

**IMPACT OF CASH LITE PAYMENT SYSTEM PERFORMANCE IN  
PUBLIC SERVICE VEHICLES IN NAIROBI CITY COUNTY**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT  
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## DECLARATION

This research project is my original work and has not been presented for a degree in any other university or for any other award.

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## **DEDICATION**

This project is dedicated to Almighty God, my family and my fellow post graduate students of Masters of Business Administration (MIS), School of Business University of Nairobi.

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Finally I thank my colleagues, lecturers and friends who provided me with support and encouragement while carrying out this research.

## ABBREVIATIONS AND ACRONYMS

<b>ATM</b>	: Automated Teller Machine
<b>BTCA</b>	: Better Than Cash Alliance
<b>BFA</b>	: Bankable Frontier Associates
<b>CBK</b>	: Central Bank of Kenya
<b>CBN</b>	: Central Bank of Nigeria
<b>CPS</b>	: Cash Lite Payment System
<b>FSDK</b>	: Financial Sector Deepening, Kenya
<b>ISSM</b>	: Information Systems Success Model
<b>MVOA</b>	: Matatu Vehicles Owners Association
<b>NTSA</b>	: National Transport Safety Authority
<b>NPS</b>	: National Payment System
<b>NFC</b>	: Near Field Communication
<b>OTC</b>	: Over The Counter
<b>PIN</b>	: Personal Identification Number
<b>PDQ</b>	: Process Data Quickly Machine
<b>PSV</b>	: Public Service Vehicle
<b>RFID</b>	: Radio Frequency Identification
<b>SACCO</b>	: Savings and Credit Co-operative
<b>SPSS</b>	: Statistical Package for Social Sciences
<b>TAM</b>	: Technology Acceptance Model
<b>TRA</b>	: Theory of Reasoned Action

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## **ABSTRACT**

This study was carried out with the aim of investigating the effect of adopting Cash Lite payment system on the performance of the public service crew in Nairobi. The study sought to achieve four objectives: evaluate the extent of use of Cash Lite payments system; evaluate the performance of Cash Lite payment system; evaluate the benefits of using Cash Lite payments system and evaluate the challenges in the use of Cash Lite Payment system. The target population for the study was all the PSVs operating in Nairobi City County and out of which a sample of 105 respondents was selected through stratified random sampling. Primary data was collected through questionnaires administered to the Public Service Vehicles Crew members since they are the ones who use the system to collect fare. The data collected was analyzed using percentages, descriptive statistics and regression analysis. The findings revealed that 44 percent of the PSVs use the system to a moderate extent to collect fare, 38 percent to a small extent used the system to collect fare, and 17 percent are not using the system at all in collecting fare. There is an unwillingness of the crew to report the correct daily collections hence why few are using the system. The study revealed 82.7 percent of the crew interviewed said increase daily collections was only to a small extent. Some of the reasons cited include delays in technical support.. However, the respondents indicated that the system is easy to use and over 55 percent had received some training on how to use it. Accessing timely technical support was a challenge 56.9 percent of the respondents said their access to timely technical support was to a small extent. Ease of maintenance was cited as a challenge especially handover of gadgets between crew of different. Moderate positive correlations were found between the performance of the crew and frequency of using the system to collect the fares; training on usage and type of gadget adopted. The PSV crew studied revealed that the adoption of the Cash Lite payment system explains 39.9 percent of their performance. If adoption is enforced, Cash Lite system has the potential to improve on the Crew performance.



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

The Public Service Transport in Kenya has 635 registered Public service Vehicles, Savings and Credit Co-operatives (SACCO) and over 25,000 PSVs spread across major towns in Kenya, National Transport Safety Authority (2015). Matatus are the informal Para transit industry in Kenya that provide service to millions of people a day and are essentially the backbone of the transport system in Nairobi (Graeff, 2009). Late 2014, Transport Licensing Board of Kenya ruled they will not issue Licenses to investors entering the Industry until they comply with a stringent set of rules including a Cash Lite system to collect fares.

Kenya is ranked second in Africa among countries that have significantly adopted Cash Lite payments system, according to the results of a new global survey (Kariuki, 2013). In his report, 27 percent of Kenyans had fully adopted the Cash Lite system for settling bills, buying goods and paying for various services with the number rising sharply due to reliable mobile phone Cash transactions.

Governments and business institutions globally have made slow and steady steps towards the goal of having a society transacting without Cash (Moody, 2010). The Cash Lite payment system is thus being seen as a more convenient method of payment by mainstream businesses and even government run institutions.

### **1.1.1 Cash Lite Payment System**

The evolution from Cash heavy to Cash Lite has gone through several stages where some payers and recipients of payments shifted from Cash and Cheques to electronic payments. Cash Lite payment system is described as a system where monetary transactions are performed with minimal contact with “hard Cash” in form of coins or banknotes and instead carried using credit / debit cards or electronic transfer of funds in e-wallets (Sanusi, 2011).

Cash Lite payments grew a result of the comfort out of electronic stores of value making bill payments easy and hence people developed the willingness to pay their bills electronically. Cash Lite economy does not refer to an outright absence of Cash transactions in the economic setting but one in which the amount of Cash-based transactions are kept to the barest minimum. It is an economic system in which transactions are not done predominantly by exchange of actual Cash (Daniel, Swartz & Fermar, 2004).

The National Payment System (NPS) Regulations 9 issued in 2014 have codified many of the regulatory practices developed since the introduction of mobile money in 2007, when CBK, the regulator articulated a prudential framework that laid out requirements in ‘letters of no objection’ to mobile operators. The NPS Regulations also addressed emerging market conduct and ecosystem issues, such as competition, interoperability, consumer protection, and governance (NPS volume 9, 2014). Transactions can now be completed without physical exchange of Cash through use of plastic cards and mobile phones. The Cash Lite Payment system is a convenient, safer and faster means of payment (Martin, 2011).The Cash Lite payment system in Public Service Vehicles is

gaining ground in Nairobi City County, despite the numerous hitches that have hit its grand launch.

### **1.1.2 Performance of Cash Lite Payment Systems**

The use of Cash Lite services has tripled since 2011 when Cash payments stood at Sh180.6trillion (\$21 trillion), 34 per cent of total global consumer spend while Cash Lite payments amounted to Sh361.2 trillion ( Kariuki , 2013). There is so much market inertia supporting old ways of doing things – use of hard Cash, in the face of significant technical innovation (Hove, 2007) in his studies done on Cash Lite payments in Europe revealed a number of reasons why Cash is still the way of transacting. This included; Cash is familiar to them and quick to exchange at least for low values, the public finding it difficult to assess the security and establish trust with the new systems and the difficulty of supplanting established payment mechanisms and standards due to the microeconomic characteristics of payments markets and a new payment device could be intrinsically clearly superior. This however, by itself will not guarantee its success in the market.

(Bolt & Humphrey, 2007) report that store-value cards accounted for just over 1 billion euros in payments across 11 European countries in 2004. Yet in that year the value of debit card transactions was estimated to be over 1 trillion euros. Debit, and especially credit, cards are still costly instruments for customers who use them for very small transactions (less than 5 euros). Cash still accounts for 85 percent of global consumer transactions and 94 percent of Consumer transactions in Kenya (McKinsey Global Payments Map, 2014).

### **1.1.3 Benefits Cash Lite Payment System**

There are a number of Cash Lite payment systems have been adopted by some transport sectors in countries such as United States, Switzerland and United Kingdom. The most common ones being Octopus, Oyster and Mobile payments which have had a great impact on the public transportation industry: increased efficiency, speed, ease of use, and convenience of the payment process. Octopus is a self-standing reloadable store-of value system operated by a single company; is topped up through a variety of mechanisms, including through Cash machines and can be used to make small payments (less than 5 euros).

Octopus is now also a stored-value smartcard, and in no small part helped by very favorable ticket pricing schemes, Octopus is growing out of the subways and ferry stations where it developed and is becoming an accepted form of payment at many retail establishments. This model is being replicated by mass transit consortia in many countries (Chau, 2003).

Cash Lite payment options have benefitted both the vehicle crews and their passengers by reducing the risk of crime - thugs mainly target holders of hard Cash, whether in large or small amounts for quick crimes, PSV crew members carrying large sum of money and disappearing with the day's collection. Cash Lite cards also increase financial discipline to the card holders and eases reconciliations (Lamikanra, 2012).

### **1.1.4 Challenges facing successful implementation of Cash Lite Payment System**

Customers are culturally accustomed to using Cash, and hence a Cash-substitute product does not need to be simply “as good as Cash,” it needs to be better to justify the switch.

The utility of the new payment mechanism can be evaluated on two core fronts: convenience and ubiquity. Cash Lite payments are seen by many as a new channel that could make fare collection more efficient and convenient there is opposition towards its proper implementation (Microfinance, 2010). A near ubiquitous nature of POS increases the usefulness of the cards though it depends on the adoption of card-reading devices by merchants – PSV crew yet to fully embrace the solution. However, the store will realize these benefits only if a significant proportion of PSV vehicles adopt the new payment mechanism (Clarke & Roger, 1996). Some of the issues raised include: inter-operability of hand held gadgets like smart phones and POS, initial low levels of acceptance rate and consumer interest.

Costs and benefits analysis of Cash and alternative payment schemes shows they are not distributed evenly across all players. From the merchant side, it is common for smaller merchants to prefer Cash despite the theft and fraud concerns, and it is only the larger merchants who want to improve efficiency by adopting e-payments (Jones, 2008).

There is lack of proper coordination and support from other levels of government like traffic marshals and police and other enforcement agencies (Suri, 2011). Other challenges include: low level & unstable internet provision and poorly developed telecommunication network, lack of suitable legal and regulatory framework for Cash Lite payments (James, 2012). Efficient safe and convenient electronic payments carry with them a significant range of macro-economic benefits. —The impact of introducing electronic payments is akin to using the gears on a bicycle. Add an efficient electronic payments system to an economy, and you kick it into a higher gear. Add better-controlled consumer and business credit, and you notch up economic velocity even further (Cobb, 2005).



### **1.1.5 Cash Lite Payment System in the PSV Sector in Nairobi City County.**

The National Transport & Safety Authority Act Legal Notice 23 of 2014 was formed and in line with the National government of Kenya National Payment Integration System tasked NTSA to drive the agenda to embrace automation of fare collection. The process of the implementation of the system is ongoing with banks (Kiarie, 2014).

Currently, there are several Cash Lite cards operated by different banks in partnership with the matatu owners and registered SACCOS. They include: “My 1963”, the Abiria and Pepea card, the Bebapay, and Beba card (Igadwah, 2014).

### **1.2 Research Problem**

Cash Lite payment systems create convenience for the passengers, matatu owners and PSV crew members (Kuan, Bock & Vathanophas, 2005) in their adopted construct of (Delone & Mclean’s, 2002) ISSM classified usability attributes into three quality dimensions i.e. information quality, systems quality and service quality. We seek to evaluate the performance of Cash lite payment systems as highlighted by concerns below:

Cash is expensive. While we are unaware of any cost analysis in a developing country, several studies in the US, Canada, and Europe have estimated that a shift from Cash to electronic payments can save a country 1–2 percent of GDP. In Cash Lite payment system, completing a transaction is as simple as clicking your mouse and electronic payment lowers costs for businesses (Hord, 2005). The more electronic and card based payments are, the less money is spent on paper, postage, cost of hiring security, end of day reconciliations and banking hours.

Cash costs put up barriers to financial inclusion. A shift toward electronic transfers—with the right kinds of features—could potentially help the poor masses – the biggest proportion of commuters improve their budgeting and save more, and with less effort. The matatu owners, crew members keep no records of their daily transactions making financial services providers shy away or price their products to them expensively since they are unable to properly access their financial strengths. Financial Sector Deepening (Zollmann & Cojocar, 2011).

Electronic payments play a role in enabling better money management. Cash Lite system aims at making the poor masses plan their expenditures in good time (Bankable Frontier Associates, 2012). Majority of commuters in Nairobi City County earn irregular wages and paid by Cash or mobile payments i.e. M-pesa and Airtel Mobile money users can now make peer-to-peer (P2P) transfers, bill payments, and merchant payments, as well as receive social disbursements and international remittances. With 26.2 million mobile money accounts and 12.5 million active mobile money users, the mobile platform offers a convenient additional method for managing money without handling cash. The appeal of these m-banking/m-payments systems may be less about convenience and more about accessibility and affordability (Anyasi F & Otubu P, 2009).

Cash Lite payment solution can lead to reduced Corruption. Adoption of the Cash Lite payment solution by way of a debit card or mobile money payments will reduce hard Cash available for bribes and unlawful subscription fees the police and informal/outlawed groups receive daily. On the other hand, PSV owners have SACCOs and need to make daily contributions out of the day's collections in Cash hence find Cash Lite not as attractive. On the other hand commuters are jittery of the system since it offers no

flexibility in payment of fares especially when fares are adjusted to reflect peak and off peak hours. Other main challenge is loading e-value to the cards since there are no sufficient loading points.

Cash lite payment System offers down stream business opportunities to banks and telecos to increase their value chains especially where cost of communications underpinning the real-time authorization of payments, in markets with limited communications infrastructure or for very low-value transactions (for which the communications cost as a percentage of the transaction cost may be too high). This can be navigated by using “very short-range communications” which include infrared, radio frequency identification (RFID) or near-field communications (NFC) technologies ( Mas & Rotman, 2008). The Cash lite card payment has to work effectively, and therefore the government needs to address the fears of the commuters, PSV crew member and owners of PSV’s. It also needs to address institutional failures of enforcing agencies (Dewole, 2013).

A Two-sided market: electronic forms of payment need to deal with penetrating two sides of the market—customers and merchants (PSVs)—and both need to be cracked at the same time. The problem is particularly acute when the two types of users need to incur specific costs (e.g., for payment terminals) to participate in the market.

The study will seek to answer the following research question; to what extent has the Public Transport Vehicles in Nairobi City County successfully adopted Cash Lite Payment System to realize its maximum Impact?

### **1.3 Research Objectives**

The main objective of the study was to investigate the impact of the Cash lite payment system in the PSV transport sector in Kenya.

The specific objectives of this study were to:

- i. Evaluate the extent of use of Cash lite payments system.
- ii. Evaluate the performance of Cash lite payment system.
- iii. Evaluate the benefits of using Cash lite payments system.
- iv. Evaluate the challenges in the Use of Cash lite Payment system.

### **1.4. Value of the Study**

The aim of the study was to provide invaluable information to the stake holders in Public Service Vehicle transport sector in Nairobi City County and aid smooth implementation and operation of Cash Lite systems. The study uncovered bottlenecks from various stakeholders including the activators, commuters, Matatu Vehicles Owners Association, Matatu Welfare Association and telecommunication operators on their obligations and roles in the successful implementation and utilization of Cash lite system. The study also revealed need for Traffic Law agents to enforce this government led initiative.

The study is of value to the government of Kenya and it will be able to come up with policies and legislation aimed at regulating the Public Vehicles Transport Sector towards the use of Cash lite payment system. Theoretically, the study will contribute to the existing knowledge on Cash Lite payment system in other retail business sectors. This study may be reference to scholars, researchers and add to knowledge and practice.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter, Literature, which is related and consistent with the objectives of the study, is reviewed. Relevant Literature from other studies relating to different payment systems and on common aspects pertaining to utilization of Cash Lite system in the transport sector in Nairobi City County is discussed.

#### **2.2 Theoretical Review**

The following theories will underpin the study:

##### **2.2.1 Diffusion of Innovation Theory**

Diffusion of Innovation is the process by which an innovation is communicated through certain channels over time among the members of a social system .Four major elements that could control the diffusion framework process: innovation, communication channels, time, and social system (Rogers, 2003).

Why do certain innovations (M-pesa consumer to business or business to consumer transfers compared to Plastic Travel Cards) spread more quickly than others? The five characteristics of adoption rate of an innovation are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. The higher the degree to which an individual recognizes the advantages of an innovation, the faster the adoption rate will take place. Compatibility is the degree to which an innovation is perceived as being consistent with existing values, past experiences, and

needs of potential adopters. If an idea is inconsistent with the values and norms of a social system, it will have an extremely slow adoption rate compared with the adoption rate of a compatible idea. Complexity is the degree of the innovation's difficulty to be understood and used. Innovations that is easy to understand and use claim higher adoption rates than do complicated innovations. Trialability is the degree to which an innovation may be experimented with on limited bases. New innovations that can be tried before adoption will be adopted quickly, giving individuals a sense of assurance for adaptation. Observability is the degree to which the results of an innovation are visible to others. The easier to see positive results of an innovation, the more likely users will be adopting it (Rogers, 1995).

The innovation-decision process; when an individual passes from first knowledge of an innovation to forming an attitude about the innovation. Time involved in the innovativeness of an individual is relative to the earliness/lateness of adopting the innovation. Time involved in the rate of adoption of a system is measured as the number of members of the system adopting the innovation in a given time. Another element in adoption of an innovation is the social system, which is a set of interrelated units that are engaged in joint effort to accomplish a common goal. Are all players in the Public Service Vehicles engaged for a common purpose of Cash Lite system of collecting fares?

### **2.2.2 Institutional Theory**

The institutional theory points out that the beliefs, attitudes and behaviors of individuals and organizations are strongly influenced by various networks and interactions (Scott, 2001). It also addresses the role of institutions in understanding the behavior of social actors, and provides a perspective which can help assess the institutions' formal and

informal rules that can strongly shape the beliefs, attitudes and behaviors of social actors (North, 1989; Burkhardt, 1994).

The institutional theory holds that the institutions' influences on the beliefs, attitudes and behaviors of social actors are secret but pervasive. Scott noted that institutionalization should be better viewed as the 'social process by which individuals came to accept a shared definition of social reality' (Scott, 1987) and defined institutions as 'social structures that have attained a high degree of resilience' (Scott, 2001).

Once internalized, or encoded into actors through a socialization process, institutions transform into a particular pattern of attitudes and behaviors, which will shape actors' future attitudes and behaviors and provide stability, order, continuity and meaning to social life. When institutions are established, they become authoritative guidelines for social behaviors (Scott, 2004). Thus organizational structures and processes become ingrained in the organization, and become 'taken for granted' as 'the way these things are done' (Scott, 1987). Therefore, the actors may not even realize that their behaviors are in fact partly shaped by institutions. Institutions guiding adoption of Cash Lite system include Banks, NTSA and Traffic Law enforcers.

### **2.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)**

This is a technology acceptance model formulated by Venkatesh and others in "User acceptance of information technology: Toward a unified view". The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior. This theory would therefore help explain a number of factors that determines the adoption of the Cash Lite payment system The theory holds that four key constructs: performance

expectancy, effort expectancy, social influence, and facilitating conditions; the first three being direct determinants of usage intention and behavior, and the fourth a direct determinant of use behavior. Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behavior (Venkatesh & Morris, 2003).

### **2.3 Review of Past Literature**

Commercial non-Cash electronic transactions, which is the focus of this paper, usually involves a payer and a payee exchanging money for goods or services, and one or two financial institutions acting as an issuer on behalf of the payer or an acquirer on behalf of the payee (Briggs & Brooks, 2011).

Use of the Cash Lite payment system is determined by several factors i.e. competition, government regulations, volume of transactions among others. This study concentrates on the three main factors contributing to the use of Cash Lite payment system by PSV in Nairobi City County. These factors are cost of Cash transactions, friendly technology, security concerns and interoperability of activator driven solutions.

Friendly Technology. Technological advancement has provided efficient and effective payment system devoid of “Cash and carry syndrome”. Specifically, Cash Lite payment system has provided a medium through which economic exchanges take place without visiting brick and mortar banks or with no physical presence of the transacting parties. Cash Lite solutions allow travelers to tap their preferred plastic cards across all Cash Lite public transport vehicle portable gadgets. It is the government’s strategy to ensure the



success of the project ahead of the revised December deadline for a ban on Cash transactions.

As such is friendly the technology, it offers convenience to passengers as they do not need to invest in multiple cards. Cash is becoming increasingly redundant with the rise of contactless payment systems and digital wallets (Nichols, 2013). Public awareness to the stakeholders is important to increase acceptability of these Cash Lite payment modes

Cost of Cash Transactions. Security is a major concern that has contributed to adoption of Cash Lite payments system. High Cash usage enables corruption, leakages and money laundering, amongst other Cash related fraudulent activities (Okechi & Kepeghom, 2013). The Kenyan government through NTSA has introduced regulations to operate Cash Lite system for the public fare. This is expected to reduce corruption and losses experienced by passengers and matatu owners when touts disappear with their money. The agency requires providers of Cash Lite public vehicle payment systems to seek clearance from the Central Bank of Kenya (CBK) as a strategy to ensure matatu owners' deposits are protected.

Improving performance of the public transport sector involve increasing the speed of delivery, enhancing the flexibility of the public transport sector, and achieving economies of scale which are the main characteristics of production and efficiency practices. These activities work together to achieve better productivity performance, lower cost of operation, higher quality, and better commuter service (Liu, et al, 2002).

Cash Lite payment system successful adoption and implementation process is a necessary condition towards increasing public transport vehicle sector efficiency. The Cash Lite

payment system strategies must have adaptive human resources capital available since it directly affects performance and that innovativeness is a mediating factor (Calantone et al., 2002; García-Morales et al., 2007)

Enforcement to ensure that the over 25,000 PSVs in Kenya have implemented the Cash Lite payment system and are using it would be a daunting task for the government. It is therefore argued that the success of the developmental efforts requires universal acceptability and market arrangements on the basis of cooperation with institutions involved (Baddeley, 2004).

Interoperability of POS, Smart phones and other hand held gadgets. Economies of scale accruing from e-payments are characterized by large fixed costs (merchant terminals, value loading machines, servers) and very small marginal costs. This creates significant barriers to entry and delays the point at which newer solutions can be justified on a business case basis. On the other hand Network economies: the value of the payments network grows with the number of economic agents using it. (David Humphrey et al, 2007). The greatest challenge faced by public transport vehicle sector managers when implementing Cash Lite payment system in their public transport vehicle sectors is balancing Cash Lite payment system goals and economic realities (Laaria, 2013).

Public transport vehicle managers/crew-level factors, public transport vehicle sector-level factors and financial and regulatory system-level factors determine implementation of Cash Lite payment system in public transport vehicle sectors. Partnerships or cooperative ventures are therefore born of diversity and require capitalizing on that diversity to achieve joint ends (Gray, 1989).

Knowledge, Beliefs and Attitudes. Beliefs and attitudes play a fundamental role in the way that public transport vehicle crews will deal with Cash Lite payment system in the public transport vehicles. In other words, dealing effectively with Cash Lite payment system, relates not only to knowledge of Cash Lite payment system, but also to individuals' attitudes and perceptions regarding Cash Lite payment tools. Actual use of Cash Lite payments depends largely on public transport vehicle crews' personal feelings, skills, and attitudes towards it. The successful implementation of Cash Lite payment system in public transport vehicle sector greatly depends on the effectiveness of public transport vehicle sector leaders to manage change (Laaria, 2013).

(Makhonu, 2010) argues that other costs like duties and taxes levied on Cash Lite payment system products have made it impossible for poor public transport vehicle sectors in implementing effective Cash Lite payment system. The author notes that there are other costs that the public transport vehicle sector manager has to factor in before embarking on implementation of Cash Lite payment system are, costs for training crews, infrastructure and maintenance costs of the equipment.

Public transport vehicle crews hold negative attitudes towards use of Cash Lite payment system ranging from mild anxiety to extreme avoidance (Laaria, 2013). Technical support is vital in maintaining confidence of public transport vehicle crews and managers as to the reliability of Cash Lite payment system software and other equipment (Makhonu, 2010). As part of an education campaign, commuters and drivers could learn about the education and civic pride campaigns used in Bogotá that introduced a new level of civic pride and organization along the streets of a city that was once described as chaotic and hopeless (Grava & Sigurd , 2003).

The government needs to provide adequate manpower, train and retrain personnel on Cash Lite payment system program management. This will help to ensure that these personnel become conversant with Cash Lite payment system usage, troubleshooting techniques (Chiemeke, 2004).

## **2.4 Summary**

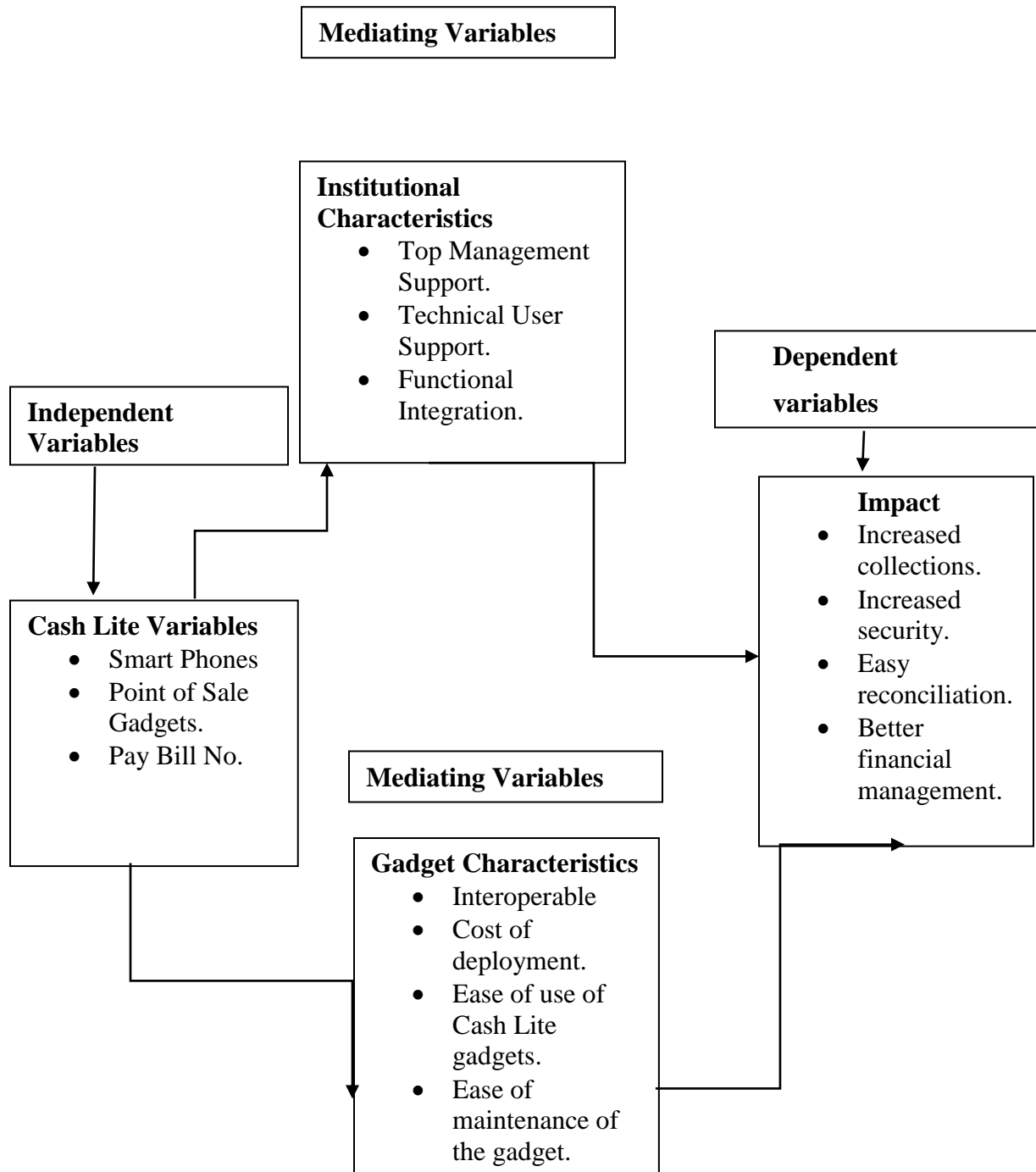
The implementation of Cash Lite payment system in the public transport sector will bring increased revenue to Kenya's economy, sanity to the Public transport sector, reduce avenues of corruption. Regulatory factors, which can vary dramatically from country to country, play a strong role in determining which services can be delivered via which institutional arrangements (Donner & Tellez, 2008). Scholarly research on the adoption and socioeconomic impacts of m-banking/m-payments systems in the developing world is scarce (Maurer, 2008). Even less attention has been paid to the social, economic, and cultural contexts surrounding the use of these systems.

Octopus Ltd issues cards for fare payments in Hong Kong and according to their website, there are more than 25 million Octopus cards in circulation, which is three times the city's population. The company says more than 99 percent of Hong Kong inhabitants, ages 15 to 64, possess an Octopus and more than 14,000 retail outlets accept Octopus. There are more than 67,000 Octopus readers throughout Hong Kong, and 13 million Octopus transactions amounting to roughly US\$18 million are processed daily. The card can be used to pay for small shopping, and to pay for parking fee at municipal parking lots in Hong Kong (Roberti, 2014).

Thus this research study seeks to investigate the strategic impact and performance of the Cash Lite payment system in the transport sector in Nairobi City County, Kenya.

## 2.5 Conceptual Framework

The study can be presented in a conceptual framework as shown in the figure 2.1



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Research Design**

This was descriptive study aimed at giving complete description of the situation, making sure that there is minimum bias in the collection and interpretation of data as defined by (Cooper & Schindler, 2001). The performance of the Cash Lite system in Public Service Vehicles in Nairobi City County was analyzed through a qualitative and quantitative research approach.

#### **3.2 Target Population**

The target population was the over 20,000 independent Public Service vehicles operate in Nairobi according to KNBS statistics 2013. Defined target population as the entire group of individuals or objects in which the researcher is interested in to generalize his conclusions from (Kothari, 2004).

The target sample was drawn from PSV which operate in Nairobi and in sampling aimed at 60 big carrying capacity (over 14 passengers) PSVs and 45 small capacity PSV (up to 14 passengers).

#### **3.3 Sampling Design and Sample Size**

The Nairobi City County Public Service Transport System is of heterogeneous nature; varying passenger capacity of the PSVs, varying number of vehicles per SACCO and not all vehicles have a terminus in the central business district. The study adopted Stratified random sampling technique to determine sample units representative of the population (Cochran, 1963). The researcher identified two strata of the Public Service Vehicles; the

big capacity ones – carrying over 14 passengers and the small capacity vehicles – 14 passengers. The study used purposive sampling as described earlier to select a sample of one hundred and five (105) PSVs which had Cash Lite payment system installed.

### **3.4 Data Collection Procedure**

The study made use of primary data which was collected through administration of a questionnaire. The questionnaire had four sections and was administered to the PSV crew. The researcher administered a questionnaire to all respondents with a cover letter attached explaining the purpose of the study.

### **3.6 Data Analysis**

There are three objectives in data analysis; getting a feel for the data, testing the goodness of the data, and answering the research question (Sekaram, 2003). He further notes that establishing the goodness of data lends credibility to all subsequent analysis and findings because it measures the reliability and the validity of the measures used in the study.

Demographic data was analyzed using descriptive statistics specifically mean, percentages, and standard deviation. The demographic data ; the extent to which PSV crew members have adopted Cash Lite system was analyzed using mean and standard deviation, the impact on performance of PSV was analyzed using correlation and regression analysis between Cash Lite system characteristics and impact of Cash Lite performance.

### **3.7 Ethical Issues**

Prior Informed Consent (PIC) to participate in the study was sought from all respondents before administering research instruments. All respondents were assured of total confidentiality and that the information was to be used only for the purpose of this study.

## **CHAPTER FOUR DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This study was conducted in order to establish the impact of Cash Lite payment systems on the performance of public service vehicles in Kenya. The study had four objectives to achieve: evaluate the extent of use of Cash Lite payments system; evaluate the performance of Cash Lite payment system; evaluate the benefits of using Cash Lite payments system and evaluate the challenges in the Use of Cash Lite Payment system.

### **4.2 Response rate**

Out of the 105 questionnaires administered, 86 were returned resulting to a response rate of 81.9 percent. A response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent (Mugenda & Mugenda, 2003).

### **4.3 Demographic Information**

Questions one to six aimed at collecting demographic information of the PSV. The respondents were required to respond to a total of 6 questions and the results are presented in the sub sections that follow:

#### **4.3.1 Vehicle Carrying Capacity**

The results on demographic information in Table 4.1 reveal that 81.4 percent of the vehicles had a sitting capacity of more than 14 passengers. The findings are presented in Table 4.1



**Table 4.1: Vehicle Capacity**

<b>Number of Passengers</b>	<b>Frequency</b>	<b>Percentage</b>
Up to 14	16	18.6
15 to 34	52	60.5
More than 34	18	20.9
<b>TOTAL</b>	<b>86</b>	<b>100</b>

#### **4.3.2 Type of Cash Lite System Installed**

All the PSV vehicles whose crew were interviewed have adopted some form of Cash Lite payment system, with the Point of sale machines (PDQ) were 80.2 percent. The PDQ machine is a popular Cash Lite tool in other sectors of the economy like Cash and carry shops, petrol stations, super markets amongst many other who accept card payments. Also most PDQ machines accept plastic cards from more than one issuer. Findings are presented in Table 4.2.

**Table 4.2: Cash Lite System Installed**

<b>Gadget installed</b>	<b>Frequency</b>	<b>Percentage</b>
PDQ	69	80.2
Pay bill No.	10	11.6
Smartphone	7	8.2
<b>TOTAL</b>	<b>86</b>	<b>100</b>

#### **4.3.3 Crew Training on operating Cash Lite System**

A slight majority of 55.8 percent have been trained on the gadget installed in their vehicle. This can be associated to factors like high crew turn over in the industry, crew working in shifts missing out opportunity to be trained and the crew being a newly employed. The findings are presented in Table 4.3.

**Table 4.3: Crew Training**

<b>Crew Training</b>	<b>Frequency</b>	<b>Percentage</b>
Trained	48	55.8
Not trained	38	44.2
<b>TOTAL</b>	<b>86</b>	<b>100</b>

#### **4.4 Cash Lite System Features.**

This section of questionnaire needed the respondents to describe the features of the Cash Lite system installed in their vehicle. The findings are in Table 4.4.

**Table 4.4 Gadget Features**

Findings presented as a percentage of the total (%)

<b>Extent</b>	<b>Very large</b>	<b>Large</b>	<b>Moderate</b>	<b>Small</b>	<b>Not at all</b>	<b>Mean</b>	<b>Var</b>	<b>SD</b>
The portable gadget was easy to use	6.98	55.81	20.93	16.28	0.00	2.53	0.72	0.85
Technical support is offered by the Vendor	1.16	4.65	60.46	32.56	1.16	1.72	0.39	0.63
The portable System is easy to maintain.	3.49	4.65	54.65	37.21	0.00	1.74	0.50	0.71
The Cash lite system reads different activato	34.88	46.51	6.98	0.00	11.63	2.93	1.48	1.22

#### **4.4.1 Relative Ease of use of Cash Lite System**

Out of the 86 respondents, 55.81 percent indicated a large extent of ease of the Cash Lite system adopted. A mean ease of use of 2.53 out of a scale of 4 was obtained indicating that the general crew population were generally conversant to a moderate extent on Cash Lite system use. The standard deviation of 0.85 indicate a majority of the respondents finding ease of use of between small extents to a large extent. The findings is contained in Table 4.4.

#### **4.4.2 Inter-operability of the Cash Lite system Adopted**

This section of the questionnaire aimed to find out as to whether the Cash Lite system employed could accept read from different activator cards, 46.5 percent of the respondents agreed the systems installed could accept different cards. A standard deviation of 1.21 showed a wide disparity in responses with some on the extreme end of accepting many cards to the other extreme end of not accepting more than one card. The findings are Table 4.4.

#### **4.4.3 Operational Ease of Maintenance.**

The study sought to find out whether the Cash Lite payment system adopted by the public transport vehicles is easy to maintain. The research findings established that majority of the PSV crew at 54.65 percent indicated that the system is easy to maintain to a moderate extent; 37.21 percent of the respondents indicated that the system is easy to maintain to a small extent and less than 10 percent revealed that the system is easy to maintain to a large extent. On the operational ease of use, the findings reveal that a mean of 1.74 out of a maximum 4 was achieved which is fairly low. Some of the issues that can be associated difficulties in operational ease of use include high crew turn over, access to power, ease of securing the Cash Lite gadgets and high costs of replacement of gadgets. Standard deviation of 0.71 also indicating a fair spread of responses from a small extent to moderate extent in terms of ease of use. The findings are presented in Table 4.4.

#### **4.5 Benefits of the Cash Lite Payment System**

This section of the questionnaire aimed to find out the benefits of Cash Lite system and to what extent it is being used to collect fare. The responses were subjected to descriptive

analysis and the results are tabulated in Table 4.5 .The respective benefits are discussed in sub sections that follow.

### **Table 4.5 Benefits of the Cash Lite Payment System**

Findings presented as a percentage of the total (%)

<b>Extent</b>	<b>Very large</b>	<b>Large</b>	<b>Moderate</b>	<b>Small</b>	<b>Not at all</b>	<b>Mean</b>	<b>Var</b>	<b>SD</b>
To what extent do you use the portable gadgets collect	0.00	0.00	44.18	38.37	17.44	1.27	0.55	0.74
Daily collections have increased using cash lite gadgets	0.00	2.33	5.81	87.20	4.65	1.05	0.20	0.44
You are able to reconcile daily collections easily	0.00	86.04	11.63	2.33	0.00	2.83	0.19	0.43
Cash lite system has made fare collection hustle free	3.49	73.25	15.12	5.81	2.33	2.69	0.27	0.52
Reduced hard cash results to improved security	2.33	80.23	15.12	2.33	0.00	2.82	0.25	0.50
Generally, it is cost saving using the cash lite gadgets	1.16	2.33	39.53	37.21	19.77	1.28	0.72	0.85

#### **4.5.1 Adoption of Cash Lite system in collecting fare**

From the findings in Table 4.5, 44.18 percent of the crew moderately used the Cash Lite system to collect fares while 38.37 used the Cash Lite system to a small extent. Further, a mean of 1.27 was achieved out of a maximum 4– representing a small extent of use of Cash Lite system by the crew members interviewed. A standard deviation of 0.74 shows a range of spread of the means between 0.53 – not using the Cash Lite system to collect fares to 2.01 using the system to a moderate extent to collect fares. Table 4.5 presents a summary of the findings.

#### **4.5.2 Benefits and performance of crew using Cash Lite systems**

Increase in daily collections. The findings of the study reveal that 87.2 percent of the crew interviewed saw an increase in collections to a small extent. A mean of 1.05 out of

maximum 4 and standard deviation of 0.44 indicate that most respondents increased daily fare collections to a small extent.

Ease of reconciliation .The findings from the study, 86.04 percent of the crew said the system made it easier for them to reconcile their daily collections. A mean of 2.83 and a standard deviation of 0.43 also implied that most of the respondents agree that the Cash Lite payment system assisted them to reconcile the daily collections from moderate to a large extent.

From the findings, 73.25 percent of the respondents said fare collections is hustle free using the system had a mean of 2.69. A standard deviation of 0.52 indicated that responses on fare collections being hustle free was varied between moderately hustle free to a large extent hustle free.

The study findings indicate that 39.53 percent of the respondents had a moderate savings on operational costs. Further 37.21 percent of the PSVs said the savings on cost has only been realized to a small extent. A standard deviation of 0.85 on the mean of 1.28 out of a maximum of 4, shows a wide range of responses of between a small extents on cost savings to a moderate extent. This might be associated to operational cost like hire / purchase of gadgets and hence more needs to be done to ensure that the Cash Lite payment system achieves cost savings in.

The findings revealed, 80.22 percent of the crew felt more secure to a large extent. A mean of 2.82 out of a maximum of 4 and a standard deviation of 0.50 further confirms that the crew were more secure collecting fares using Cash Lite system probably since

they had less hard Cash which is a target of hijackers and petty thieves. The findings are in Table 4.5.

#### 4.6 Challenges of Cash Lite Payment System

The results in Table 4.6 show a summary of the challenges faced by the public service crew in the use of Cash Lite payment systems. The respondents were provided with possible challenges and were required to indicate the extent to which they agreed with the statements. The responses were subjected to descriptive statistics and the results are presented in Table 4.6.

**Table 4.6 Challenges of using Cash Lite System.**

Extent	Very large	Large	Moderate	Small	Not at all	Mean	Var	SD
It is easy to adjust fares using the Portable gadgets.	1.16	4.65	23.25	53.48	17.44	1.42	0.73	0.85
The portable gadgets accept payments from different activ	4.65	55.81	23.25	13.95	2.33	2.81	0.80	0.89
You have access to timely technical support	2.33	10.46	20.93	56.97	9.30	1.39	0.78	0.88
The cost of acquiring a portable gadget is friendly	1.16	2.33	3.49	75.58	17.44	0.94	0.41	0.64

##### 4.6.1 Initial cost of installing the Cash Lite system.

The study findings in Table 4.6. indicated that the Cash Lite payment system read and 55.81 percent of respondents said gadgets accepted payments from the other different activator cards as supported by and a mean of 2.81 and a standard deviation of 0.89 which indicated a range of responses between reading and accepting from other activator cards to large extent and others saying it was to a small extent.

Initial cost of installing the Cash Lite system, 75.58 percent of the respondents said the initial set up cost of the system was unfriendly, a mean of 0.94 out of a maximum of 4 supported that most of the crew members felt the initial cost of installation was

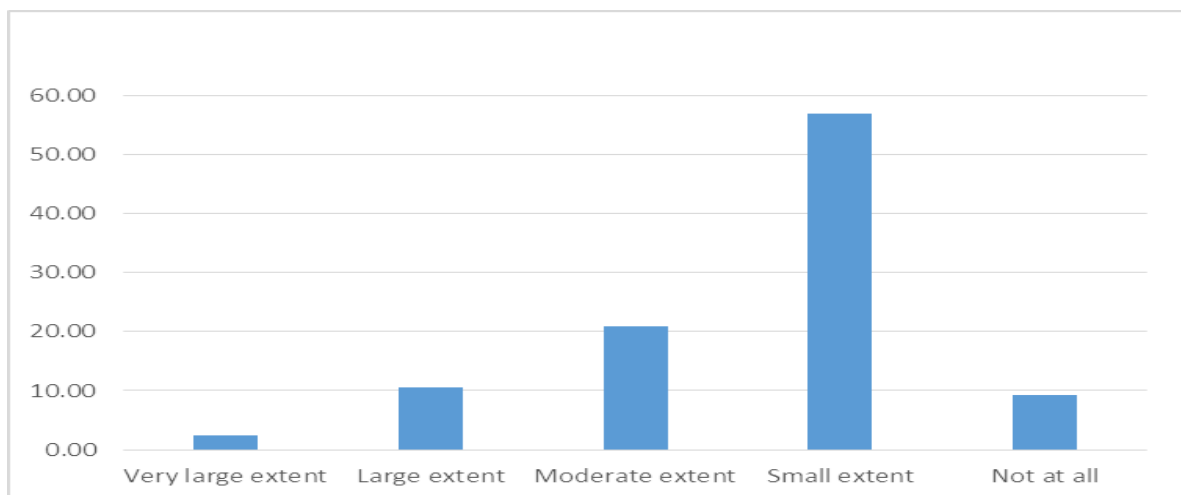
unfriendly. A standard deviation of 0.64 further confirmed the responses coalesced the cost of installing was friendly to a small extent.

Flexibility of adjusting fares. From the results in Table 4.6, 53.48 percent of the respondents experienced challenges in adjusting fares to a small extent. A mean of 1.42 out of 4 and a standard deviation of 0.85. The variation is fairly significant with responses lying between moderate to small extent ease of adjusting fares pointing out to possible reasons like training and attitude towards the use of Cash Lite system.

#### **4.6.2 Access to timely technical support.**

In this section, as shown by figure 4.1, the study sought to find out if PSV crew received quick and timely technical support on the Cash Lite system they had adopted. The findings show 56.97 percent of the PSV crew indicated that technical support is accessible to small extent and 9.30 percent did not access technical support at all. A mean of 1.39 out of a maximum of 4 and a standard deviation of 0.88 showing a varied responses. Some respondents said access to technical is to a moderate extent and others said they accessed no technical support.

**Figure 4.1: Access to Timely Technical support** (as a percentage %)



#### 4.7 The Relationship between Adoption of Cash Lite System and Crew Performance

The study sought to establish the relationship that exists between performance of the public service crew and the adoption of the Cash Lite payment system. The results are presented in Table 4.7

**Table 4.7 Relationship between adoption of Cash Lite system and Crew performance.**

	Performance of crew	Frequency of use	Training on usage	Type of Gadget	Ease of use
Performance of crew	1.000				
Frequency of use	.609**	1.000			
Training on usage	.542	.499	1.000		
Type of Gadget	.507	.775**	.335	1.000	
Ease of use	.586	.321	.447	.632**	1.000

\*\*Correlation is significant at the 0.05 level (2-tailed)

The research findings in Table 4.7 reveal that there was a moderate positive correlation of 0.609 between the performance of the public service crew and the frequency of usage of the Cash Lite payment system. There is also a strong positive correlation of 0.775 between type of gadget and frequency of use, the popular gadget being a PDQ machine which reads and accepts payments from various activator cards. The study further established that there was a strong positive correlation of 0.632 between ease of use and type of gadget. From previous discussions (Table 4.2.) there was an indication that adoption of the PDQ machine which was the most preferable gadget with 80.2 percent having installed it. The study findings results show that the type of gadget, the easier it is to use the gadget, and the



higher the frequency of use of the gadgets to collect fares, leads to better the performance of the crew. The findings are presented in Table 4.7.

#### 4.8 Effect of Cash Lite Payment System on Crew Performance

The study sought to establish the effect of the Cash Lite payment system on the performance of the public service vehicle crew. A multivariate regression analysis was conducted between the extent of adoption as the independent variable and the performance of the Cash Lite payment system as the dependent variable. The mean responses in each case were used. The results are presented in Table 4.8

**Table 4.8 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.632(a)	.399	.312	1.43	.399	3.252	2	9	.024

a. Predictors: (Constant) X2, X1, X3

b. Dependent Variable: Y1

The results from the regression analysis reveal that our coefficient of correlation – R squared was 0.399 i.e. we cannot say with certainty that there will be significant changes in dependent variable Y with sufficient changes in predictors ; the variables X1, X2 and X3 representing Frequency of use, Type of Gadget and Ease of use respectively . This is an indication the independent variable Y – Crew performance, 39.9 percent can be accounted for by adoption of Cash Lite system with variables (X1, X2, and X3). This means that a greater percentage of the crew performance, 60.1 percent can be explained

by other factors other than the Cash Lite payment system. It also implies that much needs to be done to ensure that the performance of the Cash Lite payment system explains a greater variance on the performance of the PSV crew.

**Table 4.9: F Statistics to determine if the model was significant.**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations
	B	Std. Error	Beta			Part
1 (Constant)	1.058	.312		2.604	.003	
Frequency of use	2.032	.010	.978	1.309	.002	.312
Ease of use	.828	.021	.639	1.112	.003	.210
Type of Gadget	3.114	.001	.659	2.118	.041	.432

a. Dependent Variable: Performance of crew

### Discussion of Findings

The study assumed significance level i.e. an alpha level of  $\alpha < 0.5$  for the Null Hypothesis; Cash Lite Adoption improves Crew Performance to be true. From Table 4.9 the calculated P values (0.312, 0.210, 0.432) and all less than  $\alpha < 0.5$  hence significant and therefore the Model can be used to predict crew performance. This findings are similar to a study done by Van Hove on Cash Lite payments in Europe in the year 2007. Amongst the reasons given his studies included the public finding it difficult to assess the security and establish trust with the new systems. Zollmann & Cojocaru of BFA and FSD respectively in 2015 revealed that digitization of payments has a potential to deliver a wide range of low-cost financial services to low income earners through track their spending. They however, said developing an inclusive payments systems that help achieve this goal – and that people actively use – is no easy feat. The complete equation can be written as:  $Y = 1.058 + 2.032x_1 + 0.828x_2 + 3.114x_3$

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The main purpose of this study was to investigate the effect of the Cash Lite payment system on the performance of the PSV crew. This chapter presents the summary of findings, conclusion, recommendations made as well as suggestions that will guide future research.

#### **5.2 Summary of Findings**

The study established that majority of public transport vehicles have installed the Cash Lite payment system. The study further established that most of the PSV crew had not received any formal training on the use of the Cash Lite payment system. The research findings also revealed that the Cash Lite payment system was easy to maintain to a moderate extent.

On the benefits of the Cash Lite payment system, it was revealed that the system has not succeeded significantly in improving the fare collection in the Public service vehicles. Much needs to be done to ensure that the system enhances fare collection in the industry. This includes assisting in the reconciling of collections; the system also makes the fare collection hustle free, the crew said security increases with adoption of the system.

Some challenges of the Cash Lite payment system were revealed. The PSV crew did not receive timely technical support from the system vendors of gadgets they had installed hence resorted to collecting Cash. Some crew members mentioned that Cash Lite system led to lack of hard Cash for operational emergencies. Further challenges observed

included handover of gadgets as an operational quagmire since crew member's work in shifts.

The study findings results show that the type of gadget and in this case the PDQ, the ease of use the gadget, leads to a higher frequency of use of the gadgets to collect fares, and hence to better performance of the crew. The regression results revealed that the Cash Lite payment system as is at the time of the study accounts for only 39.9 percent of the performance of the PSV crew. The study also show that even with an ease to use gadget or access to timely technical support, not all crew members used the Cash Lite system in collecting fares and those who did , it did not necessarily lead to improved performance. There is a reluctance by the industry stake holders to adopt Cash Lite system

### **5.3 Conclusion**

Most of the PSVs have adopted the Cash Lite payment system. They have in place the gadgets used in the collection of fares from passengers. The biggest challenge however is a perception by the crew members that the system did not improve their performance significantly. Also the underdeveloped e- payments space has players – issuers whose gadgets do not read cards from different activators. Maintenance of the system was also cited as one of the challenges faced by the PSV crew including access to power the PDQ, crew handover procedures, bulkiness of PDQ and transaction alerts. The adoption of the Cash Lite payment system explains 39.9 percent of the performance of the PSV crew and this means that it has more potential to improve on the performance. Moderate positive correlations were observed between the performance of the crew and frequency of using the system to collect the fares; training on usage and type of gadget adopted. When compared to other cash lite payments i.e. Mobile transfers, agents who are an equivalent

of the crew members need to feel the venture is mutually beneficial. M-pesa, Airtel money earn commission on transactions done on behalf of the telecoms.

Despite having installed Cash Lite system most crew members were reluctant to use the system and some of the reasons associated include avoidance of some order in the sector including the crew reporting correct amounts of Cash collected, owners making correct and adequate statutory returns amongst others. This was an indication that there is need for strict enforcement of use of Cash Lite and of media campaigns to educate the public on Cash Lite systems. The study concludes that, all Cash Lite gadgets installed in PSV be certified for inter-operability, ease of use, the vendors offer on line technical support, there be fair playing grounds like low or exemptions of initial set up cost. This study is in line with similar studies done in Nigeria on Cash Lite economy by Odior E.S in 2012, another done by Zollmann & Cojocaru of BFA and FSD respectively in 2015 on the impact of digitization of payments.

#### **5.4 Recommendations**

The Cash Lite payment has potential of improving the performance of the PSV .The PSV crew has cited challenges in accessing technical support, initial costs associated with acquiring the gadgets are prohibitive and maintenance of the Cash Lite payment system.

There is need for the gadget vendors to increase accessibility hence timely provision of technical support, waiver of initial acquisition costs will make the system more affordable. Efforts should be made to improve e-payments ecosystem so as to increase its acceptance as the best alternative tool of making payments.

### **5.5 Suggestions for Future Research**

Implementation of this system to collect fare has not picked significantly. It will be important to replicate this study and include Commuters, PSV owners, Traffic Law enforcement agencies and activators. It will also be important to carry out a comparative study with other countries who have successfully adopted use of the Cash Lite system especially for ticketing and fare collection. This will enable Kenya to benchmark for best practice in implementation of the system.

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## **APPENDICES**

### **Appendix I: Letter of introduction**

Dear Sir / Madam,

This questionnaire is for a MBA research study in the field of Management Information Systems. The study aims at collecting information on the Impact of Cash Lite payment system in the public Service Vehicles in Nairobi City County.

Your participation in the study will enable me draw conclusions to the benefit of scholars, practitioners as well as policy makers. In appreciation, I would be glad to offer you a summary of the key findings on completion of the study. I urge you to simply enclose your business card with contacts where later I will share with you the findings.

Thank you for participating.

Yours Faithful,

Josiah N Bwana

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**KENYA**

## Appendix II: Research Questionnaire

### PSV CREW

#### GENERAL INFORMATION

1) What is the sitting capacity of your Vehicle?

Up to 14 seater  15 – 34 seater  More than 35 seater

2) In your route, customers are picked or dropped at designate points in CBD?

Yes  No

3) Which Cash Lite portable gadgets in your vehicle?

PDQ machine  Smart Phone  Pay Bill Number  Other.....

4) Have you been trained on how to use any of Cash Lite portable gadgets above?

Yes  No

5) To what extent do you collect fare using the portable gadgets above?

Very large extent  Large Extent  Moderate extent  Low extent  not at all

6) Do you have separate gadgets or pay bill numbers to collect fares from different

cards? Yes  No

7) What advised you get another Cash Lite portable gadgets tick as appropriate

	<b>GADGET FEATURES</b>	Very large extent	Large extent	Moderate extent	Small extent	No at all
i	The portable gadget was easy to use					
ii	The vendor of the portable gadgets offered technical support					

iii	The Cash lite System is cheap to maintain.					
iv	The Cash lite system reads more than one card.					

8) Please rate to what extent the following statements on use of Cash Lite portable gadgets are true.

	<b>BENEFITS AND PERFORMANCE</b>	Very large extent	Large extent	Moderate extent	Small extent	No at all
i	You have increased daily collections using Cash Lite gadgets					
ii	You are able to reconcile daily collections easily.					
iii	Cash Lite system has made fare collection hustle free					
iv	Generally, it saves operational costs using the Cash Lite gadgets					
v	Reduced Cash in hand has resulted to improved security					

	<b>CHALLENGES</b>					
iv	It is easy to adjust fares using the Portable gadgets.					
v	The portable gadgets accept payments from different activators.					
vi	Access to technical support is timely					
vii	The cost of acquiring a portable gadget is friendly					