	369	369	368	369
time	Pearson Correlation	.251**	.546**	1	.603**	.448**	.357**	.314**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000
	N	369	369	369	369	369	368	369
car condition	Pearson Correlation	.404**	.625**	.603**	1	.551**	.559**	.547**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000
	N	369	369	369	369	369	368	369

call center	Pearson Correlation	.175**	.345**	.448**	.551**	1	.380**	.463**
	Sig. (2-tailed)	0.001	0.000	0.000	0.000		0.000	0.000
	N	369	369	369	369	369	368	369
app	Pearson Correlation	.415**	.407**	.357**	.559**	.380**	1	.623**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		0.000
	N	368	368	368	368	368	368	368
My overall experience was very satisfying	Pearson Correlation	.404**	.375**	.314**	.547**	.463**	.623**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	
	N	369	369	369	369	369	368	369
**. Correlation is significant at the 0.01 level (2-tailed).								