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Adopting Card-Based Payments in Ethiopia
(A FRAMEWORKS EVALUATION)

A PROJECT FOR THE PARTIAL FULFILLMENT OF A
MASTERS DEGREE IN BUSINESS ADMINISTRATION

By: Temesgen Busha

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Submitted to: Zewdie Shibre(Dr)



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Title: **Adopting Card-Based Payment System in Ethiopia.**

By: **Temesgen Busha**
FBE
MBA Program

Approved by Board of Examiners:

Fewdie Shibre (PhD)

Advisor

[Handwritten Signature]

Signature

Examiner

Signature

Examiner

Signature

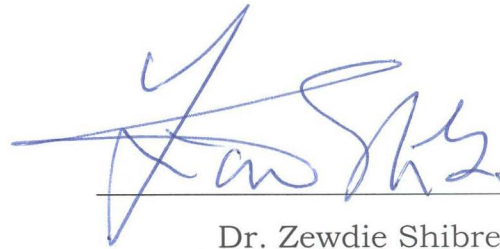
Examiner

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Certification

This is to certify that Temesgen Busha has completed his project work entitled **“Adopting Card-Based Payment System in Ethiopia”** successfully in partial fulfillment of the requirement for the award of Degree of Masters of Business Administration. In my view, the work is original effort of the candidate and all materials used to the project work have been acknowledged.



Dr. Zewdie Shibre

Advisor

Statement of Declaration

I hereby declare that the project entitled "**Adopting Card-Based Payment System in Ethiopia**" is my original work and has not been presented (submitted) by anybody; for any degree or diploma in any other university and all materials used for the project work have been duly acknowledged.

<u>Temesgen Busna</u>	<u></u>	<u>22/03/07</u>
Name of Candidate	Signature	Date

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Abstract

This project is an explanatory research to evaluate whether the currently prevailing conditions in the country are sufficient to introduce card-based payment. A framework evaluation approach is used to analyze the existing conditions. The research methodology used is an in depth interview of key informants from relevant institutions to the subject. Ethiopia is a country which had its own money in ancient times, but now it is one of the few countries that use ancient payment system- cash-based payment. But this situation must be changed at some point and the country needs to be acquainted to modern payment systems, such as card based payments that developing countries, including those in Africa are using. Currently, there are recent initiations started by commercial banks. The necessary frameworks for this purpose are found to be weak but they are sufficient to begin the operation of card based payment system in the country. To this end, all the stakeholders including the government must join hands to strengthen the weak points and smoothen the process of adopting the system.

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CHAPTER ONE

INTRODUCTION

1.1 Background

Cards as means of effecting payment were introduced in the 1920s by gas stations and department stores in the United States of America mainly as a means of competition by widening the customer base of the retailers [1]. Though the invention of cards well before the 1920s, it was not before the early 1960s it has got significant magnitude in the economy. Ever since their introduction as payment mechanism, cards have passed through various development stages and currently there are different types of cards used for a number of payment purposes around the world.

Cards have useful impacts to the merchant, the consumer as well as the card issuer in many ways [2]. To the merchants, payment cards increase customer demand by simplifying payment methods and inducing consumption of goods and services. They also bring about customer loyalty especially when the cards are sponsored by merchants. To the public (the consumer) cards help improve lifestyle through simplifying payment methods and entitling to consumer credits. To the card issuer cards earn annual fee (on all cards), and interest on outstanding balances of credit cards from the card holder, and inter-charge fee (merchant discount) from the merchant firm.

Use card based payments has a direct relationship with the economic development of the country. The efficiency in the transaction processing and

In the last eight decades, cards have reached every corner of the world except few developing countries. Ethiopia is one of those few countries

in the world who have only cash based retail payment system. Carrying cash, and at times checks, to all payment points is mandatory in the country.

The first time when a form of payment card is introduced in Ethiopia was the year 2002, when the Ethiopian Telecommunication Corporation (ETC) introduced prepaid mobile and public phone cards. The prepaid telephone cards were not typical payment cards as they involved only two parties, the Corporation and the clients. Since then, Total Ethiopia introduced pre-paid fuel cards in 2004, commercial bank of Ethiopia introduced ATM services in 2004, Dashen Bank distributed VISA cards few months back. The cards introduced by these institutions are typically stored value or cards. The commercial banks the fuel company are using the introduction of cards as new product line to retain their existing customers and to attract new customers.

1.2 Types of Payment Cards

Payment cards can be categorized in different ways based on the different attributes. They can be grouped as credit and debit cards based on the relation of transaction payment and the bank account of the customer. If payments are directly deducted from the account of the client, the type of card is a debit card whereas, if payments are charged to the payment guarantor (card provider), and then later at the end of the month paid by the card holder such type of card is a credit card. A prepaid (stored value) card is different from both debit and credit cards, in that the payment is made in advance and the cards are used for utilizing the payment. [5]

Cards can also be categorized as smart or dumb based on whether they contain memories in them. Smart cards contain micro-chips embedded in them and can store relatively large amount of data related to the card holder, the transaction made, the security related data and other useful data. On the other hand, dumb cards are ordinary cards that have magnetic stripes and contain very limited amount of data. [5]

1.3 Definitions of Some Payment Cards

Credit card: - A plastic card having a magnetic strip, issued by a bank or business authorizing the holder to buy goods or services on credit. It is also called charge card. [3]

Debit card: - A bankcard used to make an electronic withdrawal from funds on deposit in a bank, as purchasing goods or obtaining cash advances [4].

Prepaid cards: - A card that stores value and used instead of cash to pay for a single service, such as pay telephones or public transport. Some prepaid cards are reloadable while others are non reloadable collector cards [6].

Smart card: - Is a plastic card embedded with a chip that enables a large amount of information to be stored, accessed and processed through a terminal or card reader. [5]

1.4 Project Description

This project is an effort to realize a successful card based payment system in Ethiopia especially in the retail payments. The project, concentrates on identifying the necessary frameworks that can be viewed as minimum requirement for introducing card based payment

systems. The necessary frameworks are seen from four fundamental perspectives: infrastructural frameworks, legal (the judiciary) instruments, regulatory frameworks that deal with the determination of policies and rules of operation and socio-cultural frameworks. The roles to be played by the parties involved in card based payments are also assessed.

1.5 Statement of the Problem

For a number of decades, Ethiopian economy has remained aloof of card based payment system while many countries of the world including developing African countries such as Kenya, Uganda, Tanzania and Rwanda, have introduced the system to their economy many years back [7]. It is obvious that the country has foregone the benefits it could have enjoyed from the practice for not adopting the system. Now the time has come to step forth that there are some beginnings. To foresee the prospects and alleviate possible problems ahead of time, it is imperative to reveal the long-lived bottlenecks that proved the country incompatible to payment cards so far. What are the reasons that made the country to refrain from card based payment systems, till now and what are the necessary socio-economic, legal, infrastructural and regulatory conditions for installing and succeeding in card based payment systems? The roles of the various stakeholders must be assessed to realize the new payment system.

1.6 Objective of the Study

The main objective of this study project is to evaluate prevailing conditions of Ethiopia against the necessary frameworks required for

the adoption of card based payment system in the country. The minimum infrastructural, legal and regulatory frameworks as well as the socio cultural frameworks necessary for card based payment system adoption are also assessed in the study. The project also explored the roles different stakeholders should play for successful adoption of the system. It also shows what policy makers and legislature may do to bridge the gap and facilitate the adoption of card based payments in the country. Throwing light on the newly started payment card practices, was also the aim of the study.

1.7 Scope of the Study

The study explored cards that are used as point of purchase payment mechanisms mainly from retail payment perspective. In the context of this study, cards are taken as alternative payment media to cash and check payment. This study is not a feasibility study for card based payment system in the country; it is an exploratory research to identify the minimum necessary requirement to introduce card based payment practice.

1.8 Significance of the Study

By identifying the problems that delayed the country from introducing payment cards to the economy, and assessing the status of relevant social, economic, legal and infrastructural conditions necessary for successful adoption of card based payment systems, this project avails information for policy makers and legislatures that enable them incorporate the subject in policy and decrease designing. The paper can also be used as a point of reference for evaluating the payment cards being implemented. The study can provide baseline information

for future studies on electronic payment systems in general and card based payment systems in particular.

1.9 Methodology of the Study

In this exploratory research, the methodology mainly employed is an in-depth interview of key informants who have the expertise in the relevant topics covered in the study.

As a source of information, four categories of institutions namely: the regulatory institution of the financial sector, the National Bank of Ethiopia, Card issuer and/or Sponsor banks, and institutions that are point of purchase payment recipients and the physical infrastructure provider, Ethiopian telecommunication Corporation are included.

From prospective card issuer banks Wegagen Bank share Co. as current card issuer Dashen Bank Share Co. and Commercial Bank of Ethiopia are chosen. From among merchant institutions or card recipients. Hilton Hotel Addis Ababa, Abyssinia Supermarket, Shi Solomon Hailu Supermarket (Baherawi branch) are included. National Bank of Ethiopia is the regulatory authority of the financial sector of the country and selected to give information from regulation point of view. The Ethiopian telecommunication Corporation (ETC) is the sole provider of telecom intra structure in the country and supposed to inform on the telecom capacity of the country.

One key informant from each institution was thoroughly interviewed, but two key informants were interviewed. Interviewer made with the key informants twice or more to capture the necessary data. The interviews huge conducted by the principal investigator.

Ten randomly selected individuals from a bank two different banks payment unit and the environs were interviewed to investigate the payment cards usage tendency of the public and the reason for not using. The individuals were randomly to represent the community that is supposed to own payment bank accounts.

CHAPTER TWO

LITERATURE REVIEW

2.1 Evolution of Payment System

Human development history explains that the first and the oldest payment mechanism is the barter system. In the barter system people used to change goods for goods in the market place.

The excessive increase in human need overtime and the indivisibility of the bartered items gradually proved the barter system unsuccessful and replaced it by the commodity money system. The commodity money served some how as a medium of payment and store of value, solving some of the drawbacks of the barter system. The commodity money used certain commodities that are acceptable to all parties interested in the transaction (to sell or buy goods or services). Though it had solved some problems associated with barter, the commodity money had its own problem that included, the bulk quantity of the commodity, lack of standardized divisibility, and the attitude difference of various communities towards the medium of transaction made commodity money un acceptable over time. The gradual refusal of payment commodity and the emergence of technocrats paved the way for the emergency of non-commodities money. The first currency monies were metallic currencies crafted by black smith. The metallic currencies (coins) are still in use usually as subdivisions and as alternative form of paper currencies. The paper money evolved to avoid the physical fatigue and inconvenience associated with handling and trading with metallic currencies. [8]

The increased rate of circulation of money per unit time in a society, the risk of theft proved physical currencies (both coins and paper currencies) cumbersome. Much of the problems related with handling physical currencies are avoided by using cards. In the current society cards improve life style by reducing the contact people made with physical money.

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2.2 The Contemporary Payment System

The current society is characterized by usage of multiple payment systems that ranges from physical cash both in paper and coin, checks, cards in various forms, and the electronic pay payment (e-payments) and the contact less payments. The later two are developed on card based payment environment in a sense that the customer has to have some type of payment card to use any of the forms of e-payment that is conducted by using internet and transaction soft ware, and for the contact less payment method, possession of a card is important as the account holder information is provided in connection with cards.

In many countries, cash and checks made up the largest or the whole part of payment system where as cards, and the other electronic transaction systems used the most in western and developed countries where the economy is well developed and the literacy and technology succeeded to tear away prejudice towards electronic payments from peoples' mind.

2.3 History of Payment System in Ethiopia

History shows that the state of Axum in the northern part of the current Ethiopia is one of the Worlds oldest nations who experienced the use of coin money in the early history of mankind. Starting 8th

century BC, Axumite monarchs issued coins¹ Gradually when the state of Axum was weakened, the coin minting practice was discontinued which forced the state to trade in primitive payment system, the barter system. In the barter system, people interchanged items of value among themselves. Due to lack of standard in the barter payment system it was replaced by commodity money.

The commodity money used different commodities as medium of payment in Ethiopia. Among the commodities used as medium of exchange were salt (bar of salt), cloths, iron, beads and wares and so on that won acceptability among the people and that could be stored for long period of time. The commodity money stayed in effect in Ethiopia until mid 19th century when a foreign coin money (Maria Theresa thaler) was introduced into the country through international trade². Maria Theresa was in circulation until 1945. There were also other coin currencies used simultaneously with the thaler. Such coins were minted either by Italians during the occupation of Eritrea or by Ethiopia during the regims of Haileselassie I and Menlik II. There were also local metallic currencies in Harar that were called "Mahalak" and "Ashrafi" used from 1789 to 1887.

The first paper money was introduced in the payment system of the country in 1914 when then Bank of Abyssinia issued bank notes. The bank notes were in 5,10,50,100 Birr subdivisions and were printed in London, Britain. Ever since the introduction of paper money, they were used simultaneously with coin currency as coins were basically sub-division of the Birr. The payment system of the country has hardly changed since then in the 20th century except the introduction of Bank checks as a means of effecting payment instead of cash. [8]

2.4 Characteristics of Card Based Payments

There are characteristics that card based payments have that makes them distinct from other forms of payment. All card based payments free the card holder from carrying cash for payment of transaction of any sort. All payment cards are either of magnetic strips or embedded microchips on a slim rectangular plastic plate. Magnetic strips or microchips are the areas on the cards where card holder related and account related electronic data are stored. Payment cards are operated by undertaking payment verification protocol to identify card user and ensure legitimacy of the payment. The payment verification protocols differ from one type of card to another or based on the specification set by the card provider.

2.5 Necessary Frameworks for Card Based Payment System

Introduction

For the smooth operation of the card based payment system, there are various requirements that must be in place. These requirements include infrastructural, legal and supervisory and socio cultural frameworks.

2.5.1 Infrastructural Framework

The infrastructural framework necessary for card based payment system are the data transmission the telephone, wireless media or the Radio frequency media; the card reading facility (point of sales terminal).

2.5.1.1 The telephone network

Data transmission is made to verify the legitimacy of the card holder and the availability of funds and other customer related

issues. It is also necessary to transfer payments from the account of the payer (card holder) to the account of the payee (merchant) as well as to effect the subsequent settlement and clearance. The minimum required infrastructure is a telephone network to transmit the data. There are also other value adding data transmitting infrastructures which are not necessary requirements to launch payment card services. These group of infrastructures include mobile telephone network and the internet. As the verification and payment transfer data re transmitted through telephone lines (cable or other forms), sufficient transfer capacity of telephone services as well as un interrupted service is mandatory to provide card based payment services.

2.5.1.2 Postal Service

The presence of a fast and careful postal service is necessary for transferring payment advices and messages of payment cards. In areas where there are no point of sales terminal equipments printed card vouchers, usually supplied by card issuers, could be used by a merchant to make collections from card holders. The original copy and vouchers are sent to the clearing company by mail. This method is especially ideal to entertain tourists that travel to remote areas that are not accessible through telephone and carrying cash is insecure.

2.5.1.3 Electric power

It is obvious that payment data processing requires availability of uninterrupted electric power supply. The payment verification and settlement requires electric power supply even if the telephone line can work without external power supply.

2.5.2 The Regulatory Framework

For a reliable card based payment system to exist in country, the presence of regulatory frameworks governing the overall payment environment is essential. The role of enacting regulatory measures governing all participants in the payment system could be played by the central bank of a country or any institution endowed with the authority of overseeing the financial sector [9].

Not only the mere existence of such regulatory measures is important for the effectiveness of card based payments, the time of the introduction and the pertinence of the regulations to the objective realities in the economy is curial. In line with the time of introducing the regulatory framework, preparing stringent policies all the beginning of the system may create difficulty to the banks to fulfill hence the entrusted institution may consider a step-by-step introduction of the regulatory measures should it find expensive to the banks and the processing companies and the merchants to comply with in the short run [9].

To safeguard the economy and make the best out of card based payments, the policies must be all encompassing of the relevant areas. The areas that need coverage by the policy instruments of the supervising authority may include but not restricted to:

- Determining the minimum and maximum level of payment to be effected using cards. These limits have a significant impact on the acceptance of the payment system by the public. The maximum payment ceiling and the minimum (floor) payment amount are largely determined by the level of system security and the economic significance, and cost of the micro payment to the service provided respectively.

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- Determine the amount and who should pay commissions and charges on prepaid and debit cards as well as the amount of interest on unpaid balance of credit cards [10].
- Protect cards against money laundering and terrorist funding attempts
- Protect payment cards from application in capital flight through cross-border transactions.
- Determine the number of parties involved in payment cards with duties and responsibilities of each in the system.
- Devise a general framework for consumer and data protection schemes [10].

The presence of regulatory policy instruments has the impact of developing confidence among the card holders. However, it can also impede the attitude of card providers and third party processors by putting unachievable parameters at the stage of the introduction of the system. In order to facilitate the adoption of the system, the concerned supervisory authority has to study when to introduce the policies and which one must come first.

2.5.3 The Legal Framework

The legal instruments for establishment of card based payment system in the country may include but not restricted to:

- Determining the judiciary procedures to be followed to resolve payment card related disputes
- Determining the effects of payment card related regulatory, instrument on other laws in the country.
- Deciding with regional countries how and which legal jurisdiction to apply if/and when there arise disputes on cross border card based payments.

- The magnitude and procedures of measures taken in payment card related frauds, cheatings and misappropriations.

Presence of legal framework for the card based payments boosts the confidence of all participants.

2.5.4 Socio-cultural Framework

The socio-cultural aspect of the society is also necessary to adopt card based payment. The attitude of the general public towards new technology and new modes of life is very poor in developing countries like ours. The public must be receptive to new technologies and should develop trust to use them in order to reap the best out of them. The confidence of the people diminishes partly due to literacy and lack of exposure to other forms of payment, and partly because of long lived sentimentality to physical money.

Public confidence and trust can be developed for card based payment adoption, through ensuring acceptance of cards by laws, and undertaking significant promotion activities for increasing public awareness. The provision of alternative facilities on cards (ATM facility to access cash) is also useful to induce acceptance. Banks and merchants can also induce benefits such as loyalty fees to speed up the acceptance of the system. [11]

2.6 Participants and Their Roles in the Card Payment System

There are five participants involved in a conventional card based payments. The parties have their own respective roles in the payment process.

- 1 **The Buyer (the card holder):** the buyer in the payment card transaction is a consumer who is using cards for effecting payments. Such a customer in most cases (except prepaid cards) has an account with a bank that issued the payment card.
- 2 **The Seller (Merchant):** is a trader that sales his products or services on cards. Such a merchant is using a POS terminal to collect payments from buyers and may or may not have an account with the POS terminal owner bank.
- 3 **The card Issuer Bank:** the card issuer is the bank that holds the account of the buyer and provides cards to the issuer. This is the bank that gives credit to the card holder in the case of issuing credit cards.
- 4 **The card acquirer bank:** this bank is the one whose POS terminal is located at the premise of the merchant and through whose reader the payment transaction is conducted. This bank may or may not hold the account of either or both of the buyer and the seller. In most cases, it holds the account of the seller.
- 5 **Third Party Processor:** this is an independent entity that undertakes the reconciliation of the card acquirer and card issuer banks. It also performs the payment verification request from the card issuer account and communicates approval of the transaction to the merchant and the acquirer. Third party processor could be established by the association of card issuer banks. Card provider such as the VISA can also play the role of third party processor.
- 6 **National Switch:** this is a third party processor at a national level. The presence of such institution at a national level avoids the sending of fully local transaction to an international router and it shortens the long time taken for verification and approval through international router.

2.7 Benefits of Card Based Payment System

Card based payment system has a number of benefits to the country's economy in general and to the parties involved in the payment system in particular. Card based payment a significant role the in general economic development as it increases money velocity. It also income to government through taxi from the profits of the participating parts. The benefits that go to the individual participating entities described as follows.

2.7.1 Benefits to the Card Holder

Convenience : The card holder enjoys the ease of handling a small plastic card instead of carrying and converting) bank notes and coins at the time of purchase.

More secure : Carrying cash is risky as it could be stolen, and cards reduce this risky by requiring authentication of payment even if hey are stolen

Credit facility: Cardholders whose are proved to be credit worth are granted credit through cards. This facility improves the quality of life by enabling cardholders to consume the goods and services of their choice when they desire it [11]

Short transaction time and ease of access: Card based payments greatly save cardholder to access cash during off days and hours through automatic payment facilities (ATM)

2.7.2 Benefits to the Merchant (seller)

The card issuer bank has several benefits including the following:

- **Interest:** Card issuing bank earns interest income on unpaid balance of credit card payment. This type of payment is associated with credit cards.
- **Satisfied Customer:** Banks may retain their existing customer and can attract others when they invent product that add value to their customers.
- **Mobilize More Savings:** As people gradually learn the benefit of using cards more people tend to open accounts (come to the banking system) which wider the customer base.

2.7.3 Benefits to the Acquirer Bank

The acquirer bank is the bank that acquires more cards through POS terminal. In other words, the bank that has many POS terminals with merchant institutions or other wise has high probability of buying more cards. The acquirer earns commissions per transaction made.

Here it must be noted that a particular bank can be both card issuer and card acquire at the same time.

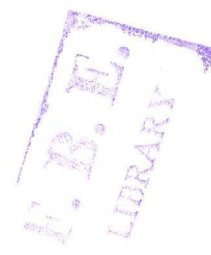
2.7.4 Benefit to the Third Party Processor

Third party processor earns commission and charges per transaction processed or a fixed rate fee based on the agreements made between the party and the banks.

2.7.5 Benefit of Card Based Payment System in the Economy

Payments are the lifeblood of economies. The adoption of card-based payment system over cash based payments smoothens the transaction process through reducing the counting and handling of cash thereby increasing money velocity in the economy. Moreover, it expands the sales volume of goods and services, reduces the barrier to immediate credit and liquidity. [12]

- **Increased Domestic Economic Activity:** card-based payments increase the domestic economic activity through increasing money velocity in the country.
- **Increased Global Economic Activity:** Researches have indicated that with the increase in electronic payment (to which cards are parts), proportionally increases the country's global economic activity. [12]
- **Cost Saving:** The increased efficiency of payment processes helps to save costs. Much of the activities performed by manual system are done by computers including the routine transaction processing.
- **Capital Accumulation:** Card-based payment products can act as gateways into the banking system for un-banked segments which make up as much as 70 percent of the world's population. For individuals, inclusion in the banking system helps improve money management and leads to enhanced financial empowerment. For economies, this creates a potentially powerful engine for growth-drawing cash into bank accounts where it can provide low-cost funds for lending and investment.



CHAPTER 3

DATA ANALYSIS AND INTERPRETATION

The data were collected by employing in depth interviews of key informants using open-ended interview guiding questions. The interviews were moderated by the principal investigator. The key informants were selected from the following eight organizations:

Shi Solomon Hailu Supermarket (Beherawi branch), Abyssinai Supermarket, Hilton Hotel Addis Ababa, Wegagen Bank share company, Dashen Bank Share Company, Commercial Bank of Ethiopia, the National Bank of Ethiopia and Ethiopian Telecommunication Corporation (ETC).

Since card based payment system is a new phenomenon in Ethiopia, it is difficult to find well versed individuals and/or institutions in the area that can be reliable source of information related to payment cards. Therefore, the following organizations were selected based on their relevance to provide useful data for the following reasons:

The supermarkets were chosen as good informants on the newly launched Dashen -Visa Card related variables. Hilton Addis Ababa has been using various international Cards including VISA, Master Card, American express, diners Club, since its establishment in 1969 G.C. Dashen Bank is the first domestic issuer VISA debit card and has been acquiring international payment cards in the country. Wegagen Bank is one of the prospective domestic payment cards issuers in the country as it has already started a project for this purpose. Commercial Bank of Ethiopia is the largest and oldest

commercial bank in the country. It is also a pioneer in introducing the ATM service in the country. National Bank of Ethiopia is the regulatory and supervisory authority of the financial sector of the country of which the payment system is a part. The Ethiopian Telecommunication Corporation is the Sole Provider of telecommunication infrastructure in the country that provides many of the communication infrastructure for card based payment system. Therefore, all the selected institutions were chosen based on the merit they have in providing the necessary information on the variables to be investigated in the research.

The respondents were referred to by their respective institutions' authorities for having deep knowledge and experience on payment card related matters. CBE is the only institution from which two respondents were chosen who have been working on ATM service and who have involvements in the card adoption project already under way by the Bank.

For ease of presentation and to avoid direct quoting of respondents' names, respondent codes were used instead of names. Profiles of the respondents represented by the codes are attached in the profile annex.

3.1 Necessary frameworks for Adopting Card based Payment in Ethiopia

Under this section the data gathered from respondents through in-depth interview were presented and simultaneously analyzed. The responses are presented under the variable (subject of investigation) to which it pertains in the up coming sections.

3.1.1 Infrastructural Framework

The infrastructural resources assessed under this title include the enabling facilities and resources, namely the telephone service, postal service, and electric power supply.

3.1.2 Telephone Service

The telephone service quality of the country provided by the sole provided etc telecommunication monopoly organization ETC is commented to be incapable to render card based payments services. All the respondents had similar view on this question.

Interviewer: How do you describe the telephone service rendered by ETC especially in relation to reliability and effectiveness?

Respondent H: "... the telephone service in the country is very disgusting" she remarked and "... you may find the telephone connection interrupted while you are collecting a bill, probably this is the biggest problem in card based transaction. You may be disconnected while you are making international calls for settlement..?"

For the same question S₂ agrees with the view of H but he is more tolerant than H to the problem.

Respondent S₂: "... In most cases there is a kind of line obstruction with the telephone, but it could be because of lack of technical known how from the users of the payment machine. We hardly succeed to collect payment without a second trial..." he exclaimed.

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However, respondent T doesn't fully admit the comment given by merchants.

Interviewer: "How can one be sure about the prevalence of reliable telephone facility for card based transaction?"

Respondent T: "... We haven't so far received any complaint on telephone service in card based payment transaction... if ever, the loss sustained by the merchant or card provider must be born by Telecommunication service provider..."

Irrespective of the statement of respondent T, all other respondents felt that the telecom service was not reliable. This fact was also corroborated by other researchers [10].

Interviewer: "Would you please tell me if the ATM has down times and the probable reasons?"

Respondent CB2: "... the ATM terminal has very frequent down time. The data transfer capacity of the line is very low. It is said that the ATM is built on DDL lines but I don't know what it exactly means ..." the respondent continued smiling, "... we call ETC for emergency maintenance when problems are unsolvable by our own technicians...."

3.1.3 Postal Services

It is known that payment cards could be handled manually at places where there are no POS terminals. The postal service used for transferring card charges must be secure and speedy. In this regard, there are reliable courier services in the country, mainly in Addis Ababa. The institutions that have such qualities of services operate in the capital and major regional towns only as they are mostly foreign companies might find going to small towns infeasible. Respondent H

has responded in the following manner to the questions asked regarding the use of postal services and the courier they use for the purpose:

Interviewer: “How do you collect international card payments without payment terminals at your disposal?”

Respondent H: “...We manually fill the card vouchers supplied by card companies and have the card holder signed for the amount charged and send it to the settlement company by mail, an international postal service...” answered the respondent.

Interviewer: “Why don’t you use the Ethiopian postal services for the voucher transfer?”

Respondent H: “... We need reliable courier for speed and delivery of the vouchers! You see, the vouchers meant money, if there happens any loss because of the courier company’s fault, we are re-instated by itself... that is why...”

3.1.4 Electric Power

Electric Power is a necessary infrastructure in card based payments, just as power supply to the payment processing equipment and machineries. It is possible to use an alternative power supply at times when power is off from the main supply, to smoothly entertain customers. However, such practice causes huge expenses to the firms, that threatens their profitability. Respondents to this variable question have indicated problem of power disturbance in their work places.

Interviewer: "... Would you tell me the problem in relation between eclectic power disturbance and the normal operation of the ATM terminal?"

Respondent CB₂ "... when there is power interruption at the central database, access problem will occur and the ATM goes stranded. This occurs several times..."

Respondents from banks take availability of alternative power supply a normal requirement. This may not be affordable to those who don't have the financial capacity in power back up.

Interviewer: "How do you solve the problem with power interruption that once happened may strand payment card operations?"

Respondent B1 "... What do you mean? Alternative source of power! How do you think of going in to such business without a stand by generator?" answered astonishingly.

3.2 Regulatory Framework

Regulation policy gives the general guideline on the operation of payment cards. The presence of such regulation gives participants the confidence for taking risks to involve in the business. In the Ethiopian context the supervisory authority of the financial sector is the National Bank of Ethiopia (NBE) which is expected to issue operational rules and regulations for all financial sector practices. Notwithstanding this fact, there are no regulatory policies and guidelines prepared in this regard.

Interviewer: In Ethiopia, some banks have already began giving card based payment services. Are there any regulatory policies to guide the practice, and to safe guard the economy?



Respondent N: "...we know that some banks have begun card based payments, but there are no regulatory measures taken by the National Bank. Card based payment needs a payment settling system, we do not so far have a sufficient clearing house even for the long lived check payments. Inter bank check interchange for payment is acceptable only in Addis Ababa and the surrounding. Checks are unacceptable even in major regional towns. So how can one think to regulate without having a settlement mechanism?"

Interviewer: The absence of regulatory framework hinders the operation and also poses other problems to the economy such as capital flight through cross border payments. How do you control that?"

Respondent N: "...It is true that there are problems currently, but our bank has begun a project of developing framework and regulation of the payment system. Regarding the control of capital flight, no one is allowed to pay through cards in foreign currency, but a foreign card can be freely cashed in the country. This is so to protect the foreign currency of the country...?"

Interviewer: When do you think in the right time to establish the regulation mechanism for the already started card based payment system?

Respondent N: "...As I told you earlier, we have a huge project under way by the Banks supervision department of the NBE, which is supposed to solve bottlenecks related to payment system regulation is general. It does not matter how the

principle should look like, for our case the project must be completed to give solution to the odds...”

The absence of regulatory framework is taken as one of the reasons why the country. There are respondents who cited lack of regulation for the delay of introducing payment cards in the economy.

Interviewer: What are the reasons for not introducing card bared payment in the country and by your bank in particular would you, please, explanation especially from your bank’s perspective?”

Respondent CB1: “...In the case the country, there was country certification problem by international card technology providers; there are criteria that are placed by those international card providers which our bank could not fulfill at first. You see, that is partly why we resorted to introduction of ATM service to satisfy some of the needs of our customers. The other problem for the country to stay with out payment cards is the country does not have a payment regulation system. That also has its own impact to reduce the country image before the international card providers.

There are several reasons for the country not adopting payment cards in the economy that including the poor image of the country in international media, lack of payment clearing institutions and payment regulating policies, poor infrastructural framework and attitude of the people. Respondent T also shares the view that the absence of regulatory framework had impact on the poor development of other payment systems in the country.

Interviewer: “What is your opinion on the reasons of poor card based payment system in the country, do you think those problems are alleviated now?”

Respondent T: “...I think one of the reasons is lack of laws and regulations in the country the other reasons are lack of knowledge, and lack of resource for the institutions to acquire the necessary infrastructure...”

3.3 Legal Frameworks

In Ethiopia the necessary legal instruments for the adoption of payment cards are not in place.

The interview made with the respondent from NBE has confirmed this fact.

Interviewer: “Some two years back a study has revealed that there are no laws enacted to determine issues related to electronic payments (including cards), what is the status since them?”

Respondent N: “... If new laws were enacted since then we must have received a copy and devised detailed directives for implementation, but there are no laws enacted in relation to payment systems...”

Interviewer: “How are disputes in electronic payments in general and card based payments in particular resolved?”

Respondent N: “...Well, so far articles in the Civil Code of the country could be used to determine disputes, and there are no disputes so far. In the future, however, the necessity of issuing pertinent cause in unquestionable...”

The responses (both direct and indirect) heard from all respondents indicate that legal instruments governing the practice of payment cards in the economy are necessary. However there are no laws enacted in this regard to serve the purpose.

3.4 Socio-Cultural Framework

The other weak side of the Ethiopian context for adopting payment cards, is poor socio-cultural condition. The general public is pro-cash society, that has developed strong attitude towards physical money (currency) over centuries. This situation needs long and continuous attitude development effort. The response from relevant informants also shows this fact.

Interviewer: "How is the attitude of customers towards using cards?"

Respondent S1: "Only foreign nationals and exceptionally few Ethiopians use cards, the payment terminal is almost idle all day long..."

Respondent from the other supermarket also affirms this view by responding to the above question as follows.

"... Now it (the POS) is idle, I think it will be used well in the future. You know it is only few months since it was introduced....."

The informant from the other merchant institution responded as follows:

Interviewer: "Has the recent card introduction by Dashen Bank, shown any difference on your customer base, (increased)?"

Respondent H: "...As I told you, we have many years' experience with card transaction, most of our customers are foreigners and very rich people in the country. Foreigners have continued to use cards where as domestic customers kept on cash. Domestic cards users are virtually non existent..."

The low level of acceptance of the payment cards by the general public is also reflected on the use of CBE's ATM card as indicated by respondents CB1 and CB2.

Interviewer: "Do you think that ATM has fetched the required acceptance from the public?"

Respondent CB1: "... CBE has around 1.5 million account holders, we distributed ATM cards to around 6,000 clients, you can see the usage rate..."

Interviewer: "What do you think is the a reason for low acceptance level?"

Respondent CB1: "...There were several reasons from the banks internal factors, our internal database (storage capacity) capacity was very small; not for more than 10,000 customers. We did not make much promotion as we did not have the capacity to serve more customers ..."

The other respondent from the bank admits that the ATM service has failed acceptance but the reason is lack of awareness and poor attitude towards automation.

Interviewer: "How do you evaluate the acceptance the public showed towards the ATM service and the reasons?"

Respondent CB2: "...It can be said that the ATM card service was not well accepted, even not more than half the employees that have the access for ATM have acquired the card and the service you know, this is a free service offered by the Bank to ensure customer convenience. There could be some sort of prejudice to technology..." he admired "... and the reason is lack of proper promotion of the service..." he added.

Interviewer: "one factor that has been a threat to the adoption of payment cards is security problem. What are the security conditions of the Ethiopian telecom infrastructure in this regard?"

Respondent T: "...I feel we have sufficient security systems to handle payment cards; the security features are already in place. But as the card based payment system is a new phenomenon for the country, the security capacity is not tested. It is therefore, difficult on the security strength..."

Interviewer: There are many people that suspect the capacity the capacity of the Ethiopia's ICT infrastructure both in terms of speed and continued connectivity to host payment card systems. These also cite the connectivity problems of telephone lines and the speed of data transfer on the ETC provided internet. What is your opinion this view?"

Respondent T: Previously, ETC had capacity limitations to transfer data fast and in large quantity. Now this problem has been solved as the corporation has already begun providing broadband and multimedia connection services. With this infrastructure, it can be said that ETC is at a

reliable level of capacity to host payment card and provide effective services...”

• **General Public’s Outlook Toward Payment Cards**

The interview made to know the acceptance level of payment cards by the general public respondents. It has been identified that people do not want to use cards irrespective of their income and educational level, their life styles, and knowledge of the benefits of payment cards.

1. Alem Amare 28, Education 12th complete, Income 1500/month.
“I have bank account but not payment card. I know the availability but not using.”
2. Darge Berkessa 53, Education Masters, Income 4,500/month.
“I know about the payment cards, but I don’t have it. Because the service is not complete only debit card from my account is not enough. I can use cash for that purpose...”
3. Mebratu Gebeyehu (Eng.) 43 Edu. Bsc., Post grad, Inc. 5000/month
“I have the card, and bank accounts also I don’t usually use the card, I use cash I don’t remember it usually.”
4. Sare G/Mariam 35, Education can write and read Amharic
Income I don’t exactly know but have income
“ I don’t have that card thing but have heard something about it. I have got an account.”
5. Sena Tolesa, 30 Edu. Dipl, Inc. 1200/month
“I don’t have payment card, I don’t have bank account also. I will have one soon...”
6. Martha Asefa, 29, Edu. 5th grade, Inc.: not clearly known.
“... I don’t have both. My income is very low, I have two kids to feed and sometimes I don’t get anything. I have not even thought of putting money in bank...”
7. Abinet Akalu, 31, Edu. Bachelor’s Degree, Income 1600/month

“ ...I have an account at a bank and I have also heard about the payment card thing.....but I never thought of having one...”

8. Solomon Hagos, 28, Edu. Bachelor's Degree, 2500/month
“...I have a bank account but I don't have an ATM card if that is what you are talking about...I don't' think I need that...”
9. Haile Kiros, 29, Edu. Diploma, Income 1200/month
“... I don't have a card; I don't even have a bank account”
10. Aschalew Eshete, 31, Edu. Bachelor's Degree, Income/2500
“ ... It's good to have the bank account which I have...but the card?... I don't know if I want it...”

The respondents have week usage attitude and practice irrespective of their socio-cultural background.

3.5 Other Issues

• Participants in the Card Based Payment in the Country

The recent by started card based payment system in Ethiopia is characterized by four participants: Buyer (card holder) the seller (Merchant). The merchant bank, (POS terminal provider) Bank of the buyer (card issuer), the clearing institution (the 3rd party processor).

At this point in time, the only card issuer and acquires bank in the country is Dashen Bank. Now the domestic cards in circulation are the Dashen VISA card (debit cards). The bank is sole issuer and sole acquires of cards. In other words the buyer and the seller bank are the same (at least for domestic cards in which case the number of parties reduce to four: The buyer and the seller, their common bank (Dashen) and the international cleaning house the VISA Association.

Interviewer: “Would you, please, elaborate the parties involved in the current payment card transaction and their roles in the payment process?”

Respondent B2: "...Currently only Däshen Bank has introduced card based payments service in the country. To introduce the service, the bank has invited merchants to open accounts the bank, and provided them with POS terminals for payment collections the bank also provided its customers (account holders) with debit cards so that they can effect payments through striping their cards at the merchant instead of cash. In effect we hold both accounts (of the buyer and the seller. The settlement process and clearance is handled by the card provider association the VISA. VISA in this case acts as a third party processor..."

- **Impact of Cards on Customer Base Widening**

In principle, cards increase the sales volume and the customer base of the merchant. However, in the current Ethiopian Condition, Cards are not yet well accepted and used by the people. There is no vivid positive impact on the number of customers or volume of sales since the introduction of Dashen-VISA card.

Interviewer: "Has the number of your customer or your sales volume increased since your acquisition of Dashen-VISA POS terminal?"

Respondent S1: "...There were very few (or neighbor) users of card, and there is no increase in sales volume or number of customers so far. There are some people who have the card in their pockets but don't use it for payment. Now this machine more of a problem to us than helpful material..."

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Other merchant informants have also confirmed this view with varying tones by responding to the above question in the following manner.

Respondent S2: "...Currently the payment terminal is rarely used as only few foreigners buy using cards. This will improve overtime as people understand the benefit of payment cards..."

- **What Type of Card to Introduce First?**

The type of card based services now being introduced in the country are cards that are connected to the account balance of the card holder and that do not entitle the consumer to credit facility. Banks prefer debit cards basically to avoid consumer defaulters at least until the culture of saving is well leaned by the public. Responses from the interviewees show this view.

Interviewer: "Your bank has recently introduced a VISA debit card service. Why do you prefer to launch debit cards instead of credit card for example?"

Respondent B₂: "... the reason is clear, because it is difficult to provide credit cards without knowing the credit worthiness of the customer. Customers first have to know what using payment cards meant through debit cards, then we can introduce credit cards..."

Interviewer: "... It is known that Wegagen bank Share Company has initiated a project to introduce payment cards. I don't want to press you to tell me the type of card your bank is going to launch, but why do banks favor beginning with

customers account dependent services such as ATM Card and debit card?

Respondent B₁: "... In countries where collateral loans – are not collected safely, it is difficult to provide credit cards. The banks have no guarantee to provide consumer credits. Therefore, it is advisable to begin with debit cards and ATM services. Credit cards could be considered gradually after wards..."

Banks in the country are very prudent about lending money due to high rate of bad date acumination and the rampart collateral foreclosure and related expenses. Respondent CBI from Commercial Bank of Ethiopia gives similar reason as the about.

Interviewer : "... Your institution introduced ATM Services that operates directly on the customers account, and Dashen bank has recently launched debit card services. Would you please, tell me debit cards are preferred, and why credit cards are not?"

Respondent CB₁: "...Credit card facilities are electronic form of consumer credits which is not encouraged in the county. To give credit card services good culture of credit by borrowers. The populous must have job and income security per month. Without these things in place, how can credit cards be provided?..." remarked the respondent, and continued "... credit cards could be introduced overtime, knowing credit worthiness of each customer..."

Current Card Payment Participants in the Country

Interviewer "Would you please tell me the participants in card based payment and their role when effecting payment in a particular transaction?"

Respondent B1: "...In a conventional card based payment system there are four parties involved in a transaction. These are the card holder (customer), a merchant, a bank and a third party processor (a clearing house)..." He continued to explain the roles of the parties

Card Holder Presents a valid and good balance card for effecting payment for the amount of good or service he/she received

Merchant Stripes the customer card in a POS terminal or presents the POS device so that the customer strips it to deduct the required value from the card.

Bank The bank is the card issues in many instances. Banks also acquire the cards through their terminals* the bank is responsible to verify a payment

Third party processor the third party processor serves as a clearing house of the card based transaction. Cards of a particular bank could be acquired by other banks in which case payments are verified by

* The payment terminal installed by a particular card provider (e.g a bank) is used to collect payments from holders of other cards. In this case the transaction card is acquired by the terminal owner bank which collects commission on such transactions.

card issues and commissions are collected for the card acquirer. The third party processor hosts a transaction processing switch and card issuing banks are affiliated (are members) in there)

Interviewer “Is payment verification request always necessary each time a payment is made on a particular card in a day?”

Response “... with the presence of third party processor[^], repeated payment verification per day could be avoided in which case the banks transfer the card holder’s account and of the merchant in one initial verification and the bank stays off line as far as that particular land holder account in concerned....)”

Interviewer: In that case how can the bank avoid over payment from such particular card holders account, being offline?

Response “...the bank, at the first payment verification sets payment limits from the accounts called velocity limits of transaction from that particular card holder account. The velocity limit can be made in two ways:

“...in amount of payment and number of payments...”, he remarked. “... If payment is attempted beyond the number of transactions allowed or amount allowed, the request is stopped by the system...”

[^] The process of transferring card holder account and merchant account to the third party processor by establishing velocity limit is positive file.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

Card based payment system in Ethiopia is at a very rudimentary stage. Not only is the card-based payment system undeveloped, other forms of payment (other than the cash) are also still at an infant stage as compared to the conditions of other developed as well as developing countries-including those in Africa- who have seen the contact-less (cashless card-less) society.

There are several factors that contributed to the poor development of payment system in general and card based payments in particular in the country. It is learnt from this research that the underdevelopment of the enabling frameworks-the infrastructural, regulatory, legal and socio-cultural frameworks- has resulted in underdevelopment of the payment system in the country.

- **Infrastructural framework:** - The infrastructures that are necessary for adopting card based payment system including the telecommunications services are not well developed. The telephone connectivity of the country is one with frequent failure. Though the Corporation claims to have introduced of new and state of the art services, it could not secure the confidence of the public including the business entities. The postal service of the country (domestic services) is not reliable for speed and security of messages. However, there are foreign based couriers that can give standard services (though high service charges) in the country. Power disturbance is a frequent

phenomenon to the point that one has to develop alternative power source to ensure uninterrupted power supply.

- **Regulatory framework:** - There are no rules and regulations in the country that are issued to oversee the card based payment system. Operating card based payments (any form of payments for that matter) without guiding regulations and principles is detrimental to the consumer and to the economy also. It also erodes the confidence of participants involving in the transaction.
- **Legal framework:** - There are also no legal frameworks to determine the legal and judiciary aspects of card-based payments in the country. But the availability of such legal instruments is unquestionably important.
- **Socio-cultural framework:** - The socio-cultural factors of the society are not encouraging for technological innovations. Sentimentalities to physical money (cash) and the intrinsic value of money are rampant. The newly introduced card-based payment systems, ATM by CBE and VISA by Dashen Bank are not well used so far mainly due to lack of well designed promotion coverage of the services.

The tendency of the public in general towards using payment cards is weak irrespective of the socio-cultural background of the people- the educational level and income level, age and knowledge about the benefit of payment cards. Further research must be conducted to investigate to know the real cause of the weak attitude of the public.

It is the totality of this factors that prohibited the country from using improved and modern methods of payment in Ethiopia. There is no guarantee for the success of the current endeavors in this regard if well planned and timely measures are not taken.

4.2 RECOMMENDATIONS

For the current beginnings to flourish and be fruitful, improvements in the abovementioned frameworks must be seen.

- ETC has to work with stakeholders to meet the ever failed customer expectation both in service quality and accessibility. Without the availability of proper telecommunication services the goal of introducing efficient card-based payment system is unrealistic.
- The sole electric power provider of the country, the Ethiopian Electric power corporation (EPCo) needs to ensure acceptable level of continued power supply to its customers.
- The Ethiopian Postal Services has to improve its services to win the confidence of the public in speed of services and security of messages to compete with foreign postal service providers. The current circumstance is enough and sufficient in terms postal services for adopting card based payment system. But to ensure the reliability of the service, it is better to have domestic service provider in the economy.
- The purpose of crafting proper regulatory measure of the payment system is that of the National Bank of Ethiopia. The National Bank has to prepare competent policies and regulations in the proper time and level. Issuing stringent policies and regulations may discourage the participants in the sector and hinder the development of the Payment system. Leniency and lagging behind might on the other hand leave consumers and the general economy unprotected. It may also harm the confidence of participants. Therefore, careful and step

by step introduction of the necessary regulatory frameworks is crucial.

- The legislature or any competent institution in charge of crafting such laws as card-based payment system must make the necessary legal framework in place as early as possible to build the confidence of participants and nurture the infant establishments.
- To improve the attitude the general public towards the use of payment cards, card issuers and acquirers (banks) merchants (business firms) and third party processors have to join hands to design and implement proper promotional activities. It is also useful to introduce customer loyalty benefit schemes, which is one of the strategic tolls exercised by card providers and merchants to attract new customers and retain existing ones.

The responsibility to improve these factors is not only of the mentioned institutions. All stakeholders including banks, the business community, regulatory and legislative bodies, government and the public at large have to play their respective roles to realize the adoption of the card based payment system in the country and to reap the benefits thereof.

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Annex 1: profile of respondents

Respondents and their Representation

No.	Institution	code	Position	Education level	Experience	Age	Name
1	Wegagen Bank SC	B1	IT Dep't Mgr	B. Sc. Elec	10	29	Dawit Teferra
2	Dashen Bank S C	B2	Div head. Cards system	B. Sc. Comp Sc.	11	35	Abebe Girmay
3	Hilton Addis Ababa (hotel)	H	Credit Manager	Dip Acct, hotels edu	35 yrs	52	Genet Bahta
4	Commercial Bank of Ethiopia	CB1	Prod. Dvt Mgr	B A Econ	20 yrs	37	Daniel G. Medihn
		CB2	ATM Proj. officer	Dipl.	9 yrs	30	Sirak Ababe
5	National Bank of Ethiopia	N	Bank Inspector	MBA	6.5 yrs	28	Endalkachew Mihretu
6	Abyssinia Supermarket	S1	Sales Supervisor	12 th	2 yrs	29	Wubshet Kebede
7	Shi Solomon Hailu Supmkt.	S2	Sales Supervisor	12 th comp	6 yrs	27	Dawit Adnew
8	Ethiopian Telecom Corp	T	Div. Mgr, Multi media NW	Master Tele Eng.	10	34	Shimelis Mamo