

**FACTORS AFFECTING ELECTRONIC PAYMENT ADOPTION BY
MATATU OWNERS SACCOS IN NAIROBI CITY COUNTY**

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DECLARATION

This research project is my original work and has not been presented for examination in this or any other university.

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

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ABBREVIATIONS AND ACRONYMS

ATM	Automated Teller Machine
BI	Behavioral Intention
E PAYMENT	Electronic Payment
EPS	Electronic Payment System
ICT	Information and Communication Technology
IDT	Innovation Diffusion Theory
IT	Information Technology
M PESA	Safaricom Mobile Money Services
MATATU	Kenyan Public Transport
MOA	Matatu Owners Association
NTSA	National Transport Safety Authority
PSV	Public Service Vehicle
SCT	Social Cognitive Theory
SN	Subjective Norm
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior

TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
PWDs	Persons with Disabilities
CA	Communications Authority of Kenya
SACCO's	Savings and Credit Cooperative Societies

ABSTRACT

E-commerce, which is combination of traditional commerce and Internet, has brought dramatic changes of the way business transactions are conducted not only in Kenya but across the world. The study sought to establish the factors affecting electronic payment adoption by Matatu owners Sacco in Nairobi County. The study adopted a cross-sectional design and was guided by the following research objective; to establish the factors affecting electronic payment adoption by Matatu owners Sacco in Nairobi County. The study utilized primary data which was collected using a semi-structured questionnaire. From a population of 64 SACCOS, a 41% random sample was taken for the study. A 5-point Likert scale was used to measure the output of each item answered by the participants. Descriptive statistics were used to describe (and analyze) the variables numerically. The outcome of the study established that although matatu SACOS have positively responded to the call to adopt e-payment systems, they have faced immense challenges in successful adoption of the electronic technology. The study revealed that factors affecting the adoption of e-payment technology range from capacity of owners, government policy, lack of adequate a legal and institutional framework and low ICT knowledge base. The study recommends that relevant agencies foster public-private collaborations in ICT training, re-training to empower the matatu operators with adequate ICT tools to enhance the uptake of e-payment techniques not only in Nairobi but across the country. The study further recommends that both the private and public sector to collaboratively establish the right legal and institutional structures to create an enabling environment for technology absorption among the matatu operators in Nairobi and beyond to ameliorate the impact arising from the absence of an appropriate legal and institutional framework. Due to the lack of adequate Government support particularly in terms of Reinforcement from the relevant authority, the study recommends that the national government through line ministries to formulate sound polices ant strategic plans biased towards creating impetus to technology dissemination and absorption among the matatu operators to enhance their core competencies. The study was limited to the extent that, a study of this magnitude should have included a survey of a sizeable number of firms. However time and material resources did not make this feasible. On the other hand, the study period was a little bit narrow for a study of this nature posing a major hindrance particularly in ensuring that the research work did not hamper the performance and productivity of the researcher at the work place. The study recommends further research to focus on identifying optimal e-payment practices and on the possibility of setting benchmarks in Kenya. The need for further research into this aspect is further compounded by the facts that electronic payment particularly in the matatu industry is a relatively new phenomenon in Kenya. Studies involving confirmatory analysis will need to be carried out to further test and confirm the findings of the study. In the same context, there is need for further research to focus on the critical success factors in the adoption and successful implementation of electronic payment techniques not only in the matatu sector but across the other sectors in Kenya.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The rapid rise in the growth of E-payment technology throughout the world is a phenomenon that has been particularly remarkable among many economies, largely because of the e-payment model and ability to store and transfer cash. As a result, all classes of society now have access to financial services as people become increasingly familiar with E-payment-money bill payment system. This concept of marketing being relatively new to most service industries in Kenya has made them to operate in a highly competitive and uneven marketplace characterized with consumers who are highly literate and financially e-transported (Milkau, 2010).

E-payment technology, viewed as a payment or service channel, has the potential to allow two important dimensions to be addressed at the same time: on the demand side, it represents an opportunity for financial inclusion among a population that is underserved by traditional services. On the supply side, it opens up possibilities for service industries to deliver a great diversity of services at low cost to a large clientele of the poorest sections of society and people living in remote areas, (Trim & Tanudjaja, 2013). The enthusiasm about the potential of E-payment money remittance services for Africa's development is based on a view that if many western countries experienced the positive impact of science and technology during the industrial revolution, E-payment money remittance services would, on this basis, assist Africa to assail socio-economic problems (Macharia, 2013).

Several theories and models have been suggested as appropriate for the study of technology adoption. Each theory/model has been utilized in numerous studies that have focused on the

intention to adopt or to use a specific information technology. The most popular of these include the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB). Both theories draw on Fishbein and Ajzen's earlier 'theory of reasoned action (Fishbein & Ajzen, 1975), Innovation Diffusion Theory (IDT) by Roger, (1982), Social Cognitive Theory (SCT) Bandura (1986), and most recently, the Unified Theory of Acceptance and use of Technology (UTAUT) (Davis, 1989).

There are 64 registered Matatu sacco's in Nairobi based on the report by the NTSA as at 31st January 2015. Matatu's and bus companies play a critical role in Nairobi's transport system because they serve a need that is not met by other modes. Where the Matatu service becomes critically important is in connecting the city centre to outlying township communities. Where distances are too far to walk, Matatu's provide the only affordable means of transport for many people. With such a major role in the regional transport mix, disruptions to Matatu operations result in significant and hard-felt effects on the population at large. The significance of this is that policies affecting Matatu performance will have an effect on Matatu riders, and thus strategies to improve traffic congestion must consider the effects on these users of the road network, in addition to people who travel in private vehicles.

1.1.1 The Concept of Adoption

The the benefits from adopting a new technology, as in the wireless communications example, are flow benefits which are received throughout the life of the acquired innovation. However, the costs, especially those of the non-pecuniary "learning" type, are typically incurred at the time of adoption and cannot be recovered. There may be an ongoing fee for using some types of new technology, but typically it is much less than the full initial cost. That is, a potential adopter

weighs the fixed costs of adoption against the benefits he expects. These fixed costs are irrelevant because a great part of them have been *sunk* and cannot be recovered.

This argument in turn implies two stylized facts about the adoption of new technologies: first, adoption is usually an absorbing state, in the sense that we rarely observe a new technology being abandoned in favor of an old one. This is because the decision to adopt faces a large benefit minus cost hurdle; once this hurdle is passed, the costs are sunk and the decision to abandon requires giving up the benefit without regaining the cost. Second, under uncertainty about the benefits of the new technology, there is an option value to waiting before sinking the costs of adoption, which may tend to delay adoption.

1.1.2 The Concept of Electronic Payment

An electronic payment system is a way of paying for goods or services electronically, instead of using cash or a check, in person or by mail. Today, many users make payments electronically rather than in person. Hundreds of electronic payment systems have been developed to provide secure Internet transactions. Electronic payment systems are generally classified into four categories: credit card and debit cards; electronic cash; micropayment systems; and session-level protocols for secure communications (Maiyo, 2013).

E-payment involves integration of the internet and related ICTs into the commercial institution or organization and has two facets. One is the integration of supply chain so that production and delivery becomes a seamless process. The other is the creation of new commercial transaction models based on open systems of communication between clients, and partners. Where the integration of the supply chain provides increased efficiency and significant cost advantages through waste minimization, the development of new products and services are facilitated by

new ways of conducting commercial transactions based on internet working between institutions, organizations and individuals,(Windrum & De Berranger, 2002).

1.1.3 The Public Transport Industry in Kenya

Kenya Vision 2030 envisages a country with integrated and firmly interconnected transport infrastructure consisting roads, railways, airports, seaports and waterways. Any country that wishes to prosper economically cannot ignore to place a huge premium on roads development. A high quality road network is an asset for any economy. Roads facilitate movement of people and goods and therefore they are part of the transport system that comprises rail, water and air transport modes. Together, the system generates a seamless connectivity at the national, regional and international levels (Macharia, 2013).

Kenya has enough trunk roads, but lacks decent roads connecting rural and urban areas, so it is hard for farmers to deliver food directly to city markets. Investments are being made. The new Nairobi-Thika superhighway, located at the very heart of Kenya's economic engine, is a good example. The time taken to traverse Thika town and Nairobi has dropped from 2-3 hours to 30-45 minutes, greatly improving transport connections throughout the area. This is an important development since the Nairobi Metropolitan Area accounts for more than 30% of national GDP (PWC, 2013).

There are plans to improve road connections at Mombasa to help handle growing freight traffic, some of which are being financed by a Japanese Official Development Assistance (ODA) loan. The Governments of Kenya and South Sudan have started consultative talks with several international donors to finance the US\$1.08 billion Juba-Eldoret development corridor. The road,

linking the north-west Kenyan town of Eldoret with the South Sudanese capital Juba, is an integral part of the LAPSET Corridor. Kenya has established a sound system for funding road maintenance and has made great strides with institutional reforms (PWC, 2013). Kenya's rail corridor, linking the Port of Mombasa to Nairobi and continuing onward into Uganda, is of strategic importance to the region. It is a key conduit for bulk freight, easing pressure and providing additional capacity along the northern corridor. But the corridor is still poorly developed, and there is an urgent need to improve the rail-port interface at Mombasa. Improving rail infrastructure is also critical to increasing trade throughout the East Africa Region and the EAC estimates the corridor requires US\$2.1 billion in investment (Macharia, 2013).

However, Kenya's national rail carrier, Kenya Railways Corporation (KRC), is reportedly insolvent, and although it registered a profit of US\$13.2 million in 2012, it could be extremely difficult for the company to lead the planned revival of the railway sector.vii In 2012, KRC signed a landmark US\$2.6 billion contract with a Chinese construction company to build a new standard-gauge railway running from Mombasa to Nairobi to Malabi. Currently the Rift Valley Railways Consortium (RVR), a group led by South African companies, runs much of the rail system in Kenya and Uganda under a 25-year concession contract. RVR runs trains on old narrow-gauge track that won't be compatible with the new standard-gauge line. While RVR has been upgrading – in June 2013 it announced it had completed repairs to 73km of track between Mombasa and Nairobi (PWC, 2013).

Kenya is well served from an airport and airline perspective and is a regional leader in air transportation. According to 2007 figures, Kenya has 225 airports, with 15 of these having paved runways. There are four runways longer than 3 000m. Jomo Kenyatta International Airport in

Nairobi is a major international gateway in sub-Saharan Africa. A major fire caused extensive damage to the airport terminal in August 2013, but the Kenya Airports Authority (KAA) announced normal service would resume by the beginning of 2014. The domestic air transport sector in Kenya is thriving, and is the fourth-largest in sub-Saharan Africa according to the World Bank. Kenya Airways is among the top three international carriers in Africa and one of the most respected. Its extensive network across Africa and safety record is on par with international standards. The airline is one of the few African flag carriers to have been successfully privatised. Much of the company's success is attributable to an innovative public-private partnership with a key investor, KLM. KLM only has a minority stake in the company, but is fully responsible for its management. Kenya Airways currently flies to 59 destinations worldwide, 47 of which are in Africa, and carries over three million passengers per annum (PWC, 2013).

Ports stand out as one of the keys to Kenya's future growth. There are currently major ports at Mombasa, Lamu and Malindi. Mombasa is the main port, serving not only the Kenyan hinterland, but also markets in neighbouring countries such as Uganda. With almost 800 000 TEUs and 3.7 million tons of cargo handled each year, Mombasa is the second-largest port in sub-Saharan Africa after Durban in terms of tonnage and containers handled. Together with Dar es Salaam, Mombasa is one of the key trading centres for the East Africa region. The port is also a natural transshipment centre for East Africa. But Mombasa is facing serious capacity constraints and congestion. Delays in cargo clearance as well as congested and insufficient rail and road feeder systems are contributory factors to this situation. The World Bank considers the port the major infrastructure constraint in Kenya, particularly given its potential to be a major

link between the East African market and global shipping services. Over the last decade, Mombasa has steadily seen total cargo volumes grow by an annual average of 11.6% compared to a global average of 7.1%. In terms of performance, Mombasa fares relatively well compared with other ports in eastern and southern Africa. However, its container crane productivity, at 10 containers per hour, is far behind Dar es Salaam (20) and Durban (15). Kenya is ranked 88th out of 155 countries in the international shipments category of the 2012 Logistics Performance Index, while competitor Tanzania's rank is much better at 59th (PWC, 2013).

1.1.4 Matatu Sub-sector in Nairobi

A unique feature in Kenya's transport sector has been the rapid expansion of the Matatu, a small scale means of transport. The Matatu plays a significant role in the movement of people, goods and services in Kenya. Ogonda (1992) notes that since 1973 when Matatu"s were given a presidential decree to operate, they have grown to compete and complement the public bus transport companies in towns and rural areas in medium- and long-distance passenger transport.

The word Matatu is derived from the Kikuyu term mang'otore matatu which means thirty cents, the then standard charge for every trip made (Aduwo, 1990). The Matatu means of transport provides work indirectly and directly to institutions and individuals. Indirectly, it offers work to vehicle assemblers, insurance companies, garages and petrol stations. Directly, it offers work to drivers, conductors and stage workers. Thus, the Matatu contributes to employment-creation and income generation in Kenya. The public transport industry, especially the Matatu subsector is exposed to a multiplicity of environmental factors which include political, economic, legal and social in their daily operations.

Matatu's are the most common form of public transport in Nairobi. Currently there are 64 registered Matatu Sacco's in Nairobi (NTSA, 2015). They are privately owned minibuses and the most popular form of local transport generally seating fourteen to thirty five. The Matatu's destination is imprinted on the side of the vehicle, and Matatu's plying specific routes have specific numbers. Matatu's are easily distinguishable by their paint schemes, as owner's paint their Matatu's with various colourful decorations such as their favourite football team or hip hop artiste. Presently, the organizational framework is largely based on route-based Matatu associations that demand goodwill from new entrants. There is a proliferation of such associations. Route-based associations keep on springing up, either as new ones or as breakaways from old ones. Stage and route matatu workers have also organised themselves into labour groups (Khayesi, 1997). Matatu's have in the past years faced considerable competition from buses, which are increasingly common in the city. The three bus companies operating the city routes are the traditional Kenya bus service (KBS) and newer private operators like Citi hoppa and Double M. buses.

1.2 Research problem

In a meta-analysis of 75 studies, Tornatzky and Klein (1992) examined the relationship between innovation characteristics and adoption. The 10 characteristics they found most frequently used were relative advantage, complexity, communicability, divisibility, cost, profitability, compatibility, social approval, trialability and observability. Of these, relative advantage (the degree to which an innovation is perceived as better than its precursor(Rogers, 1995), compatibility (the degree to which an innovation is perceived as consistent with the existing values, needs, and past experiences of the potential adopter) and complexity (the degree to which

an innovation is perceived as difficult to use, parallels perceived ease of use quite closely(Rogers, 1995) were found to be consistently related to adoption and salient to the attitude formation(Tornatsky & Klein, 1996). Recent studies in IT adoption have found these variables to be also important in the context of adoption of various information technologies (Premkumar & Roberts, 1999).

Empirical studies done in Kenya include Njuru (2007), who did a study on the challenges in implementing electronic banking strategy by commercial banks in Kenya; Ongare (2013), conducted a study on the effect of electronic banking on the financial performance of commercial banks in Kenya; Aduda and Kingoo (2012) on the relationship between electronic banking and financial performance among commercial banks in Kenya; Maiyo (2013) who did a study on the effect of electronic banking on financial performance of commercial banks in Kenya; and Mwangi (2007) who did a study on an investigation into internet banking technology adoption among commercial banks in Kenya, however none of these studies has sought to determine factors affecting electronic payment adoption by Matatu owners Sacco in Nairobi. The study sought to answer the research question; what factors affect successful adoption of electronic payment among the matau SACCOS in Nairobi City County?

1.3 Objective of the study

The objective of the study was to establish the factors affecting electronic payment adoption by Matatu owners Sacco in Nairobi.

1.4 Value of the study

The study would among other things help to know whether the switch from the use of the postpaid meter to the e-payment meter has actually caused an increase in the welfare of consumers. It is also expected that the outcome of this research would help Matatu Owners and all stakeholders to know the hidden challenges that consumers are facing with the prepayment system so that they can effectively address them. In general, the outcome of this study will determine whether the introduction of the e-payment meter has been beneficial to consumers or not.

Earlier studies of the Matatu sector have used a survey methodology that aimed to understand the broad contours of the industry (Cervero, 2000; Aligula et al. 2005; and Kumar & Barret, 2008). Such research gathers quantitative data with a view to generalizing from a sample to the population. The research on which this report is based will take a different approach. It will use qualitative methods, and attempt to gain in-depth knowledge of electronic payment adoption practices for a limited number of Matatu businesses operating on different routes in Nairobi.

The study will provide light on the essence of the proposed cashless system as presenting great potential opportunities, especially around increased transparency in the transport sector. The study will also indicate an in depth analysis of the factors affecting the adoption of the electronic payment system in the Matatu sector so as to give advice to the government on the best approaches for the adoption of the system in the sector.

1.5 Chapter Summary

This chapter has stated the research questions, and set them in context thus laying the foundation for the study. It introduces the background, research problem, objectives, significance, scope of

the study and the value of the study with regards to how the findings of the study will contribute to theory, policy practice and managerial practice. On these foundations, the study proceeds with a detailed description of the literature review.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature to the area of study. It covers theoretical foundation of the study, review of related literature, challenges of adopting electronic payment and summary of the knowledge gap.

2.2 Theoretical Foundation

Several theories have been suggested as appropriate for the study of technology adoption. Each theory and model has been utilized in numerous studies that have focused on the intention to adopt or to use a specific information technology. This study will analyse three (3) of the theories which include the Theory of planned behavior, diffusion of innovation theory and Cognitive dissonance theory.

2.2.1 Theory of Planned Behaviour

The theory of planned behavior (TPB) is a well-established intention model that has been proven successful in predicting and explaining behavior across a wide variety of domains, including the use of information technology (Agarwal, 2000). The TPB establishes that, a small business executive's decision or behavioral intention (BI) to pursue a course of action, such as creating a presence on the web or adopting e-commerce, is a function of attitude (A), subjective norm (SN), and perceived value. The TPB also theorizes that BI will ultimately result in the behavioral control (PBC) action. SN is the degree of perceived social pressure that the executive feels to adopt a technology. PBC is how easy or difficult an executive thinks that adoption will be, involving potential obstacles (Riemenschneider et al., 2003)

2.2.2 Diffusion of Innovations Theory

The fundamental approach for the study of the adoption of new technologies is the diffusion of innovations theory (DOI) (Tornatsky & Klein, 1982). The focus of DOI research is on the perceived characteristics of the innovation that either encourage relative advantage or inhibit (complexity) adoption (Chwelos et al., 2013). Rogers, an authority on innovation theory, defined an innovation as an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 1983). An important context identified by Rogers is characteristics of the innovation; Information System researchers have combined them with other contexts to provide a richer and potentially more explanatory model (Thong, 1999).

2.2.3 Cognitive Dissonance Theory

Cognitive Dissonance theory and its cognitive dissonance is an uncomfortable feeling caused by holding two contradictory ideas simultaneously. The theory of cognitive dissonance proposes that people have a motivational drive to reduce dissonance by changing their attitudes, beliefs, and behaviours, or by justifying or rationalizing them. The phenomenon of cognitive dissonance has been quickly adopted by consumer behaviour research. Described as a psychologically uncomfortable state that arises from the existence of contradictory (dissonant, non-fitting) relations among cognitive elements (Festinger, 1957) cognitive dissonance revealed high exploratory transport in explaining the state of discomfort buyers are often in after they made a purchase (Davis, 1989).

2.3 Review of Empirical Literature

E-payment in transport supply side is also grounded on the cognitive dissonance theory. The customers had the perception that the e-payment would be very reliable and cost effective. As

postulated by the theory, customers' expectations were very high in the effectiveness of the e-payment especially because they thought it would be cheaper than prior e-payment. However, this turned out not to be the case after the purchase and utilization of the e-payments. Hence, the customers have raised concerns in the use of the e-payment indicating that they are more expensive than the previous e-payment and also the e-payment bundles cut off as soon as the credit runs low (Milkau, 2010).

The e-payment concept is an untapped opportunity with a vast range of digital services, including tracking of defaulters and criminals. The new concept aims at using the available mobile money platform that is already widely been adopted by the public, thus, adapting the Check-in/check-out (CICO) methodology. With the cashless system, the drivers will no longer carry cash and it could bring down corruption on roads by 70 per cent. The planned migration from cash to virtual payments has seen an increase in the number of players positioning to cash in on the cashless fare system, (Johnson & Scholes, 1997),

Maloff (1996) identifies four general areas or categories of benefit involved with e-payment. The first category concerns benefits arising from the reduction of external and internal communication expenses, the speed-up of businesses processes and reduction of administrative tasks. The second category relates to revenues that can be generated, either from current business or from new initiatives. The third category relates to tangible benefits, such as reduced costs and more flexible working practices and the final category relates to intangible benefits, such as enhanced competitive positioning and improved customer relationships. From the business perspective, with less time spent during each transaction, more transaction can be achieved on the same day. As for the consumer, they will save time during their transaction. Because of this,

e-payment has replaced the traditional payment method where a single transaction could cost both parties a lot of valuable time. With few clicks, a transaction or an order can be placed and completed via the internet with ease. For instance, a banking transaction can be completed through the Internet within a few minutes compared to the traditional banking (Chaffey, 2007)

E-payment can be approached in different ways depending on the specific commercial transaction process that might be carried out through the internet. Thus, several internet usage profiles or approaches are possible. A bank or company must determine which profile or combination of profiles best suits its particular commerce context and strategy (Mendo & Fitzgerald, 2005). E-payment has got strategic values which include: deflationary and other macro-economic value. Electronic markets affect the consumer purchase process in two ways (Turban et al., 2000). The first involves the digitization of market mechanisms, reducing Customers' search costs in terms of money, time, and effort needed to gather information on price, quality, and product features. The second involves the digitization of information products and their distribution. The cost structure of these products is increasing returns and minimal reproduction costs. Digitization also eliminates the need for sellers to maintain an inventory that must be physically shipped to the consumer.

A digitized market can be especially efficient when electronic payment methods will become more widely used. (Turban, 2000). As labour and capital resources are released as a result of e-commerce and channeled into the production of other goods and services, their overall supply would go up, thereby exerting a downward pressure on prices.

2.4 Challenges of Adopting Electronic Payment

All organizations and companies are not similar in that they are in the early stages of adopting e-commerce to become a clicks-and-mortar operator in an industry with a conservative culture. As such, different barriers arose for each organization, but with the consistent effect on all three being a slow and cautious implementation of e-commerce processes (Armistead & Machin, 1997).

These centre on the organizations 'motives in adopting e-commerce and the intended purposes in the use of e-commerce. This seems to point to the need to place a consideration of impact of the adoption of e-commerce on internal business processes into the strategic context for an organization. Strategic context can be taken to be the relationship between organization's motives and intentions in its use of e-commerce and its corporate strategic objectives (Bitner, 2001).

The e-operations has therefore some limitations which are to be incorporated an explicit consideration of an organization's strategic context. As with the varying levels of business and information process integration, differing and sometimes contradictory reasons can be identified for each company's decision to implement e-commerce. To some extent, organizations are largely driven by internal, strategic factors. They perceives themselves as organizations offering a service which are unique and which they would like to extend to their (mainly retail) customers through an online Internet channel (Armistead & Machin, 1997).

The retail banks operate e-commerce mainly because of internal strategic factors, namely the acquisition of a competitor and its range of online Internet based mortgage products. The application of e-commerce can be driven by external factors: the perceived external threat from

competitors and a sense of vulnerability at the hands of broker intermediaries (Bitner et al., 2001).

According to Bitner et al. (2001) the barriers to increased use of e-commerce are both social (for example conservative organizational and industry cultures) and technological (for example lack of industry standards and open systems). Organizations have various and often confused motives for adopting e-commerce. These include reducing costs, fear of being left behind by competitors, targeting specific niche markets, and experimentation (learning by doing).

The issue of perceived risk adoption arises because economic transactions involve risk, (Humphrey & Schmitz, 1998). This is particularly true in the case of online banking, where the bank and the customer are physically separated, contingencies are difficult to predict and incorporate into terms and conditions, relationships are difficult to monitor, and cyber-laws are not well-defined. The heightened risk perceptions of customers affect the level of internet banking adoption. When processing online information, customers may often perceive that there is a high level of risk even though the risk level may be actually low. More experienced online customers have more information about online banking, and therefore they perceive the risk to be less and thus have more trust in online transactions (Ba, 2001).

Clay and Strauss (2000) argued that one of the customer's main concerns would be reliability of the network. When customers are transmitting personal financial data over the electronic network, there are risks that unauthorized parties could intercept this information. Therefore, 19 customers' technology orientation and perception of the technological competency of the electronic communication system is very important in their information processing behaviour

and perceived trust. The reputation of the bank is a very important factor of trustworthiness. Ba (2001) concluded that when customers feel that an online bank has a poor or bad reputation, they would be discouraged from using that Web site. While assessing the reputation, customers also assess the innovative abilities of the bank, which is based on the customers' expectations of the skills and competencies that the bank possesses in electronic transactions, (Lee & Turban, 2001).

Perceived risk reduction proves critical in an uncertain and risky environment, (Mayer , 1995) and, as pointed out by Krauter and Kaluscha (2003), online transactions always take place in that risky environment where anonymity, lack of control and potential opportunism are always involved. Online trust can reduce the levels of perceived risk associated with transaction processes (Pavlou, 2003; Koufaris & Hampton-Sosa, 2004). In terms of perceived security, web sites could increase consumers' online trust by decreasing perceived environmental risks or by raising security (Warrington, 2000). Also consumers may disclose their private information to web sites when reliability and credibility are recognized; this subsequently reduces consumers concerns of privacy and security and helps to build online trust toward the web sites (Culnan & Armstrong, 1999).

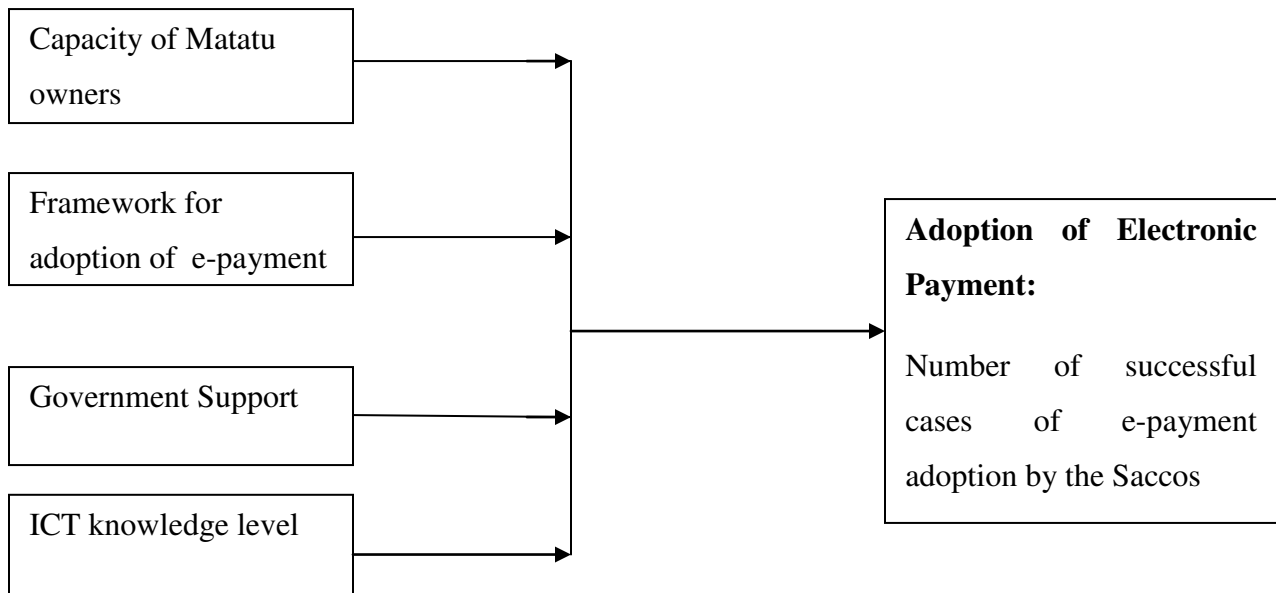
Many studies have proved the significant relationship between trust and electronic banking or any e-commerce adoption. Trust occurs when one party has confidence in an exchange partner's reliability and integrity (Chen & Barner, 2007). For example, Chen and Barner (2007) found that trust significantly important on online purchasing intention, web site loyalty (Flavian & Guinaliu, 2006), online banking commitment (Mukherjee & Nath, 2003), electronic banking adoption and behaviour intention to adopt online information service (Chen & Corkindale, 2008). Yousafzai (2003) concluded that trust in electronic banking and its infrastructure reduces

customers transaction-specific uncertainty and related risks associated with the possibility that a bank might behave opportunistically. When people trust others, they assume that those they trust will behave as they are expected to, reducing the complexity of the interaction.

2.5 Conceptual Framework of the Study

A conceptual framework is a logically developed, described and elaborated network of interrelationships among variables integral in the dynamics of a situation being investigated (Mugenda & Mugenda, 2003). A dependent variable is the variable of primary interest to the researcher. In the study the dependent variable was the adoption of electronic payment by Matatu Saccos in Nairobi City County. An independent variable is the one that influences the dependent variable in either a positive or negative way. The independent variables in this study were: Capacity of matatu owners, Framework for adoption of e-payment, Government support and ICT knowledge level. The conceptual framework is presented in Figure 2.1.

Figure 2: The Conceptual Framework of the study



Source: Own Compilation (2015).

2.6 Chapter Summary

The ensuing research is based on a summary of the literature thus presented. Much of the review considers empirical works published in academic journals from 1988 to 2015. The review started by looking at the concept of electronic payment strategy. The chapter then moves into the theoretical and conceptual framework of the study. Key theories discussed in this section include; the Theory of Planned Behavior, Diffusion of Innovation Theory and Cognitive Dissonance Theory. The next chapter presents the research methodology adopted for the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter will articulate research design, data collection and data analysis methodology. Rajasekar (2013) refers research methodology as a systematic way to solve a problem. Essentially, research methodology is about the procedures by which researchers go about their work of describing, explaining and predicting phenomena. This chapter focuses on; the research design, population, sampling frame and sample size, data collection methods, and data analysis methods that were used in the study.

3.2 Research Design

The study adopted a cross-sectional design. The rationale for using a cross-sectional design is based on the fact that, Cross sectional studies are generally quick, easy, and cheap to perform. They are often based on a questionnaire survey. In addition, there will be no loss to follow-up because participants are interviewed only once. However, a cross sectional study may be prone to non-response bias if participants who consent to take part in the study differ from those who do not, resulting in a sample that is not representative of the population (Kothari, 2011). A 5-point Likert scale was used to measure the output of each item answered by the participants on the predictor variables (various supply chain management practices).

3.3 Target Population

Mugenda and Mugenda (2003) define a population as an aggregate of all that conform to given characteristics. The population of interest in the current study consisted of all 64 registered Matatu Saccos in Nairobi County (see appendix I).

3.4 Sampling frame and Sample size

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample i.e., the size of the sample. Sample design is determined before data are collected (Kothari, 2011). The sampling frame was drawn from the report by the NTSA as at 31st January 2015.

From the target population of 64 matatu SACCOS, a 41% random sample of 26 matatu SACCOS was selected for the study. According to Mugenda and Mugenda (2003), a representative sample is one which is at least 10% of the population thus the choice of 41% is considered as representative. The respondents in the study included the operation managers of the SACCOS.

3.5 Data Collection

Primary data was utilized in the study. According to Kothari (2011) primary data are those which are collected afresh and for the first time, and thus happen to be original in character. Primary data was collected using a semi-structured questionnaire subdivided into two parts. Part 1 consisted of open-ended questions aimed at obtaining general information on the respondents while Part 2 consisted of questions aimed at obtaining data on the factors affecting the adoption of e-payment by matatu SACCOS in Nairobi County. The study was conducted by the researcher himself. The respondents in the study were the operation managers of matatu SACCOS owing to the fact that in most cases operations strategy falls in the domain of operations managers.

3.6 Data Analysis

Both descriptive and inferential statistics were used to describe (and analyse) the variables numerically. These included: simple means; standard deviations regression and correlation analysis by use of SPSS while factor analysis was applied to check on the categorization of the factors affecting the adoption of e-payment systems by the matatu SACCOS in Nairobi. The frequency distribution show the distribution of individual scores for a given variable and percentages gave the proportion of a subgroup to the total sample. Percentages were used to compare proportions of the population relative to the entire sample.

3.7 Chapter Summary

Methodologically the study adopted a cross-sectional design while the main method of data collection was through self-administered questionnaires. Descriptive statistics were used to describe (and analyse) the variables numerically. This chapter thus presents a detailed discussion on the research design adopted, the population of the study, the nature of data and the research instrument used in the study. The chapter goes further to give a precise description of the data analysis method applied in the study. The next chapter presents the data analysis, research findings and the discussion of the findings.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study in establishing factors affecting the adoption of electronic payment by matatu owner's savings and cooperative societies in Nairobi. The study was based on the following research objective: to establish the factors affecting electronic payment adoption by Matatu owners Saccos in Nairobi City County. With the help of SPSS version 21 statistical software data on factors affecting the adoption of electronic payment by matatu saccos in Nairobi City County was analysed using; mean scores, standard deviations, coefficients of variation and regression analysis.

The factors were ranked in order of importance, the correlation between them yielded the key factors that loaded most on the components and therefore had the greatest impact on electronic adoption among the matatu saccos. Twenty-six (26) questionnaires were administered to the matatu Saccos. Twenty-two (22) questionnaires were returned representing a response rate of 84.6%. This response rate was sufficient and representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good while a response rate of 70% and over is excellent.

4.2 Demographic Information

The demographic characteristics of the respondents that studied included; gender, age and literacy level.

4.2.1 Gender of the Respondents

The study sought to determine the positions of the respondents in their respective firms. The results are shown in Table 4.1.

Table 4.1 Gender of respondents

		Frequency	Percent	Valid Percent
Valid	Male	21	80.8	80.8
	Female	5	19.2	19.2
	Total	26	100.0	100.0

Source: Primary Data (2015).

From Table 4.1 it is clear that most of the respondents (80.8%) were male. This is consistent with the fact that the matatu operations have been traditionally associated with men in Kenya. However the fact that 19.2% of the respondents indicate that gender disparity has gradually narrowed over the last few years in Kenya's matatu industry.

4.2.2 Age distribution of the Respondents

The study sought to determine the age distribution of the respondents. The results are shown in Table 4.2

Table 4.2 Age distribution

		Frequency	Percent
Valid	21-30 yrs	7	26.9
	31-40 yrs	13	50.0
	41-50 yrs	6	23.1
	Total	26	100.0

Source: Primary Data (2015).

Table 4.2 indicates that 76.9 percent of the respondents are aged between 21-40 years. The findings thus support the current situation in Kenya where most of the young generation has now

ventured into the transport sector due to diminishing job opportunities and increasing unemployment levels over the years.

4.2.3 Literacy Level of Respondents

An inquiry was made into the level of education of the respondents. The results are presented in Table 4.3

Table 4.3 Literacy level

		Frequency	Percent
Valid	Primary	2	7.7
	Secondary	14	53.8
	College/ University	6	23.1
	Post-graduate	4	15.4
	Total	26	100.0

Source: Primary Data (2015).

According to the results in table 4.3, most of the respondents are educated to secondary education level (53.8%) with a significant number of them having attained college/university education at 23.1%. The findings above further reaffirm the current unemployment situation in Kenya today.

4.3 Factors affecting the Adoption of Electronic Payment Systems by Matatu owners

SACCOS in Nairobi City County

Unlike the classical functional approach, technology management is process oriented. The effectiveness of a technology management process lays in the implementation of specific technology management practices in the context of a given operations policy. Towards this end, the study sought to examine the various factors affecting successful adoption of electronic payment approaches by Matatu SACCOS in Nairobi City County. The respondents were asked

questions on the extent to which various factors have affected the adoption electronic payment systems on a Likert scale of 1-5 where: 1 = Not at all; 2= Small extent; 3= Moderate extent; 4= Large extent; and 5= Very Large extent.

In the initial step, a correlation matrix was generated to identify any significant relation between the items then Descriptive statistics were used to determine the variance of the factors affecting the adoption of electronic payment among the matatu SACCOS in Nairobi. The outcome of the analysis is presented in the following sections.

4.31 Capacity of Owners and adoption of Electronic Payment by SACCOS in Nairobi

In tandem with Strategic change management principles, successful technology uptake calls for the necessary infrastructure to be put in place. Towards this end, the study sought to examine the impact of the capacity of the owners on successful adoption of electronic payment systems. The respondents were asked questions on the extent to which various factors have affected the adoption electronic payment systems on a likert scale of 1-5 where: 1 = No extent; 2= Small extent; 3= Moderate extent; 4= Large extent; and 5= Very Large extent. The results are presented in Table 4.4.

Table 4.4 Capacity of owners

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
There is incompatibility with other payment systems	26	4.00	1.00	5.00	99.00	3.8077	.21497	1.09615	1.202	-1.365	.456
High level of complexity	26	4.00	1.00	5.00	75.00	2.8846	.25009	1.27521	1.626	.483	.456
secure deposit and withdrawal of money	26	2.00	1.00	3.00	45.00	1.7308	.11842	.60383	.365	.171	.456
secure communication networks	26	4.00	1.00	5.00	89.00	3.4231	.28378	1.44701	2.094	-.392	.456
secure network maintenance	26	2.00	3.00	5.00	118.00	4.5385	.13846	.70602	.498	-1.255	.456
The systems lacks authenticity, privacy, integrity and non-repudiation	26	4.00	1.00	5.00	96.00	3.6923	.20583	1.04954	1.102	-.443	.456
The EPS is also user friendly	26	3.00	1.00	4.00	70.00	2.6923	.20583	1.04954	1.102	-.218	.456
The EPS is not simple and easy to use especially in micropayment	26	3.00	2.00	5.00	93.00	3.5769	.15858	.80861	.654	-.023	.456
The system does not support impulse buying	26	4.00	1.00	5.00	97.00	3.7308	.27489	1.40165	1.965	-.611	.456
The country lacks its own set of policies that EPS must conform to.	26	4.00	1.00	5.00	90.00	3.4615	.26736	1.36325	1.858	-.426	.456
There is mass customization which is possible through online transaction systems	26	4.00	1.00	5.00	112.00	4.3077	.20583	1.04954	1.102	-1.806	.456
Online fraud and other security issues are a menace to existence of EPS	26	1.00	1.00	2.00	34.00	1.3077	.09231	.47068	.222	.885	.456
There is high level of disclosure to unauthorized persons	26	4.00	1.00	5.00	71.00	2.7308	.17149	.87442	.765	.191	.456
There are no prescribed rules on money laundering	26	4.00	1.00	5.00	102.00	3.9231	.18333	.93480	.874	-1.429	.456
Customer intimacy on location sensitive products is not easily maintained	26	2.00	1.00	3.00	63.00	2.4231	.13782	.70274	.494	-.829	.456
There is unreliable internet connection to support the system	26	4.00	1.00	5.00	115.00	4.4231	.21607	1.10175	1.214	-1.927	.456
There is steady reduction in use of electronic payment technologies such as automated teller machine (ATM)	26	2.00	1.00	3.00	45.00	1.7308	.15249	.77757	.605	.527	.456
There is lack of infrastructure capacity	26	4.00	1.00	5.00	103.00	3.9615	.28545	1.45549	2.118	-1.109	.456
Valid N (listwise)	26										

Source: Primary Data (2015).

The findings in Table 4.4 indicate that secure network maintenance has the biggest impact on the adoption of electronic payment with the highest mean at 4.5385 and standard deviation of 0.13846 followed by Unreliable internet connection to support the system at 4.4231 and 0.21607 respectively. Online fraud and other security issues are a menace to existence of EPS affects electronic payment adoption to the least extent with the lowest at 1.3077 and standard deviation of 0.09231. The findings imply that unstable network connection and online fraud presents the biggest challenge to successful adoption of e-payment systems among Matatu SACCOS in Nairobi.

4.3.2 Framework for Adoption of e-payment by Matatu owners in Nairobi City County

A legal and institutional framework is critical in successful technological absorption. An inquiry was made into whether the existing legal and institutional framework affects the adoption of electronic payment among the Matatu SACCOS in Nairobi County. The results are presented in Table 4.5.

Table 4.5 Framework for adoption of e-payment

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
There is legal framework that guides the adoption of E-payment	26	4.00	1.00	5.00	96.00	3.6923	.26469	1.34964	1.822	-.762	.456
choosing partners and skills carefully enhances the performance of E-payment	26	4.00	1.00	5.00	66.00	2.5385	.23684	1.20767	1.458	.272	.456
There is integration across the entire organization	26	4.00	1.00	5.00	103.00	3.9615	.26300	1.34107	1.798	-1.111	.456
There is development of an E-commerce strategy that complements the corporate strategy;	26	4.00	1.00	5.00	94.00	3.6154	.29392	1.49872	2.246	-.666	.456
There is avoidance layering costs onto the current distribution network	26	4.00	1.00	5.00	66.00	2.2385	.28946	1.47596	2.178	.566	.456
There is a developed benefits register and measure your achievements against it.	26	4.00	1.00	5.00	103.00	3.9615	.25103	1.28002	1.638	-1.039	.456
There is adequate Information intensity	26	4.00	1.00	5.00	79.00	3.0385	.23846	1.21592	1.478	.066	.456
There is consideration of organizational characteristics in general and size specifically	26	4.00	1.00	5.00	78.00	3.0000	.29352	1.49666	2.240	.310	.456
The external environment plays a significant role	26	4.00	1.00	5.00	76.00	2.9231	.31828	1.62291	2.634	.256	.456
There is external support (from consultants, vendors)	26	4.00	1.00	5.00	117.00	4.5000	.19415	.98995	.980	-2.546	.456
Valid N (listwise)	26										

Source: Primary Data (2015).

From the findings in Table 4.5, external support (from consultants, vendors) affects the adoption of e-payment to the largest extent with a mean of 4.5 and standard deviation of 0.19415. The

same findings indicate that the next most influential factor is the integration across the entire organization at 3.9615 and 0.263 respectively. The results in Table 4.5 also indicates that avoidance of layering costs onto the current distribution network has the least negative effect in the adoption of electronic payment with the lowest mean at 2.2385 and standard deviation of 0.28946. The findings thus imply that most of the matatu SACCOS have not been able to utilize the expertise of consultancy and vendors culminating into a major impediment to the successful adoption of electronic payment.

4.3.3 Government Support and Adoption of Electronic Payment

Government policy plays a critical role in the creating an enabling environment for technology absorption and incubation. The provision of both hard and soft ICT infrastructure is the prerogative of any state keen on enhancing both firm and national competitiveness. In this context, the study sought to investigate the effect of government intervention in the successful implementation of electronic payment system among Matatu SACCOs in Nairobi. The results are presented in Table 4.6.

Table 4.6 Government Support

	N	Range	Minimum	Maximum	Sum	Mean	Std.	Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Statistic
There is high number of e-payment adoption after reinforcement from authorities	26	4.00	1.00	5.00	60.00	2.3077	.23383	1.19228	1.422
Government policies favor the adoption of e-payment	26	4.00	1.00	5.00	76.00	2.9231	.25972	1.32433	1.754
Reinforcement from the relevant authorities results to resistant from stakeholders	26	4.00	1.00	5.00	107.00	4.1154	.28997	1.47856	2.186
There is high number of e-payment users after reinforcement	26	4.00	1.00	5.00	42.00	1.6154	.17608	.89786	.806
Through reinforcement, there is adoption of e-payment options that users feel they are expensive	26	3.00	2.00	5.00	78.00	3.0000	.18397	.93808	.880
Valid (listwise)	N 26								

Source: Primary Data (2015).

According to the outcome in Table 4.6, Reinforcement from the relevant authorities' results to resistant from stakeholders has the highest mean at 4.1154 and corresponding standard deviation at 0.28997 implying that it affects the adoption of e-payment to a large extent. The next most influential factor in this category is the fact that through reinforcement, there is adoption of e-payment options that users feel they are expensive with a mean of 3.0 and 0.18397 standard deviation respectively. On the other hand, the high number of e-payment users after reinforcement has the least effect on e-payment adoption at 1.6154 and 0.17608 respectively. The results in Table 4.6 thus point to the fact that Reinforcement from relevant authorities and the issues cost implications constitute the main Government policy hindrances to successful adoption and implementation of e-payment among matatu SACCOS in Nairobi.

4.3.4 ICT knowledge level and the Adoption of Electronic Payment by Matatu SACCOS

Technological dissemination largely depends on the technical knowhow of both the implementing agency and the final operators. In view of this, the study sought to examine the effect of the ICT knowledge level of the operators and the successful adoption and implementation of electronic payment by Matatu SACCOS in Nairobi. The results are presented in Table 4.7.

Table 4.7 ICT knowledge

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Users are not able to transact banking business over the phone	26	4.00	1.00	5.00	64.00	2.4615	.27863	1.42073	2.018	.628	.456	-.730	.887
The e-payment concept used is technical and requires high education levels to operate	26	4.00	1.00	5.00	77.00	2.9615	.29079	1.48272	2.198	.550	.456	-1.493	.887
There is no training rendered to e-payment users thus impeding transaction	26	4.00	1.00	5.00	99.00	3.8077	.25431	1.29674	1.682	-.925	.456	-.198	.887
Majority of users have low level of education thus making it impossible to execute e-payments	26	3.00	2.00	5.00	112.00	4.3077	.19030	.97033	.942	-1.256	.456	.562	.887
Payment through the Internet is viewed as time wasting and complex	26	4.00	1.00	5.00	105.00	4.0385	.26300	1.34107	1.798	-1.261	.456	.305	.887
The devices such as message integrity, digital signature, digital wallet requires high level of education of which majority of the users do not possess.	26	4.00	1.00	5.00	113.00	4.3462	.24142	1.23101	1.515	-1.984	.456	2.976	.887
Low levels of ICT literacy all impedes the adoption of e-payment	26	4.00	1.00	5.00	99.00	3.8077	.21497	1.09615	1.202	-.970	.456	.466	.887
Valid N (listwise)	26												

Source: Primary Data (2015).

Going by the results in Table 4.7, the application of devices such as message integrity, digital signature, and digital wallet requires high level of education of which majority of the users do not possess has the highest mean at 4.3362 and standard deviation of 0.24142. This implies that the factor affect e-payment adoption to a large extent. The next factor with the highest impact on the adoption of e-payment among the SSACOS is the fact that majority of users have low level of education thus making it impossible to execute e-payments at 4.3077 and 0.1903. The user's inability to transact banking business over the phone has the least effect with a mean of 2.4615 and standard deviation of 0.27863 respectively. According to the findings, it is clear that the application of ICT devices such as digital signature and digital wallet requiring a high level of technological knowhow is the biggest technological challenge to successful adoption of electronic payment among the Matatu SACCOS in Nairobi.

4.4 Chapter Summary

This chapter has presented the outcome of data analysis in the framework of the study objective. The main objective of the study was to investigate factors affecting the adoption of e-payment systems among the matatu SACCOS in Nairobi City County. The chapter began by presenting the analysis of demographic data before delving into analyzing data on the various factors that affect the adoption of e-payment systems among matatu SACCOS in Nairobi City County. The chapter focuses on four streams of factors that were deemed to have a significant impact on the adoption of e-payment systems by matatu SACCOS in Nairobi County which are: capacity of matatu owners, framework for the adoption of e-payment systems, government support and ICT knowledge level.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study sought to investigate the factors affecting the adoption of electronic payment systems by Matatu SACCOS in Nairobi. This chapter presents; the summary of the findings, conclusions and recommendations of the study.

5.2 Summary

According to the study findings though most matatu operators are male, there is a gradual increase in women involvement in matatu operations implying that the campaign on gender mainstreaming is gradually bearing fruits in the matatu industry in Kenya. The findings further indicate that the youth have now ventured into matatu operations to mitigate the impact of unemployment in Kenya underscoring the significance of the matatu sector in Kenya's economy.

The capacity of owners seems to have a significant effect on the adoption of electronic payment by matau SACCOS in Nairobi with Secure network maintenance having the biggest impact on the adoption of electronic payment followed by Unreliable internet connection to support the system. Online fraud and other security issues are a menace to existence of EPS affects electronic payment adoption to the least extent. The findings imply that unstable network connection and online fraud presents the biggest challenge to successful adoption of e-payment systems among Matatu SACCOS in Nairobi.

The establishment of a legal and institutional framework seems to be the driving force behind the successful adoption of electronic payment systems among the Matatu SSACOS in Nairobi.

According to the SACCOS, external support (from consultants, vendors) is the integration across the entire organization affects the adoption of e-payment to the largest extent. It seems that the avoidance of layering costs onto the current distribution network is not a major hindrance to the adoption of electronic payment. The findings thus concur on the fact that a legal and institutional framework is critical in successful technological absorption.

Government intervention and policy seems to have a significant effect on the adoption of electronic payment among the matatu SACCOS in Nairobi. Most SSACCOS view Reinforcement from the relevant authorities' results to resistant from stakeholders the fact that through reinforcement, there is adoption of e-payment options that users feel they are expensive as the main challenges affecting the adoption of e-payment among the matatu SACCOS in Nairobi. The findings thus support the fact that Government policy plays a critical role in the creating an enabling environment for technology absorption and incubation. The provision of both hard and soft ICT infrastructure is the prerogative of any state keen on enhancing both firm and national competitiveness.

ICT knowledge level poses a major challenge to successful adoption and implementation of electronic payment among matatu SACCOS in Nairobi. The application of devices such as message integrity, digital signature, and digital wallet requires high level of education of which majority of the users do not possess has the biggest impact on the adoption of e-payment among the matatu SACCOS in Nairobi. Apparently, the user's inability to transact banking business over the phone least affects the successful adoption of electronic payment systems among the Matatu SSACOS in Nairobi. The result concurs with the thesis that; technological dissemination

largely depends on the technical knowhow of both the implementing agency and the final operators.

5.3 Conclusions

In response to the current electronic evolution in Kenya, the matatu sector in Nairobi has not been left behind hence the clamor for e-payment among the matatu SACCOS. However, successful adoption of the electronic technology has faced immense challenges since inception. The study shows that factors affecting the adoption of e-payment technology range from capacity of owners, government policy, lack of adequate a legal and institutional framework and low ICT knowledge base. The agility with which the Matatu SACCOS have embraced the e-payment technologies is a positive indication in line with the government policy on implementing cashless payment system in the transport sector.

5.4 Recommendations for Policy and Practice

The study found that owner capacity is a major challenge to the successful underscoring the need for the line ministry and relevant agencies to foster public-private collaborations in ICT training, re-training to empower the matatu operators with adequate ICT tools to enhance the uptake of e-payment techniques not only in Nairobi but across the country. Going by the study findings, there is a big knowledge gap among the matatu operators in Nairobi further underpinning the need for tailor-made ICT programs by the relevant bodies to bolster the level of ICT know-how among the matatu operators.

The absence of an appropriate legal and institutional framework on e-payment in Nairobi calls for both the private and public sector to collaboratively establish the right legal and institutional

structures to create an enabling environment for technology absorption among the matatu operators in Nairobi and beyond.

Government intervention and policy seems to have a significant effect on the adoption of electronic payment among the matatu SACCOS in Nairobi. Most SSACCOS view .

The lack of adequate Government support particularly in terms of Reinforcement from the relevant authority's calls for the national government through line ministries to formulate sound polices ant strategic plans biased towards creating impetus to technology dissemination and absorption among the matatu operators to enhance their core competencies.

5.5 Limitations of the Study

The study sought to establish the factors affecting the adoption of electronic payment systems by matatu SACCOS in Nairobi. It is clear that a study of this magnitude should include a survey of sizeable number of firms across the country. However time and material resources did not make this feasible and for this reason the study concentrated on 64 SACCOS in Nairobi.

On the other hand, the study period was a little bit narrow for a study of this nature. The researcher had to juggle between work and the field particularly during data collection. This was a major hindrance particularly in ensuring that the research work did not hamper the performance and productivity of the researcher at the work place.

At the same time, some of the respondents were non-committal posing major challenge in the field during the data collection costing the researcher since he had to do a lot of data editing after

field work. Despite these challenges the validity of the findings emanating from this study cannot be compromised.

5.6 Suggestions for further Research

The fact that the degree to which various factors affects e-payment adoption varies from one matatu SACCO to the other calls for further research efforts to identify optimal e-payment practices and on the possibility of setting benchmarks in Kenya. The need for further research into this aspect is further compounded by the facts that electronic payment particularly in the matatu industry is a relatively new phenomenon in Kenya. Studies involving confirmatory analysis will need to be carried out to further test and confirm the findings of the study. In the same context, there is need for further research to focus on the critical success factors in the adoption and successful implementation of electronic payment techniques not only in the matatu sector but across the other sectors in Kenya.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER


UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE...10/09/2015

TO WHOM IT MAY CONCERN


The bearer of this letter ... JAMAL OMAR KONGO GATHUMB
Registration No. D61/2333/2011

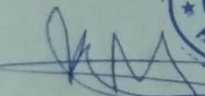
is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

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

Thank you.




PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS

APPENDIX II: THE QUESTIONNAIRE

Introduction: Please complete the following questions to reflect your opinions as accurately as possible and to answer factual questions to the best of your knowledge. Your information will be kept strictly confidential.

PART 1: DEMOGRAPHIC INFORMATION

1. State your gender:

a) Male

b) Female

2. Please indicate your Age (in years)

a) 21 Up to 30 years

b) 31 Up to 40 years

c) 41 Up to 50 years

d) Over 50 years

3. Please indicate your highest level of education

a) Primary

b) Secondary

c) College / University

d) Post graduate

PART 2: CAPACITY OF OWNERS AND ADOPTION OF ELECTRONIC PAYMENT BY MATATU OWNERS IN NAIROBI.

I. To what extent the following factors have affected the adoption of electronic payment in your SACCO?

Please indicate on a Scale of 1 – 5 where: 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

	Effect of capacity of owners on the adoption of Electronic payment by Matatu owners in Nairobi	1	2	3	4	5
i.	There is incompatibility with other payment systems					
ii.	High level of complexity					
iii.	secure deposit and withdrawal of money					
iv.	secure communication networks					
v.	secure network maintenance					
vi.	The systems lacks authenticity, privacy, integrity and non-repudiation					
vii.	The EPS is also user friendly					

viii.	The EPS is not simple and easy to use especially in micropayment					
ix.	The system does not support impulse buying					
x.	The country lacks its own set of policies that EPS must conform to.					
xi.	There is mass customization which is possible through online transaction systems					
xii.	Online fraud and other security issues are a menace to existence of EPS					
xiii.	There is high level of disclosure to unauthorized persons					
xiv.	There are no prescribed rules on money laundering					
xv.	Customer intimacy on location sensitive products is not easily maintained					
xvi.	There is unreliable internet connection to support the system					
xvii.	There is steady reduction in use of electronic payment technologies such as automated teller machine (ATM)					
xviii.	There is lack of infrastructure capacity					

PART 3: FRAMEWORK AND ADOPTION OF E-PAYMENT BY MATATU OWNERS IN NAIROBI.

II. To what extent the following factors have affected the adoption of electronic payment in your SACCO?

Please indicate on a Scale of 1 – 5 where: 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

		1	2	3	4	5
xix.	Framework on adoption of electronic payment system					
xxv.	There is legal framework that guides the adoption of E-payment					
xx.	Choosing partners and skills carefully enhances the performance of E-payment					
xxi.	There is integration across the entire organisation					
xxii.	There is development of an E-commerce strategy that complements the corporate strategy;					
xxiii.	There is avoidance layering costs onto the current distribution network					
xxiv.	There is a developed benefits register and measure your achievements against it.					
xxv.	There is adequate Information intensity					
xxvi.	There is consideration of organisational characteristics in general and size specifically					
xvii.	The external environment plays a significant role					
xviii.	There is external support (from consultants, vendors)					

PART 4: GOVERNMENT SUPPORT AND ADOPTION OF E-PAYMENT BY MATATU OWNERS IN NAIROBI

III. To what extent the following factors have affected the adoption of electronic payment in your SACCO?

Please indicate on a Scale of 1 – 5 where: 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

	Effect of government support on adoption of e-payment by Matatu owners in Nairobi.	1	2	3	4	5
xix.	There is high number of e-payment adoption after reinforcement from authorities					
xx.	Government policies favor the adoption of e-payment					
xxi.	Reinforcement from the relevant authorities results to resistant from stakeholders					
xxii.	There is high number of e-payment users after reinforcement					
xxiii.	Through reinforcement, there is adoption of e-payment options that users feel they are expensive					

PART 5: ICT EDUCATION LEVEL AND ADOPTION OF E-PAYMENT BY MATATU OWNERS IN NAIROBI.

IV. To what extent the following factors have affected the adoption of electronic payment in your SACCO?

Please indicate on a Scale of 1 – 5 where: 1 = No Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent

	Effect of low ICT education level on adoption of e-payment	1	2	3	4	5
xxiv.	Users are not able to transact banking business over the phone					
xxv.	The e-payment concept used is technical and requires high education levels to operate					
xxvi.	There is no training rendered to e-payment users thus impeding transaction					
xxvii.	Majority of users have low level of education thus making it impossible to execute e-payments					
xxviii.	Payment through the Internet is viewed as time wasting and complex					
xxix.	The devices such as message integrity, digital signature, digital wallet requires high level of education of which majority of the users do not possess.					
xxx.	Low levels of ICT literacy all impedes the adoption of e-payment					

APPENDIX III: LIST OF MATATU SACCO'S IN NAIROBI

1. 12C TRANSPORT SACCO LTD
2. 2B TRAVELLERS SACCO LTD
3. BABA DOGO 25 TRAVELLERS SACCO
4. BURUBURU 58 TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED
5. CBET SACCO
6. CITY HOPPER LIMITED/FANAKA MERCHANTS LIMITED
7. CITY STAR SHUTTLE LIMITED
8. CITY TRAM SHUTTLE LTD
9. COMPLIANT MANAGEMENT COMPANY LIMITED
10. COUNTY LINK SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD
11. DABUMATO COMMUTER SERVICE SAVINGS & CREDIT CO-OPERATIVE SOCIETY LTD
12. DAKIKA MATATU OWNERS SACCO
13. DANDORA USAFIRI TRAVELLERS SACCO
14. DAYAH EXPRESS COMPANY LIMITED
15. DOUBLE M SACCO
16. EASTERN BYPASS TRAVELLERS COMPANY LIMITED
17. EASTLANDS EAGLES LIMITED
18. EASTLEIGH COMMUTER SERVICES LIMITED
19. EASTLEIGH ROUTE SACCO
20. ELEVENTH HOUR TRANSPORT SACCO
21. EMBASSAVA COOPERATIVE SAVINGS AND CREDIT SOCIETY LTD
22. ESTATES CONNECTION LIMITED

23. FIG KOMBA
24. FORWARD TRAVELLERS SACCO LTD
25. FOURTY FOUR SACCO
26. GANAKI MULTI PURPOSE COOP SOCIETY
27. HIGHRISE KIBERA SACCO
28. HIMOSA TRAVELLERS SACCO
29. HURUMA 46 SAVINGS AND CREDIT CO-OP SOCIETY LTD
30. HURUMA MINI-BUS SACCO LTD
31. INDIMA (NJE) SACCO
32. JONSAGA FLATS SACCO
33. KANGEMI MATATU OWNERS SACCO
34. KANI TRANSPORT SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED
35. KARIOBANGI MATATU OWNERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED
36. KASBOWA SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED
37. KENYA BUS SERVICE MANAGEMENT LIMITED
38. KIBERA BURETI SACCO
39. KIBERA MATATU OWNERS COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED
40. LOPHA MULTIPURPOSE CO-OPERATIVE SOCIETY
41. LUCKY BABA DOGO TRAVELLERS SACCO LTD
42. MADIWA MATATU OWNERS SACCO
43. MARIMBA TRAVELLERS SACCO
44. MAVEROUS SHUTTLE LIMITED
45. MNK SACCO SOCIETY LTD

46. MWIKI PSV SACCO
47. MWIRONA SACCO LTD
48. NAIROBI FRIENDS TRAVELLERS SOCIETY
49. NGONG TRAVELLERS SACCO
50. NGUMO-LINE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED
51. NGUSO TRAVELLERS SACCO
52. OUTER CIRCLE SACCO
53. PEJO TECH COMPANY LTD
54. PINPOINT SOLUTION (K) LTD
55. REMBO SHUTTLE SAVINGS AND CREDIT SACCO LTD
56. ROG TRAVELLERS SAVINGS AND CREDIT COOPERATIVE SOCIETY LTD
57. STAHTO COMMUTER SERVICES CO.LIMITED
58. TAWALA UTAWALA SACCO
59. TRAVEL MART LIMITED
60. UMOINNER SACCO LTD
61. UMOJA INNERCORE TENA MATATU OWNERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD
62. UMOWA SACCO
63. UTAWALA BY-PASS TRAVELLERS SACCO
64. WALOKANA MULTIPURPOSE CO-OPERATIVE SOCIETY LTD