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ANALYZING FACTORS AFFECTING THE ADOPTION OF E-HAILING SERVICE IN ADDIS ABABA ETHIOPIA

A Thesis Submitted To the Department of Marketing Management, In Partial Fulfillment for the Requirement of the Award of Degree of Masters of Arts (MA) In Marketing Management

By

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Advisor

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LETTER OF CERTIFICATION

I hereby certify that Metasebia Yeneneh has carried out her project work on the topic of "Analyzing Factors Affecting The Adoption Of E-hailing Service in Addis Ababa, Ethiopia "under my supervision. This work is original, and it is suitable for Submission in partial fulfillment of the requirement for the award of a Master's Degree in Marketing Management.

_____ _____

Dr. Tewodros Mesfin (Advisor) Signature

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Date

Addis Ababa University

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June 2020

DECLARATION

I, the undersigned, declare that this Master's thesis, entitled "Analyzing Factors Affecting the Adoption of E-hailing Service in Addis Ababa, Ethiopia" is my original work, prepared under the guidance of Tewodros Mesfin (PhD). All sources of materials used for the thesis has not been submitted either in part or in full to any other high learning institution for earning degree.

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June 2020

Analyzing Factors Affecting the Adoption Of E-hailing Service in Addis Ababa, Ethiopia

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ACRONYMUS AND ABBREVIATION

APP= APPLICATION

UTAUT= Unified Theory of Acceptance and Use of Technology

ABSTRACT

This research deals with identifying those factors affecting the adoption of E-hailing service in Addis Ababa, Ethiopia. Internet based questionnaire was used to gather the data from 384 respondents who were selected using a convenient sampling technique. The collected data was analyzed using SPSS version 26, employing statistical tools such as reliability, correlation, and multiple regression analysis. The result of the study uncovered that all the six independent variables (Performance expectancy, Effort expectancy, Social influence, Facilitating condition, perceived credibility, and price saving orientation has a positive and significant effect on the adoption of E-hailing service. In accordance the multiple regression analysis result uncovered that 79.5 % of variation in the Adoption of E-hailing service is explained by the combined effect of the six independent variable and the unstated variables represent 20.5 % of the variation. Furthermore, the study indicated that facilitating condition was the strongest predictor of the adoption of e-hailing service while price saving orientation represent the least importance in relation to the adoption of E-hailing application .Also six hypotheses were tested to examine the effect of these variables have on the adoption of E-hailing service. Thus, the outcome chiefly indicates that passengers will adopt E-hailing application if they perceive that E-hailing application is easy to use, allow them to communicate with drivers quickly, is compatible with other technologies, make them feel safe, and increases their prestige among others. Based on the findings of the study, the researcher forwarded some recommendations.

Keywords: E-hailing application, Adoption

CHAPTER ONE

INTRODUCTION

In large metropolitan urban areas, the Emergent of E-hailing service has altogether improved individuals' understanding of taxi travel by giving one of a kind taxi taking experiences. This administration, as a new form of communication between drivers and passengers, has aroused scholarly interest. Journal of Advanced Transportation, (2018); Giovanni & Farzad (No date) unpublished work

In light of this, this research examines factors affecting the Adoption of E-hailing Applications in Addis Ababa, Ethiopia: In doing this, the introductory chapter of the paper provides the background of the study, statement of the problem, research questions and the objectives of the study. In addition, the chapter covers the significance of the study, scope of the study, limitation of the paper, some operational terms and organization of the paper. The detail is presented as follows.

1.1 BACKGROUND OF THE STUDY

In the last decade, Information and Communication Technologies (ICT) have significantly developed and proliferated society and organizations alike. According to the United Nations Development Program UNDP,(2003) “ICTs are basically information-handling tools – a varied set of goods, application and services that are used to produce, store, process, distribute and exchange information”. The term ICT also covers mobile phones, computers, tablet devices, and network hardware and software.

As indicated by Kemp,(2017) statistical report, just about 3 billion individuals will utilize cell phones in 2020 and Leading firms will look to shape the advancement of technological applications to further their own benefit Lovelock,(2001); Lai,(2007). As such, with the development of portable innovation and applications, numerous organizations are utilizing the opportunity to create relationships with consumers through mobile applications. Zhang, (2017).These applications are pieces of software installed onto individual cell phones to attain services like entertainment, communication, transportation, shopping, mapping, etc. With respect

to this D. Shanthi and M.Phil et al (No date) unpublished work, believed that the clients in the present day are utilizing portable applications to book a taxi at any time and from any place in urban regions. In like manner, an investigation in Brazil uncovered that 18.2% of all respondents with smartphone and internet access requested transportation by means of an E-hailing application at least once with in the past six weeks of 2015. Luiz Antonio Joia, (No date) unpublished work.

According to Wikipedia, E-hailing is referred to as "the processes of requesting a vehicle, taxi, limousine, or some other type of transportation pick up by means of virtual gadgets: computer or smart phone" Moreover, "E-hailing also refers to the process of ordering a car, taxi or any other mode of transportation by way of computer or mobile device. 'E' here refers to 'electronic' and 'hail' signifies the customary procedure of signaling an approaching Cab to stop" Eapjmrm,(2018). These savvy application works in a way: find passengers; drop them to their destination and according to fare structure: based on time and distance collect money from passengers. (Rukhsana Rasheed,(No date) unpublished work. Thus, by means of E-hailing service clients can distribute their brief travel solicitations to close by cab drivers and taxi drivers can decide to acknowledge or dismiss orders. For each accepted request, the passenger receives the information of the corresponding taxi driver, and the driver will be directed to the customer's location. An E-hailing order is completed when the customer is sent by the reserved taxi to his/her destinations and pays the taxi fare either using cash or E-hailing application. Such convenient and instantaneous information exchange process effectively reduces the previous information barriers caused by spatial deviation between customers and taxi drivers. Fang Hea,b.etal (2016).

As indicated by Giovanni & Farzad (No date) unpublished work, the Emergent of E-hailing services have altogether improved individuals' understanding of taxi travel by giving a remarkable taxi taking encounters (i.e., online-to-offline payments, convenient and comfortable service, social interactions), and have pulled in an enormous number of enlisted clients.

With that in mind, despite the fact that E-hailing is growing rapidly with the ascent of organizations like Zayride Ride, Polotrip, and taxiye in Addis Ababa, data concerning key variables influencing the adoption of E-Hailing application is restricted.

To this effect, the study examines the key factors affecting passengers adoption of E-hailing service in Addis Ababa, Ethiopia and specifies the name of the applications for ordering a taxi via

mobile devices as ‘E-hailing applications’ and utilize the term ‘adoption’ and ‘use’ interchangeably throughout the paper.

1.2 STATEMENT OF THE PROBLEM

A taxi is a vehicle that conveys ride seekers starting with one area then onto the next at a concurred cost dependent on the journey covered Juma, (2016). Taxi has become an essential piece of our lives, particularly when you have to surge some place desperately. At such occasions, public transport can be slow or inconvenient Rayle et al. (2014). Right now, 8 million individuals utilize the public transport in Addis Ababa and with practically 60% of the 900,000 vehicles in the nation found in Addis Ababa, this led the nation in to overwhelming street blockage. What's more, the vehicle authority revealed that only 69.7% of the transport demand was met by the government in the last fiscal year. Along these lines, e-hailing Platform was acquainted to address these issues. Addis fortune, (2016)

E-hailing service is perhaps the most recent innovation utilizing portable technologies to access a transportation service and the greater part of the nations have implemented and utilized e-hailing service in their everyday life. In the past, clients consistently hail empty cruising taxis on roads, which offer low to lower solace and efficiency particularly during times of heavy traffic or blustery days Fang and Zuo-Jun, (2015). But currently, these applications have made it a lot simpler for travelers to avail taxi service with numerous choices and this is driven by the innovation that changed the conventional method for hailing a taxi. Previously, the travelers need to go to the side of the road for calling a taxi, yet now the framework empowers people to secure a taxi or book a ride just by a tap from their cell phones from anyplace at any time .Mohamed, (2014); Kah Boon, (2018).

As indicated by Google play store report, the number of enrolled users of E-hailing applications, for example, Ride in Addis Ababa arrived at 100,000 up until October 2019 Thus, with the progressed and dynamic development of innovations, how quick the Passengers are adopting and utilizing these technologies relies upon various factors. There have been various researches tending to factors impacting customers' adoption of E-hailing service in the different part of the world. For example, In Thailand a comparative study was directed to examine the adoption of E-hailing Applications between female and male users and the examination showed that relative advantages

and ease of use had an impact towards the adoption of e-hailing applications in the two sexual orientations While, social influence and physical security influenced only the male user to adopt e-hailing applications. In another two studies conducted in Malaysia: perceived usefulness, subjective norms, perceived risk, perceived playfulness, performance expectancy, effort expectancy, social influence and facilitating conditions were among the factors that affect the consumer adoption of Ride-Hailing or E-Hailing Applications. (Kah Boon 2018; Hermana's Haba and Omkar Dastane ,2018). Be that as it may, when we come to the context of Ethiopia; studies on E-hailing services mostly focused on the passenger's satisfaction of app-based transportation services. For instance Yodit Bekele (,2019), conducted a study on factors affecting customer's satisfaction of application-based taxi service in Ethiopia and the study focused on passenger's satisfaction of ride e-hailing application. Furthermore, the paper investigated the effect of mobile application convenience on passenger's satisfaction. Thus, the current study tried to bridge in the gap in literature by focusing on factors affecting the adoption of e-hailing service in Addis Ababa, Ethiopia.

Furthermore, although E-hailing companies collect user information and detailed trip characteristics, such data are usually not publicly released due to privacy concerns. Additionally, although the e-service operators have data in regards to how many of their application have been installed by several users', information regarding the key factors driving the passengers to adopt /use the E-Hailing service is limited.

Thus, the study tried to fill in the aforementioned gaps by analyzing the factors affecting the adoption of E-hailing service in the context of Addis Ababa, Ethiopia. All the four dimensions of Unified Theory of Acceptance and Use of Technology (UTAUT) model (Performance expectancy, Effort expectancy, Social Influence and facilitating condition,) and additional factor perceived credibility and price-saving orientation from the extended UTAUT2 was measured.

1.3. RESEARCH QUESTIONS

In this study, leading questions were generated to study factors affecting the passenger's adoption of E-hailing service in Addis Ababa, Ethiopia. The study thus, is guided by the following research questions.

The main research questions are as follows.

1. To what extent Performance Expectancy influence adoption of E-hailing Service in Addis Ababa, Ethiopia?
2. How does Effort Expectancy affect the adoption of E-hailing service in Addis Ababa, Ethiopia?
3. To what extent Social Influence affects the adoption of E-hailing service in Addis Ababa, Ethiopia?
4. How does Facilitating condition influence the adoption of E-hailing service in Addis Ababa, Ethiopia?
5. How does perceived credibility affect the adoption of E-hailing service in Addis Ababa, Ethiopia?
6. To what extent price-saving orientation influences the adoption of E-hailing service in Addis Ababa, Ethiopia?

1.4 OBJECTIVES OF THE STUDY

1.4.1 General objective

The general objective of the study examines factors affecting the adoption of E-hailing service in Addis Ababa, Ethiopia.

1.4.2 Specific objective

1. To determine the effect of Performance expectancy on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

2. To analyses the effect of Effort expectancy on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

3. To investigate the effect of social influence on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

4. To examine the effect of facilitating condition on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

5. To investigate the effect of perceived credibility on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

6. To analyze the effect price-saving orientation on the adoption of e-Hailing service among passengers in Addis Ababa, Ethiopia;

1.5 SIGNIFICANCE OF THE STUDY

The study explains the key factors that drives passengers to use the app-based taxi application. In light of this**,** the study helps app-based taxi operators to: (1)Understand major factors leading the passenger's to adopt E-hailing service (2) provide them with the information they need to update their mobile application, and (3) Convey suitable strategies for passengers when implementing their technology. Alongside this, it helped passengers express their feeling toward the different e-hailing application in Addis Ababa, Ethiopia. Lastly, it contributed to future research works related to the adoption of application-based service in the transport industry.

1.6 SCOPE OF THE STUDY

1.6.1 Scope of Content

In this study, the researcher examined and identified the relationship between the independent variables (Performance expectancy, Effort expectancy, Social influence, facilitating condition, perceived credibility, price-saving orientation) and the dependent variables (adoption of E-hailing service).

1.6.2 Scope of application and demographic

The study investigated the factors affecting the adoption of E-hailing service in the case of passenger application. In this manner, the study implemented inclusion criteria, such as passengers who have traveled at least once using E-hailing services were included in the study. Thus, a passenger who hails a taxi only using the call center was excluded while those that have used both were included. The study was conducted in Addis Ababa, Ethiopia and all the respondents where part of the face book community of the service provider.

Accordingly, for face-to-face distribution, the researcher planned to distribute the questionnaire when the passengers enter the selected Taxis or vehicles where the researcher was collecting data but due to the corona Virus pandemic and social distancing, the researcher was forced to collect data using an internet-based survey. The questionnaire was distributed on the service provider's social media pages such as Facebook. The researcher used a two-step survey to minimize the missing rate. The social media pages were from all the e-hailing service providers' page with a Facebook community who had the highest installed passenger applications

1.7 LIMITATION OF THE STUDY

In Addis Ababa, most of the people know about E-hailing service but there are still not many people using taxi booking mobile applications because people are used to calling taxis via traditional way; so the researcher used two stage internet based questionnaire to deal with this obstacle and this helped the researcher to distinguish between the application users from the non-users in addition to this the internet based survey allowed the researcher to find respondents easily. Moreover, the study faced challenges in pre-specifying the factors that can affect E-hailing due to absence or inaccessibility of reliable records and reports on how technology was adopted in the taxi industry in the past years but the researcher referred to literatures related to adoption of mobile applications and adopted those factors related to the transport industry. In addition to this, the study employed convenience sampling method to select respondents and this created bias because it was difficult to get an equal probability of e-hailing service users. Accordingly the research was forced only to generalize its study in the context of the selected city.

Lastly, due to the current pandemic the researcher was forced to conduct internet based survey and this created frame coverage bias. Thus, the survey participation depended on the respondents being a member of the service provider's Facebook page and having an email address such as the study missed those passengers who were not a member of the Facebook page and those who did not have an email address were also excluded.

1.8. OPERATIONAL DEFINITION OF TERMS

E-hailing application: "is the process of ordering a car, taxi or any other form of transportation pick up via virtual device computer or mobile device." Wikipedia,

Mobile application: It is a software application that can be installed on handheld devices (mobile phone, tablet, e-reader or other portable device). It supported by operating systems and able to connect to wireless networks. Gahran, (2011)

Technology adoption model: is a model that has two beliefs – perceived usefulness and perceived ease of use – are instrumental in explaining the variance in users' intentions Kharim H.Salim,AlShoubakiY.EllianandKharimA.Salim, (2011)

Innovation Diffusion Theory (IDT): "diffusion of innovations is the process which innovations are communicated through specific channels over time among the member of a social system. Combining all the characteristics, innovations that are perceived with greater relative advantages, compatibility, trialability, observability and less complexity are more likely to be adopted faster." Everett M. Rogers,(2003.)

Unified Theory of Acceptance and Use of Technology: "This is a model that integrates the eight previously presented views and theories about user acceptance or user behavior. It proposes four dimensions: performance expectancy, effort expectancy, social influence and facilitating conditions. Which play an important role as a direct determinant of user adoption and usage behavior. Venkatesh, V. (2003)

1.9. ORGANIZATION OF THE STUDY

The research is organized into five chapters in which chapter one is the introductory chapter that presents the background of the study, statement of the problem, objective of the study (general and specific), research questions , scope of the study, significance of the study, limitation of the paper, and operational terms. Chapter two presents the review of related literature consisting of theoretical, empirical and conceptual frameworks. Chapter three covers the research design, research approach, population, sample size, sample procedure, and methods to be used during data collection and data analysis. The fourth chapter presents the analysis and interpretation of empirical data collected from respondents. The final chapter provides the conclusion and recommendation of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter shows the theoretical literature review on E-hailing service, features of E-hailing application and Evolution of E-hailing service in Addis Ababa. In addition to this, one of the model of technology adoption was discussed including the independent variables (performance expectancy, effort expectancy, Social influence, facilitating condition, perceived credibility, price-saving orientation and the dependent variable (Adoption of E-hailing service). Then after the theoretical literature review; it presents discussion on the Empirical and Conceptual framework.

2.1. REVIEW OF THEORETICAL LITERATURE

2.1.1 E-HAILING SERVICE

2.1.1.1. DEFINING E-HAILING

In the ongoing months, E-hailing services have grown rapidly as more passengers enrolled for the services. Not only this but the number of operators and the zone served by the administrators has additionally enhanced JUMA, (2016).According to Wikipedia, the term E-hailing is alluded to as "the processes of ordering a car, taxi, limousine, or any other form of transportation pick up via virtual devices: computer or mobile device". Moreover, E-hailing also refers to the process of requesting a car, taxi or any other mode of transportation by way of computer or mobile device. 'E' here refers to 'electronic' and 'hail' means the traditional process of signaling an approaching taxi cab to stop .Eapjmrm, (2018).

An E-hailing application is a software program on smartphones that performs at least one of the following functions; 1) permit travelers to distinguish the areas of accessible cabs; 2) permit drivers to recognize travelers who are prepared to travel; 3) permit travelers to hail a taxi by means of mobile applications; 4) permit drivers to get hail requests; and 5) E-payment. Likewise JUMA, (2016) saw that a significant part of E-hail application is its capacity to support ; identification of location(s) by both drivers and passengers, looking for accessible cabs in a given zone; permits a traveler to book a taxi and the driver to acknowledge such request; and enable the passenger to estimate payment using the E-hail application.

To book an electronic ride customer's pick-up location is required which can be provided either by entering his/her address or his/her current location via GPS connectivity Eapjmrm, (2018). Juma, (2016) plainly expressed that the progression of app-based dispatch system on mobile phones begins when a passenger books a taxi from licensed driver using the E-Hail Application. Then the Application in turn communicates the passenger's details such as area, name, recent bookings, and available routes among others to driver via GPS and application charge a distance-variable fare.

Globally the leading brand is Uber, a united state- based company with a pioneering software application by the same name. Which has a strong presence in North America and Europe; it has also established its own footprint in Africa by launching operation in Egypt, Ghana, Kenya, and morocco, Nigeria, South Africa, Uganda and Tanzania. Many African have tried to modernize their transport system by introducing similar E-hailing platforms. Kenya capital Nairobi has over 2000 drivers that operate through internet hailing companies, with more than ten applications launched in the last three years. The reporter, (2018).In light of this, this research specified the name of the applications for ordering a taxi via mobile devices as 'e-hailing applications.

2.1.1.2. Applications of e-hailing service

This section discusses the key applications that are required in standard E-haling service to make the online service run smoothly. Following are the basic and significant applications without which online taxi booking and dispatching is preposterous:

2.1.1.2.1 Dispatcher Application

A dispatch application is a real-time software platform that automates scheduling and routing of vehicles using location and traffic data. Taxi or ride hailing dispatch systems connect drivers with riders via their mobile phones. The application allows service providers to automatically manage vehicle fleets, including vehicle utilization, driver's performance and driver's payment. Furthermore, it assures passengers safety by monitoring both the driver and passenger and reporting the data to the dispatch system. The reporter,(2018).

2.1.1.2.2 Passenger App

The passenger application assists riders to book and select vehicle types of their preference. In addition to this, it displays available online drivers live on map, it allows them to hail ride on demand or pre-book them for later use and it helps them identify the nearest available taxis within

any particular area.Furthmore, the application displays drivers information such as the drivers name, vehicle registrations, and telephone number to the passenger to communicate with the driver.

2.1.1.2.3 Drivers App

The application is prominent to drivers as it allows them to track their earning over time, confirm or deny request based on their availability and using the route optimization feature the drivers can locate the most efficient and quickest route to reach its customers. Furthermore, it allows drivers to accept passengers while drivers travel to their preferred destination. For instance, the drivers can accept request on their way home.

2.1.1.3 Features of e-hailing apps

This section discusses the key features that are important for providers to sustain passengers in the E-hailing service. The following are the basic features;

2.1.1.3.1 Booking options

This feature allows passengers to book a ride, select pickup location, and destination, level of service and pickup time and date. Furthermore, it permits passengers to choose a taxi of their preference and reduce waiting time (VoIP.n.d, unpublished work).Accordingly Santi et al. (2014): Rayle (2014) found that if a customer hails a cab from his/her smartphone, waits for up to one minute for the taxi, and could tolerate a delay of up to five minutes in the trip, 32% of the total travel times can be saved compared to traditional taxi. In support of this Brodeur, (2018) reveals that after Uber entered the New York taxi market in 2 011, the number of traditional ("Yellow Cab") taxi ride reduced by 25% while the Gross booking for Uber reached $20 billion in 2016.Newcomer, (2017)

2.1.1.3.2 Driver information

E-hailing app displays information of their drivers and the passengers to ease the communication between drivers and passengers. According to Ackaradejruangsri (2015) some of the information displayed to the passengers included drivers name, vehicle registrations, and telephone number which made the service delivery smooth. Prior to displaying the information to passenger, the service providers verify the relevant information such as license and tax number during registration to assist the dispatch service. Hence, this system is installed to make taxi passengers feel

comfortable and safe when they are using the taxi service, by providing them with the driver's name, location on the map, and vehicle information. Tom Jackson (,2016): Juma (2016)

2.1.1.3.3 Tracking and Security Features

With a sharp increase in the adoption of smartphones and the consequent use of mobile application has increased Marôcco et al (2014;)Vasconcelos, (2014). Smartphones, in particular, are highly attuned to E-hailing application due to their portability, which enables the use of such apps by drivers and passengers while the GPS helps drivers identify customers and vice versa. According to a study conducted in Brazil, by the end of 2015, 18.2% of all smart phone users with internet requested transportation at least once in the preceding six weeks via an E-hailing application.

These applications are advanced mobile service applications that enable requests for transportation services via Internet and Global Positioning System. As such after the passenger books a ride and after the driver accepts the ride request passengers can track the ride as it approaches. They can also share their trip status and estimated time of arrival (ETA) with family, friends, on social networks, and via email. Thus, as an extension the GPS can also serve as a security measure for travelers. In addition, the application displays available online drivers live on a map and allows users to hail taxicabs on demand or pre-book them for later. Juma, (2016)

2.1.1.3.4 Costing model

The passenger can predetermine the cost of their rides using the starting price displayed on the application. This allows passengers to compare with other available options for competitors in the market. In most case the application allows drivers to display the cost of the journey and bill the passenger when the ride is completed. Juma,(2016). According to Mulligan, (2015), Uber e-hailing service enabled passengers to estimates the price of their ride prior to ordering. The company relies on "dynamic pricing" which means prices go up during higher demand – rainstorms or at nightlife peak time. Cusumano (2015)

2.1.1.3.5 Payment methods

The app provides Suitable payment methods to passengers according to their preference such as credit card payment, E-wallet and cash payment. Rayle,(2014) while investigating the motive for customers using ride-sourcing found that the top motives were ease of payment (25%), short wait time (17%) and ease to call/hail a taxi (11%).

2.1.1.3.6 Rating

The Review and rating are what quantifies quality because it offers the passengers to give their feedback or write a textual review of their experience. The reviews and rating system can help reward or penalize a driver and can also passively incentivize good drivers resulting in retention. This encourages professional behavior and respect from both passengers and operators, and foster greater communication between the customers and operators. Juma,(2016)

2.1.1.4 Evolution of e-hailing service in Addis Ababa

The mobile hailing services were introduced around 2016 by a few startups such as Zayride and ETTA in Addis Ababa, Ethiopia. The mobile hailing apps started out providing services only to licensed cabs and later expanded into the private car business. These E-hailing applications provide an information platform that makes communication between drivers and passengers more efficient and convenient. Tom Jackson, (2016). Following are the basic revenue model the E-service companies use.

2.1.1.4.1: Fleet Aggregation model

Zayride was the first company that started E-service in Ethiopia on July 2016 by focusing on licensed taxis. It was the first Uber style ride hailing services in Ethiopia, where small fleet owners or single car owners can put the company brand on the car and get registered with them. As such for every company initiated rides the taxies pay 15 % commission on fares. Tom Jackson (, 2016). This model had low capital expenditure and lower maintenance costs. Bookings were done via telephone calls as well as through their websites.

Furthermore, the other company that uses this model is Ride technology Inc which builds on Zayride model by using ride sourcing. This is a strategy by which individual or private owners get registered to provide taxi service to passengers. Today when entering new markets, RIDE solely focuses on private drivers. They are also the largest private driver focused app in Ethiopia.

Before introducing the application to passengers, Ride technology inc developed and launched the first SMS system which connected customers automatically with drivers and this later grew in to Application based system. Bookings were done via telephone, SMS, website as well as mobile apps and the payments via cash Alemayehu Bacha (,2014). Currently over 100,000 passengers

have installed ride E-hailing application on their phone while 10,000 passenger installed Zayride E-Hailing Application on their phone. Google store (,2019)

2.1.1.4.2: Fully Owned Fleets Management

In this model, companies with their relevant stake holders owned the complete fleet with the drivers as salaried employees. The E-hailing drivers' application is operated only by the companies trained drivers and the company provides a management service of the fleets to the stakeholders. From the various E-hailing service providers in Addis Ababa, Ethiopia Pick-pick technology Inc. follows this model. Today they offer 70% loans for individuals to buy new cars. In addition to providing their service to individual passengers the company also offer separate corporate account for business clients. The app works similarly to other ridesharing apps – it offers a customer's request to the closest driver, they do background checks of drivers and show their full name, car and license plate to the passengers. Currently over 5000 passengers have installed Pick Pick E-hailing application on their phone. Google store (,2019).

2.1.1.5 Various theories/models of technology acceptance

Specialists in the field of Information Technology (IS/IT) and social science have for long been keen on examining the theories and models that have the force in foreseeing and clarifying behavior Venkatesh et al., (2003). As such the main objectives of this study 5s to investigate the factors affecting the adoption of E-hailing service Addis Ababa, Ethiopia. A brief look at each theories and models below will help us understand the benefits they offer.

To this effect, this section reviews and discusses the literature in relation to the Unified Theory of Acceptance and Use of Technology (UTAUT) model.

2.1.1.5.1 Unified Theory of Acceptance and Use of Technology

This theory was developed by Venkatesh, Morris, Davis, G. B. and Davis F. D. (2003) known as Unified Theory of Acceptance and Use of Technology. This is a model that integrates the eight technology adoption models which are: (1) Innovation Diffusion Theory (IDT), (2) Social Cognitive Theory, (3) Theory of Reasoned Action (TRA), (4) Theory of Planned Behavior (TPB), (5) Decomposed Theory of Planned Behavior (DTPB), (6) Technology Acceptance Model (TAM), (7), Augmented TAM and TPB(CTAM-TPB), (8) PC Utilization model presented views and theories about user acceptance or user adoption. It proposes four dimensions: performance

expectancy, effort expectancy, social influence and facilitating conditions. Which play an important role as a direct determinant of user adoption and usage behavior. Those dimensions are affected by the moderator variables of gender, age, experience and voluntariness of use Venkatesh et al.(2003)

The four main dimensions of UTAUT are related to the dimensions in those previous models or theories. Venkatesh et al. (2003)

1. ―**Performance expectancy**; is defined as the extent to which an individual believes that this system will help to improve working performance. The term is equivalent to Perceived usefulness in Technology Acceptance Model (TAM), extrinsic motivation‖ in the theory of motivation, relative advantage in diffusion of innovation theory, Job-fit Model of PC Utilization and Outcome Expectations Social Cognition Theory (SCT)

2. ―**Effort expectancy** refers to the ease of use of the system. It is equivalent to perceived ease of use in Technology Acceptance Model (TAM) and complexity in Innovation Diffusion Theory (IDT)

3. ―**Social influence** dimension in UTAUT is defined as the extent to which an individual perceived that people who are important to him or her think he or she should use the system. The term is equivalent to ―subjective norm in Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB), Social Factors MPCU and Image DOI.

4. ―**Facilitating conditions**: defined as "the extent to which an individual believes existing organization or technical infrastructure will support the use of the system in the UTAUT". "It is equivalent to perceived behavioral control‖ in Theory of Planned Behavior (TPB), self-efficacy in Social Cognitive Theory (SCT), and compatibility in Innovation Diffusion Theory (IDT) "Venkatesh et al.(2003)

2.1.1.6. Rationale for adopting UTAUT model

One benefit of UTAUT over other models is that UTAUT model was developed for research of technology adoption and compared to other adoption models UTAUT model has the highest explained variance. Such models as TRA, TPB and TAM reported to routinely explain over 40 percent of variance in individual intention to use technology Venkatesh et al.,(2003), while

UTAUT models reported 70 percent of variance in usage intention Venkatesh et al.(, 2012). In addition to this, utilizing the UTAUT model for the research of e-hailing applications adoption permits the researcher to discover more specific motivators that might determine the user decision to adopt E-hailing service.

Secondly, the review of mobile app adoption studies and of Application features shows that the selection of variables presented in the UTAUT model as the ones that determine users Intention to adopt new technology. These factors correspond to the list of factors that the research aims to test. Based on the review of mobile app adoption literature 'Performance Expectancy' represents such features as effective communication Nah et al., (2005), convenience, control Kim, Wang, &Malthouse, (2015), timeliness Legner, Urbach, & Nolte, (2016), time and money saving (Oghuma et al. (2015), usefulness Verissimo, (2015) etc. described in the previous research among the features that attract consumers to adopt mobile applications. Effort Expectancy and Facilitating Conditions represent such features as access to mobile device, internet and online support Hew et al., (2015), personalization (Legner, Urbach,, & Nolte, 2016; Morosan, &DeFranco, 2016), compatibility with other functional devices Cugola et al., (2014), perceived ease of use Verissimo, (2015), etc.

Furthermore, the UTAUT allows for researchers to study the adoption of mobile technology not only from its technological qualities but also from other factors perspective that influence consumer decision to use product/ service, such as social influences. In light of this, UTAUT is the preferable model in the study.

2.1.1.7. Research model

In the research of mobile app adoption, it is also quite common to build a model that focuses specifically on variables that are relevant for the type of service provided by mobile app. Example Han, Wu &Windsor (2014) did research on the adoption of free third-party security apps, where they evaluated variables that are relevant specifically for adoption of security apps. In light of this, for the purpose of the study the researcher utilized the four dimensions from UTAUT model (performance expectancy, Effort expectancy, social influence, facilitating condition) and additional constructs such as Perceived credibility and the redesigned, price value factor, known as price saving orientation from Ramon Palau-Saumell, etal.(2019) extended UTAUT2 model. Furthermore, for this study, the researcher did not dig into the moderating effect of age, gender, education level,

voluntariness and experience. As several researches revealed the insignificant effect of these moderators in the four constructs of the model. (Brown et al., (2010), Liang et al., (2010), Xiong, Qureshi & Najjar). Thus, the study examines the direct effect of the four dimensions of UTAUT model. In addition to this, the study in cooperates perceived credibility as additional variable for examining factors affecting the adoption of e-hailing service. According to a study conducted by Suganth,(2001), revealed the need to research conducted by Suganth,(2001), argued the need to extend the original UTAUT model by adding perceived credibility as an additional variable. This was because users were concerned with their security and privacy in the adoption of technology. In addition to this a study conducted on mobile banking adoption, incorporated privacy and security, as dimensions of perceived credibility, into adaption of the previous model of UTAUT.

A study conducted on E-hailing application also in cooperated the need to measure Physical security constructs in the adoption of e-hailing application in Malaysia. In fact, it is well known that consumers are concerned about security, privacy, and transaction risks in the mobile context Lu, Y,(2011), and that overcoming these issues is essential for the adoption of applications in the mobile ecosystem Kambourakis,(2015). Thus, identifying the influence of perceived credibility on the Adoption of E-hailing service is important

Moreover, Venkatesh et al.(2012) extended the original UTAUT model by introducing three additional factors. These are Hedonic Motivation, Price Value and Habit constructs and were developed specifically for explaining the individual consumer use of technology. According to Venkatesh et al., (2012) Price value refers to the consumer's cognitive tradeoff between the perceived benefits, and their monetary cost. Accordingly, Ramon Palau-Saumell, etal.(2019), redesigned the original Price value construct to Price-saving orientation to fit their study. Due to the fact that this construct doesn't apply to mobile application when they are free of charge. As such the E-hailing Application can be downloaded from iTunes or Play Store free of charge. Thus, Ramon Palau-Samuel, etal (.2019), definition of Price saving orientation is relevant to the study.

With that said, the research measured the four constructs of UTAUT model such as Performance expectancy, Effort expectancy, Social influence, facilitating condition, and the two additional constructs Perceived credibility and price saving orientation from (Ramon Palau-Saumell, etal (.2019) extended theory of UTAUT2 model.

2.2. REVIEW OF EMPIRICAL LITERATURE

2.2.1 Adoption of e-hailing services

Many mobile app adoption studies describe the adoption of mobile apps from the perspective of the functional value they create for the user. Such studies focus on a specific category of the app, such as mobile banking, shopping, traveling app, E-hailing Application etc. The (Athapolruang n.d, unpublished work) conducted a study on E-hailing app adoption. The study aimed at presenting findings on E-hailing app adoption between Male and Female users. For the research author used a quota sampling with an aim to identify how the independent variables subjective norms ,perceived usefulness, perceived ease of use ,complexity ,compatibility ,relative advantage and trust affects the adoption of e-hailing. Furthermore, the researcher wanted to determine which factors influence female and male consumer of e-hailing service. As a result, the study showed that relative advantages and ease of use had an influence towards the adoption of e-hailing applications in both genders. While, social influence and physical security influenced the adoption of e-hailing applications for male users.

Luiz and Diego (2017), investigated the e-hailing application from the passenger's perspective to determine the factors affecting e-hailing adoption the author used TAM and IDT models. Researchers used technology Acceptance model TAM, TRA, TPB and innovation diffusion model IDT to show how the user satisfaction affects the continuous intention to adopt E-hailing apps. The research is based on the data obtained from online survey. The study reports a crucial role of using user satisfaction as a substitute of attitude in relation to E-hailing service and as an antecedent to the intention of use as a valid contribution, since these two approaches are rarely combined.

Herman Fassouhaha (,2018);lim,K.B.etal,(2018) did research of the adoption e-hailing application from the Malaysian context. In their research they put a strong emphasis on the need to study the factors affecting adoption of E-hailing application has been growing. The researchers identified perceived usefulness, subjective norms, perceived risk and perceived playfulness, perceived price level, performance expectancy, social influence and facilitating conditions as factors affecting the adoption of E-hailing services from consumer's point of view. The finding indicated that performance expectancy and perceived playfulness has the most influence on the adoption of Ride hailing application.

Hettlarachci H.a.m, (2017), aimed to determine the factors affecting adoption of online taxi applications in sirilanka. The researcher used Perceived behavioral control as the key model for conducting the research. The researcher emphasized on the need to study the matter as not much research has been carried out in sirilanka because the e-hailing is still new and still in monitoring process. The finding of the research relabeled that perceived behavior control has a positive influence in the usage intention of online taxi booking application.

Nor hamizah,(2018) examined the four constructs of UTAUT (Perceived credibility, Social influence, effort expectancy and facilitating condition on the E-hailing application. This is the use of the app for requesting transportation or taxi service that is different from the tradition hailing of taxi. As a result, the researchers reported strong correlations between facilitating condition and intention to use e-hailing service. By providing these results, the study proved the worthiness of developers' investments into mobile apps. The study also showed that users of E-hailing application are interested in simplicity of transaction and would prefer waiting for less time for a taxi.

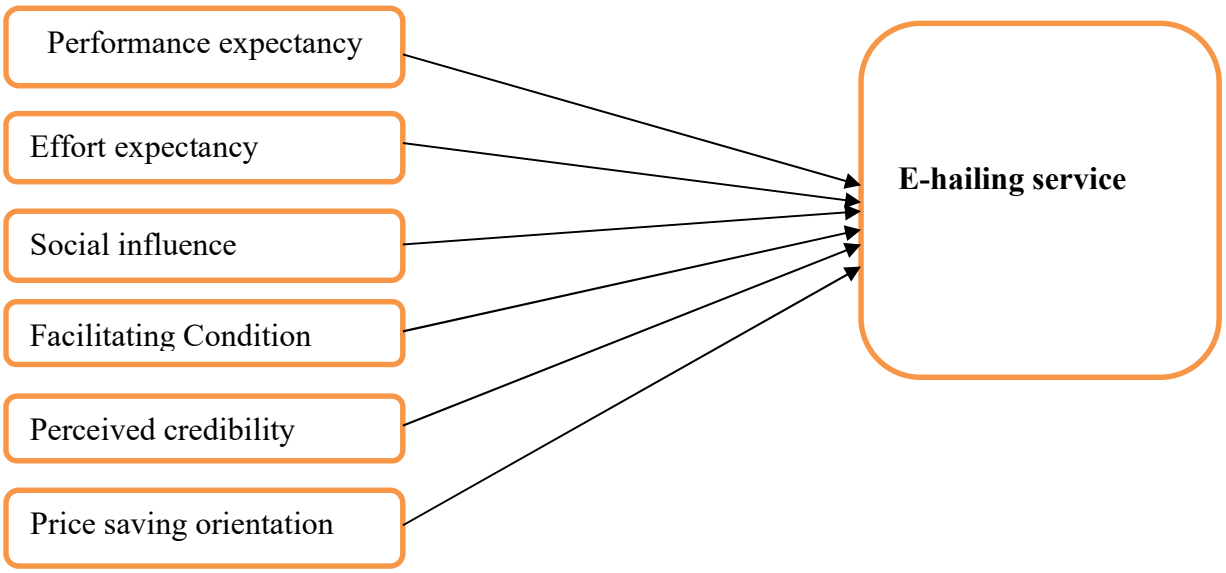
2.3. CONCEPTUAL FRAME WORK

Based on the literature review six independent variables were developed and presented in the subsequent section. The conceptual framework is designed with the independent variable performance expectancy, effort expectancy, social influence, and facilitating condition, perceived credibility, price saving orientation and the dependent variables: adoption of e-hailing service were identified in this research.

The consecutive conceptual frame work was adopted from, Venkatesh et al., (2003) and Ramon Palau-Saumell;Shafi Al-Shafi and Vishanth,(2010),. In addition to this the frame work was modified to fit the context of E-hailing service.

Figure1: illustrates the proposed conceptual framework for the research

Independent variable Dependent Variable



Source: Venkatesh et al., (2003) and Ramon Palau-Saumell; Shafi Al-Shafi and Vishanth,(2010)

The effect of Performance expectancy on the adoption of E-hailing service in Addis Ababa, Ethiopia.

Performance expectancy is defined as the extent to which using technology will offer benefits to a customer in performing certain activities Venkatesh et al. (2003).According to Venkatesh et al., (2003), performance expectancy includes five variables: Performance expectancy, extrinsic motivation, job-fit, relative advantage and outcome expectations while Davis,(1989); Compeau et al., (1999); Moore and Benbasat, (1991); Davis et al., (1992) integrated perceived usefulness, outcome expectancy, relative advantage, job fit and extrinsic motivation constructs into performance expectancy factors. The similarities between these integrated concepts are acknowledged by several researchers Davis, Bagozzi, &Warshaw, (1989); Plouffe, Hulland, &Vandenbosch,(2001).

Herman Faso Haba, (2018) applied Venkatesh et al (2003) theory of UTAUT without moderator on adoption of taxi hailing applications among users in Malaysia and found that performance expectancy had a positive relationship with behavioral intention and was the most important

construct of predicting human behavior. Since it was the believe that an individual have when utilizing a particular system will benefit him or her in term of service Venkatesh et al, (2003).Also Malik Khlaif Gharaibeh et al., (2018) conducted a qualitative research on determinates of factors affecting adoption of mobile banking using UTAUT2 found that performance expectancy has a positive and significant effect on the adoption of mobile banking services users..

In light of this, the study measure performance expectancy as far as the perception of e-hailing service benefits, such as saving waiting time, and effort, facilitating ease of communication between drivers and passengers to hail a taxi using the application, and features improving the quality of taxi services.) To explain performance expectancy toward the adoption of E-hailing service. Therefore,

H1: Performance expectancy has a positive and significant effect on the adoption of E-hailing services

The effect of Effort expectancy on the adoption of E-hailing service in Addis Ababa, Ethiopia.

Effort expectancy is defined as the degree of ease related to customer's use of technology Venkatesh et al.,(2003).Similar to performance expectancy, Venkatesh et al. (2003) captured three constructs from other models into this concept, which is perceived ease of use, complexity and ease of use. The first one, perceived ease of use, is a concept from the TAM Davis, (1986) while the second concept complexity is a concept of the MPCU hompson et al., (1991) and the last concept Ease of use, is a core construct of the IDT. Rogers, (1995).The similarity between these concepts is confirmed by Plouffe et al. (2001) and Thompson et al. (1991). In the UTAUT2 model Venkatesh et al. (2012) also confirmed the importance of Effort Expectancy for the voluntary consumer context.

Additionally, Marchewka et al., (2007) claim that this constructs can be significant in determining user acceptance of information technology. Among Many scholars utilized UTATU2 Malik Khlaif Gharaibeh et al., (2018) conducted a study on adoption of mobile banking and found that effort expectancy has a positive and significant influence on adoption of mobile banking services. Furthermore, all participants indicate that any mobile application must be easy to use and learn so that customers can use it. In regards to this, effort expectancy is measured by the perceptions of ease of use of E-hailing application/services as well as the ease of learning. Therefore,

H2: Effort expectancy has a positive and significant effect on the adoption of E-hailing service.

The effect of Social Influence on the adoption of E-hailing service in Addis Ababa, Ethiopia.

Venkatesh et al. (2003) and Venkatesh et al. (2012) in UTAUT and UTAUT2 models defined Social influence as the degree in which an individual perceives that importance of others' opinion in believing he or she should use the new system. Relevant references, such as citizen's family, colleagues and friends may have an influence on citizen's decisions Irani et al., (2009); Tan and Teo, (2000). The findings of many scholars like Rogers (1995), Taylor and Todd (1995),Davis (2000) , Lu et al., (2005) and Pavlou and Fygenson (2006) suggest that social influences are an important determinant of behavior. The three concepts included in social influence are: subjective norm in TRA, TAM2, and TPB, social factors in MPCU and image in IDT. Each of these concepts refers to the notion that the social environment has a substantial influence on the way people act Venkatesh et al., (2003).

In Thailand a comparative study was conducted to investigate the adoption of E-hailing Applications between female and male users and the research indicates that social influence only influenced the adoption of E-hailing applications in case of male users due to the fact that they adopted the E-hailing application because of their important others such as bosses, peers, subordinate, etc.) Talked positively about e-hailing application. Furthermore, according to Venkatesh et al., (2003) study all the members from the focus group agreed that mobile banking services was a status symbol in the community. Additionally, the study indicated that social influence has a positive and significant impact on adoption of mobile banking services in an everyday life setting it may be the family, friends or influential colleagues who may be using the mobile application and influence the consumer intention to adopt the application.

In light of this, the study assumes that if e-hailing service adopters are influenced with positive messages by their social networks. Thus, social influence is measured by the perceptions of influential colleagues; friends or family members who may be using the application might influence customers to adopt E-hailing service. The study also expects that the perception of image, the use of technology to upgrade a person's image or social status, and influence consumers to adopt E-hailing service. Therefore,

H3: Social Influence has a positive and significant effect on the adoption of E-hailing service.

The effect of Facilitating Condition on the adoption of E-hailing service in Addis Ababa, Ethiopia.

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system (Venkatesh et al., 2003). Facilitating conditions in the UTAUT and UTAUT2 comprises of perceived behavioral control, facilitating conditions, and compatibility from the TPB, TAM, MPCU, and IDT models Ajzen, (1985); (1991); Taylor and Todd, (1995); Triandis, (1979); Venkatesh et al., (2003); Venkatesh et al., (2012).Finally, in their replication of UTAUT2 model Hew et al. (2015) also reported that the high level of users' perception of Facilitating Conditions, such as online support, mobile-devices, internet connection and so forth leads them to a high level of adoption. Moreover, since the user experience in case of mobile application is highly dependent on the mobile device itself, technical characteristics and features of mobile phone may become a strong reason for the user to consider adopting or not adopting mobile application. Additionally, while not all users have an unlimited access to mobile internet, the extent to which mobile application functionality depends on the permanent access to internet may become another facilitating condition that may influence customers to adopt mobile application and Malik Khlaif Gharaibeh et al., (2018) found that facilitating conditions has a positive and significant effect on the adoption of mobile banking services.

Based on this empirical evidence and on the reasoning described above, facilitating conditions is measured by the extent users can access the required resources such as mobile phone and application necessary to use e-hailing service, as well as platform to obtain knowledge and the necessary support needed to use e-hailing services. It is also influenced by the perception of the technology compatibility with other systems such as the internet. Thus,

H4: Facilitating conditions has a positive and significant impact on the Adoption of E-hailing service.

The effect of Perceived credibility on the adoption of E-hailing service in Addis Ababa, Ethiopia.

Perceived credibility in the mobile context is defined as the extent to which an individual believes that the use of mobile technology will not entail any security or privacy threats Lu,Y.;Yang,S,(2011). In fact, it is well known that consumers are concerned about security, privacy, and transaction risks in the mobile context Laforet, S.; (Li,2005), and that overcoming these issues is essential for the adoption of applications in the mobile ecosystem. Thus, identifying the influence of perceived credibility on the adoption of e-hailing service is relevant.

In the mobile environment, perceived credibility has been measured with three dimensions: security, privacy and trust. Additionally, Security in the context of E-hailing application Users' main concern when conducting mobile e-hailing is related to physical security (Athapol Ruangkanjanases, n.d, unpublished work) as such travelling by taxi with unknown drivers gives passengers some uncertainty about their safety. Most of the E-hailing applications provide drivers' information such as names, phone numbers, photos and plate numbers. According to them physical security positively influenced male users to use e-hailing application in Malaysia

Additionally, Johns and Quirchmayr (2010) emphasis the importance of trust and privacy protection in applications that use GPS or location-based-system. According to them the main issue is that users are afraid of revealing their locations to organizations or someone they don't know. A study conducted by Microsoft had 1500 respondents spread around the world, and 51% of them had used Location based system, of which 70% of the main user allowed the applications to identify their location using GPS navigation. Accordingly, E-hailing application is one of those application that use GPS or location-based system that disclose the exact location of passengers and drivers so that the passenger can track and locate nearby drivers who use the E-hailing service.

Perceived credibility has been analyzed in the mobile application context according to a study by Casper Brundel & Soumaya Azrioual,(2018); Ramon Palau-Saumell (2019), perceived credibility has positive effects on adoption of mobile applications. With that in mind, perceived credibility has not been tested with respect to E-hailing users, and it does not appear among the UTAUT variables. Thus, this study includes perceived credibility, in order to better understand and explain the privacy and security issue that may affect the adoption of E-hailing service. Therefore, in the E-hailing application framework, only the physical security of users and the privacy concern in regards to revealing their location is incorporated in the definition of perceived capability. Therefore,

H5: Perceived credibility has a positive and significant effect on the Adoption of E-hailing service.

The effect of Price saving orientation on the adoption of E-hailing service in Addis Ababa, Ethiopia.

The price-saving orientation refers to the economic benefits that are obtained by technology users; that is to say, the use of technologies allows consumers to acquire a product or service at a lower price. Accordingly, in previous research on UTAUT-2, the price value construct has been replaced by the price-saving orientation these authors found a positive relationship with intentions to use mobile application Escobar-Rodríguez,(2014). In fact, other studies have found that consumers who purchase products and services through websites can reduce prices and save time, or can carry out comparisons of product prices. Both can be associated with price saving Escobar-Rodríguez, (2014). In this research, the price-saving orientation refers to the economic benefits that are obtained by technology users; Thus, in E-hailing, information about prices and their comparison will allow for a price saving. Based on this theoretical review, the following hypothesis is proposed:

H6: Price saving orientation has a positive and significant effect on the Adoption of E-hailing service.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 METHODOLOGY OF THE RESEARCH

This section presents the research methods and instruments which was utilized in completing the investigation.It incorporates the research approach, research design, target population, sample size, sampling procedure, type of data collection instruments, data collection procedures and data analysis techniques. Each topics is elaborated briefly below.

3.2 RESEARCH APPROACH

Based on the type of data it employs, a research can follow quantitative, qualitative and mixed approaches. A quantitative research is used in researches that have measuring and counting attributes which largely depends on the measurement device or instrument used. The approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion (Kothari, 2004). It is also often concerned with finding evidences to either support or contradict a hypothesis that contains concepts to be measured. Hence, this study found the quantitative method appropriate to investigate the causal relationship between the variables in line with the main aim of the research which was testing the developed hypothesis.

3.3. RESEARCH DESIGN

Keeping in mind the purpose of this specific investigation, the researcher utilized descriptive and explanatory type of research design with cross-sectional research strategy. Thus, this research focused on the phenomenon at a particular time. Cross-sectional design permits collection of data on more than one case at a single point of time.In order to gather quantitative or qualitative data regarding at least two factors, which are utilized to distinguish patterns in associations Bryman & Bell, (2011). This design fits to the research purpose because it offered the researcher a chance to examine the relationships between the independent and dependent variables in a specific time.

3.3.1 DESCRIPTIVE RESEARCH

Descriptive research is broadly utilized research design to accumulate data about the current existing conditions by the use of survey, personal interviews and observation. This research design is vital for analysts to have a clear picture about the phenomenon on which they wish to gather information before the assortment of the data Saunders et al., (2012). Hence, descriptive research empowered the researchers to better comprehend the factors that influence travelers to adopt E-hailing application in Addis Ababa, Ethiopia.

3.3.2 EXPLANATORY RESEARCH

Explanatory research centers on the cause–effect relationship between the independent variable and dependent variable. Yin,(1994).Explanatory research provides more than description because it clarifies the reason behind the phenomena that descriptive study only observes .In this

research the researchers used explanatory research to study the cause –effect relationship between the independent variables :performance expectancy, effort expectancy, social Influence , facilitating condition ; perceived credibility ,price saving orientation and the dependent variable :Adoption of E-hailing service .

3.4 TARGET POPULATION

The target population for a survey is the whole set of units for which the study information is to be utilized to make inferences. Along these lines, the target population characterizes those units for which the findings of the survey are intended to generalize. Paul (2008).with that said , due to the corona virus pandemic the researcher was forced to conduct internet-based survey due to this the target population for this study included only passengers who have downloaded and installed the e-hailing application from Google store and were a part of the service providers Facebook page. In light of this, the researcher chose five applications for this study according to their level of installation by passengers such as Ride, Polo trip, Zay-ride, Taxiye and Pick Pick.

3.5 SAMPLING METHOD

Sampling is a procedure of choosing a part of the population to represent the complete population and the findings from the sample represent the remainder of the group. The advantage of choosing a sample is that it is less expensive and efficient than gathering data from a large group of respondents. In this examination, the non-likelihood sampling method was used. Non-probability sampling is a procedure of choosing respondents into the examination with fewer odds of acquiring a representative sample Burns & Grove (2001).Non-likelihood examining is a feasible decision for an assortment of reasons, including when there is lack of reliable population data and there is absence of suitable sampling frames .Malhotra et al., (1996;) Craig and Douglas, (2000)

In regards to this the analyst was forced to utilize non-likelihood sampling method as there was lack of adequate data base and access to sampling frame. Thusly, the investigation utilized convenient sampling technique to select the respondents for the study as it was the most suitable techniques for the research. As such the passengers were simply selected because they were a part of the service provider’s Facebook community, and were online during the time when the researcher was collecting data.

3.6.SAMPLE SIZE

In order to minimize sampling problems and to keep the representativeness of target respondents selected from the population, the proposed study employed the below formula.

The formula utilized in the examination is the one proposed by Krejcie & Morgan (1970) for deciding the required sample size in social science research when the population is known. The equation can be expressed as:

Formula 1: $S = \frac{X^2 NP(1-P)}{D^2(N-1)+X^2P(1-p)}$

Where: S = required sample size; X^2= the table value of chi-square for 1 degree of freedom at 0.05 confidence level (3.841); N = the population size; P = the population proportion (assumed to be 0.50 as this would provide the maximum sample size); and d = the degree of accuracy expressed as a proportion (0.05).

$$S = \frac{(3.841)123{,}000 * 0.5(1-0.5)}{(0.05)^2(123{,}000-1) + (3.841)0.5(1-0.5)}$$

$$S = \frac{118{,}110.75}{307.4975 + 0.96025}$$

$$S = \frac{118{,}110.75}{308.45775}$$

$$S = 382.90 \approx 390$$

Based on the above formula, three hundred ninety (390) individual passengers were included in the sample as respondents for the questionnaire.

The second formula selected in the study was the one proposed by Cochran (1977) as a finite population correction to determine the final sample that turns out to be 5% or more of the total population. The formula can be stated as:

Formula 2: $n1 = \frac{S}{1+\frac{S}{N}}$

Where: S = is desired sample size; n1= is the new value for the sample size adjusted using Cochran's population correction formula; N = is the total number of the population from which 'n' is being drawn.

$$n1 = \frac{390}{1 + \frac{390}{123{,}000}}$$

$$n1 = \frac{390}{1 + 0.0149}$$

$$n1 = \frac{390}{1.0149}$$

$$n1 = 384$$

The questionnaires was distributed online as such on the first phase of the survey the respondents were asked if they had experience using e-hailing application more than once and during this phase the researcher collected the email address for all the respondents. Afterwards, the researcher only emailed the main questionnaire to the respondents whose response was yes to having experience to using the e-hailing application. As such, this was done to reduce the missing rate and to satisfy the inclusion criteria of the study.

3.7 DATA SOURCE AND TYPE

The data sources for the research was collected from both primary and secondary sources. As indicated by Naresh (2010), primary data was sorted out for the particular reason in order to deal with the issue at hand. Besides that, primary data refers to firsthand data or information attained initially by the researchers on the study of interest to investigate a specific problem or give answer to a particular objective. Sekaran & Bougie (2009).The primary data was collected from passengers who utilized app-based taxies in Addis Ababa, Ethiopia. In utilizing secondary sources, published articles, research works, previous studies, book, and different sources was reviewed. The essential information was gathered using structured questionnaires.

3.8. DATA COLLECTION

3.8.1 TOOLS

In order to collect sufficient data that can answer the research questions, the researcher designed a two-stage survey; as such the first stage was conducted to distinguish between those clients who have experience to those don't have it. While the second survey was distributed too

passengers who have experience using e-hailing application in order to answer the research problem.

3.8.1.1 QUESTIONNAIRES

In order to collect the primary data the researcher predominantly utilized questionnaires and it was designed in such a way to include mainly closed ended questions. The questionnaire had three sections these are: the general, specific and opinion sections. In addition to this, the passengers response was measured on a five Likert rating scale where: Strongly Agree (SA) = 5; Agree (A) = 4; Neutral (N) =3, Disagree (D) = 2; and Strongly Disagree (SD) = 1.

The language construction of the questionnaire is in one language-English and this was due to the fact that all the E-hailing applications use this language. In addition to this the questioner was distributed using Google form and the data was collected starting from April 1 up until May 13, 2020.

3.8.2 APPROACH

Accoriding to Karim (2013), "Accurate and systematic data collection is crtical to conducting scientific research". Contingent upon the research type and the current Covid 19 pandemic, the researcher used internet-based survey to collect primary data. In light of this the researcher took all the proper measure to avoid face to face contact with respondents by conducting all its survey online. The researcher used convenient sampling to get a sample from the population and chose the Facebook page of five E-hailing application providers with a Facebook community and after doing this the researcher then sent the first phase of the questionnaire asking if any of the respondents has experience using e-hailing application and collected their email address online .After doing that ,the researcher sent the second questionnaire to respondents who has experience using the e-hailing application through the harvested email address. The researcher followed this procedure to reduce missing rate.

3.9 METHODS OF DATA ANALYSIS

After collecting the data, it was analysed using the Statistical Package for Social Science (SPSS 26). Furthermore all the important and relevant statistical tests were further applied to test the relationship between the independent and dependent variables. The detail is presented below:

3.9.1 MULTIPLE REGRESSION ANALYSIS

Multiple regression analysis is a "statistical technique that serves to measure the hypothetical, predictive and linear relationship between a dependent (criterion) and two or more independent (predictor) variables in order to predict the strength and direction of the relationship"Shiu et al., (2009,).Thus, multiple regressions was utilized to test the research hypotheses and investigate the quality of relationships between the independent and dependent variable. Furthermore, the regression coefficient, R^2 was used to indicate the variation in the study. Thus, the higher the value, the better the model and the established predictions that explain the variation.

In addition to this, the Beta coefficient allowed the researcher to directly compare the independent variables and their impact on the dependent variable.The model for the research is

$Y = \beta1 + \beta2PE + \beta3EE + \beta3SI + \beta4FC + \beta5PC + \beta6PSO + ui$

Where Y = Adoption of E-hailing Service

PE = Performance expectancy

EE = Effort Expectancy

SI= Social influence

FC= Facilitating condition

PC= Perceived credibility

PSO=Price saving orientation

β1 to β6= the intercept on the regression model

3.9.2 MULTICOLLINEARITY ANALYSIS

Multicollinearity analysis was tested before multiple regression analysis. Multicollinearity problems exist when variable's tolerance value is under 0.5 and the variance inflation factor (VIF) is more noteworthy than 5 that assess the seriousness of multicollinearity. Thus, High collinearity is dangerous on the grounds that it makes temperamental slant assesses and can make the coefficient value very dubious .Lewis-Beck, (1995,)

3.9.3 RELIABILITY

Cronbach's Alpha is a measure of internal consistency of inquiries inside the survey and checks if the questions of the questionnaire were comprehended and if the information is reliable for analysis Travakol&Dennick, (2011). Cronbach's Alpha reliability test was applied on the information to be gathered to determine the reliability of the data.

Table 3.9: Criteria of Reliability

Cronbach's Alpha Coefficient	Reliability Level	Desirability Level
0.80 – 1.00	Very High	Excellent
0.70 – 0.79	High	Good
0.50 – 0.69	Medium	Fair
0.30 – 0.49	Low	Poor
Less than 0.30	Very Low	Unacceptable

Source: Vanitbuncha, K. (2003).

3.9.4 VALIDITY

Validity of research can be clarified as a degree to which prerequisites of scientific research method have been followed throughout the process of producing research findings. Oliver (2010) considers validity to be a necessary requirement for a wide range of studies. There are various types of research validity and primary ones are specified by Cohen et al (2007) as content validity, criterion-related validity, construct validity, internal validity, external validity, concurrent validity and face validity. The research tested the content validity. Thus; the questionnaire was evaluated by the internal advisor of this research paper.

3.10 ETHICAL CONSIDERATIONS

The researcher made clear that the respondents of the research stayed obscure and clarification was made on how the information was gathered and how the data was utilized. The researcher took all the fundamental measures to guarantee that every moral aspects of the research process were followed. In particular, the researcher put forth attempts to guarantee that the respondents comprehend that their interest in the research process is on a voluntary basis, and that they can withdraw whenever of their preferring. Moreover, the researcher also took all the appropriate measures to guarantee that all the respondents' identity was kept anonymous.

CHAPTER FOUR

DATA PRESENTATION ANALYSIS AND INTERPRETATION

4.1. INTRODUCTION

The research has a primary aim of studying the factors affecting the adoption of E-hailing application in Addis Ababa. In accordance with this, this section presents the analysis and

interpretation of the information assembled from different sources. The analysis and interpretation of data were directed so as to achieve a better understanding of the factors affecting the adoption of E-hailing application. The first segment depicts the fundamental in formation derived from analysis of demographic characteristics through quantitative descriptive statistics. The subsequent area presents the outcomes from the inferential investigation which portrayed the relationship between the independent variable (Effort expectancy, Performance expectancy, Social influence, Perceived credibility and Price saving orientation) and dependent variable (Adoption of E-hailing service). Thus, this chapter therefore provides descriptions of the results.

4.2 RESPONSE RATE

With the end goal of this examination, Data was gathered through internet-based surveys. With this respect, a semi-structured questionnaire was conveyed to 384 (three hundred eighty-four) sampled users of E-hailing applications. However, the researcher has only received 320 properly filled questionnaires.

Accordingly, out of the total number of sampled respondents 320 completed questionnaires were received, converting into nearly 88% response rate. The response rate is viewed as fitting since Nulty, (2008) contends that any response rate above 75% is classified as appropriate. The rate of return of questionnaire was computed as follows.

Rate of return = (R / (S-ND)) X 100

Where;

R = number of questionnaires that were returned

S = total number of questionnaires sent out, and

ND = number of questionnaires unable to be delivered (“returned to sender”)

Rate of return= 320 / (384-19) X100

Rate of return ≈ 88%

4.3. DESCRIPTIVE STATISTICS ANALYSIS

4.3.1. ANALYSIS OF PROFILE OF RESPONDENTS

The following section presents the analyses of the general characteristics of respondents.

Gender of the Respondents

Table 4.3.1 Gender of the respondent

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	195	60.9	60.9	60.9
	Female	125	39.1	39.1	100.0
	Total	320	100.0	100.0	

Source: Survey Result, April 2020

Table 4.3.1 present the frequency of the gender profile of the respondents. The table shows that 195 (60.9%) respondents were male and 125 (39.1 %) respondents were female. This showed that from the total participants, the number of males was more prominent than the number of female.

Age of the respondent

Table 4.3.2 Age of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 years and below	4	1.3	1.3	1.3
	21-30 years	216	67.5	67.5	68.8
	31-40 years	76	23.8	23.8	92.5
	Above 50 Years	24	7.5	7.5	100.0
	Total	320	100.0	100.0	

Source: Survey Result, April 2020

The table above shows the age of the respondents wherein, 216 (67.5 %) respondents were between the ages of 21 to 30 years. Then again, 76 (23.8 %) respondents were between the ages of 31 to 40 years, and 24 (7.5 % respondents) were over the ages of 50 years. In this way, it is clear to

conclude that majority of the e-hailing application users during the time of study were youngsters and this may be due to the fact that the study utilized online survey.

Educational Background of the Respondents

Table 4.3.3 Educational background of the respondent

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate and below	3	.9	.9	.9
	Diploma	22	6.9	6.9	7.8
	Bachelor's Degree	226	70.6	70.6	78.4
	Master's degree and Above	69	21.6	21.6	100.0
	Total	320	100.0	100.0	

Source: Survey Result, April 2020

Table 4.3.3 infers that based on their educational level lion's share of the respondent's educational level was Bachelor's-degree, which comprised 226 (70.6%) of the total response. On the other hand, respondents with certificate and below constituted the least percent which was 3 (0.9 %).

Occupation of the Respondents

Table 4.3.4 occupation of the respondent

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public Sector	63	19.7	19.7	19.7
	private Sector	142	44.4	44.4	64.1
	Self-employed	88	27.5	27.5	91.6
	student	27	8.4	8.4	100.0
	Total	320	100.0	100.0	

Source: Survey Result, April 2020

The above table shows the occupation of the respondents wherein, 63 (19.7 %) of respondents were seen as government workers, while 142 (44.4 %) respondents were seen as representatives of the private segment. Then again, clients who have personal business constituted 88 (27.5%), and 27 (8.4 %) of respondents were students. This shows that majority of the users of the E-hailing application during the time of the study were government employees.

Income of the Respondents

Table 4.3.5 Income of the respondent

Monthly income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5000 and below	91	28.4	28.4	28.4
	10000	87	27.2	27.2	55.6
	15,000	61	19.1	19.1	74.7
	20000 and above	81	25.3	25.3	100.0
	Total	320	100.0	100.0	

Source: Survey Result, May 2020

The above table shows the month to month pay of the respondents in which, 91 (28.4%) of respondents were found to procure a month to month salary between the scope of 5000 and beneath, while 87 (27.2%) respondents were found to gain 10000 birr. At last, 81(19.1 %) of respondents acquire a month to month pay of 20,000 or more.

4.4. RESPONSE OF CUSTOMER ON E-HAILING APPLICATION USAGE

4.4.1. Experience of Respondents in using E-hailing service

Table 4.4.1 Experience of using E-hailing application

Experience of using E-hailing application

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	320	100.0	100.0	100.0

Source: Survey Result, May 2020

Table 4.4.1 shows that all the respondents have experience in using E-hailing application to request a taxi. Thus, 320 (100%) of the respondents used e-hailing application..

4.4.2. TECHNIQUE USED BY RESPONDENTS TO HAIL /REQUEST FOR A TAXI.

Table 4.4.2 Technique used to request a taxi.

Technique used to request a taxi from e-hailing service providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Call center	6	1.9	1.9	1.9
	E-hailing application	149	46.6	46.9	48.7
	both	163	50.9	51.3	100.0
	Total	318	99.4	100.0	
Missing	99	2	.6		
Total		320	100.0		

Source: Survey Result, May 2020

Table 4.4.2 present the technique used by respondents to request a taxi from ane-hailing service provider. The table shows that 149 (46.6 %) respondents utilized the e-hailing application to demand a taxi from the service providers, while 163 (50.9%) of the respondents utilized both the e-hailing applications and the call center. Finally, a small minority of the respondents only used the call center to request for a taxi and they were considered as missing.

4.4.3. TYPES OF E-HAILING APPLICATION USED BY RESPONDENTS.

Table 4.4.3 Types of E-hailing application used.

Type of taxi hailing App used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ride	231	72.2	72.2	72.2
	Polo Trip	18	5.6	5.6	77.8
	Zayride	43	13.4	13.4	91.3
	Taxiye	11	3.4	3.4	94.7
	pik pick	7	2.2	2.2	96.9
	Others	10	3.1	3.1	100.0

Total	320	100.0	100.0	

Source: Survey Result, May 2020

Table 4.4.3 suggests that to be exact almost 231 (72.2%) of the respondents used ride-application to hail for a taxi. While, a minority of 11 (3.4 %) of the respondents used Taxiye to demand transportation from an e-hailing service provider. This indicates, that majority of the clients is using and has installed the Ride-hailing application to request for a taxi.

4.5. RELIABILITY TEST

Reliability analysis was computed to test whether the scale utilized in the investigation was internally consistent and this was measured using the reliability procedure in SPSS (version 26). As indicated by Vanitbuncha, K. (2003) criteria of reliability a Cronbach's Alpha Coefficient going between 0.80 – 1.00 is viewed as excellent. Accordingly, Cronbach Alpha test was conducted to check for the consistency of the questions and the reliability statistics was 0.85. Thus, based on the test of the scales and constructs included, it is revealed that each scale represents a reliable and valid construct. This implies that there was a genuinely higher level of consistency in the questionnaire measuring all the variables of the study.

Table 4.5 Cronbach Alpha Test result

Reliability Statistics

Cronbach's Alpha	N of Items
.857	7

Source: Survey Result, May 2020

4.6. CORRELATION ANALYSIS

As indicated by Mooi and Sarstedt (2011), the calculated value of the correlation coefficient ranges from -1 to 1 where - 1 demonstrates an ideal negative relation (the relationship is perfectly linear) and 1 shows an ideal positive relationship. A correlation coefficient of 0 demonstrates that there is no correlation. In expansion to this, Field (2005) characterized correlation coefficient (r) as follows: 0.1– 0.29 is weak; 0.3 – 0.49 is moderate; and > 0.5 is strong. Considering this, the researcher followed this guideline to decipher the Pearson´s correlation coefficient (r).

Subsequently, a correlation analysis with Pearson´s correlation coefficient (r) was directed on all factors in the examination to investigate the relationships between independent variable (Performance anticipation, Effort Expectancy, Social impact, Facilitating condition, Perceived validity, Price sparing direction) with the Adoption of E-hailing application.

Table 4.6 Pearson correlation coefficients between independent variables and dependent variable

		AE
PE	Pearson Correlation	.652**
	Sig. (2-tailed)	.000
	N	320
EE	Pearson Correlation	.533**
	Sig. (2-tailed)	.000
	N	320
SI	Pearson Correlation	.621**
	Sig. (2-tailed)	.000
	N	320
FC	Pearson Correlation	.741**
	Sig. (2-tailed)	.000
	N	320
PC	Pearson Correlation	.702**
	Sig. (2-tailed)	.000
	N	320
PSO	Pearson Correlation	.452**
	Sig. (2-tailed)	.000
	N	320
Correlation is significant at the 0.01 level		

Source: Survey Result, May 2020

As it is clearly demonstrated in Table 4.7, a moderate to strong and positive relationship was found between performance expectancy and adoption of E-hailing application (r =.652, p < .05), effort expectancy and adoption of E-hailing application (r = .533, p < .05), social influence and adoption

of E-hailing application (r = .621p < .05) Facilitating condition and adoption of E-hailing application (r = .741, p < 0.05), perceived credibility and adoption of E-hailing application (r = .702, p < .05), price saving orientation and adoption of E-hailing application (r= .452, p < 0.05) which are statistically significant at 1 %.

As indicated by an examination led by (Morosan, C.; DeFranco, 2016) the most important factors affecting the adoption of technology in the class room in the case of instructors were: Performance Expectancy, Effort Expectancy, and Social Influence.

4.7. DIAGNOSTICS IN REGRESSION

It is imperative to test if all the important model assumptions are valid before performing inference. Thus, in developing the regression models the researcher assumed no or little multicollinearity, no auto-correlation, normality and homoscedasticity. Model diagnostic procedures involve both graphical techniques and formal statistical tests. It is imperative to decide if all the important model assumptions are substantial before performing analysis. In developing the relapse models the specialist accepted no or little multicollinearity, no autocorrelation, ordinariness, and homoscedasticity. Model symptomatic strategies include both graphical techniques and formal measurable tests.

4.7.1. MULTICOLLINEARITY

Multicollinearity accepts that the independent variables in the model are strongly connected with one another that they are basically estimating the same thing. You might want to see no or little multicollinearity among the independent variables. The tolerance of a variable is used as a measure of collinearity. To acquire measures of tolerance, every independent variable is treated as a dependent variable and is regressed on the other independent variables Ge (,2012).

In any practical context, the correlation between explanatory variables will be non-zero, although this will generally be relatively benign in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. This is in accordance with Wooldridge's (2002) decision that if the Pearson Correlation Coefficient is under 0.80 it infers that there is no worry for concern in regards to multicollinearity problem among independent variables. Along these lines in table 4.7.1 beneath delineates there is no

relationship between the independent variables that equals or surpasses Pearson connection coefficients of 0.80.

Table.4.7.1.a Pearson correlation coefficients of independent variables

	PE	EE	SI	FC	PC	PSO
EE	.366	1				
SI	.493	.300	1			
FC	.472	.333	.501	1		
PC	.498	.346	.373	.567	1	
PSO	.350	.197	.306	.373	.323	1

Source: Survey Result, May 2020

We can likewise test this assumption by observing Tolerance and Variance Inflation Factors (VIF) and having examined Variance Inflation Factor (VIF) we realize that a VIF of 5 or more and tolerance value under 0.5 is not useful for regression model because it might render other noteworthy variables redundant (Akinwande, Dikko& Samson, 2015). In any case, table 4.5.1.b shows that there is no multicollinearity issue between factors. The outcome shows that the tolerance value for every independent variable is (PE=0.600, EE= .812, SI= .655, FC= 0.550, PC = .595, PSO=.810) respectively. In this way,,multiCollinearity assumption is not violated. This is likewise upheld by the VIF value, which is 1.667, 1.232, 1.527, 1.817, 1.681 and 1.234 which is way below the cut-off value of 5.

4.7.1.b Multicollinearty Diagnosis

Coefficients[a]

		Collinearity Statistics	
Model		Tolerance	VIF
1	PE	.600	1.667
	EE	.812	1.232
	SI	.655	1.527
	FC	.550	1.817
	PC	.595	1.681

	PSO	.810	1.234

a. Dependent Variable: AE

Source: Survey result, May 2020

4.7.2. AUTOCORRELATION

Concerning the appraisal of autocorrelation, the examination has directed the Durbin-Watson test. The Durbin-Watson statistic extends between the values of 0 to 4. A value close 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; while a value toward 4 indicates negative autocorrelation. Accordingly, the examination found that the Durbin-Watson test result is 1.874. If the test statistic value (d) is close 2 the test is conclusive and we do not reject the null hypothesis that states no autocorrelation, positive or negative (BerhaneTaye, 2018). Hence, the outcome for Durbin-Watson fulfills this condition and it is concluded that there is no sufficient condition that states there is a problem of autocorrelation.

Table 4.7.2 Durbin-Watson (DW) Test

Model Summary		
Model	Std. Error of the Estimate	Durbin-Watson
1	.37594	1.874
a. Predictors: (Constant), PSO, EE, SI, PC, PE, FC		
b. Dependent Variable: AE		

Source: Survey result, May 2020.

4.7.3. NORMALITY

One of the manners in which that these assumptions can be checked is by examining the residuals scatter plot and the normal probability plots of the regression standardized residuals that were mentioned as of the analysis. These are introduced in ordinary P-P Plots of regression standardized residuals diagram. In normal probability plots the focuses will lie in a sensibly straight inclining line from base left to the upper right. This would suggest no major deviations from normality. The finding from normal P=P Plot reveals no violation of normality assumptions.

The examination utilized the two strategies for evaluating normality; graphically. Figure 4.7 .3, portrayed that the scores are normally distributed using Normal Probability Plot (P-P) diagrams (on the appendix section) and numerically using Skewness and Kurtosis.The skewness value gives

a sign of the symmetry of the distribution while kurtosis gives data about the sharpness of the peak of a frequency-distribution curve.

Table: 4.7.3 Normality Diagnosis

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
AE	320	-1.003	.136	.011	.272
PE	320	-.998	.136	.112	.272
EE	320	-.964	.136	.139	.272
SI	320	-1.003	.136	.202	.272
FC	320	-.991	.136	.058	.272
PC	320	-1.002	.136	.284	.272
PSO	320	-.980	.136	.651	.272
Valid N (listwise)	320				

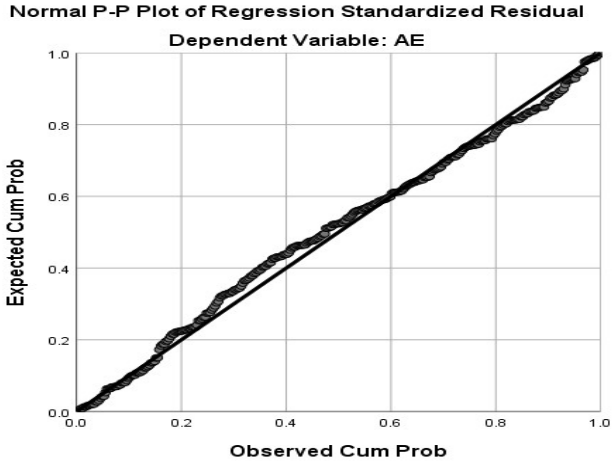
Source: Survey Result, May 2020

As should be obvious from the above tables, the value for Skewness of the factors go from – 0.964 through – 1.003, and for Kurtosis they go from 0.011 through 0.651. As per George and Mallery (2010), the most commonly acceptable value for (kurtosis/ Skewness) distribution is a range of -2 through +2. The histogram and P-P plot additionally show that the distribution is normal. In this manner, the distribution is acceptable and it fulfills the assumption of Normality distribution.

4.7.4. HOMOSCEDASTICITY

Homoscedasticity points out for every value of X, the distribution of Y scores must have approximately equal variability. To check this assumption, the residuals can be plotted against the predicted values and against the independent variables. When standardized predicted values are plotted against observed values, the data would form a straight line from the lower-left corner to the upper-right corner, if the model fit the data exactly George and Mallery (2010), As appeared in figure 5 beneath, P-P plot used to test the homoscedasticity assumption for the model, In this case P-P plot the dots are drawn closer to the diagonal line, indicating that assumption of homoscedasticity is met.

Figure 2: Normal P-P Plot



4.8. REGRESSION ANALYSIS

4.8.1 The Regression Model Statistics of Performance expectancy and the adoption of E-hailing application.

It is demonstrated in the examination directed by Ramon Palau-Saumell et.ael (2019); Malik Khalif Gharaibeh et al., (2018); (Herman Fassouhaha, (2018);Lim, K.B.etal,(2018) that there is a positive significant relationship between Performance expectancy and adoption of mobile application. Accordingly, this research has established a hypothesis and conducted regression analysis to see the effect of Performance expectancy on adoption of E-hailing service/application.

Table 4.8.1.a: Test of Model Adequacy (ANOVA) for Performance expectancy

Source: Survey Result, May 2020

The regression model summary presents how much of the variance on adoption of E-hailing service is explained by the predictor variables. The adjusted R square shows 42 % of the variation in the adoption of e-hailing application is explained by

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652[a]	.425	.423	.62989

a. Predictors: (Constant), PE

b. Dependent Variable: AE

performance expectancy

Table 4.8.1.b: Model Summary for Performance expectancy and adoption of E-hailing application.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.314	1	93.314	235.188	.000[b]
	Residual	126.171	318	.397		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), PE

Source: Survey Result, May 2020.

In addition, model adequacy test (ANOVA test) was led to demonstrate that the model on the connection between these two factors is fitting. The test measurement demonstrates in table 4.8.1.b show that the model is adequate and fitting for this relationship since the p-value is 0.000, which is under 0.05 and even 0.01 of significance level.

4.8.2 The Regression Model Statistics of Effort expectancy and the adoption of E-hailing application.

R square is the amount of variation in the outcome variable that is accounted for by the model (Field, 2009). The adjusted R2 discloses to us how much variance in the result would be represented if the model had been derived from the population from which the sample was taken (Field, 2009).

Table 4.8.2.aModel Summary for Effort expectancy and adoption of E-hailing application.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533[a]	.285	.282	.70269

a. Predictors: (Constant), EE

b. Dependent Variable: AE

Source: Survey Result, May 2020.

In the above table, the R2 between the dependent variable adoption of E-hailing application and the independent variable effort expectancy equals 0.285. Subsequently; we can presume that the independent variable (Effort expectancy) in the model explains 28.5% variance in dependent variable (adoption of e-hailing service). The remaining 71.5 % of the variation in adoption of E-hailing application can be ascribed to different factors.

Table 4.8.2 b: Test of Model Adequacy (ANOVA) for Effort expectancy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.467	1	62.467	126.510	.000[b]
	Residual	157.019	318	.494		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), EE

Source: Survey Result, May 2020.

To test significance of this model ANOVA (F-test) was performed. It is shown on the above ANOVA table 4.8.2.b that the model is significant F (test) =126.510, P=.000).F test is a statistical test; its motivation is to look at whether the independent variables taken together have a significant effect to the dependent variable. If the significance value of the F statistic is small; that means smaller than the error margin 0.05, then the independent variables explain the variation in the dependent variable significantly. It can be observed there is a significant relationship between Effort expectancy and adoption of e-hailing application (P<0.01).

4.8.3 The Regression Model Statistics of social influence and Adoption of E-hailing application.

Considering the effects of social influence on adoption of E-hailing application, the study has formulated hypothesis. The hypothesis of the research states that social influence has significant effect on adoption of e-hailing service at 5% level of significance. Accordingly, regression analysis was conducted to see the regression coefficient or r square. The regression result shows that the coefficient of determination; R square is 0.386 at 0.01 level of significance. This shows that there is a significant relationship between social influence and adoption of e-hailing application. The following table indicates the result.

Table 4.8.3.a Model Summary for Social influence

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.621[a]	.386	.384	.65110

a. Predictors: (Constant), SI

b. Dependent Variable: AE

Source: Survey Result, May 2020.

As indicated by Athapol Ruangkanjanases and Chayanee (unpublished article), social influence has a positive significant effect on the adoption of E-hailing application. This outcome is affirmed with the present investigation as the Pearson connection coefficient is 0.621 and the relationship between the dependent variable (adoption of e-hailing service) and the independent variable social influence is significant at 1 percent. Thus, social influence has a positive and significant effect on the adoption of e-hailing application in the context of Addis Ababa.

Table 4.8.3.b: Test of Model Adequacy (ANOVA) for Social influence

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.674	1	84.674	199.735	.000[b]
	Residual	134.811	318	.424		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), SI

Source: Survey Result, May 2020.

4.8.4 The Regression Model Statistics of Facilitating condition and the adoption of E-hailing application.

Past examinations, for example, (Al-Gahtani et al. 2007; Im et al. 2011; Nassuora, 2012; Wang and Shih 2009), Jairak et al. (2009) affirm the positive and significant effect of facilitating condition on the adoption of technology. Accordingly, the regression result shows that the coefficient of determination R2 is 0.386 at 0.01 of significance level. In this case, the coefficient of determination indicates that 38.6% of the variation on the adoption of E-hailing service is attributed to the effects of Facilitating condition. Henceforth, it is partly concluded that there is a significant relationship between Facilitating condition and the adoption of E-hailing service.

Table 4.8.4.a Model Summary for Facilitating Condition

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741[a]	.550	.548	.55754

a. Predictors: (Constant), FC

b. Dependent Variable: AE

Source: Survey Result, May 2020.

However, to pass on final judgment on the relationship between the independent and dependent variables, model adequacy test (ANOVA test) is conducted. The test statistic indicates in the following table 4.8.4.b indicates that the model is adequate as the p-value is 0.000, which is less

than 0.01of significance level. Therefore, there is a significant relation between Facilitating Condition and the adoption of E-hailing application.

Table 4.8.4.b: Test of Model Adequacy (ANOVA) for Facilitating Condition

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	120.636	1	120.636	388.088	.000[b]
	Residual	98.850	318	.311		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), FC

Source: Survey Result, May 2020

4.8.5 The Regression Model Statistics of Perceived credibility and the adoption of E-hailing application

According to the regression result indicated in the following table, the coefficient of determination R square is .493 at 1% significance level. The coefficient of determination indicates that 49.3% of the variation on the adoption of E-hailing service is attributed to the effects of Perceived credibility. This infers there exist a significant relationship between the two variables.

Table 4.8.5.a Model Summary for perceived credibility

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.702[a]	.493	.492	.59144

a. Predictors: (Constant), PC

b. Dependent Variable: AE

Source: Survey Result, May 2020.

Simple regression analysis is investigated to test the hypothesis on the effects of Perceived credibility on the adoption of e-hailing application. The accompanying table 4.8.5.b.demonstrates

the outcome from regression analysis on the effects of Perceived credibility on the Adoption of e-hailing application. The coefficient of determination R square is .493 and R is .702 at 0.01 of significance level. The coefficient of determination demonstrates that 49.3 % of the variation on the Adoption of e-hailing application is attributed to the effects of perceived credibility. This suggests that there exists a significant relationship between perceived credibility and the adoption of e-hailing service.

Table 4.8.5.b: Test of Model Adequacy (ANOVA) for Facilitating Condition

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.250	1	108.250	309.466	.000[b]
	Residual	111.235	318	.350		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), PC

Source: Survey Result, May 2020.

Moreover, the model adequacy directed utilizing investigation of variance. The test result validates the assumption that the model is adequate and appropriate for this data since p-value of 0.000, which is less than 0.05 percent. As can be seen from the table number 4.8.5.b, the test statistic (the p-value) is 0.00 and it is even less than 0.01 of level of significance. Thus, we conclude that the predicator variable has a significant effect on the adoption of e-hailing service.

4.8.6 The Regression Model Statistics of Price saving orientation and the adoption of E-hailing application

Considering the effects of Price saving orientation on the Adoption of e-hailing service, the study has formulated hypothesis. The hypothesis of the research states that Price saving orientation significantly affects adoption of E-hailing application significance. In like manner, regression analysis was directed to see the regression coefficient or r square. The regression result shows that the coefficient of determination; R square is 0.204 at 0.01 level of significance. This shows that

there is a significant relationship between price saving orientation and the adoption of E-hailing application. The accompanying table shows the outcome.

Table 4.8.6.a: Test of Model Adequacy (ANOVA) for price saving orientation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452[a]	.204	.202	.74104

a. Predictors: (Constant), PSO

b. Dependent Variable: AE

Source: Survey Result, May 2020.

To confirm the above findings, ANOVA test is conducted and it aimed to prove that the regression model on relationship between price saving orientation and the adoption of E-hailing application is adequate or fit. The test statistic indicated in the following table states that the model is adequate and fitting in the relationship between price saving orientation and the adoption of E-hailing application since the p-value is 0.000, which is less than 0.05 and even 0.01 of significance level. In conclusion price saving orientation and the adoption of E-hailing application at 1% level of significance.

Table 4.8.6.b: Test of Model Adequacy (ANOVA) for Price saving orientation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.857	1	44.857	81.685	.000[b]
	Residual	174.629	318	.549		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), PSO

Source: Survey Result, May 2020.

4.9. MULTIPLE REGRESSION ANALYSIS

Multiple regression analysis was employed to examine the influence of (Performance expectancy, effort expectancy, social influence, facilitating condition, perceived credibility, and price saving orientation) on the adoption of E-hailing application.

Table 4.9.a Model Summary b

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894[a]	.798	.795	.37594

a. Predictors: (Constant), PSO, EE, SI, PC, PE, FC

b. Dependent Variable: AE

Source: Survey Result, May 2020.

The regression model summary presents how much of the variance on adoption of e-hailing application is explained by the predictor variables. The adjusted R square indicates 79.5 % of the variation in adoption of e-hailing application is explained by the combined effect of the six predictor variables, i.e. Performance expectancy ,Effort expectancy ,Social influence, Facilitating condition ,Perceived credibility and Price saving orientation.

Table 4.9.b ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	175.250	6	29.208	206.669	.000[b]
	Residual	44.236	313	.141		
	Total	219.486	319			

a. Dependent Variable: AE

b. Predictors: (Constant), PSO, EE, SI, PC, PE, FC

Source: Survey Result, May 2020.

To test significance of this model ANOVA (F-test) was performed. It is shown on the above ANOVA table 4.9.b that the model is significant F (test) =206.669, P=.000).F test is a statistical test; its purpose is to examine whether the independent variables taken together have a significant effect to the dependent variable. If the significance value of the F statistic is small; that means smaller than the error margin 0.05, then the independent variables explain the variation in the dependent variable significant. Thus, this indicates that the regression model is fit and significant.

Table 4.9.c Coefficient table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.500	.203		-12.289	.000
	PE	.228	.044	.171	5.225	.000
	EE	.251	.036	.198	7.018	.000
	SI	.245	.040	.193	6.150	.000
	FC	.377	.041	.311	9.080	.000
	PC	.350	.042	.271	8.238	.000
	PSO	.121	.038	.091	3.219	.001

a. Dependent Variable: AE

Source: Survey Result, May 2020.

The coefficient table indicates level of effect each variable has on the dependent variable. From the signs of the estimated regression coefficients, it is seen that the direction of influence is linear. With that in mind, the highest beta value of Facilitating condition B= 0. .377 indicates that the variable has relatively a strong degree of importance for adoption of e-hailing service than any other variables in the study. Variables with second & third degree of importance are Perceived credibility & effort expectancy with beta values (.350 &.251) respectively. While, price saving orientation has the least importance compared to the other variables. The regression equation took the following form to measure effort expectancy

$$Y = \beta 1 + \beta 2Xi + \beta 3X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + ui$$

Where Y= Adoption of E-hailing Service(AE)

Xi = Performance expectancy (PE)

X2 = Effort Expectancy (EE)

X3= Social influence (SI)

X4= Facilitating condition (FC)

X5= Perceived credibility (PC)

X6=Price saving orientation (PSO)

β1 to β6= the intercept on the regression model

UI=Error term

AE= -2.500 +.228PE +.251EE + .245SI +.377FC+ .350PC+ .121PSO +ui

From the above multiple regression analysis it can be noted that all the six independent variables i.e. PE (B=0.228, P=.000), EE (B=0.251, P=.000), SI (B=0.245, P=.000), FC (B=0.377 P=.000), PC (B=0.350, P=.000) and PSO (B=.121, P=.001) are statistically significant and have a positive impact on the adoption of e-hailing application. Standardized coefficient (Beta value) indicates the degree of importance each variable has towards the adoption of E-hailing application as a result, the independent variables can be ranked in the following order on the basis of their contribution. Facilitating condition comes first with the highest standardized beta value (B=0.377), followed by perceived credibility (B=0.350) and effort expectancy ranked third with beta value (B=0.251).

4.10. HYPOTHESIS TESTING

As the alternate hypothesis denotes that there is a significant difference on the outcome variable that is caused by the Independent variable. The obtained results are presented in table 4.10

Table 4.10 Summery of hypothesis testing.

Hypothesis	Result	Reason
H1: Performance expectancy will have a positive and significant effect on adoption of E-hailing services	H1:Supported	B=.228 t=5.225 p < 0.01
H2: Effort expectancy will have a positive and significant effect on adoption of E-hailing service	H2:Supported	B=.251 t=7.018 p < 0.01
H3: Social Influence will have a positive and significant effect on adoption of E-hailing service.	H3:Supported	B=.245 t=6.150 p < 0.01
H4: Facilitating conditions will have a positive and significant impact on Adoption of E-hailing service.	H4:Supported	B=.377 t=9.080 p < 0.01
H5: Perceived credibility will have a positive and significant effect on Adoption of E-hailing service	H5:Supported	B=.350 t=8.238 p < 0.01
H6: Price saving orientation will have a positive and significant effect on Adoption of E-hailing service	H6:Supported	B=.121 t=3.219 p < 0.01

4.11. DISCUSSION OF RESULTS

The empirical findings of this research indicate that factors that are driving passengers to adopt E-Hailing application, arranged by sway are: Facilitating condition, perceived credibility, effort expectancy, social influence, performance expectancy and price saving orientation. This outcome chiefly shows that passengers will feel the need to use or adopt the app if they perceive that e-hailing application is easy to use, permits them to communicate with drivers quickly, increase their prestige among other, is compatible with other technologies for example, the internet, make them feel safe and in the event that it gives them better value for their money. Additionally, Moreover, the outcomes uncover that the best influence on the adoption of e-hailing application are exerted by, from high to low, facilitating condition, perceived credibility and effort expectancy. The results indicate that facilitating condition is the strongest predictor of adoption of e-hailing application, in the context of Addis Ababa.

Despite the fact that facilitating condition showed the strongest influence in relation to the other variables all six of them showed a positive and statistically significant result. Hence, this lead to the acceptance of the six developed hypotheses. The results of the hypotheses test are detailed here under:

As indicated in table 4.10, **H1** is supported as Performance expectancy factor is significantly different from zero & is important in the model. This Implies passenger's feels the need to use or adopt e-hailing application if they believe they can save time, become more productive and increase their chance of getting a taxi while searching for a one. Thus, Performance expectancy has a positive effect towards adoption of e-hailing application, there by confirming the previous literature on UTAUT in the mobile context (Yu, C.S.2013;,Venkatesh, V.; Thong, J.Y.L.; Xu, X.,Slade, E.L.;2105). The outcomes are likewise reliable with Luiz Antonio Joia, (2017) previous research that has indicated that using e-hailing application will help passengers save time while looking for a taxi.

Concerning the subsequent hypothesis, Table 4.10 showed, **H2** is supported as Effort expectancy has positive and significant effect on the adoption of E-hailing application. Accordingly, the adoption of e-hailing application in Addis Ababa context depends on the degree to which passengers feel the application is easy to use, learn and understand. This is consistent with study of adoption of e-

hailing application in Malaysia which states, travelers, want to utilize e-hailing applications if they see the application as user friendly and require few steps to use.

So the existence of this influential factor will contribute toward improving the perceptions of the end-users to adopt and utilize the available e-hailing application which will encourage many users to hail for a taxi using the application. Thus, the more users perceive the system to be easy to use, the more they will adopt it. This finding is consistent with previous scholars like (Lai, I.K.V.201;Okumus, F.;(2016) ;Venkatesh, (V.;2012), who revealed that consumers which have strong perception of the easiness of the system adopt the application than those with weak perception of the easiness of the system.

Social influence is the original construct of UTAUT-1, which has been tried most generally in the mobile adoption framework, and its influence on the adoption of mobile application has garnered considerable support Yu, C.S.(2012);, Yang, S.;(2012). In this investigation, the social influence construct was clarified in two ways. Primarily passengers are influenced by friends or family members to adopt e-hailing application or they are influenced as a result of normative pressure from reference groups and this result is aligned with the study of Escobar-Rodríguez,(2014);Lee,J(,2018) and . Okumus, F.; (2016).Subsequently, passengers feel the need to adopt e-hailing application due to the image or prestige it creates for them and this is consistent with Escobar-Rodríguez, (2014) study of adoption of restaurant booking application. Thus, Passengers found in the setting of Addis Ababa are affected by the influence of their reference group.

The effects of facilitating conditions **(H4**) on the adoption of technologies have been supported in research carried out on app-based mobile tour guides Lai, I.K.V, (2015), and their impact on utilization has also been tested among consumers of mobile shopping services Yang, (K.,2010). Accordingly, in this study, facilitating conditions was the strongest predictor of the adoption of e-hailing application, in the context of Addis Ababa and this study contradicts with other mobile application studies that portrayed in significant relationship between facilitating condition and the adoption of mobile application Okumus, (2019). These results show that the role of facilitating conditions is more influential in the setting of E-hailing application in Addis Ababa. This implies that individual' perceptions regarding the support and the resources available to them such as cell phone are key factors influencing the adoption of E-hailing application.

Along these lines, passenger will adopt the application in the event that they feel that the necessary platform is available to assist them in case of difficulties. Likewise, compatibility of the application with other technologies for example, the internet also plays a major role in the use of the application. In connection with this, facilitating conditions were seen as an important factor in mobile banking adoption. It appears to the clients that when they see they have adequate knowledge about the service, appropriate cell phone, and help from the bank to help them with any challenges while utilizing the service, their intention to use it will increase. In accordance with this, passengers of e-hailing application in Addis Ababa feel that the most important factor driving them to continuously use the application is the support provided to them by the service providers during difficulties.

Perceived credibility (H5) is the second strongest predictor of the adoption of e-hailing application, this implies that privacy and security are still issues while adopting technologies, and it generally emerge in the early stages of the adoption of new technologies. In the e- hailing context, privacy and security are not simply a matter of safeguarding information rather about physical security as going by taxi with obscure drivers gives travelers some degree of vulnerability about their wellbeing and e-hailing application provides transparency of driver's information Such as drivers name and license number to their passengers. Moreover, the application records the historical journey of the passengers which causes them to have a sense of security while using the framework. Consequently, perceived credibility is another important antecedent towards the adoption of e-hailing application, which is also consistent with the findings of previous studies utilizing UTAUT-1 model in the context of mobile applications Yu, C.S,(2012) and the study uncovered that male users in relation to female users adopted E-hailing application since they felt a sense of security while utilizing the application.

Lastly, **H6** is supported since $\beta = .121$ and $P < 0.05$. The price saving orientation is significantly different from zero & consequently it is important in the model. Thus, the price-saving orientation and its influence on adoption of e-hailing application is significant, subsequently confirming to past research Escobar-Rodríguez, (2014). These outcomes uncover that travelers utilize these applications to compare price of different service providers in return allows them to save money. In spite of the fact that this factor demonstrated a significant relationship, unexpectedly the estimated β parameter represented one of the least powerful drivers of adoption of e-hailing application by passenger in Addis Ababa context. This might be observed in the demographic profile as most of the passengers

who has adopted the E-hailing application where individuals earning a monthly income of 5000 and below.

In conclusion, the study uncovers the importance of platform that provides passengers with technical support in case of difficulties and also passengers will consider utilizing e-hailing application based on opinions provide by their family and friends. In this way, with a higher level of optimistic views from their social circle, for example family and friends, in relation to the application, passengers will more likely adopt it. Furthermore ,effort expectancy and performance expectancy dimension of UTATU model plays significant role on the adoption of e-hailing application in Addis Ababa and also the additional two factors perceived credibility and price saving orientation were proved to be important factors to consider while contemplating adoption of e-hailing application.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter a summary of the study, conclusion and recommendations of the study findings as stipulated in the research objectives are presented. Discussions and conclusions of the study findings are drawn upon which recommendations are made.

5.2. SUMMARY OF MAJOR FINDINGS

The examination was led to inspect the variables affecting the adoption of E-hailing application. In the wake of looking into past examines and related literature, the four dimensions from UTAUT model (Performance expectancy, Effort expectancy, Social influence, facilitating condition) where chosen and the additional factors from the extended theory of UTAUT (perceived credibility and price saving orientation) were added to the model. This study was motivated by the fact that there is limited research on factors affecting the adoption of e-hailing application. Further the only research done on e-hailing service concentrated on a solitary firm and led an examination just on the matter of customer satisfaction. Thus, the study tried to fill in the aforementioned gap.

The study was conducted in Addis Ababa on passengers who have installed e-hailing application. An Internet-based survey was conducted due to the current epidemic of the corona virus and total number 320 complete questionnaires were received, translating into nearly 88% response rate. The questionnaires used 5 point likert-scale. Descriptive and inferential statistical techniques were used to analyses the primary data collected.

In the view of the demographic profile it was discovered that the majority of the passengers who have adopted the application were male 195 (60.9%) followed by 125 (39.1 %) female with 216 (67.5 %) of respondents falling in the age scope of 21-30years. Moreover a large portion of the respondent has Bachelor's-degree .In addition to this; most of respondents were self & private sector employees with their income failing between 5000 and below.

Regarding the experience of using e-hailing application all the respondents used e-hailing application at least once; this was because the researcher collected data utilizing two phase questionnaire. Most of the respondents utilized 149 (46.6 %) e-hailing application to request a taxi. Likewise, larger part of the clients (72.2%) utilized ride application compared to other service providers found in Addis Ababa. While the inferential analysis, reveals that the greatest factor influencing passengers to adopt e-hailing application is exerted by, from high to low, facilitating condition, perceived credibility and effort expectancy. The outcome demonstrates that facilitating condition is the most grounded predictor of adoption of e-hailing application, in the context of Addis Ababa. The finding of this examination is adequate in creating data that brought about the achievement of objectives.

Respondent's discernment towards the elements and Pearson relationship and relapse results are summed up here under:

The Pearson correlation result indicates that all the independent variables were significantly and positively correlated with the adoption of E-hailing application. The most positively correlated variable being, facilitating condition, Perceived credibility & performance expectancy with (r=.741), (r =.702) & (r =.652) followed by social influence, effort expectancy& price saving orientation (r=.621), (r=.533) & (r= .452) respectively

The analysis also revealed the most important factors in influencing adoption of E-hailing to be facilitating condition, Perceived credibility followed by effort expectancy with beta value of (β =.377), (β =.350) and (β =.251), followed with social influence ,performance expectancy and price saving orientation respectively with a significance level of 1 %.

The overall results of this study indicate that the aforementioned factors have a positive and significant effect on the adoption of e-hailing application. This study has found that facilitating condition and perceived credibility has the highest β coefficient and Pearson coefficient r. This means that individual' perceptions of the support and resources that are available for using e-hailing application are key factors for the adoption of this technology. Thus, passenger will adopt the application if they feel that the necessary platform is available to assist them in case of difficulties. In addition to this perceived credibility is reported as the second highest factor which influences adoption of e-hailing application. This outcome reveals that privacy and security are

still issues when adopting technologies, and usually arise as such, in the early stages of the adoption of new technologies. It appears to the customers that when they perceive there is transparency of information such as the name of the driver and plate number they feel some level of safety and this influence them to adopt E-hailing application. This can suggest that these two factors are very important in app based taxi service. Finally, 79.5 % of the variation in adoption of e-hailing application is explained by the entire six variables (performance expectancy, effort expectancy, social influence, facilitating condition, perceived credibility and price saving orientation).

5.3. CONCLUSION

According to the research findings, all six of the independent variables have a positive and significant effect on the adoption of E-hailing service in Addis Ababa, Ethiopia. Facilitating condition and perceived credibility has the highest influence on passenger's adoption of e-hailing application. Whereas if passengers feel there is a platform that will provide them with technical support in case of difficulties and perceive that using the application will lower the level of uncertainty when it comes to their physical safety they will adopt the e-hailing application. Furthermore, although price saving orientation significantly affects the adoption of e-hailing application it has the least importance compared to the other variables. Therefore, it can be concluded in this research that facilitating condition has displayed the highest influence on adoption of e-hailing application.

5.4. RECOMMENDATION

Based on the findings of the study it is found that the majority of passengers of e-hailing application will continue to use e-hailing application. Accordingly, given the significant & positive relationships between the predictor variables (performance expectancy, effort expectancy, social influence, facilitating condition, perceived credibility and price saving orientation) and the outcome variable (adoption of e-hailing application), the following recommendations are forwarded for a better use and adoption of e-hailing application.

- E-hailing application service providers should focus on building a platform that will assist passengers in case of difficulties and should make their application compatible with other technologies' such as internet. The application must function in 3G OR 4G network.Thus,

service providers can communicate with ethio-tele com to make their application compatible with the internet.

- It is quiet common for passengers to feel some level of uncertainty when it comes to their safety so the service providers should continue with their effort of revealing their drivers contact information and should scan their drivers thoroughly before allowing them to join the company.
- E-hailing service providers should make their application to be user friendly and easy to use so that the application is clear and understandable to passengers. The study revealed that majority of the users had bachelor's degree and were found between the ages of 21-30 this may be due to the limitation of using internet-based survey or this may be due to the fact the application is not easy to understand for passengers with low education and older age. Thus, the service providers can make video showing step by step guide on how to operate their applications. Further, study is recommended on this matter.
- The service providers of E-hailing application should make all their drivers available at all destination in Addis Ababa in order to help passengers save time and increase their productivity while searching for a taxi .Furthermore, this will enable passengers to communicate with nearby drivers more quickly.
- The service providers should initiate referral programs as social influence has a positive and significant effect on the adoption of e-hailing application. This referral will increase the use of e-hailing application by allowing family members or friends to positively influence their reference group.
- Although price saving orientation has the least importance in relation to the other independent variables it still has a significant impact on adoption of e-hailing application. Thus, the service providers should make various types of taxies or personal cars available with varying price so that passengers can look for cars with low price and should continue displaying sage price so that passengers can compare price of various service providers.

5.5. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The research is limited to the opinion of those passengers who has Facebook account and is part of the service providers social media page such as, Facebook, Thus, individuals who were not part of this community and including those who were not online during the data collection stage were excluded. This was because the researcher was forced to conduct internet based survey due to the corona virus pandemic and the researcher was unable to use traditional survey method. In addition to this, the study used convenient sampling. Hence, the results of the study may not be generalized to the population. The study is also limited to passenger's application. Future researchers can conduct a study on adoption and acceptance of driver's application. They can also investigate new factors that can influence adoption of e-hailing application. In addition, to this although the researcher used two stage survey to reduce missing of response the sampling method creates bias so it would be better to use better sampling method in order to make unbiased generalizations. Finally the descriptive analysis of the research showed that majority of the respondents who adopted the e-hailing application were individuals with their age ranging 21-30 thus, future research ought to conduct to why this is.

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APPENDIX 1: Item and reference for questionnaire

Dimension	Item	source
Performance expectancy (PE)	PE 1- I believe I can save time using E-hailing service when searching for a taxi	Ramon and Santiago (2019);ViktoriiaVinnik(2017);Venkatesh, Morris, Davis, and Davis (2003)
	PE 2-Using the E-hailing service/application enables me to communicate with the driver quickly	
	PE 3- I Find E-hailing useful in my daily life when searching for a taxi	
	PE 4- I believe that using E-hailing increases my productivity when searching for Taxi	
	PE 5- Using this mobile application increases my chance of getting a taxi	
Effort expectancy (EE)	EE1- I Find E-hailing application easy to use EE2: I would find it easy for me to become skillful at using E-hailing application EE3: My interaction with the E-hailing service would be clear and understandable EE4: I would find it easy to request a taxi using e-hailing application. EE5: Learning how to use/operate e-hailing application is easy for me.	Ramon and Santiago (2019);ViktoriiaVinnik(2017);Venkates(2003))
Social influence (SI)	SI1- People who are important to me think that I should use this mobile application	Venkatesh et al. (2003) Ramon and Santiago (2019);
	SI2-People who influence my behavior think that I should use this mobile application	
	SI3- People whose opinions I value prefer that I use this E-hailing service application	
	SI4- using E-hailing service increase my prestige among others	
Facilitating condition (FC)	FC1-I believe that I have the necessary smartphone to use e-hailing service	Ramon and Santiago (2019);ViktoriiaVinnik(2017);Venkates(2003))
	FC2-I believe that I have the necessary knowledge to use E-hailing	

	service	Vinnik(2017);Shuo Mei(2013);Venkates(2003
	FC3-I feel comfortable using E-hailing service	
	FC4-I believe E-hailing applications are compatible with other technologies such as internet.	
	FC5-A specific platform is available for assistance with E-haling difficulties	
Perceived credibility (PC)	PC1-E-hailing application provides me booking transparency information. For example; driver's name, driver's number and plate number.	Athapolruangkanjanases and Chayannetechapoolpho, n.d)
	PCI2-I feel safe when traveling by e-hailing application because historic journeys are recorded systematically.	
	PCI3- I feel safe when traveling by e-hailing application because I can declare my location via message, e-mail or on social network.	
	PCI4-.I think the privacy issue will not affect my intention to use E-hailing service	
	PCI5: Drivers in E-hailing service can detect my location is acceptable	
Price saving orientation (PSO)	PSO1-Using e-hailing will help me save money by examining the prices of different providers of E-Hailing service.	(Ramon Palau-Saumell,2017)
	PSO2-I believe E-hailing service offer better value for my money	
Adoption and use of e-hailing service	AU1- I will always try to use E-hailing application to hail a taxi	(Ramon Palau-Saumell 2017)
	AU2- I plan to continue to use E-hailing service frequently.	
	AU3- I intend to continue using E-hailing service in the future.	

Questionnaire

Dear sir /madam, I am doing a research study to know as to what extent the below factors affected you the passengers to adopt E-hailing (Electronic taxi Application) service in Addis Ababa Ethiopia. I shall appreciate if you can spare a few minutes to fill in the questionnaire and May I assure you that the information provided by you shall be kept strictly confidential and will be used only for academic purposes. As such you are **not required** to leave your name and Please feel free to provide your opinion by ticking (·) the alternative that you feel best describes your opinion.

(Department of Masters in Marketing Management) Addis Ababa University of commerce,

Best regards

MetasebiaYeneneh

Note: E-hailing or electronic taxi application is the processes of ordering a car, taxi, or any other form of transportation picks up via virtual devices: computer or mobile device.

SECTION - A: Demographic Profile Section PLEASE READ EACH QUESTION CAREFULLY. Please tick (√) to the most appropriate response for each of the following questions.

1. Gender

   1. Male ( ) 2. Female ( )

2. Age

   1.20 years and below ( ) 2.21-30 years ( )

   3.40 years ( ) 4.Above 50 years ( )

3. Educational level

   1. Certificate and below ( ) 2.Diploma ( )

   3. Bachelor's Degree ( ) 4.Master's Degree and above ( )

4. Occupation

   1. Public sector ( ) 2. Private sector ( )

   3. Self-employed ( ) 4. Student ( )

5. Monthly Income

    1. 5000 and below ( ) 2. 10,000 ( )
    2. 15,000 ( ) 4. 20,000 and above

SECTION - B: Specific question Section PLEASE READ EACH QUESTION CAREFULLY. Please tick (√) to the most appropriate response for each of the following questions.

6. Do you have Experience using E-hailing service (**electronic taxi application)** more than once?

    1 Yes ( ) 2 No ( )

7. Which technique do you use to request a taxi from E-hailing service providers?

    1. Call center ( ) 2. Electronic /E-hailing application ( ) 3. Both ( )

8. Type of Taxi Hailing App you use?

    1.Ride ( ) 2. Polo Trip ( ) 3.Zayride ( ) 4.Taxiye ( )

SECTION - C: General Opinion Section, please choose the most suitable answer to indicate the extent to which you agree or disagree with each of the statements given below. **Please tick (√) your appropriate answer based on the following rating. 1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree**

Performance Expectancy (PE): Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PE 1- I believe I can save time using E-hailing service when searching for a taxi	1	2	3	4	5
PE 2-Using the E-hailing service/application enables me to communicate with the driver quickly	1	2	3	4	5
PE 3- I Find E-hailing useful in my daily life when searching for a taxi	1	2	3	4	5
PE 4- I believe that using E-hailing increases my productivity when searching for Taxi	1	2	3	4	5
PE 5- Using this mobile application increases my chance of getting a taxi	1	2	3	4	5

Effort Expectancy (EE): Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
EE1- I Find **Electronic taxi application** easy to use	1	2	3	4	5
EE2: I find it easy for me to become skillful at using **electronic taxi application**	1	2	3	4	5
EE3: I find Electronic taxi application to be clear and understandable	1	2	3	4	5
EE4: I find it easy to request a taxi using **electronic taxi application**	1	2	3	4	5
EE5: Learning how to use/operate e-hailing application is easy for me	1	2	3	4	5

Social Influence (SI): Please circle one number per line to indicate the extent to which you agree or disagree with the following statement.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SI1- People who are important to me think that I should use this mobile application	1	2	3	4	5
SI2-People who influence my behavior think that I should use this mobile application	1	2	3	4	5
SI3- People whose opinions I value prefer that I use this E-hailing service application	1	2	3	4	5
SI4- using E-hailing service increase my prestige among others	1	2	3	4	5

Facilitating Condition (FC): Please circle one number per line to indicate the extent to which You agree or disagree with the following statements

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
FC1-I believe that I have the necessary smartphone to use e-hailing service	1	2	3	4	5
FC2-I believe that I have the necessary knowledge to use E-hailing service	1	2	3	4	5
FC3-I feel comfortable using E-hailing service	1	2	3	4	5
FC4-I believe E-hailing applications are compatible with other technologies such as internet.	1	2	3	4	5
FC5-A specific platform is available for assistance with E-haling difficulties	1	2	3	4	5

Perceived Credibility (PC): Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PC1-E-hailing application provides me booking transparency information. For example; driver's name, driver's number and plate number.	1	2	3	4	5
PC2-I feel safe when traveling by taxis that use E-hailing application because historic journeys are recorded systematically.	1	2	3	4	5
PC3- I feel safe when traveling by e-hailing application because I can declare my location via message, e-mail or on social network.	1	2	3	4	5
PC4-. I think the privacy issue such as the drivers getting my phone number will not affect my intention to use E-hailing service	1	2	3	4	5
PC5: Drivers in E-hailing service can detect (track) my location and this is acceptable	1	2	3	4	5

Price Saving Orientation (PSO): Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PSO1-Using electronic taxi application will help me save money by allowing me to compare the prices of different providers of E-Hailing service.	1	2	3	4	5
PSO2-I believe Using electronic taxi application will help me find cheaper taxis or vehicles	1	2	3	4	5
PSO3-I believe E-hailing service offer better value for my money	1	2	3	4	5

Adoption of E-hailing service (AE): Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
AE1- I will always try to use Electronic taxi application to hail a taxi	1	2	3	4	5
AE2- I plan to continue to use E-hailing service frequently.	1	2	3	4	5
AE3- I intend to continue using E-hailing service in the future.	1	2	3	4	5

The End.

Thank you very much for your participation in this survey!

All responses will be kept private and confidential.