

**A COMPARISON OF CUSTOMER PERCEIVED SERVICE
QUALITY BETWEEN TRADITIONAL AND MOBILE-APP TAXI
SERVICES IN NAIROBI, KENYA**

VICTOR NYABANDO OGETO

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DECLARATION

I declare that this research project is my original work and has not been presented to any other university or college for any academic purposes.

Signed Date.....

VICTOR NYABANDO OGETO

D61/67825/2011

This research project has been submitted for examination with my approval as a University Supervisor.

Signed.....Date.....

PROF. JAMES M. NJIHIA

SUPERVISOR

DEPARTMENT OF MANAGEMENT SCIENCE

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DEDICATION

This project is dedicated to my parents, siblings, wife and daughter for their dedicated support and patience through my MBA study.

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ABBREVIATIONS AND ACRONYMS

APP	Application
DOI	Diffusion of Innovation
E-HAILING	Electronic Hailing
GPS	Global Positioning System
IS	Information Systems
IT	Information Technology
KENATCO	Kenya National Taxi Corporation
MIS	Management Information Systems
SERVPERF	Service Performance
SERVQUAL	Service Quality
SPSS	Statistical Package for Social Science

ABSTRACT

Customer perception of service quality directly impacts the level of customer satisfaction in service businesses. Assessment of customers' perception of service quality in the taxi industry is crucial in determining whether mobile-app taxi hailing has improved service quality in the taxi industry in comparison to the traditional taxi model. Mobile-apps are an information technology that improves operation efficiency and convenience therefore leading to improved service quality. This study had an aim of determining if mobile-app taxi hailing improved service quality in the taxi industry as compared to the traditional taxi. The SERVPERF model was used as the guideline tool for carrying out the study. A 25 response questionnaire was self-administered in order to survey club and restaurant taxi hailing customers within Nairobi. There were 395 valid responses, 63.5% male and 36.5% female respondents. Data was analyzed using the Paired sample t-test to determine levels of service quality represented by overall mean values of traditional and mobile-app taxi responses. The study was significant; the null hypothesis was rejected. The significant dimensions in the study were determined through one sample t-test for each taxi model; findings suggested that all the dimensions were significant in the study for both the traditional and mobile-app based taxi services. The conclusion was that mobile-app technology has significantly contributed to improvement of taxi hailing service quality. All service quality dimensions were significant for both the traditional and mobile-app taxi services. Limitations of the study were financial, scope of coverage and population size related. Suggestions for further studies included: mobile-app taxi services competitiveness and wider scope of taxi service quality survey.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Organizations worldwide adopt newer and relevant technologies in an effort to improve business processes, gain competitive advantages and improve service quality. Information technology today has been interlinked with business in an inevitable manner leading to organizational competitive advantages (Jorfi, Nor, & Najjar, 2011). Information technology (I.T) is computer hardware and software that provide support for operations and management within an organization (Thong & Yap, 1995). It is logical to determine the contribution of technology in any business from the customers' perspective and that is their perception of service quality through comparison of an information technology supported business model to a similar business that has no I.T support. A customer is an organization or person who buys goods and services (Ramees & Safeena, 2016). A good number of studies have linked better service quality to increased levels of customer satisfaction.

A taxi is a vehicle that carries people to a requested location at an agreed price relative to distance (Onyango, 2016). Taxi definition varies worldwide, in the Kenyan context a taxi does not include public transport famously branded as a "Matatu", which usually picks and drops passengers operating within specific routes rather it is a more personal, individual or group hailing request to the taxi service provider. The traditional taxi model entails a customer hailing a taxi from a stage or waving at a moving taxi in order for the driver to notice them or alternatively making a phone call in order to acquire the taxi service while mobile-app taxi hailing services use mobile applications that integrate GPS

technology to map the locations of the rider who requests for a taxi and the driver who offers to transport the rider.

Traditional taxi hailing still exists in Nairobi although a number of taxi companies and individuals have adopted mobile app technology in order to survive what is considered the taxi disruption. Teke Taxi already signed a number of taxi firms in an effort to utilize mobile app advantages (Njihia, 2016). The taxi industry faced disruption with the emergence of mobile-app taxi hailing. Uber commands the biggest market share in Kenya and is the mobile app technology taxi hailing pioneer (Ngila, 2019). Uber launched its services in Kenya in 2015. Njihia (2016) suggests that Uber penetrated the Kenyan market due to its pricing model, charging a standard amount per kilometer relatively lower than traditional taxi operators. Uber does not own vehicles, it recruits people willing to provide taxi services under its mobile app network. In Kenya, some of the companies that have adopted mobile-apps for taxi hailing services include: Bolt formerly Taxify, Little cab, Pewin Cabs, Easy Taxi, Maramoja and inDriver.

The biggest challenge the traditional taxi model is facing is the ride sharing technology dominance (Rahel, 2016). This research seeks to determine if mobile app usage as an information technology within the taxi industry improves taxi hailing service quality. A comparison of traditional and mobile-app based taxi services will be conducted with focus on customer perception of service quality.

1.1.1 Perceived Service Quality

Parasuraman et al. (1988) conceptualizes perceived service quality as the customers' evaluation of difference between expected services and perception of services offered. Cronin and Taylor (1992) in a different angle view perceived service quality as measure of customer's attitude towards offered services. Cronin and Taylor (1992) only consider customer perception, therefore eradicating the customer expectations aspect. Jiang and Wang (2006) suggest it is the customer's evaluation of services obtained in comparison to their expectations, while Grönroos (1984) views perceived service quality as what comes out as a result of customer evaluation where customers' expectations with service received are compared. Cronin and Taylor (1992) view it as measure of customers' attitudes towards services offered. Zeithaml and Bitner (2003) suggest, businesses are able to identifying problems fast, improve services and better assess client expectation as a result of customer perception of service quality. It is measured using the SERVQUAL and SERVPERF instruments. There is no clear determination as to which is a better instrument between SERVQUAL and SERFPERF (Jain & Gupta, 2004).

1.1.2 Traditional Taxi

The traditional taxi model entails acquiring a taxi service through waving at a moving taxi, picking a taxi cab from a designated taxi stage or dialing a taxi driver or taxi providing service phone contact number in order to receive the taxi service. In some countries traditional taxis are fitted with taxi meters for billing purposes while in some countries the rider and driver agree on the taxi service fare mostly prior to service provision (Onyango, 2016).

The traditional taxi operators in Kenya mainly consist of pioneers who command fleets of taxi cabs. They offer corporate taxi services, car hiring as well as safaris and airport transfers. Under this category are individual taxi owners who park their cars at strategic joints to attract passengers (Hussein, 2016). In Nairobi, a number of formerly traditional taxi service providers have combined effort to adopt mobile app technology for taxi hailing. Teke Taxi already signed previous traditional taxi firms (Herbling, 2016). Teke taxi partners include: State-owned Kenya National Taxi Corporation (KENATCO), Jimcab and Delight Cabs (Teke Taxi, 2019).

1.1.3 Mobile-App Technology Services

Mobile technology has spread rapidly worldwide. More than five billion people own mobile gadgets and at least half of the gadgets are smartphones (Pew Research Center, 2019). Mobile apps run gadgets that are moveable, easy to access and that have ease of use (Islam, 2010). Organizations are developing mobile-apps in order to gain more customers and deliver higher quality services (Dak & Acharya, 2017). Adoption of mobile apps has becoming increasingly important in business (Kimberley, 2014).

Adoption of mobile-app technology in taxi hailing has its unique contributions to improved services. Online payment options, rating systems, GPS tracking and a network of drivers are some of the advantages from mobile app taxi hailing platforms (Pepić, 2018). Pepić (2018) suggests digital taxis offer great transparency and flexibility.

1.2 Research Problem

Disruptive technologies are changing the landscape now and into the foreseeable future. Uber is revolutionizing the delivery of what we conventionally think of as taxi service (Rick, 2014). According to Nah and Siau (2005) the major reason for adopting mobile applications is to maximize benefits to the company. Mobile apps are adopted due to their effectiveness, efficiency, cost reduction, customer satisfaction, security, and usage acceptance (Nah & Siau, 2005). Mobile apps have made an impact in the taxi industry and usually affect operation efficiency and effectiveness. Onyango (2016) suggests e-hailing applications improve lead time in taxi waiting and reduces strain in taxi hailing. According to Ngila (2019), factors that lead to adoption of mobile-app for taxi hailing are: convenience, cashless payment, professional drivers, safety, and ability to offer cheaper services compared to the traditional taxi operators. There are a number of factors that clearly differentiate traditional and mobile-app taxis, including pricing, frequency of trip cancellations, security, driver payments, car ownership, market penetration, and driver incentives. It is part of these differences on which customers base their decisions to ride a particular taxi service (Ngila, 2019).

In Kenya, digital taxis have cut by half the fares offered by traditional taxis for the same services. Traditional cabs usually pay fixed rate monthly parking fee while most of mobile-app taxi providers pay for parking on need basis (Gachuhi, 2019). Traditional taxi operators must wake up to the reality of disruption and should be advised to adapt or die (Njihia, 2016). Both traditional and mobile app based taxi models have their unique contributions and challenges. Mobile app taxi hailing service operators Taxify and Uber drivers have been accused of fraudulent billing through use of dummy apps thus charging

riders more (Njanja, 2018). Regulators have questioned Uber driver vetting with security incidents on the rise (Dougherty, 2015). The traditional taxi hailing model cannot be ignored as its customers still exist in Kenya, this can be reflected by mobile-app pioneer Uber's effort to reach out to the traditional customers' by introducing a 24-hour toll free phone call support to be used for taxi hailing (Uber, 2019).

The question eludes as to which is a better taxi model in terms of service quality when comparing traditional and mobile app based taxi services as there is no much scientific evidence. The study seeks to fill the gap in literature in determination of which is a better taxi model between traditional taxis and mobile-app based taxis in reference to service quality. The question to be answered is does adoption of mobile-apps in taxi hailing improve service quality?

There are no enough studies that suggest mobile applications improve service quality in taxi hailing, therefore there is no clear evidence that adoption of mobile taxi hailing applications in taxi service provision has improved service quality. The research seeks to determine if mobile applications as an information technology has any significant contribution to service quality in taxi hailing. This research will compare and analyze customer perceived service quality for both traditional and mobile-app taxi hailing services. The research question in this case is; does adoption and use of mobile applications improve service quality in taxi hailing services?

1.3 Research Objectives

The main objective is to assess and compare customer perception of service quality for both traditional and mobile-app taxi services in Nairobi, Kenya. The specific objectives are:

- i) To determine whether mobile-app adoption in taxi hailing services leads to better service quality as compared to traditional taxis.
- ii) To determine significant service quality dimensions for both traditional and mobile-app based taxi services

1.4 Value of the Study

Stakeholders in taxi service provision will be able to determine a better taxi model in relation to better service quality offered through comparison of traditional and mobile-app based taxi models. Stakeholders can be aided in determining important service quality areas in order to improve on them. Government and other stakeholder will be able to pinpoint issues relating to policy and regulation formulation in order to create a balance and reduce conflict between traditional and mobile-app based taxi hailing services. Researchers and academicians will gain through contribution of the research in service quality and technology adoption for competitive advantage. The research will serve as relevant literature studies for future researchers.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction.

Relevant literature is reviewed in this chapter. Theories, models and empirical review on service quality are discussed and formulation of the conceptual framework.

2.2 Theoretical Foundation

The theories and models discussed below are fundamental to the study:

2.2.1 SERVQUAL Model

Parasuraman et. al. (1988) conceptualize SERVQUAL as an instrument which measures service quality. The instrument captures client expectations and perceptions matched to five service quality dimensions. Data is collected via a questionnaire that captures twenty-two expectation items and twenty-two perceptions items, all the questions are linked to the five service quality dimensions, which should logically match with the customers' idea of service quality. Its dimensions consist of four items for tangibles, four for responsiveness, five for reliability, five to capture empathy and four for assurance. Kettinger and Lee (1994) had a need to evaluate customer satisfaction in Management Information Systems (MIS) function led to adoption of the SERVQUAL. Despite the popularity of SERVQUAL instrument, there have been critics of the model including Cronin and Taylor (1992). SERVQUAL model is the basis under which SERVPERF model was developed thus providing a better understanding of its dimensions and its initial use in the MIS related research projects.

2.2.2 Diffusion of Innovation Theory

Rogers (1995) aimed to determine how a new product or idea gains popularity and spreads through a given population with the end result being that people adopt the new phenomena, therefore developing the Diffusion of Innovation Theory (DOI). Adoption of innovation is influenced by: Observability; that is results observed from an innovation. Complexity; innovations that are easy to use are adopted more easily than the complex ones. Relative advantage; if members of a population find an innovation to be better than what they are used to, they will adopt it more easily. Triability; most users will be more comfortable with adopting an innovation if they can test before committing to spend on it or adopt it fully, Compatibility with values, experience and needs.

Factors like relative advantage, observability and complexity can be considered relevant factors in diffusion of mobile application in the taxi industry. Laggards, late adopters and other pending groups who have the need to join the mobile-app bandwagon can depend on findings of this study and other related studies to make that decision.

2.2.3 SERVPERF Model

Cronin and Taylor (1992) suggest the approach of determining service quality through analyzing the gap between expected and perceived quality is not logical and as a result developed SERVPERF. Their study suggested that a performance based measure of service quality is better than analysis of quality gaps. Cronin and Taylor (1992) therefore conceptualized SERVPERF as a tool measuring service quality. SERVPERF uses perceived service quality as a measure leading to satisfaction but suggests satisfaction leads to further purchase intentions, they have also suggested that the number of constructs other researchers could add to the service quality models is unlimited. Bolton

and Drew (1991a) suggested that an addition of importance weights does not necessarily improve SERVQUAL or SERVPERF scales.

SERVPERF model will be used in this study. SERVPERF provides for flexibility in dimensions thus this freedom will be exercised to provide a more reliable questionnaire for the taxi service customers.

2.3 Dimensions of Service Quality

Parasuraman et al. (1998) developed a five-dimension service quality model consisting of: Reliability, Responsiveness, Assurance, Tangibles and Empathy as dimensions for measuring perceived service quality therefore developing SERVQUAL model. SERVPERF models use the five service quality dimensions but provides for freedom of assessment within the dimensions.

2.4 Empirical Literature Review

A research on mobile app usage and its impact in service management in public transport carried out by Schmitz et al. (2016) in German, suggested that perceived usefulness and perceived ease of use of mobile applications led the app acceptance and adoption. Findings suggested company specific customized mobile apps leads to high benefits to the customer due to increased usage.

Hussein (2016) carried a study to determine adoption levels of service quality practices by Nairobi based taxi companies for both traditional and mobile-app taxi. Results suggested that the majority of customers were satisfied with their taxi service providers'

services resulting in customer loyalty to their specific brands. Levels of service quality differed among service providers.

2.5 Summary of Literature Review

Perceived ease of use and user acceptance of mobile applications influences acceptability of a mobile app, which in turn leads to improved operations and therefore improved service quality. This suggests if a mobile-app by passes the user acceptance threshold then service quality will be experienced due to improvements as the mobile app creates convenience, speedy transactions and reliability, leading further to customer satisfaction. The research will compare the traditional taxi and mobile-app based taxi hailing services to determine if value has been created in reference to service quality as a result of mobile app technology adoption and use in taxi hailing from the customers' perspective. The research will use SERVPERF model. Since Cronin and Taylor (1992) provides for freedom of assessment within the dimensions, the taxi survey study will use: 4 items related to tangibles, 7 items related to reliability, 3 items related to responsiveness, 5 items affiliated to assurance and 5 items associated to empathy, a total of 25 items in order to clearly capture the intended output of the survey.

2.6 The Conceptual Framework

The conceptual framework represents a structure that seeks to describe the logic of the study as seen in Figure 2.1.

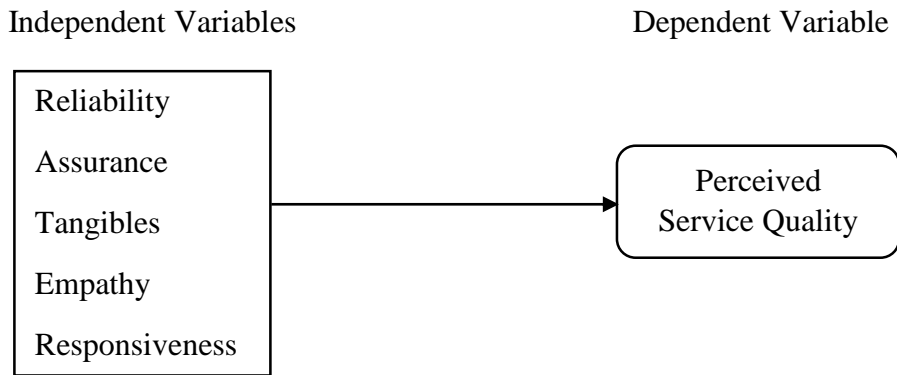


Figure 2. 1 : The Conceptual Framework

Source: Adopted from Cronin and Taylor (1992)

From Figure 2.1, it is discernible that the study is measuring perceived service quality. The predicting variables in the measure of perceived service quality of both traditional and mobile-app based taxi models are the independent variables.

H0: Mobile app based taxi hailing services are less satisfactory in comparison to traditional taxi hailing services in relation to service quality.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter focusses on the methods used in collecting information, procedures used in conducting the research and various techniques of the data collected.

3.2 Research Design

The study is a descriptive survey. It has been used to describe the current state of affairs of traditional and mobile app based taxi services through comparison. Customers who have hailed both the traditional and mobile-app taxi services were examined to determine the true picture of the current taxi models service quality levels in Nairobi.

3.3 Population

The population studied is the taxi hailing customers within Nairobi, Kenya. Club and restaurant patrons within Nairobi were chosen for the study as a representative of the population. The population is indefinite hence an infinite sample size was used.

3.4 Sampling Design

Random sampling was used on the identified target sample population. The study population had an indefinite number, an infinite sample size as a proportion of the population was used. An infinite sample size of club and restaurant patrons in Nairobi was surveyed as a sample representative of the population.

Formula for an infinite sample size is given below as per Cochran (1963).

$$n = \frac{z^2 * p * q}{e^2}$$

Given: Confidence level =95%, p=0.5; e = 0.05; q=0.5; z=1.96; n=?

infinite sample size (n) = 385

385 sample size was rounded off to 400 to target 400 respondents who have used both traditional and mobile-app taxi services.

3.5 Data Collection

Data collection was conducted via a structured questionnaire consisting of 2 sections. section A captured personal information while section B captured perception of both traditional taxi and mobile-app based taxi services, making use of a 5 point Likert scale. The questionnaire was self-administered in a random manner at different restaurants within Nairobi. The study targeted 400 respondents who have used both traditional and mobile-app based taxi services. The respondents were club and restaurant clients within Nairobi.

3.6 Data Analysis

Data analysis was conducted out via SPSS version 26, a statistical analysis tool.

Paired sample difference in means test was used to test whether there was a significant difference between the traditional and mobile-app taxi model means. The difference in their means was used to determine a better taxi model between mobile-app taxi model and traditional taxi model.

A one sample difference in means test was used to assess the significant service quality dimensions for both traditional and mobile-app based taxi services.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter discusses the results attained from data collected. Highlighting the response rate, demographics, taxi survey mean descriptive data and difference in means statistics.

4.2 Response Rate

The total number of respondents who filled the survey questionnaire and have used both traditional and mobile-app taxi services were captured.

Table 4. 1 : Response Rate

		Percentages
Target Sample Size	400	100%
Valid Response Rate	395	98.75%

Source. (Author, 2019)

As shown in Table 4.1 a target sample size of 400 respondents, 395 valid responses were attained. This was 98.75% of the targeted sample size. The response rate was adequate as it by passed the minimum required sample size of 385 respondents.

4.3 Demographics

Demographics covers the respondents' gender, age group and employment status.

4.3.1 Gender of the Respondents

Taxi survey respondents filled their gender information and the results were recorded.

Table 4. 2 : Gender of the Respondents

		Frequency	Percent
Valid	Female	144	36.5
	Male	251	63.5
	Total	395	100.0

Source: (Author, 2019)

The respondents were mostly male as shown in Table 4.2. Those who validly filled in the questionnaires, 63.5% were male and 36.5% were female. 63.5% represented 251 male respondents while 36.5 represented female respondents.

4.3.2 Age of the Respondents

The respondents' age group was also required and the validly filled results were analyzed based on frequency and percentage.

Table 4. 3 : Age of Respondents

Category	Frequency	Percent
18-30	153	38.7
31-40	198	50.1
41-50	26	6.6
Above 50	18	4.6
Total	395	100.0

Source: (Author, 2019)

Most respondents were aged between: 31-40 at 50.1%, 18-30 at 38.7%, 41-50 at 6.6% and Above 50 years at 4.6% as shown in Table 4.3.

4.3.3 Employment Status

Respondents were required to fill their employment status and data was recorded.

Table 4. 4 : Employment Status

Category	Frequency	Percent
Employed	307	77.7
Self Employed	61	15.4
Unemployed	27	6.8
Total	395	100.0

Source: (Author, 2019)

Most of the respondents were the employed at 77.7%, self-employed were at 15.4% and the unemployed at 6.8 % as presented in Table 4.4.

4.4 Descriptive Findings

The findings are described for both the traditional and mobile-app taxi services. The Table 4.5 and Table 4.6, each show the mean scores from all the 395 valid respondents, on each required response and in each service quality dimension for both the traditional and mobile-app taxi models.

Table 4. 5 : Service Quality in Traditional Taxis

		MEAN
	TANGIBLES	
P1.	Taxi vehicles are modern	2.63
P2.	Taxi vehicles interior & exterior is visually appealing (Clean, Comfortable, Spacious, Attractive	2.76
P3.	Taxi drivers are neat appearing	2.94
P4.	Taxi related materials(receipts/statements) are visually appealing	2.43
	Tangibles mean value	2.6911
	RELIABILITY	
P5.	When taxi service providers promises to solve grievances by a certain time, they do so	2.31
P6.	When you have a grievance, the taxi service provider shows a sincere interest in solving it	2.68
P7.	The taxi driver will not cancel a taxi request	2.70

P8.	The taxi driver will arrive on time for pickups and drops	2.72
P9.	The taxi driver understands the routes and locations for pickups and drops	3.26
P10.	Taxi service providers have convenient payment options	2.98
P11.	There is convenience in taxi booking and taxi boarding (Ease, speed, vehicle availability)	2.68
	Reliability mean value	2.7631
	RESPONSIVENESS	
P12.	The taxi service provider will notify the customer exactly when passenger pickup or drop will be performed.	2.64
P13.	The taxi service provider will give prompt services to the customers.	2.93
P14.	Taxi drivers will never be too stubborn or busy to respond to customer requests.	2.86
	Responsiveness mean value	2.8101
	ASSURANCE	
P15.	Drivers are professional and follow traffic rules and regulation	2.96
P16.	You feel safe and secure when riding a taxi	2.85
P17.	Drivers are consistently courteous with you	3.10
P18.	Prices are determined in advance, well communicated and do not vary at the end of trips	3.04
P19.	Price is fairly consistent and there is value for money	2.64
P20.	Taxi service providers have driver, vehicle and customer tracing capabilities in case of any issues arising.	2.26
	Assurance mean value	2.8080
	EMPATHY	
P21.	Taxi service providers have customer feedback options, driver rating options and customer follow up options	1.92
P22.	The taxi service providers will have operating hours convenient to the customer	2.88
P23.	Employees/Drivers are not mean and are attentive to you	2.97
P24.	Taxi drivers will always be willing to assist customers (boarding and luggage)	3.28
P25.	Taxi service providers understand your specific needs	3.10
	Empathy mean value	2.8304

Source :(Author, 2019)

Table 4.5 shows the means of all the 395 respondents, in each response for the traditional taxi model. The table also provides the means for each of the five service quality dimensions for the traditional taxi model. As shown in Table 4.5, there is a clear indication that respondents scored empathy better as compared to the other dimensions with a rating of 2.83 which was still a low score as it did not surpass the neutral score of 3.0, tangibles scored the lowest with a mean score of 2.69. Drivers willingness to assist customers scored highest compared to all the other 24 measured items. Traditional taxi customer feedback options, driver rating options and customer follow up options was rated the lowest with a 1.96 score.

Table 4. 6 : Mobile-App Taxi Means

		MEAN
	TANGIBLES	
P1.	Taxi vehicles are modern	3.78
P2.	Taxi vehicles interior & exterior is visually appealing (Clean, Comfortable, Spacious, Attractive)	3.87
P3.	Taxi drivers are neat appearing	3.56
P4.	Taxi related materials(receipts/statements) are visually appealing	3.52
	Tangibles mean value	3.6823
	RELIABILITY	
P5.	When taxi service providers promises to solve grievances by a certain time, they do so	3.14
P6.	When you have a grievance, the taxi service provider shows a sincere interest in solving it	3.34
P7.	The taxi driver will not cancel a taxi request	2.85
P8.	The taxi driver will arrive on time for pickups and drops	3.42
P9.	The taxi driver understands the routes and locations for pickups and drops	3.55
P10.	Taxi service providers have convenient payment options	3.72
P11.	There is convenience in taxi booking and taxi boarding (Ease, speed, vehicle availability)	3.78
	Reliability mean value	3.4018
	RESPONSIVENESS	

P12.	The taxi service provider will notify the customer exactly when passenger pickup or drop will be performed.	3.69
P13.	The taxi service provider will give prompt services to the customers.	3.54
P14.	Taxi drivers will never be too stubborn or busy to respond to customer requests.	3.21
	Responsiveness mean value	3.4793
	ASSURANCE	
P15.	Drivers are professional and follow traffic rules and regulation	3.43
P16.	You feel safe and secure when riding a taxi	3.49
P17.	Drivers are consistently courteous with you	3.50
P18.	Prices are determined in advance, well communicated and do not vary at the end of trips	3.28
P19.	Price is fairly consistent and there is value for money	3.57
P20.	Taxi service providers have driver, vehicle and customer tracing capabilities in case of any issues arising.	3.77
	Assurance mean value	3.5055
	EMPATHY	
P21.	Taxi service providers have customer feedback options, driver rating options and customer follow up options	3.74
P21.	The taxi service providers will have operating hours convenient to the customer	3.66
P23.	Employees/Drivers are not mean and are attentive to you	3.40
P24.	Taxi drivers will always be willing to assist customers (boarding and luggage)	3.34
P25.	Taxi service providers understand your specific needs	3.25
	Empathy mean value	3.4785

Source: (Author, 2019)

Table 4.6 shows the means of all the 395 respondents in each required response for the mobile-app taxi model. Table 4.6 also provides the means for all the five service quality dimensions for the mobile-app taxi model. Tangibles dimension had the highest means score with a 3.68 score which was a rating above the neutral score on the scale but below agree. The lowest dimension for mobile-app taxi model was reliability which had a mean score of 3.4. which was also a rating between neutral and agree. Taxi vehicles interior

and exterior visual appeal scored the highest in the measure of all the 25 mobile-app taxi service quality items. The lowest item in the measure of mobile-app taxi service quality was “the taxi driver will not cancel a taxi request” at 2.85, the only item that scored below the neutral value of 3.0 in mobile-app taxi scores, the low score signifies that mobile app taxi drivers usually have a tendency of cancelling customer taxi hailing requests.

Table 4. 7 : Service Quality Dimensions for Both Taxi Models

SERVICE QUALITY DIMENSIONS	TRADITIONAL TAXI DIMENSION MEANS	MOBILE-APP TAXI DIMENSION MEANS
TANGIBLES (P1 – P4)	2.6911	3.6823
RELIABILITY (P5-P11)	2.7631	3.4018
RESPONSIVENESS (P12-14)	2.8101	3.4793
ASSUARANCE (P15-P20)	2.8080	3.5055
EMPATHY (P21-P25)	2.8304	3.4785
OVERALL MEAN SCORE	2.7808	3.4960

Source: (Author, 2019)

Table 4.7 shows that mobile-app taxi services scored better in all dimensions as compared to the traditional taxi. Mobile-app taxi had an overall mean score of 3.4960 while the traditional taxi model had a mean score of 2.7808. All dimension scores for mobile app taxi services scored between neutral and agree, which is above the mean of the scale 3.0, signifying some customer level of satisfaction. The traditional taxi dimensions all scored between disagree and neutral which signifies some customer dissatisfaction considering the scores were below the scale mean value of 3.0. Both taxi models need improvements in taxi service quality as there was no perfect score of 5.0.

4.5 Difference in Means Statistics

Difference in means also known as t-test provides for the differences in mean values of both traditional and mobile-app taxi models. Difference in means also provides a test to determine if the null hypothesis should be rejected or fail to be rejected through significance testing.

Table 4. 8 : Paired Samples Statistics

	Mean	N	Std. Deviation
TRADITIONAL	2.7808	25	.31465
MOBILE	3.4960	25	.23862

Source: (Author, 2019)

The paired sample statistics table, Table 4.8 presents the mean values of all the 25 responses from all the 395 respondents. The mean values signify that mobile-app model scored higher at 3.5 while the traditional taxi was lower with a mean value of 2.78.

Table 4. 9 : Paired Samples Test

TRADITIONAL - MOBILE						t	df	Sig. (2- tailed)
	Mean	Std. Deviat ion	Std. Error Mean	95% Confidence				
				Lower	Upper			
	-.71520	.43493	.08699	-.89473	-.53567	-8.222	24	.000

Source: (Author, 2019)

Table 4.9 shows significance of the difference in means between the traditional and mobile-app taxi models. T-test seeks to prove two pairs of data are significantly different or not in order to reject or fail to reject the null hypothesis. Traditional taxi and mobile-app taxi models are significantly different; $P < 0.05$, we therefore reject the null

hypothesis. Mobile-app taxi has a higher mean as compared to the traditional taxi. Mobile taxi is a better taxi model.

4.6 Significance of Service Quality Dimensions

The traditional taxi and the mobile-app taxi service quality dimensions are each compared to the traditional taxi mean and mobile-app taxi mean respectively to determine the significance of each service quality dimension in comparison to the related taxi mean.

Table 4. 10 : Traditional Taxi Dimensions’ Significance

	Test Value = 2.7808					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence	
					Lower	Upper
TANGIBLES	-2.393	394	.000	-.08966	-.1633	-.0160
RELIABILITY	-.482	394	.000	-.01769	-.0898	.0544
RESPONSIVENESS	.758	394	.000	.02933	-.0468	.1054
ASSUARANCE	.710	394	.000	.02722	-.0481	.1026
EMPATHY	1.301	394	.000	.04958	-.0253	.1245

Source: (Author, 2019)

The data displayed in Table 4.10 signifies that all the service quality dimensions in the traditional taxi model are significant in the test of perception of service quality as per taxi service customers. The service quality dimensions’ means are tested against the traditional taxi mean value of 2.7808. The dimensions’ means are compared to the overall traditional taxi mean value in order to determine if there is a significant contribution to customer perceived service quality for each service quality dimension.

Table 4. 11 : Mobile Taxi Dimensions' Significance

	Test Value = 3.4960					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence	
					Lower	Upper
TANGILES	4.095	394	.000	.18628	.0969	.2757
RELIABILITY	-2.454	394	.000	-.09419	-.1697	-.0187
RESPONSIVENESS	-.437	394	.000	-.01668	-.0917	.0583
ASSUARANCE	.254	394	.000	.00949	-.0639	.0829
EMPATHY	-.384	394	.000	-.01752	-.1072	.0722

Source: (Author, 2019)

Table 4.11 shows that all the service quality dimensions in the mobile-app taxi model are significant in the test of perception of service quality as per taxi service customers. The service quality dimensions' means are tested against the mobile-app taxi mean value of 3.4960, therefore determining the significant contribution of each dimension to customer perceived service quality.

4.7 Discussion of Findings

Customer perception of service quality between traditional and mobile-app based taxi services survey was conducted with an aim of identifying if mobile-app technology has led to improvement in taxi hailing service quality. The first objective was to determine whether mobile-app adoption in taxi hailing services leads to better service quality as compared to traditional taxi service quality, findings indicate that the mobile-app taxi model is better than the traditional taxi. Mobile-app taxi mean scores were higher than the traditional taxi model as scored by the respondents, indicating it is a better. There was a significant gap between traditional and mobile-app means therefore rejection of the null hypothesis.

Service quality in the taxi industry was measured as a comparison between traditional and mobile-app taxi model with an aim of acknowledging the impact of technology in reference to service quality. Studies related to service quality and technology have been previously undertaken. Sharma and Das (2017) examined service quality and customer satisfaction of online taxis in India with an objective of determining if dimensions of service quality influenced customers' satisfaction, findings indicated: tangibles, responsiveness and empathy were the significant factors in customer satisfaction. Reliability and assurance were not.

Cronin and Taylor (1992) provide freedom in dimensionality in the use of the SERVPERF instrument in determining perceived service quality. Freedom of dimensionality has been used in this study. A number of researchers' have used SERVPERF in their studies related to taxi survey including Yao and Ding (2011) who have also expressed freedom of dimensionality in their study.

In conclusion, SERVPERF is an acceptable tool in taxi survey because of its freedom in dimensionality. Technology supported services demonstrate improvement in service quality which has also been determined in this study as mobile-app technology use in taxi hailing has contributed to improvement in service quality in taxi hailing. Significance of service quality dimensions vary in different studies.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter entails summary, conclusion, recommendations from the study, study limitations and suggestions for further studies.

5.2 Summary

Summary is based on objectives of this study. The objectives are: to determine whether mobile-app adoption in taxi hailing services leads to better service quality as compared to traditional taxis and to determine significant service quality dimensions in the measure of perceived service quality for both traditional and mobile-app based taxi services. This study was carried out due to the fact that there is limited scientific evidence to suggest mobile-app taxi hailing which is a technology supported platform has improved taxi hailing services or not. SERVPERF model was used as a guide to create the taxi survey questionnaire. The questionnaire consisted of 25 items, the items were classified under 5 service quality dimensions. The questionnaire was self-administered to club and restaurant patrons across Nairobi, Kenya. An infinite sample size of 385 respondents was determined, while the study targeted 400 respondents who have used both traditional and mobile-app taxi services. 395 valid responses were acquired and analyzed, findings indicated that the mobile-app taxi model is better in references to service quality as compared to the traditional taxi model, this signified that mobile-apps as an information technology has led to improvement in service quality in taxi hailing services. Service quality dimensions were all significant as per the second objective for both taxi models.

5.3 Conclusion

The first objective was to determine whether mobile-app adoption in taxi hailing services led to better service quality as compared to traditional taxis. Findings indicate mobile-app taxi model is the preferred taxi model as compared to the traditional taxi model in reference to customer perceived service quality, 395 respondents gave a better rating to mobile-app taxi model as compared to the traditional model. The paired difference in means test also proved there is a significant difference in the means of mobile-app taxi and traditional taxi services. We therefore conclude that mobile-app taxi model has improved service quality in taxi hailing.

The second objective was to determine the significant service quality dimensions in the measure of perceived service quality for both traditional and mobile-app based taxi services. Findings indicate that all the dimensions were significant for both mobile-app and traditional taxi hailing services. We conclude that all dimensions were important in customer perception of service quality in both taxi services. We therefore affirm the value of technology in improving service quality through creation of operations efficiencies and customer convenience.

5.4 Recommendations

The study recommends embracing of technology in taxi hailing activities in order to gain from advantages brought about by technology. Taxi service providers can embrace technology in taxi hailing in order to maximize on operation efficiencies and increased customer convenience as a result of mobile-app technology, while customers can maximize on advantages of using mobile-app based taxi services.

The study recommends focus on all service quality dimensions in an effort to improve service quality of taxi services.

5.5 Limitation of the study

The population being studied was wide and scattered therefore making data collection relatively difficult. In some instances, it was difficult to get information due to customers' lack of interest. Finance was also a limiting factor as data collection involved hiring of research assistants. The scattered nature of the population led to collection of data in different locations within Nairobi therefore leading to higher costs involved in data collection.

5.6 Suggestions for Further Study

The study suggests undertaking of further studies in relation to taxi mobile-app technology ease of use and acceptance. Studies can be undertaken on competitiveness as a result of increased adoption of mobile-apps for taxi hailing services. Further studies can be carried out to determine other ways of improving service quality in taxi hailing services. Future studies that relate to service quality in taxi hailing can be extended beyond Nairobi to other cities in Kenya.

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APPENDICES

APPENDIX 1: LETTER OF RECOMMENDATION



UNIVERSITY OF NAIROBI SCHOOL OF BUSINESS

Telephone: 020-8095398
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsities

Tel: 020 8095398
Nairobi, Kenya

DATE: 02/11/2019

TO WHOM IT MAY CONCERN

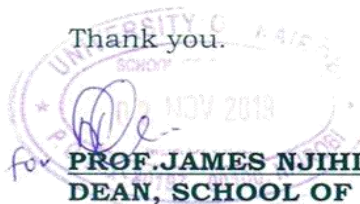
The bearer of this letter, Victor Nyabando Ogeto of Registration Number D61/67825/2011 is a Master of Business Administration (MBA) student of the University of Nairobi.

He/she is required to submit as part of his/her coursework assessment a research project report

We would, therefore, appreciate if you assist him/her by allowing him/her to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.

A circular purple stamp from the University of Nairobi School of Business, dated NOV 2019, with a signature in the center.
PROF. JAMES NJIHIA
DEAN, SCHOOL OF BUSINESS

APPENDIX 2: QUESTIONNAIRE

TAXI SERVICE QUALITY SURVEY QUESTIONNAIRE

I am currently an MBA student at the UON carrying out a survey on service quality of traditional taxi hailing and mobile application based taxi hailing services.

Kindly spare a few minutes to fill out the questionnaire. Thank you in advance.

The questionnaire is in two parts: Personal Information and Perception (Experience) from taxi hailing services.

SECTION A: PERSONAL INFORMATION

	For each of the below, Kindly mark one options with (X)		
1	Gender	Male : <input type="checkbox"/>	Female : <input type="checkbox"/>
2	Age (Years)	18-30 : <input type="checkbox"/>	31-40 : <input type="checkbox"/> 41-50 : <input type="checkbox"/> Above 50 : <input type="checkbox"/>
3	Employment Status	Employed : <input type="checkbox"/>	Self Employed : <input type="checkbox"/> Unemployed : <input type="checkbox"/>
4	Have you used traditional taxis? If Yes, please proceed to the next question. If No : Kindly, do not proceed further.	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
5	Have you used Mobile-App based taxis? If Yes, please proceed to the next section. If No, Kindly, do not proceed further.	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>

SECTION B: PERCEPTION (EXPERIENCE)

For each statement below, from **P1** to **P25**, use (X) to show the number that best represents your experience with both traditional and mobile-app based taxi hailing services.

Give a general experience that best suites traditional taxi and mobile-app based taxi hailing services.

Kindly rate each statement with the below guide:

Strongly Disagree

Strongly Agree

1

2

3

4

5

PERCEPTION (EXPERIENCE)		TRADITIONAL TAXI SERVICES					MOBILE-APP TAXI SERVICES				
TANGIBLES		1	2	3	4	5	1	2	3	4	5
P1	Taxi vehicles are modern										
P2	Taxi vehicles interior & exterior is visually appealing (Clean, Comfortable, Spacious, Attractive)										
P3	Taxi drivers are neat appearing										
P4	Taxi related materials(receipts/statements) are visually appealing										
RELIABILITY		1	2	3	4	5	1	2	3	4	5
P5	When taxi service providers promise to solve grievances by a certain time, they do so										
P6	When you have a grievance, the taxi service provider shows a sincere interest in solving it										
P7	The taxi driver will not cancel a taxi request										
P8	The taxi driver will arrive on time for pickup and drops										
P9	The taxi driver understands the routes and locations for pickups and drops										
P10	Taxi service providers have convenient payment options										
P11	There is convenience in taxi booking and taxi boarding (Ease, speed, vehicle availability)										
RESPONSIVENESS		1	2	3	4	5	1	2	3	4	5
P12	The taxi service provider will notify the customer exactly when passenger pickup or drop will be performed.										
P13	The taxi service provider will give prompt services to the customers.										
P14	Taxi drivers will never be too stubborn or busy to respond to customer requests.										
ASSUARANCE		1	2	3	4	5	1	2	3	4	5
P15	Drivers are professional and follow traffic rules and regulation										
P16	You feel safe and secure when riding a taxi										

P17	Drivers are consistently courteous with you													
P18	Prices are determined in advance, well communicated and do not vary at the end of trips													
P19	Price is fairly consistent and there is value for money													
P20	Taxi service providers have driver, vehicle and customer tracing capabilities in case of any issues arising.													
EMPATHY		1	2	3	4	5		1	2	3	4	5		
P21	Taxi service providers have customer feedback options, driver rating options and customer follow up options													
P22	The taxi service providers will have operating hours convenient to the customer													
P23	Employees/Drivers are not mean and are attentive to you													
P24	Taxi drivers will always be willing to assist customers (boarding and luggage)													
P25	Taxi service providers understand your specific needs													