Addis Ababa University College of Business and Economics Department of Management

Factors Affecting the Adoption of Electronic Payment on Cash Transfer Program in Ethiopia: The Case of M-Birr and Ethiopia Productive Safety Net Program (PSNP)

A thesis submitted to the School of Graduate Studies of Addis Ababa University in partial fulfillment of the requirements for the Award of the Degree of Masters of Business Administration (MBA)

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June, 2019

Addis Ababa, Ethiopia

DECLARATION

I, Shentema Woldesenbet declare that this project is my original work and has not been presented for award of degree in any other university and that all sources of materials used for the project have been duly acknowledged.

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JUNE, 2019

Addis Ababa, Ethiopia

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College of Business and Economics

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ACKNOWLEDGEMENTS

First and for most, I would like to thank the Almighty God who supported me to complete my study successfully.

Next, my immense gratitude goes to my advisor, Professor, Ayele Tirfie, for his unreserved technical and professional support to the success of this study.

Similarly, my sincere thank goes in particular to Lemi Asefa who played a critical role in the organization and facilitation of data collection. His uncommon knowledge and good nature made much of this research possible.

My deepest appreciation also goes to all the respondents who took their precious time to give me all the necessary information needed for this work.

Finally, there are no words to express my heartfelt appreciation to my spouse, Ruth Hailu (key), and our two beloved sons, Akiya and Mercy. “Key” took on all the responsibility of caring out our two angels in my absence. Above all, her continual support and love were a source of inspiration for me to go forward. Indeed, “key” is a promise from God that I will have a lifetime friend.

TABLE OF CONTENTS

Contents **Pages**

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

CT Cash Transfer

CCT- Conditional Cash Transfer

PSNP- Productive Safety Net Program

M-Birr Service- Branded nationwide mobile cash payment service

PIM- Program Implementation Manual

JRIS- Joint Review and Implementation Support

FSCD- Food Security Coordination Directorate

DCT- Donor Coordination Team

MoFEC- Ministry of Finance & Economic Cooperation

NBE- National Bank of Ethiopia

MOARD- Ministry of Agriculture and Rural Development

DRMFSS- Disaster Risk Management and Food Security Sector

CFSTF- Community Food Security Task Force

CBE- Commercial Bank of Ethiopia

EFIP- Ethiopian Financial Inclusion Project

OCSSCO- Oromia Credit and Saving Share Company

WOFEC- Woreda Finace and Economic Cooperation

WFST- *Woreda* Food Security Taskforce

RFSCO- Regional Food Security Coordination Office

DFID- Department for International Development

ABSTRACT

The purpose of this study was to investigate factors affecting the adoption of electronic payment on cash transfer program in Ethiopia in the case of M-Birr and Ethiopia Productive Safety Net Program (PSNP). A sample of 390 respondents were drawn from fifteen (15) woredas households of the four regional governments (Amhara, Oromia, SNNP and Tigray) of Ethiopia where a structured questionnaire was distributed to these samples. However, the response rate from among the intended samples was only 95.4% therefore; around 372 responses were found to be workable by this study. SPSS V 24.0 was used to analyze the data collected and to test the hypotheses put forward. Descriptive Research and Explanatory Research design was employed in order to identify the extent at which the independent variables affect the dependent variable. Multiple regression analysis was used in establishing the significance of the relationship. The findings of this study then show that factors namely convenience and relative advantage have a positive and significant relationship with electronic cash transfer adoption in Ethiopia which led to, the acceptance of hypothesis two and four. From hypothesis three, perceived risk was found to have a significant negative influence on electronic cash transfer adoption, meaning hypothesis three was supported. Whereas hypothesis one, trust has no significant relationship with the dependent variable electronic cash transfer adoption. These findings are beneficial for M-Birr and Productive Safety Net Program (PSNP) in Ethiopia to identify factors that influence the effectiveness of electronic cash transfer adoption. The study recommends M-Birr and Ethiopia Productive Safety Net Program (PSNP) to consider investing in campaigns and arranging information sessions to demonstrate the features of electronic cash transfer system, and its benefits over manual cash transfer system.

Key Words: *trust, convenience, perceived risk, relative advantage, electronic cash transfer and adoption.*

CHAPTER ONE

1. INTRODUCTION

This chapter deals with the problem and its means. It contains background of the study, statement of the problem, objectives of the study, significances of the study, delimitation of the study, limitation of the study, definition of terms, and organization of the study.

1.1. Background of the study

Samson, 2009, in (Paris-Europe) described cash transfer as "regular non-contributory payments of money provided by government or non-governmental organizations to individuals and households" (Samson, p.43). It has been shown that Cash transfers can be either conditional to able bodied persons in households eligible for a project work or unconditional to targeted persons who for various reasons are unable to work (for example, the chronically ill, the elderly, people with disabilities, and the rural and the urban destitute and they are commonly targeted at households or persons meet certain eligibility criteria such as need for income, poverty or malnutrition (Samson, 2009, p.43). As such cash transfer programs are direct transfer payments to victims of humanitarian crises to assist them in situations where opportunities for employment, income, livelihood or economic production are extremely limited or have ceased to exist.

In his research, Samson further explained that cash transfers can be implemented in a number of contexts:

Before a disaster occurs, cash transfers may be provided in preparation against a predictable shock or as a risk reduction strategy (e.g. El Niño, expected drought, flooding).

At the beginning and throughout a crisis, cash transfers may be provided to cover essential food, non-food and income needs as well as to protect livelihoods.

During the recovery or transition period, cash transfers may be provided to support livelihoods, the construction of shelters or short-term employment opportunities (Samson, 2009).

Cash transfers are also useful in chronic food crises, droughts, and to provide incomes to communities between harvests and when families are at their most vulnerable conditions.

Large cash transfer programs began in middle-income countries such as Brazil and Mexico in the nineties and have spread more recently to low-income countries such as Ethiopia and Kenya. In the past two decades, many Cash Transfer Programs (CTPs) have emerged in developing countries as a promising means for delivering social protection. According to Arnold, Conway & Greenslade (2011), at the present day between 750 million and one billion people in the developing world benefit from Social Cash Transfers (Arnold, Conway & Greenslade 2011, p.10).

Since their introduction as pilot programs in Latin America in the early 1990s, the popularity and support of Cash Transfers (CTs) among national governments and the international development communities have increased considerably (Arnold, Conway & Greenslade, 2011). In the last few years the humanitarian community has begun to replicate Cash Transfer Programs that were used in development contexts and applied them to emergency situations, with shorter timeframes (Lisa and Michael, 2014). Consequently, more organizations, donors and governments have started to use this type of intervention in crisis situations in order to help meet basic needs.

In recent years, several Cash Transfers pilot programs and nationwide initiatives have been implemented in Sub-Saharan Africa and other low-income regions (Bankable Frontier Associates, 2008, p. 5; Barca V., 2010, p.1) demonstrating that Cash Transfers are now being considered as adequate instrument of social protection for least developed countries.

Cash Transfers (CTs) are, therefore, moved "from the margins of development policy towards the mainstream of cash transfers technology in a number of global regions" (Arnold, Conway & Greenslade, 2011, p. 7).

Thus, Cash is increasingly offered to households in emergencies worldwide as supplements to in-kind aid such as food, clothing and shelter. Under certain conditions, when local markets are able to take care of increased demands and prices remain stable, cash hand-outs may offer benefits to recipients. Households have the flexibility to meet their own needs as they choose, often with great freedom as to what they may buy and where and when they buy it. Meanwhile, humanitarian agencies may experience a lighter logistical burden as cash transfers may require less transportation and storage costs than in-kind goods (Ugo, 2011).

However, a suitable payment mechanism is important for the effectiveness of cash interventions. In urban areas where the financial infrastructures are available, Cash Transfer Programs have access to multiple efficient payment modalities. Finding an efficient payment mechanism is troublesome in rural places where there is a lack of formal financial infrastructure to facilitate the orderly transfer of cash. Financial infrastructure is often very limited in the case of humanitarian crisis and makes Cash Transfer Programs efforts more challenging (Emmett, 2012).

Nevertheless, in the last ten years, many emerging markets have seen a proliferation of Digital Financial Service (DFS) solutions. New technologies have enabled Digital Financial Service (DFS) providers to extend financial services to populations who previously lacked access. These services include the extension of traditional organizational branches to agent branches and increasingly the use of mobile phone-based payments. These provide opportunities to transfer cash electronically (e-transfers) using technologies such as mobile phones agents and branches to bring more efficiency than the manual distribution of physical banknotes to beneficiaries.

In Ethiopia, technological advancements have made cash transfers increasingly available and the use of mobile phones in particular has improved accessibility to beneficiaries. Mobile phone technology was first used in Ethiopia to transfer cash using a service called branded nationwide Mobile Cash Payment Service (M-BIRR). The M-BIRR service was launched by MOSS ICT Consultancy, a leading mobile money technology service provider in Ethiopia. M-BIRR has been used by several organizations, including Ministry of Finance and Economic Cooperation, which used the service for Productive Safety Net Program (PSNP) beneficiary bulk cash transfers (Thompson, 2016).

Established in 2005, Productive Safety Net Program (PSNP), the largest cash transfer program in Ethiopia, aimed at enabling the rural poor facing chronic food insecurity to resist shocks, create assets and become food self-sufficient. Productive Safety Net Program (PSNP) provides multi-annual predictable transfers like as food, cash or a combination of both, to help chronically food insecure people survive food deficit periods and avoid depleting their productive assets while attempting to meet their basic food requirements (Berhane, Gilligan, Jumar and Taffesse, 2016).

As such, one of the fundamental principles of the PSNP is to ensure appropriate, timely and accessible transfer of resources to beneficiaries (PSNP PIM, 2014). Several attempts have been made over the course of the program to maintain this principle and considerable achievements

have been registered in existing resource transfer mechanisms. However, it is still believed that the manual bank note physical distribution system could be significantly improved by introducing alternative payment systems that utilize new technologies and innovative methods.

In line with this, the November 2016 PSNP Joint Review and Implementation Support (JRIS) Mission reached an agreement to pilot and prove the concept of using e-payment for channeling transfers to program beneficiaries. As a result, e-Payment was formally launched in 2017 to be established as an alternative payment system for Productive Safety Net Program (PSNP). With the view of testing the applicability of different e-payment modalities, the M-BIRR mobile payment system method has been piloted in two *Woredas* in the Oromia region; namely, Adami Tulu-Jido Kombolcha and Bosat in 2017. The M-BIRR pilot implementation demonstrated how to electronically transfer donor's aid to beneficiaries' accounts directly, using modern banking technology (MOSS ICT Consultancy, PSNP E- payment project report, 2017).

The comprehensive Ministry of Finance and Economic Cooperation, Federal Food Security Coordination Directorate and Donor Coordination Team evaluation report (2017) revealed that, the implementation of M-BIRR PSNP e-payment system in the two pilot *Weredas* brought significant advantages to Productive Safety Net Program (PSNP) beneficiaries. According to the conclusion of the assessment the PSNP e-transfer pilot exercises were successful. As a result the Federal Steering committee approved the scale-up of the project to 13 additional *Weredas* around the country in November 2017.

There is increasing interests within the government to scale up the advantages of e-payment to further new PSNP *Weredas (MoFEC, 2017).* E-payment offers a promising way through which to promote the resilience of poor people, especially in the areas of financial inclusion and food security. Understanding of how electronic transfer can also contribute to PSNP efficiency is growing amongst many government structures at different levels (MoFEC, 2017).

Triggered by these widespread implementations of cash transfers in Ethiopia, private organizations are currently pooling diverse resources towards modernizing the cash transfer infrastructure and projects are competing for these opportunities. Financial institutions are also trying to develop a way to manage a pool of resources towards the development of payment systems.

A broad range of scholarly literature has been published dealing with the impacts and transmission channels of Cash transfers (CTs) on the one hand and various operational aspects on the other hand. However, whereas much of the literature deals with issues such as conditionality or targeting methods, payment systems have received far less attention. Against this backdrop and taking into account recent technological innovations, this research paper aims of outlining strengths and weaknesses of electronic delivery methods in cash transfers in general and in Ethiopia's Productive Safety Net Program in particular. Moreover, the paper seeks to assess the factors that influence the adoption of the electronic payment method in Productive Safety Net Program (PSNP) from the perspective of three key stakeholder groups, namely government, beneficiaries and private enterprises.

1.2. Electronic Payment on Cash Transfer Program in Ethiopia

Ethiopia is the second-most populous country in Sub-Saharan Africa after Nigeria with estimated population of 105 million and population growth rate of 2.42% (World meters, 2019). One of the world's oldest civilizations, it is also one of the world's poorest countries. The country's per capita income of $783 is substantially lower than the regional average (Gross National Income, Atlas Method, 2016). To reverse this situation, the government is planning to reach lower-middle income status over the next decade. In order to actualize such economic development aspiration, the country needs to assess both national and international development issues, and make changes to fit in. Thus, the government of Ethiopia and private sectors are trying to make technological improvements that can push the economic development efforts of the nation forward.

Several improvements, since 2010, have a significant influence on the cash transfer program payments in Ethiopia. The political, economic and social contexts have dramatically improved during the last years and will most probably continue to evolve at the same pace in the forthcoming years (Thompson, T. 2016). From the 38.7% people living in extreme poverty back in 2004, this indicator was 29.6% in 2010 and was expected to decrease by 7.4% more by 2018. The poverty reduction effort is not yet translated into sustained improvements for Ethiopia's poorest, who suffer from recurrent drought and food insecurities. Productive safety Net Program and other cash transfer programs are extending their cash distribution and food aid to these vulnerable people for the next 5 to10 years to safeguard lives. In its endeavour of resource

transfer, Productive safety Net Program is assessing the ways to move from traditional systems to systems using information and communication technology in light of the past experiences, the international best practices and the contextual changes like humanitarian electronic cash transfers. Latest research evidences and "World Bank Guidelines" paved the way for taking this opportunity to accompany major reforms of the payments system (World Bank, 2016).

The emergence of a "middle class" linked to rural to urban migration increases the need and occurrence of Solidarity Transfers (being stayed within the program) which can also complement the "social transfers" in the perspective of poverty alleviation. The financial inclusion is still limited with 7.1 million bank accounts and an estimation of 3.6 million microfinance accounts but is rapidly developing (AEMFI, 2013). In 2013, the National Bank of Ethiopia (NBE) took measures to evolve towards a cash light society (transporting less cash) through implementation of regulation on the matter.

The **telecommunications** sector is taking up on the quality of service including updating and modernizing its infrastructure, as demand sophisticates itself. In its 85% geographical coverage, ethiotelecom was serving more than 55 million clients **(**from less than 10 million in 2010).

Following growth of the telecom service, unexpected success stories are being registered by Ethiopian mobile money service providers in the past three years. More than 85 percent of Ethiopian population is now within the telecom service coverage. The speed and extent to which mobile telephony usage has been spreading cached the attention of mobile money service providers. Branchless banking has emerged as a promising new approach to accelerate financial inclusion. By changing the costs and risks of distributing financial services, channels outside the branch have enabled large commercial banks, Micro Finance Institution's and new entrants like Mobile Money Technology service providers (MOSS ICT and Hello cash) to contemplate reaching large numbers of unserved people (DFID, 2009).

1.2.1. The Origin of Electronic Payment in Productive Safety Net Program

One of the fundamental principles of the Productive Safety Net Program is to ensure appropriate, timely and accessible transfer of resources to beneficiaries. Several attempts have been made in the past four years to maintain this principle and considerable achievements have also been registered. Despite this, it is still believed that the current manual cash distribution system could be significantly changed by introducing alternative payment systems that utilizes technologies and innovations. The first concrete step to introduce alternative payment system in PSNP started in 2010 with the launching of Ethiopian Financial Inclusion Project (EFIP) led by the Ministry of Finance and Economic Development (MoFEC) and funding from the Bill & Melinda Gates Foundation.

Before 2011, the EFIP has undertaken different projects like Biometric based payment method and evolved over time but its first project in 2011 was a pilot of delivering electronic payment for PSNP beneficiaries using biometric bracelets and POS devices.This method involves creating MFI savings accounts to PSNP beneficiaries and making the services of MFI's accessible to the beneficiaries through satellite branches. This model was first piloted in 2011 in Libokemkem woreda in the Amhara region. The Ethiopian Financial Inclusion Project (EFIP) demonstrated the potential benefits of linking Productive Safety Net Program (PSNP) payments to financial inclusion. The better correlation between PSNP and savings accounts has been observed from the pilot and as financial literacy increases, the existence of formal financial instruments permits to save for later consumption or investments. The development of competition between Kifiya biometric and manual cash distribution also benefited the final PSNP customers under the form of beneficiary protection and, therefore increased liberty in daily trade levels.

According to different reports, the pilot study also showed important limitations in the capacity to deliver the required PSNP outputs. First, the KIFIYA biometric approach of technical outreach to the rural poor was questionable. Data coverage (GPRS and higher) is not developed enough. Therefore, data-based devices were not adapted to the Ethiopian rural context deployment of fingerprint and biometric identification is a lengthy process, requiring 'heavy" infrastructure and has been proven not so reliable. The speed of enrollment and transfers was not

as expected with the biometric platform and the required costs are also beyond reference proportions.

After observing the progresses and challenges, the November 2013 PSNP/HABP Joint Review and Implementation Support (JRIS) Mission reached an agreement to pilot and prove the concept of using different e payment methods for channelling transfers to programme beneficiaries.As a further initiative to ensure predictability and timeliness of transfers, the mission agreed to (a) continue the pre-pilot of e-transfers using the Ethiopian Financial Inclusion Project in Libokemkem *woreda* in Amhara region and (b) implement PSNP electronic payment using another e-transfer methodology, in order that the two electronic payments can provide information and stakeholders can make a meaningful comparison about the benefits of scaling up the approaches.

1.2.2. Productive Safety Net Program Institutional Framework

The institutional framework of the PSNP is predicated on the Federal Administrative structure of the Ethiopian Government. The Federal state is comprised of nine autonomous regions vested with power for self-determination and two autonomous cities, which together cover about 710 *woredas*. A *woreda* is equivalent to a district, managed by a locally elected government. Each *woreda* is composed of *kebeles. Kebeles* can best be regarded as a neighborhood, a localized and delimited group of people or ward. A kebele is the lowest level of elected local government in Ethiopia. In the rural areas, each kebele encompasses a number of villages or communities within one geographic area. Given the Federal structure of Ethiopia, whereby regions have a great deal of autonomy, the PSNP was designed to respect the individual roles and responsibilities of each level of government, while building on the ability of the Federal Government to implement special purpose grants to achieve specific development outcomes (FDRE Ministry of Agriculture, 2014).

The Productive Safety net program is a Federal government program implemented largely through government systems and structures. The nature of the program does not fit neatly into the mandate of a single government agency or department. Rather the objectives of the PSNP span the mandates of two Ministries (Ministry of Agriculture and Rural Development (MOARD) and Ministry of Finance) and multiple departments within each Ministry.

1.2.3. Program Scale and Coverage

In 2018, the PSNP supported **7, 997, 218** million people in 319 chronically food insecure *woredas* in 8 of the country's 10 regions. This is equivalent to roughly 10 percent of the national population, covering over 45% of the country's *woredas*. The regional states coverage of the PSNP is shown in table 1.

Table 1 Regional Coverage of PSNP in 2018

Name of Regions	Total No. of *Weredas*	No. of Cash Only *Weredas*	No. of Food only *Weredas*	No. of Cash and Food *Weredas*	Public Work Household's	Direct Support Household's	Total Household's
Tigray	31	12	1	18	798,954	211,798	1,010,752
Amhara	64	51	8	5	1,624,618	266,367	1,890,985
Oromiya	90	49	17	14	1,505,228	228,400	1,733,628
SNNPR	79	76	0	3	916,467	123,492	1,039,959
Harari	1	1	0	0	20,045	2,056	22,101
D/Dawa	1	0	0	1	58,740	5,963	64,702
Afar	32	0	0	32	513,427	48,655	562,082
Somali	31	22	9	0	1,446,063	226,946	1,673,009
Total	319	211	35	73	6,883,542	1,113,676	7,997,218

Source: *MoFEC Annual Report, 2018*

In 2018, Productive Safety Net Program launched its IV generation of food security program, upholding two important core principles, namely the Cash first principle and the "primacy of transfers". In Productive Safety Net Program IV, whenever possible, cash should be the primary mode of transfer and that "transfers should not be delayed for any reasons. Clients have a right to receive their transfers regardless of technical or administrative delays and have a right to know in advance how much is coming and when**" (**PIM, 2014: 59**).** As indicated on the above table, numbers of food transfer woredas are thus highly decreasing replaced by cash and food and cash only. In 2019, Productive safety Net program electronic cash transfer is also scaled up in 66 *weredas* of the Regions in Ethiopia to ensure primacy of cash transfer.

1.2.4. The M-BIRR Mobile Money Service & Its PSNP E-payment Implementation

Majority of Ethiopia's population are excluded from basic financial services like having accounts, money transfers, access loans and the use of technologies, such as mobile banking. As of June 2014 the number of adult account holders in the country was 44%. To reverse this situation, it was planned to push the number of adult account holders to 80 % by 2020. The Government of Ethiopia wants to assess the opportunity of using technology to expand alternative financial service delivery channels. The NBE expressed its intentions to promote financial inclusion by creating a more permissive regulatory environment through its commitment as part of the Alliance for Financial Inclusion. With the support of Alliance for Financial Inclusion, the NBE then established a framework for the licensing and regulation of mobile and agent banking services effective January 2015(MOSS ICT, 2015).

Not long afterwards in 2015, the *M-BIRR* mobile payment system was formally launched. The first of its kind in Ethiopia, the platform was developed by MOSS ICT (an Ireland-based consulting firm). *M-BIRR* service is currently provided with the six leading MFIs (ACSI, ADCSI, DECSI, OCSSCO, OMO and PEACE) and more MFI's and Banks on pipeline waiting for NBE's approval to join. The M-BIRR Business Model is a bank based and a revenue sharing Model. It uses MFIs for providing financial services and contracts retail agents and to hold customers' accounts. In the M-BIRR model the technology provider, MOSS ICT Consultancy, has a contractual relationship with the Ethiopian Inclusive financial technology (ETIFT). ETIFT was established in 2015 to become the IT Services Hub that empowers Ethiopian MFIs to achieve their financial inclusion and poverty reduction goal through the use of ICT service.

In 2016, when commercial launch given to ACSI, OCSSCO, DCSI and OMFI M-BIRR mobile and agent banking service, ETIFT continued administering the role the financial institutions and their M-BIRR technology service provider could together play in expanding the service nationwide. Not only with MOSS, is ETIFT contracting with MFIs and the Mobile Network Operator (MNO), Ethiotelecom on the management of the M-BIRR platform.

All actors involved in the M-BIRR mobile money service chain including the technology provider, ETIFT, the MNO, the MFIs and retail agents receive a certain portion of the revenues collected from subscribers as service fees. The revenue collected from customers in the form of

service charges is first splited in to two: Forty percent usually goes to agents and the remaining will be shared between all stakeholders based on their contractual agreement. The *M-BIRR* system relies on USSD codes rather than on mobile data, effectively allowing transactions and notices to be sent over the system in areas where mobile network coverage is minimal or first generation (similar to an SMS).

Financial institutions are currently providing various services through M-BIRR mobile money. The live Services include money deposit, money withdrawal, domestic money transfer to both registered and non-registered users, interest bearing savings, bill payments, loan repayment, bulk disbursement, buy goods, Mobile airtime Top-up (Ethio telecom credit), checking account balances and other administrative services (PIN change, language change, and statement). Bulk disbursement is the most used product in M-BIRR service and it addressed the direst needs of the local communities in Ethiopia. Bulk disbursements are transfers that involve large amount of money/cash transfers intended customers called beneficiaries in their respective accounts. The transfers include both salaries for the laboring and welfare aids for the destitute that are directly assisted with no work performed in return.

M-BIRR electronic bulk transfer was first started in 2016 by Dedebit Credit and Saving Institution (DECSI) for Tigray social cash transfer program. The pilot program aimed at improving the quality of life for vulnerable children, the elders and the people with disability who are labor constrained and food in secured. The pilot made use of M-BIRR mobile money service and it was funded by Irish aid. DECSI M-BIRR mobile money was used in the pilot to conveniently and securely deliver cash to beneficiaries. M-BIRR was awarded by UN in Zambia for specific innovation employed in this electronic cash transfer method. With the view of testing alternative electronic payment method EFIP approached mobile money service providers in Ethiopia and was influenced by M-BIRR experiences in Tigray social cash transfer.

After detail initial assessments, EFIP decided to pilot PSNP transfer in two Weredas of Oromia in 2017**.** According to the PSNP Implementation Manual, two *woredas* (Adami Tullu J/Kombolcha and Boset) in Oromia were selected on the basis of availability of better MFI branch staffs to handle the role. The pilot project began distributing PSNP transfers in these two *weredas* through the *M-BIRR* platform in January 2017 and continuing monthly in the first phase

up to July 2017. The pilot had transferred to participants monthly over six months, each without any missed transfers or significant delays.

The implementing Micro Finance Institution (MFI) for the pilot was OCSCCO, one of the "Big Five" owned partly by its regional government. Other stakeholders included Productive safety Net Program donors, the World Bank, MoFEC, BoFED, MOSS ICT and FSCD bodies ("Food Security"). The partnership with the MFI and the development of a network of M-BIRR agents were crucial to the program as were the points of contact for PSNP beneficiaries and their points to "cash-out" transfers. The MFI (OCSCCO) plays a crucial role both in the financial literacy training of participants in the livelihoods component of PSNP and in the pilot project.

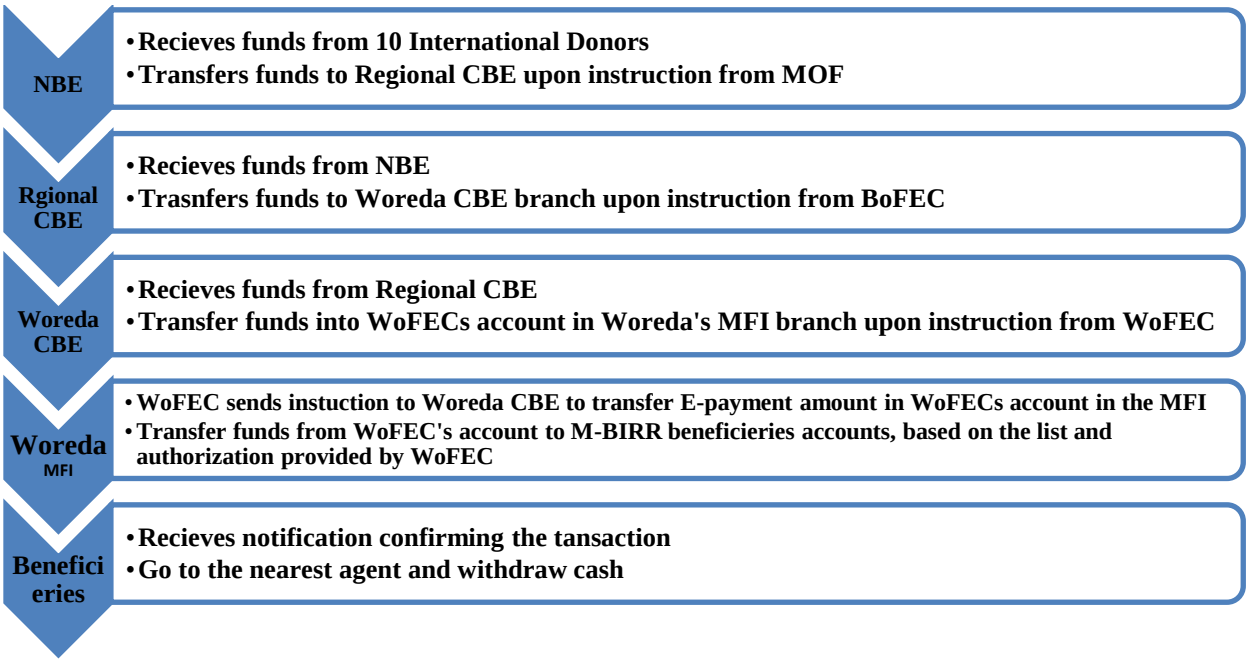
1.2.5. M-BIRR PSNP E-Payment Transfer Process

Electronic payment method (both biometric POS and m-payment method) does not change the payment process of PSNP until the "last mile". Flow of fund transfers and work processes will remain the same till preparation of payroll by WoFED. The only difference between direct cash payment and e-payment methods (and between e-payment methods themselves) lies in the way the money is distributed to beneficiaries.

M-BIRR PSNP payment process involves the creation of mobile accounts (also known as transaction accounts or store-of-value accounts) for recipients to whom payments can be made electronically. Instead of a physical delivery of cash by WoFED, the MFI offers regular access to safe M-BIRR transaction accounts, and PSNP transfers will be deposited in that account. Beneficiaries will then withdraw their money from any M-payment agent. Beneficiaries' access their account through their own mobile (if they have one) or using agent's or cashier's mobile as a proxy. Beneficiaries can also use their mobile accounts to save part of their transfers, receive transfers from other sources (solidarity transfer), buy goods and services (such as air time), send/transfer money, conduct transactions, pay loans and use other financial services provided by the Micro Finance Institution (MFI).

1.2.6. New PSNP's M-BIRR E-payment Process

Figure 1 New PSNPs M-BIRR Payment Process



Previously, woreda-level Food Security distributed transfers in cash on the days when beneficiaries visited *kebeles*. Under the e- payment pilot, mobile money is credited to the *M-BIRR* accounts of PSNP 'beneficiary' households and transferred to OCSCCO. The recipients (i.e. members of beneficiary households) then choose when and where (MFI branches or MFI M-*BIRR* agents) to withdraw their cash that is 'stored' on their mobile account (connected to the MFI).

1.2.7. Electronics Payment Benefits to Beneficiaries

a) Increased and better opportunity for financial literacy.
b) Got financial services at their doors with greater transparency and they are able to save.
c) The new system ensured transparency and beneficiaries' protection.
d) On time payment.
e) Helped beneficiaries receive full amounts- without deductions.
f) Power to decide on where and when to withdraw their money namely freedom of decision.
g) No or very limited travel and expenses for withdrawal.
h) Simple, convenient and fast fund access compared to manual cash disbursements.

1.2.8. Benefits to Public Offices and Donors

a) Reduced the cost and risk of making payment.
b) Reduced fiduciary risk/List cleaning/.
c) Excellent and timely reporting;
d) Got opportunity for using manpower for other development activities.
e) Better and efficient beneficiary protection.
f) No development activity interruption for payment purpose, because withdrawal could take place anytime.

1.3. Statement of the Problem

After the declaration of National Bank of Ethiopia's first Mobile and Agent banking directive in 2012, M-BIRR mobile money service was used in 2017 to pilot PSNP cash transfer in two *Weredas* of Oromiya regional state. Government pilot implementation reports indicated that, the introduction of this electronic payment in to the productive safety net program has contributed a lot on delivering fast, convenient and secured payments for the low income PSNP beneficiaries in Ethiopia (MoFEC, FS, WB e-payment evaluation report, 2017). The government realizes the positive impacts of this intervention such as ensuring timeliness of transfer, bringing financial inclusion, minimizing fiduciary risk and reducing other economic and social problems. The growing experiences with electronic cash transfers after 2016/17 are also promising and much of government effort has been directed towards the expansion of electronic cash transfer in Productive Safety Net Program.

However, two separate dimensions have emerged in the past four years of experiences: On the one hand, the Ethiopian government has sought to increase the use of electronic means for Productive Safety Net Program payments and to promote greater financial inclusion. Electronic payments were seen as likely to reduce the cost of payment for the program and make delivery more convenient for recipients, compared to the prevalent cash transfer schemes, which as designed require recipients to be in a particular place at a particular time to receive payment. Also, bank accounts were seen as the portal into the wider world of formal financial services, such as savings, transfers and loans. Using these services appropriately would enhance developmental benefits from social cash transfer schemes (Thompson, 2016).

On the other hand, in practice most e-payment *Weredas* have not worked as expected, as seen in the reluctance of Regional, *Zonal* and *Wereda* level government officials to replace manual cash transfer method by electronic transfer modality. They have reported that electronic mobile wallet bank accounts are not a good delivery mechanism for a rapid humanitarian response like PSNP (National PSNP E-Payment Workshop Review, 2017). Unless a program is willing to invest in the setup of electronic payment system for entire beneficiaries, the process of opening accounts and issuing cards is just not agile enough for an emergency response. Moreover, people who have never banked before need a lot of training to use their new cards and accounts effectively and there will not be enough time for this during an emergency.

In light of this conceptual gap on the ground, no published study has devoted its attention to investigate the real determinant factors that affect the adoption of electronic payment on Productive Safety Net Program cash transfers in Ethiopia, except two attempts of Ministry of Finance and World Bank evaluation report in 2017 and 2018. The focus of these reports were on the qualitative description of the performance of the electronic cash transfer without identifying and quantifying the factors that affect adoption of e-payment on the PSNP cash transfer from different perspectives of the program objectives.

This research reviews the existing evidence on the performance of alternative e-cash transfer. Based on available evidence, the research will identify the factors that deter adoption of e-payment on Productive Safety Net Program (PSNP) electronic cash transfer through in-depth quantitative and qualitative data analysis to help decision makers and policy makers understand the real influence and perhaps dynamics of electronic transfer. Therefore, there is need to carry out this research in order to help humanitarian organizations understand determinant factors affecting the adoption of electronic payment, hence package the M-Birr service into a form acceptable to beneficiaries. Secondly, since most research studies are based on theory of reasoned action and Technological acceptance model theories. These theories consist of two constructs: Perceived ease of use and perceived usefulness which are not sufficient to explain determinant factors affecting adoption of electronic payment on humanitarian cash transfer program. Moreover, in order to include more variables namely; perceived risk, convenience, trust and relative advantage. Lastly, fill the research gap in this regard.

1.4. Basic Research Questions

1.4.1. Main Research Question

- What are the various factors affecting the adoption of electronic payment system in case of cash transfer program in general and in that of the Ethiopia Productive Safety Net Program in particular?

1.4.2. Sub Research Questions

- How does trust (ability, integrity and benevolence) influence user adoption of electronic payment in Ethiopia?
- How does the convenience (perceived usefulness & perceived ease of use) affect user adoption of electronic payment in Ethiopia?
- How does perceived risk affect user adoption of electronic payment in Ethiopia?
- How does relative advantage affect user adoption of electronic payment in Ethiopia?

1.5. Objectives of the Study

Since 2015, electronic cash transfer has gained significant momentum in becoming alternative method for Productive safety net program cash transfer efforts in Ethiopia (Thompson, 2016). As Ministry of Finance e-payment report (2017) commented, "The discussion is no longer about whether electronic cash transfer is better than manual cash disbursement, but about exactly understanding factors that influence the adoption of electronic cash transfer in the PSNP accurately."

1.5.1. General Objective

- Establish determinant factors influencing the adoption of electronics payment in the case of cash transfers program of Ethiopia in general and of the Ethiopia Productive Safety Net Program in particular.

1.5.2. Specific Objectives

- Determination of whether convenience (perceived usefulness & perceived ease of use) of use plays a role in adoption of electronic payment in the case of cash transfer program in Ethiopia.
- Determination of whether relative advantage (in terms of cost and time) influence adoption of electronic payment in the case of cash transfer program in Ethiopia.
- Evaluation the effect of trust (ability, integrity, benevolence) on adoption of electronic payment in the case of cash transfer program in Ethiopia.
- Examination of the influence of users' perceived risk on adoption of electronic payment.

1.6. Significance of the Study

1.6.1. Humanitarian Agencies

With broad consensus among the stakeholders that Cash Transfer can offer advantages over in-kind humanitarian aid, the debate now focuses on how best to deliver that cash assistance. Many humanitarian agencies, previously reliant on manual distributions of cash, are exploring and piloting electronic transfers with the expectation that new technologies can improve the efficiency and security of cash programming and may even connect recipients with new financial services (Lisa and Michael, 2014).

1.6.2. Ethiopian Government

In countries with growing digital payment or mobile money ecosystems such as Ethiopia, e-transfers are becoming a standard tool for distributing humanitarian assistance. But differences that influence the quality of humanitarian programs are just beginning to be understood. This study is very significant for the Ethiopian government which considers an increasing number of options in transferring cash to those in crisis. Choosing the best transfer mechanism is an increasingly important part of response analysis which helps to determine whether the government is doing the right thing, for the right people, in the right way and at the right time.

1.6.3. Decision Makers and Practitioners of Electronic Cash Transfer

The outputs of this study can be used as references for decision making. Furthermore, this close look at PSNP electronic transfer in Ethiopia will help practitioners understand when e-transfers can add value to programs in remote operating environments and when they can be detrimental. Findings of this research may also interest donors looking to maximize the impact of each humanitarian dollar spent and private sector actors hoping to better understand the humanitarian aid sector's product needs.

1.7. Scope of the Study

The scope of this study is to cover the main constructs derived from Technology Acceptance Model (TAM) (Davis, 1989) including intention to adopt electronic payment services and convenience (perceived usefulness, and perceived ease of use). After critically examining the literature that dealing with the developments in Ethiopia humanitarian electronics payment situation, important information gathered which is the context of this study. The variables perceived risk, relative advantage and trust are added to Technology Acceptance Model in order to develop a research model to probe variables affecting adoption of electronics payment the case of humanitarian cash transfers in Ethiopia.

1.8. Definition of Terms

Perceived Risk: It refers to the five facets of risk including performance risk, security/privacy risk, time risk, social risk and financial risk. As defined by Lee (2009), these five risks can be described for humanitarian cash transfers/electronics payment as follows:

a) Performance risk: refers to losses incurred by deficiencies or malfunctions of electronics payment servers

b) Security/privacy risk: It is defined as a potential loss due to fraud or a hacker compromising the security of electronics payment user.

c) Time/convenience risk: This refers to a loss of time and any inconvenience incurred due to the delays of receiving payments or the difficulty of navigation

d) Social risk: This refers to the possibility that using electronic payment may result in

disapproval by one's beneficiary/family/work group.

e) Financial risk: It is defined as the potential for monetary loss due to transaction errors or electronic payment misuse.

Trust: There are three dimensions of trust, namely ability, integrity and benevolence. This will be observed from three perspectives: The technology service provider, mobile network provider and wireless infrastructure (Bhattacherjee, 2002). Bhattacherjee (2002) defined these as follows:

a) Ability refers to the perception of the users about the competency and salient knowledge of the technology service provider to deliver the expected service.

b) Integrity refers to users' perceptions that the technology service provider will be fair, honest and adhere to reasonable conditions of transactions.

c) Benevolence refers to the extent to which a technology service provider will demonstrate receptivity and empathy towards the user. The technology service provider will make a good faith effort to resolve users' concerns and intends to do good to the users beyond profit motives.

Convenience: It is defined as the extent to which electronic payment can serve the users' needs. It includes:

a) Perceived Usefulness: It refers to the degree to which a person believes that using a particular system would enhance his or her job performance (Davis. F,1989)

b) Perceived Ease of Usefulness: It is defined as "the degree to which a person believes that using a particular system would be free of effort (Davis. F, 1989).

Relative Advantage: It refers to the comparative benefits that a user of electronics payment may gain which he/she could not get from manual payment services as mentioned by Pikkarainen (2004) that users are more likely to adopt electronic payment if they believe using the technology will gain more relative advantages as compared to manual payment services. It includes perceived cost and time.

a) Perceived cost Savings refer to the transaction cost of conducting electronics payment transactions. Perceived cost is defined as the extent to which a person believes that using electronic payment will cost money (Luarn& Lin 2005). The cost may include the

transactional cost in the form of electronics payment charges, mobile network charges for sending communication traffic (including SMS or data) and mobile device cost.

b) Perceived Time Saving refer to the time required to complete a transaction. Lee (2009) found out in his study that time plays an important role in adopting electronics payment service by the users.

Adoption: Adoption in the context of electronics payment means acceptance, being able to accept a new technology as it is introduced and by accepting the service means a user willing to use the service (*ibid*).

Electronic payment system: This is a system which allows beneficiaries to get access to their mobile accounts via SMS (supported by telecommunication networks), website of the bank (internet) and smart phone applications. The service offered when using mobile account is such as withdrawal, deposits and fund transfer among others (*ibid*).

User/Customer: A user/customer is an individual who uses a service and in this context it means an individual that uses electronic payment services (*ibid*).

1.9. Organization of the study

This research paper was organized in to Five Chapters. The first chapter addressed background of the study, problem statement, research questions, and objectives of the study, significance of the study, scope of the study, limitation of the study and organization of the study.

The second chapter deals with the review of related literature where theoretical, empirical evidences and conceptual framework have been explored from different publications in the area of electronic payment on humanitarian cash transfer program.

The third chapter presents the research design and methodology which focused on the type of research, target population, sample size, sampling techniques, sources and instruments of data collection, procedures of data collection and finally method of data analysis.

The fourth chapter is about the results and discussion that was concerned with the summarization and interpretation of the research findings. Finally, included in chapter five of the document is the summary, conclusions and recommendations of the research findings with recommendation for future research, as policies and decisions.

CHAPTER TWO

2. REVIEW OF RELEVANT LITERATURE

2.1. Introduction

There is a growing interest in the use of electronic payment (e-payment) systems in cash transfer programmes. When cash is transferred to beneficiaries through e-payment technologies such as mobile phone accounts or smartcards, there is potential to cut costs and reduce corruption compared with physical payment methods. E-payment systems can also improve accessibility and security for programme recipients, which is important for reaching vulnerable groups including older people, people with disabilities and people in remote areas. But the lack of regulatory and financial infrastructure in low income countries means that e-payment systems need substantial up-front investment. In addition, the confusing array of e-technology platforms and providers makes it difficult for policy makers to determine whether e-payment is the most cost-effective option.

Cash transfers are increasingly being used for humanitarian response with the recognition that Cash Transfer Programming can complement the provision of in-kind assistance during emergencies. Technological advances such as the mobile phone-based money transfers have enabled the electronic delivery of cash transfers. Nevertheless, the use of mobile phone payment platforms to deliver cash transfers is not yet widespread in the humanitarian context. Mobile cash transfers (i.e. mobile phone -based) have been provided in countries such as Pakistan (2010), Haiti (2012), and Lebanon (2014) (Bailey & Harvey, 2015). While there is a well-established evidence base that cash transfers in general are more effective than other modalities, evidence regarding success stories for mobile cash transfers in humanitarian context is scant. A successful mobile cash transfer in a humanitarian setting is that of the Kerio Valley Cash Transfer Pilot (KVCTP), a project by Concern worldwide and its local partner, the Catholic Diocese of Eldoret. The project was a short-term targeted response to the food security problems that affected communities in Baringo North and Pokot East Districts of Kenya as a result of the post-election violence in 2008 (Brewin, 2008). Concern resolved illiteracy and unfamiliarity of beneficiaries with operating handsets by employing clerks. This contributed to the improved performance of

the mobile cash delivery in terms of efficiency, delivery costs and costs for beneficiaries, beneficiaries' preferences and risks minimization (*ibid*). Creti (2014) compared mobile cash transfer with cash transfer through microfinance institutions for Urban Refugees in Niger. Mobile cash transfers were found to be more effective than cash transfers delivered through microfinance institutions. The study also underscores the importance of beneficiary's previous familiarity with mobile technology and capacity to use the technology as a key factor of success. Aker (2014) also compared manual and electronic cash transfers in Niger and found electronic or mobile-based transfers to significantly reduce costs for both the implementing agency and programme recipients. In Zimbabwe, a few recent humanitarian assistance interventions implemented by the NGO Joint Initiative, have employed electronic and voucher delivery systems of cash transfers (Gourlay, undated). Still, most of the humanitarian cash transfers programmes in the country have relied on physical mechanisms of delivery.

Empirical evidence shows that humanitarian cash transfers programmes have wide ranging socio-economic and welfare impacts. They not only increase household food security but also reduce the use of adverse coping strategies, strengthen social networks, improve livelihoods and can increase demand for and trade of goods and services within local markets without causing inflation (Bailey & Harvey, 2015, HLPCT 2015; Lehmann and Masterson 2014, Slater and Mphale 2008). In addition, humanitarian CTPs reduce intra-household gender conflict and violence (Bell 2015). In most humanitarian contexts, there is little risk of beneficiaries misusing the cash and humanitarian CTPs are more efficient than in-kind assistance (Bailey & Harvey, 2015; HLPCT 2015). Unlike in-kind assistance, CTPs empower beneficiaries by enabling flexibility in spending (Cabot-Venton et al 2015), while the electronic delivery of cash transfers enhances privacy and security during withdrawal (Bailey & Harvey, 2015). As a result of this wide-ranging and compelling evidence, there have been calls for humanitarian actors to make cash transfers the main modality for humanitarian response (HLPCT 2015).

2.2. Theoretical Review

2.2.1. Factors affecting Electronic Cash Transfer Adoption

Many researchers have been using different theoretical frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies includes, Technology Acceptance Model(TAM) (Davis, 1989), which hypothesizes the two sets of beliefs, namely perceived ease of use (PEOU) and perceived usefulness (PU) to determine individual's acceptance of a technology. Theory of Reasoned Action (TRA) (Fishbein & Ajzen 1989) and Theory of Planned Behavior (TPB) (Ajzen 1991) deal with the intention of adopting and the factors affecting the use technology such as attitude, subjective norms and perceived behavioral control. The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkateshet al 2003) explain information system usage behavior. Diffusion of Innovations Theory (DIT) where developed by Rogers (1995) to explain how the diffusion of innovations takes place in the social system.

a) Adoption

Adoption is the acceptance and continued use of a product, service or idea. According to Rogers and Shoemaker (1971), consumers go through “a process of knowledge, persuasion, decision and confirmation” before they are ready to adopt product or service.

So the stages through which a technological innovation passes are the following:

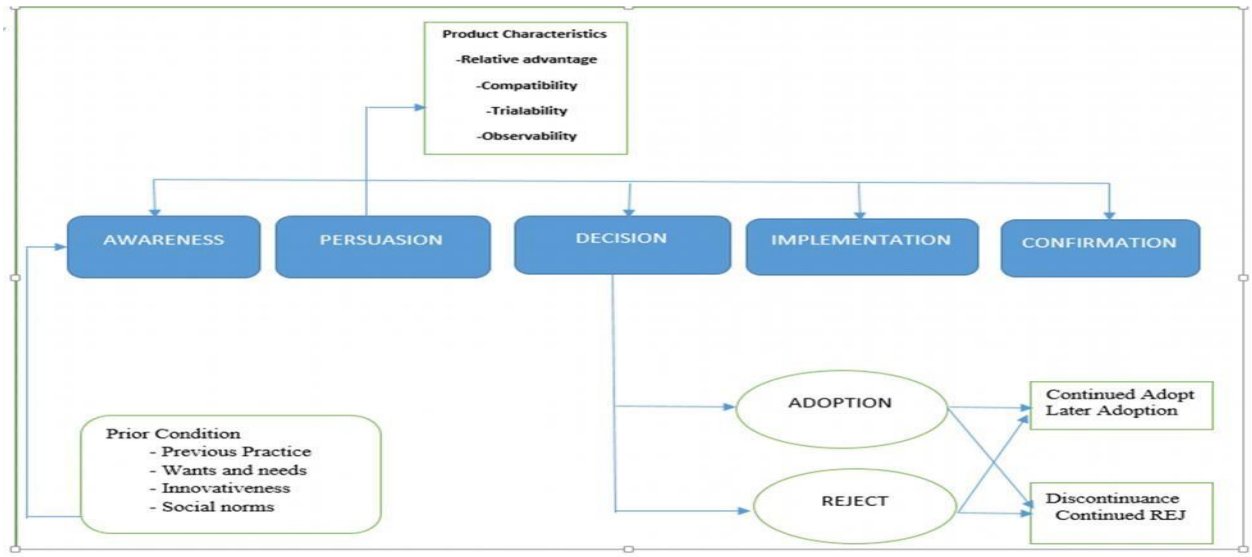
- Knowledge
- Persuasion
- Decision
- Implementation
- Confirmation

A potential adopter passes through certain stages before decision is made on whether to adopt or reject an innovation. Rogers has been one of the number of researchers who focused upon the adoption process, which he defines as the “the process through which an individual or other decision-making unit passes from first knowledge of an innovation, to forming an attitude toward

the innovation to a decision or rejection to implementation of the new idea and to confirmation of this decision" (Frambach, 1993).

The innovation adoption process defined by Rogers is the process through which an individual or other decision making unit passes from knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision (Figure 2).

Figure 2: A model of stage in the innovation-Decision Process. Source: Rogers, 1995



As the Figure 2 above shows there are five stages in innovation decision process. These are:

1) Knowledge: Socio-economic characteristics, Personality variables and communication behavior all relate to innovativeness. Innovativeness is the degree to which an individual or other adoption unit is relatively early in adopting new ideas compared to other members of a system (Rogers, 1995).According to Rogers early adopters have more formal education than later adopters and are more likely to be (socio-economic characteristics).

2) Persuasion: The potential adopter's attitude towards the innovation is formed in this stage. By anticipating and predicting future use satisfaction and risk of adoption, the potential adopter develop positive or negative attitudes to the innovation, which play important role of modifying the final decision. Perceived attitudes of an innovation as

its relative advantage, compatibility and complexity are especially important here (Rogers, 1995).

3) Decision: The decision stage occurs when an individual engages in activities that lead to adoption or rejection of the innovation. In this stage the adopter starts to actively seek information about the innovation that assists the decision making.

4) Implementation stage: In this stage, mental information processing and decision making come to an end, but the behavioral change begins.

5) Confirmation stage: After the adoption of innovations, the adopter keeps evaluating the results of his / her decision. If the level of satisfaction is significant enough, the use of innovation will continue. However, it is also possible that the rejection occurs after adoption. In the latter case, the reverse of previous decision is called "discontinuance".

The time frames for adopting an innovation can be compressed as fairly lengthy. For example, awareness of an innovation may precede the decision to adopt by months or years. Rogers (1995) has data showing awareness preceding the adoption of hybrid seed corn by about 1.7 years for early adopters and by as much as 3.1 years for later adopters. Further, the decision to adopt and the implementation of the decision may be separate acts and may be separated in time (Reed, 1996). So we can briefly define adoption: Adoption is the acceptance and continued use of a product, service or idea. According to Rogers and Shoemaker (1971), consumers as noted above go through "a process of knowledge, persuasion, decision and confirmation" before they are ready to adopt a product or service.

b) Perceived Risk

Various studies on users' perceptions of risks were conducted in the context of online cash transfers (Tan &Teo, 2000; Im, Kim & Han 2008; Wu & Wang, 2005). But the perceived risk variable has only been modeled as a single construct. When the perceived risk is modeled as single construct, it fails to reflect on the characteristics of the perceived risk (Lee, 2009).

Lee (2009) conducted a study on perceived risk in the context of Internet (online) cash transfers adoption. The perceived risk was divided into five types. They included performance risk, social risk, financial risk, time risk and security risk which provided a more in-depth understanding of the characteristics of risks regarding electronic banking (Lee, 2009). M-transfers or Mobile money transfers may be considered as an extension of online banking, but with its own unique characteristics given that a cell phone is used rather than a web browser on a personal computer (Brown, Cajee, Davies &Stroebel, 2003). Thus, a similar set of risk factors can be derived for Mobile money transfers by using the five risk types used by Lee (2009). As defined by Lee (2009), these five risks can be described for electronic cash transfers as follows:

- Performance risk refers to losses incurred by deficiencies or malfunctions of Mobile money servers (Lee, 2009).
- Security/privacy risk is defined as a potential loss due to fraud or a hacker compromising the security of a mobile money user. In a similar study, Luarn and Lin (2005) used the construct 'perceived credibility', which is defined as the extent to which a person believes that using mobile money will have no security or privacy threats. For this study, security/privacy risk will be considered to be similar to a lack of credibility.
- Time/convenience risk: This refers to a loss of time and any inconvenience incurred due to the delays of receiving payments or the difficulty of navigation (finding appropriate services and relevant commands) (Lee, 2009).
- Social risk: refers to the possibility that using electronic payment may result in disapproval by one's user/beneficiary/family/work group (Lee, 2009).
- Financial risk is defined as the potential for monetary loss due to transaction errors or electronic payment account misuse (Lee, 2009).

Lee (2009) and Kim (2007) found that all five risks: security, financial, time, and social and performance risks emerged as negative factors in the intention to adopt electronic banking. However, social risk was found to have an insignificant effect on the intention to adopt online banking (Lee, 2009).

A study by Im*et* (2008) found that when deploying a technology perceived by users to be high risk, managers need to emphasis 'ease of use'. When deploying a technology perceived to be low risk, managers need to focus on communicating the 'usefulness' of the technology (Im*et*, 2008).

A study by Wu and Wang (2005) conducted on mobile commerce, where more than three-fifths (60%) of the respondents had online transaction experience, showed that perceived risks have positive influences on the behavioral intention to use the product. The study by Wu and Wang (2005) fails to clearly explain the reason for these results; it rather assumes that the respondents might have been aware of the existing risk of mobile commerce.

A study by Tan and Teo (2000) on the adoption of electronic banking revealed that perceived risk is a significant determinant. Brown (2003) applied Tan and Teo's electronic banking adoption framework to the online banking context. Brown (2003) found perceived risks to be significant factors affecting electronic banking adoption. However, in their studies, perceived risk was modeled as a single construct (Tan &Teo, 2000; Brown, 2003).

For this study, all five risk types will be adapted as antecedents of perceived risk in the research model. As per the literature review, it is hypothesized that security, financial, time, social and performance risks are more likely to have a negative effect on the adoption of electronic banking.

c) Perceived Trust/Credibility

Users' trust is recognized as a critical factor for the success of electronic cash transfers. With the surge of both electronic commerce (e-commerce) and mobile commerce (m-commerce), more studies have been conducted on the conceptual structure, formation of the mechanisms of trust and effects of trust (Bh attacherjee, 2002; Kim, Shin & Lee, 2009; Kim, Chung & Lee, 2010; Shin, 2010).

In a study by Kim (2009) which examined the effect of initial trust in electronic cash transfer user adoption, trust was defined as a psychological expectation that a trusted party will not

behave opportunistically. In Kim, Chung and Lee (2010), trust was defined as a feeling of security and willingness to depend on someone or something.

Kim (2009) further makes a distinction between initial trust and experience or knowledge- based trust. This study was focused on initial trust, as users are more likely to have less experience with service providers with regard to the use of electronic cash transfer.

A study by Siau and Shen (2003) classified trust into two categories: trust of technology and trust of technology service providers. This is supported by Lee, Lee and Kim (2007) in a study that focused on three trust dimensions: Trust in bank, trust in mobile network provider and trust in wireless infrastructure.

A study by Bh attacherjee (2002) provided a definition and measurement of the consumer's trust of an e-commerce service provider, based on the three dimensions or typology of trust: Ability, integrity and benevolence. Bh attacherjee (2002) defined these as follows:

Ability refers to the perception of the consumer about the competency and salient knowledge of the electronic money payment service provider to deliver the expected service;

- Integrity refers to users' perceptions that the technology service provider will be fair, honest and adhere to reasonable conditions of transactions;
- Benevolence refers to the extent to which a technology service provider will demonstrate receptivity and empathy towards the user. The service provider will make a good faith effort to resolve users' concerns and intends to do good to the users beyond profit motives.

For the purpose of this study the three dimensions of trust, namely ability, integrity and benevolence (Bhattacherjee, 2002), will be used, together with trust from the three perspectives of mobile network provider/technology service provider and wireless infrastructure (Siau & Shen, 2003; Lee, 2007).

In the electronic cash transfer context, trusting intentions represents users' willingness to engage in subsequent transactions with the service provider (Bh attacherjee, 2002). Higher levels of trust in a service provider will therefore lead to greater intentions on the part of the user to engage in electronic payment transactions.

A study by Gu, Lee and Suh (2009) verified the effect of trust on behavioral intentions in electronic cash transfer, using the trust from the technology service providers' perspective. This indicates that trust helps reduce fraud and potential risks caused by opportunistic behavior and provides users the ultimate benefit of getting more reliable payment services from honest technology service providers (Gu*et al.*, 2009). To better understand the role of the users trust on the adoption of electronic cash transfer, the concept of brand loyalty and users' loyalty are also introduced in this study.

In a study by Lin and Wang (2006), brand loyalty is simply defined as the repetitive purchase of preferred brand products or services. It further defines users' loyalty as a user's favorable attitude toward the service provider that results in repeat using behavior (Lin & Wang, 2006). For the purpose of this study user loyalty will be used. According to Reichheld and Schefter (2000), to earn users loyalty in an online business it is critical to first earn users' trust. A study by Harris and Goode (2004) found that trust is positively and directly associated with users' loyalty for online services. Since electronic cash transfer is considered an extension of Internet banking (Brown *et al.*, 2003), it is therefore considered to be part of the online services.

Hence a user's trust in an electronic cash transfer service provider is likely to positively influence the adoption of electronic payment.

d) Convenience

Perceived usefulness: (Davis, 1985) defines Perceived usefulness as the degree to which an individual believes that using a particular system would enhance his or her job performance. Hence, it is believed that an innovation perceived to be useful is more likely to be adopted and users will take advantage of the innovation such as electronic cash transfer which they find useful to them (Luarn& Lin 2005). Perceived usefulness is one of the two most important factors affecting the acceptance of new technologies or information system.

Perceived ease of use: (Davis, 1985) defines Perceived ease of use as the degree to which an individual believes that using a particular system or innovation would be free of physical and mental effort. It is believed that a user will adopt an innovation or a particular system if it is easy to learn and use (ibid). An innovation perceived to be difficult to use by clients will be less adopted (Rogers, 1983:230). According to Cooper and Zmud (1997:137), ease of use of an

innovation is one the most important characteristics for adoption of an innovation. Adoption of electronic payment is more likely to occur if the process of usage is easy for users.

e) Relative Advantage and Trust

Relative advantage is associated with time and cost: According to Williamson (1993) "individuals use the aspect of cost of product or service to make the decision to trust or not to trust".

Relative advantage and trust can either be positively or negatively related to each other. It all depends on what the user chooses to believe in but in most cases positively related. Before making a decision to use a service or product most users will look at the cost of that product and that's where the decision to use will be derived from. Also for the case of the time used in conducting a service, time conscious users will use time to judge the service provider which in this case is the time used to make transactions. If anything happens in between the purchase say, the network fails; this can affect some users because they may render the service unreliable and hence decide not to use the service.

2.2.2. Technology Acceptance Model (TAM)

TAM was developed by Davis (1986) to explain the computer-usage behavior. According to the model, in explaining the adoption of any information system, perceived ease of use (PEOU) and perceived usefulness (PU) are the two most important determinants.

Perceived usefulness - refers to the degree to which a person using a particular system would enhance or improve his or her job performance (Davis1 986).

Perceived ease of use - refers to the degree to which a person using a particular system would be free from effort (Davis 1986). According to Masrom and Hussein (2008) the adoption of whether to use an information system for a particular individual is very much dependent on the perceived usefulness and perceived ease of use of the information system.

As noted by Davis (1989), future research on information system (System consisting of the network of all communication channels used within an organization) usage has to address the other variables which affect usefulness, ease of use and user acceptance. Consequently these two determinants may not fully explain the factors which predict the acceptance of a technology application such as mobile banking. Prior studies have extended the original TAM with added

constructs such as perceived playfulness (Moon & Kim, 2001), perceived enjoyment (Koufaris, 2002) and perceived credibility (Wang et al., 2003).

Luarn and Lin (2005) extended the existing TAM model by adding four new constructs to understand electronic cash transfer adoption in Taiwan. These are Perceived credibility, Perceived self- efficacy, perceived cost and perceived risk

Perceived Trust: In electronic cash transfer context perceived trust is defined as one's judgment on the privacy and security issues of electronic cash transfer (Ba & Pavlou, 2002). Perceived credibility relies on information and reputation as defined by others. Luran & Lin (2005) note the correlation between perceived credibility and the readiness to adopt electronic cash transfer.

Perceived Cost: The degree to which a beneficiary views using electronic cash transfer will incur cost is defined as perceived cost (Lurann & Lin 2005). These costs could typically include the cost of the devise, network charges and transaction charges for service provider costs as well as costs for data sent via the network infrastructure.

Perceived risk: Perceived risk is viewed as a hesitation regarding the result (good or bad) regarding using a product/service. It is defined as a combination of uncertainty plus seriousness of outcome involved and the expectation of losses associated with purchase acts as an inhibitor to purchase behavior (Bauer, 1960).

2.2.3. The Theory of Reasoned Action (TRA)

The original framework of this model was developed by Fishbein and Ajzen (1975). TRA explained that the actual behavior follows from behavioral intention and that behavioral intention is formed by one's attitude towards behavior and subjective norm (Masrom and Hussein, 2008).

Fishbein and Ajzen (1975) defined attitude towards behavior as the individual's feelings about performing behavior. On the other hand, subjective norm was explained as an individual's perception of whether the behavior should be performed. This would be driven by the motivation that an individual has to comply with opinions from people who are important to the individual (Fishbein & Ajzen 1975).

Behavioral intentions were assumed to indicate how hard people would be willing to try and how much of an effort they would be planning to exert in order to perform the behavior. As a general rule, the stronger the intention to engage in behavior, the more likely should be its performance

(Sheppard et al. 1988). Subsequent to the original TRA theory, Ajzen (1991) extended the TRA theory establishing theory of planned behavior (TPB).

2.2.4. Theory of planned behavior (TPB)

The Theory of Planned Behavior is derived from the Theory of Reasoned Action (TRA).TPB added a perceived behavioral control construct to the TRA. Ajzen (1991) argued that behavioral intention can find expression in behavior only if the behavior in question is under volitional control, (e.g. if the person can decide at will to perform or not to perform the behavior). In many instances behavior would be influenced by non-motivational factors such as availability of resources (Ajzen 1991).

In TPB (Ajzen 1985) a third factor called perceived behavioral control is added. It suggests that the actual behavior of a person is influenced by behavioral intention and it is influenced by either attitude, subjective norms or perceived behavioral control or all the factors mentioned above. Attitude refers to the degree to which the person has a favorable or unfavorable evaluation of the behavior in the study. Subjective norm refers to the perceived social pressure to perform or not to perform the behavior while perceived behavioral control refers to the individual's belief in the ease to execute behavior (Ajzen 1985).

2.2.5. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) were developed through consolidation of eight models that previous research had employed to explain Information System usage behavior. To develop the theory, Venkatesh et al. (2003) firstly reviewed user acceptance literature. This review included the previously discussed theories, TRA, and TAM as well as the motivational model, theory of planned behavior (TPB).

This analysis illustrated that seven constructs appeared to be significant direct determinants of intention or usage. They are performance expectancy, effort expectancy, and social influence, facilitating conditions, attitude toward using technology, self-efficacy and anxiety. Of these, Venkatesh (2003) found that the first four constructs played a significant role as direct determinants of user acceptance and usage behavior. Afterwards, a unified model Unified Theory of Acceptance and Use of Technology was formulated by integrating different elements across

the eight models. Using the original data from the aforementioned theories, the UTAUT model outperformed the eight individual models. A subsequent empirical validation using data gathered from two additional organizations confirmed the theory (Venkatesh, et al. 2003).

2.2.6. Diffusion of Innovations Theory (DIT)

Diffusion of Innovations Theory (DIT) was developed by Rogers (1983) to explain how the diffusion of innovations takes place in the social system. Humanitarian electronic cash transfer adoption can be examined using the Technology Adoption Life Cycle (TALC) which describes how new ideas and technologies spread in different cultures. According to TALC the stages by which a person adopts an innovation include awareness of the need for an innovation, decision to adopt or reject the innovation, initial use of the innovation to test it and continued use of the innovation. Through these stages diffusion is accomplished. There are five different categories of adopters namely innovators, early adopters, early majority, late majority and laggards. Innovators are those people, who want to be the first to try the innovation, are interested in new ideas and are willing to take risks. Early adopters are people who represent opinion leaders; they enjoy leadership roles, embrace change opportunities and do not need convincing for them to change. Early majority adopt new ideas before the average person but they typically need to see the innovation work before they are willing to adopt it. Late majority are people who are skeptical of change and will only adopt an innovation after it has been tried by the majority. Laggards are bound by tradition and are very conservative; hence they fear innovation (Rogers, 1983).

Rogers (1983) identifies three characteristics of innovations: relative advantage, compatibility, and complexity. Adopters have invariably been found to have different perceptions about these characteristics in comparison with non-adopters. According to Kotler (2000), the characteristics of an innovation affect its rate of adoption. Some products catch on immediately, whereas others take a long time to gain acceptance. If the innovation is perceived to be better than the existing system (a measure of its relative advantage), is consistent with the needs of the potential adopter (a measure of its compatibility), and is easy to understand and use (a measure of its complexity), it is more likely that a favorable attitude towards the innovation will be formed (Ching and Ellis, 2004).

Relative advantage: describes the degree to which an innovation is perceived as being better than its precursor (Rogers, 1983). According to Kotler (2000) when individuals pass through the innovation-decision process, they are motivated to seek information in order to decrease uncertainty about the relative advantage of an innovation. Potential adopters want to know the degree to which a new idea is better than an existing practice. Hence relative advantage is often the content of network messages with regard to an innovation.

Relative advantage, in one sense, indicates the strength of the reward or punishment resulting from the adoption of an innovation. There are a number of sub-dimensions of relative advantage such as the degree of economic profitability, decrease in discomfort, time saving and effort (Rogers, 1983). This construct is similar to the perceived usefulness in the Technology Acceptance Model, defined as the degree to which a person believes that a particular information technology would enhance his or her job performance.

Compatibility: is defined as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. An innovation can be compatible or incompatible with socio-cultural values and beliefs, with previously introduced ideas or with client needs for innovations (Rogers, 1983).The compatibility of an innovation, as perceived by members of a social system, is positively related to its rate of adoption (Rogers, 1983). The term compatibility refers to the fact that an innovation is more likely to be adopted when it incompatible with an individual's job responsibilities and value system (Agarwal and Prasad, 1998).

Complexity: is defined as the degree to which an innovation is perceived to be easy to understand and use. Adoption will be less likely if the innovation is perceived as being complex or difficult to use (Rogers, 1983). Complexity can be considered as the exact opposite of ease of use in the Technology Acceptance model, which has been found to directly impact the adoption of the Internet (Leaderer, et al., 1999). Consumers will reject an innovation if it is very complex and not user friendly. In this context, Cooper and Zmud (1997) report ease of use of innovative products or services as one of the three important characteristics for adoption from the customer's perspective.

Several researches on electronic cash transfer adoption have combined Technology Acceptance Model and Diffusion of Innovation theory (Riquelme & Rios 2010).

In their investigation on electronic cash transfer, Puschel et al. (2010) have integrated elements of the Technology acceptance model (TAM) of Davis with Roger's innovation diffusion theory. Wessels and Drennan (2010) extended TAM by adding compatibility and perceived risk as constructs for their investigation on beneficiary's acceptance of electronic cash transfer. Akturan and Tezcan (2012) have integrated TAM's perceived benefits and perceived risks to investigate electronic cash transfer adoption. Chong et al. (2010) affirm that, it is better to use TAM as a base model and extend it by including additional variables based on the study that is being carried out.

This study therefore combines extended TAM model (Luarn and Lin, 2005) along with relative advantage to investigate factors affecting the adoption of electronic payment system on cash transfer program in Ethiopia. As a result for this study the factors influencing electronic cash transfer adoption are perceived trust, convenience, perceived risk and relative advantage.

2.3. Empirical Review

2.3.1. Review of Previous Studies

Several studies have been conducted to examine the relationship between electronic cash transfer adoption and its determinants in developed and developing countries. Given the amount of empirical literature available on the topic of this research it would have been quite difficult to present the results of all the studies. Therefore, here are some of international researches done on the subject area.

There are some international researches done on electronic cash transfer. Among them, Luarn and Lin (2005) conducted a survey in Taiwan in order to understand user's behavioral intention to use electronic cash transfer service based on the extension of technology acceptance model (TAM). It was observed that the financial cost, perceived usefulness, self-efficacy, credibility and perceived ease of use were the factors influencing the behavioral intention to use electronic cash transfer. In this finding, it was also observed that credibility was a major issue, which has a stronger influence on user's behavioral intention than the technology acceptance model (TAM) of perceived ease of use and perceived usefulness.

Yang (2005) carried out a study "Exploring factors affecting the adoption of electronic cash transfer in Singapore" using Technology acceptance model (TAM) and suggested that apart from TAM factors there were other key factors that affect adoption of this technology. They were "consumer innovativeness, past adoption behavior, technology cluster adoption, age and gender". The result also mentioned that men are more favorable adopters of electronic commerce technology as opposed to women.

According to Laforet & Li (2005), "Consumers attitudes towards online cash transfer in china", Purposive sampling technique was adapted to a sample of five hundred (500) customers who transacted their banking business online. Analysis was done quantitatively through a regression model. Based on this research it was established that lack of understanding and awareness of online banking benefits were the main factors hindering the adoption of online banking usage in China though perceived risk, culture and technological skills were also barriers to online banking in China.

Guet (2009) in their study on the determinants of behavioral intension to electronic banking using TAM (Technology Acceptance Model) results showed that behavior is a strong indicator for the use of electronic banking. Self-efficiency and perceived ease of use had an effect on behavioral intension and trust was based on "structural assurances" that led to an increase in its perceived use.

Mohammad (2013) investigated on the factors that influence the use of electronic cash transfer in Bangladesh. The approach for this study was quantitative. During the course of the research a self-administrated questionnaire was given to the clients of two full-fledged electronic cash transfer service providers of Bangladesh called Brac Bank Limited and Dutch Bangla Bank Limited. Questionnaires numbering 100 were distributed but only 64 useable questionnaires were returned giving a response rate of 64 percent. The data was analyzed using multiple regressions and the outcome of the research was that, variables such as ability, integrity, benevolence, perceived usefulness, perceived ease of use relative cost and time advantages were found to influence the adoption of electronic cash transfer.

Kazi and Muhammad (2013) inspected those factors that affected Pakistan customers from adopting agency banking services. Data collection was done by surveying 372 respondents from the two largest cities (Karachi and Hyderabad) of the province Sindh by use of judgment sampling method. The researchers used a correlation research design and the analyses were done using multiple regressions in order to come up with the findings. TAM model played a big role in this research; variables such as social influence, perceived risk, perceived usefulness, and perceived ease of use were studied whether they affected the adoption of agency banking in Pakistan.

Researchers, Dineshwar and Steven (2013), investigated the complex factors that prevent customers from adopting and using electronic banking services in Mauritius. The researchers used a quantitative approach. They also combined the TAM and DIT together with perceived risk and cost construct to investigate perception of mobile banking in Mauritius. The study revealed that age, gender and salary had no influence on adoption but rather, convenience, compatibility and banking needs influenced banking adoption. On the other hand, perceived security risk and reliability were found to be the only obstacles to electronic banking usage but also that electronic banking usage is not associated with age, gender and salary.

Chitungo and Munongo (2013) in Zimbabwe: The study was about an analysis of the factors that influence online banking adoption in the rural Zimbabwe through extending the technology acceptance model. The researcher adopted use of stratified random sampling and the results of the study suggested that factors such as perceived usefulness, PEOU, relative advantage, personal innovativeness and social norms influenced the intention to accept and use online banking.

Esther (2013) conducted a research on electronic M-Transfer adoption in the banking industry in Kenya**.** This study used a descriptive research design involving multiple case studies on employees of top five commercial banks in Kenya, Nairobi, namely Kenya Commercial Bank (KCB), Barclays Bank, Standard Chartered Bank, Co-operative Bank and Equity Bank in Kenya, using the model Technology Diffusion innovation theory (DIT).The study sample comprised of 500 bank employees, 100 employees drawn from each bank ranging from junior staff to management, Out of these, 332 responses were obtained. Among the challenges that were identified, it was found that reliability was the greatest hindrance to electronic M-Transfer owing to the fact that for some of the banks their services were inaccessible at times. Availability of substitutes and accessibility on different networks was also rated high as impediments to electronic M-Transfer adoption. It was also found that most customers felt that the mobile banking services offered by their banks were not significantly different from the ones offered by the telecommunication company, and given that the ones provided by telecoms were already in existence before banks rolled out theirs gained more popularity.

Cheah (2011) conducted an empirical study with the aim of investigating on the factors that affected the Malaysian customers from adopting mobile banking services. From the study, variables such as perceived ease of use, Perceived usefulness and relative advantage were found to be positively and significantly related to the intention to adopt mobile banking services while construct such as perceived risk was found to be negatively correlated with the adoption of mobile banking.

In the context of Ethiopia, a number of studies on mobile banking were adopted. Ayana (2012) studied factors that affected adoption of E-banking in the Ethiopian banking industry. The study was conducted based on the data gathered from four banks in Ethiopia. These were private banks (Dashen bank, Zemen bank and Wegagen bank) and one state owned bank (commercial bank of

Ethiopia). A mixed research approach was used to answer the research questions emerged through the review of existing literature and the experiences of the researcher in respect of the E-banking system in Ethiopia. The study statistically analyzed data obtained from the survey questionnaire. A research framework was developed based on technology-organization environment model (TOE) developed by Tornatzky and Fleischer. The result of the study indicated that, the major barriers Ethiopian banking industries faced in the adoption of Electronic banking was and still are security risk, lack of trust, lack of legal and regulatory frame work, Lack of ICT infrastructure and absence of competition between local and foreign banks. The study suggested a series of measures which could be taken by the banking industry and by government to address various challenges identified. These measures included establishing a clear set of legal framework on the use of technology in banking industry, supporting banking industry by investing on ICT infrastructure and banks needed to focus on technological innovation competition rather than traditional bases of retail bank competition.

Michael (2013) examined the challenges and opportunities of electronic banking in Ethiopia in the case of Dashen and Nib International Banks. The study was conducted based on data collected from staff and customers of the two banks through questionnaires and interviews. The response of interviews and the survey showed that there are certain issues that become a challenge for the development of electronic banking in Ethiopia. In this regard, the result of the study indicated that the major challenges for the development of electronic banking in Dashen and Nib International Banks are lack of information, security risk, lack of trust, lack of legal and regulatory framework, lack of infrastructure, shortage of skilled professionals and lack of awareness. The study also identified perceived ease of use and perceived usefulness as benefits for the development of e-banking in Ethiopia. The study suggested a series of measures which could be taken by the two private commercial banks and address various challenges identified in the study. These measures include enhancing the awareness level of individuals on E- banking, implementing powerful security programs, establishing a clear set of legal framework on the use of technology in banking industry, supporting banking industry by investing on telecommunication infrastructure and hiring well trained and experienced IT professionals to handle the E-banking business competently with adequate knowledge.

Kalkidan (2016) conducted a research on factors influencing the usage of mobile banking in Ethiopia. The study used Technology Acceptance Model (TAM) and Innovation Diffusion

Theory (IDT) by integrating perceived risk, trust and awareness into the established models. This study was conducted based on the data gathered from customers of Commercial Bank of Ethiopia and United Bank in Addis Ababa, Ethiopia. Survey was conducted using questionnaire. The research results found relative advantage, compatibility, perceived trust, perceived usefulness, and perceived risk as major influencing factors for mobile banking adoption. Whereas Perceived ease of use and awareness were found to have insignificant effect on mobile banking usage for bank customers located in Addis Ababa, Ethiopia. The study recommended banks to consider investing in campaigns and arranging information sessions to demonstrate the features of mobile banking services and its benefits over traditional channels.

2.4. Research Hypothesis

H1: Trust has a positive and significant influence on electronic Payment adoption in Ethiopia.

H2: Convenience has a positive and significant influence on electronic Payment adoption in Ethiopia.

H3: Perceived risk has a negative influence on electronic Payment adoption in Ethiopia.

H4: Relative advantage has a positive and significant influence on electronic Payment adoption in Ethiopia.

2.5. Summary of Literature Review and Research Gap

The adoption of electronic payment in humanitarian cash transfer program has been gradually increasing with the rapid increase in the use of wireless handsets in the recent past. Studies conducted in the early 2000 showed that European countries including Scandinavian countries, France, UK, Ireland and Germany, alongside Canada and Japan were among the leaders in electronic cash transfers. In some Asian countries (Singapore and Malaysia) electronic cash transfer penetration was on the increase whereas Australia and New Zealand were among the slow adopters. There was no reference to Africa considering it is a developing continent and electronic cash transfer was still very new in the technology world. However, other studies conducted in mid 2000s showed that electronic cash transfer had grown faster in Sub- Saharan Africa than in most other parts of the world within a relatively short time, and was expected to continue increasing (International Telecommunications Union, 2005).

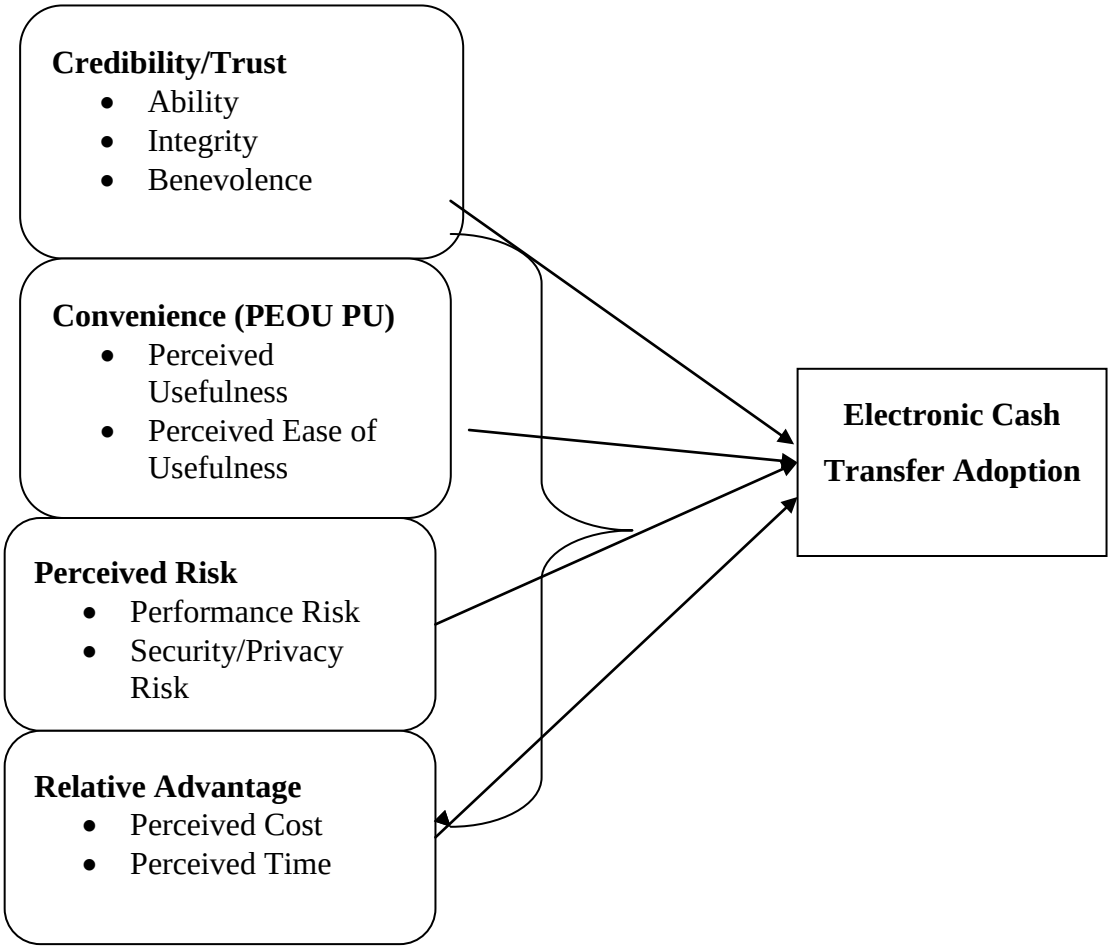
Studies were conducted in different countries. Some of these studies include Yang (2005) was carried out a study "Exploring factors affecting the adoption of electronic cash transfer in Singapore" (Laforet & Li, 2005) and "users attitudes towards electronic cash transfer in china". Gu (2009) conducted a study on determinants of behavioral intension to electronic cash transfer. Esther (2013) conducted a research on electronic cash transfer adoption in humanitarian cash transfer programs in Kenya. An empirical study that was conducted by Cheah 2011 on the factors affected the Malaysian users from adopting electronic cash transfer services. In the context of Ethiopia, however, to the knowledge of this researcher, there appears to be limited evidence on factors affecting adopting of electronic payment on cash transfer program. In addition perceived trust, convenience, perceived risk and relative advantages which are major factors of electronic cash transfer adoption were not studied. Therefore, carrying out this research will help humanitarian cash transfer programs in general and other technology service provider in particular in pin-pointing the factors affecting the adoption of electronic cash transfer. Hence, the research effort at hand would hopefully fill the gap.

2.6. Conceptual Framework

Masinge K. (2010) used TAM Model and showed how Perceived Risk, Trust, Convenience would lead users towards the adoption of electronic cash transfer. Similarly, Cheah (2011) has established his model by showing how Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Relative Advantages (RA), Perceived Risk (PR) and Personal Innovativeness (PI) would influence Behavioral Intention to adopt electronic cash transfer. This study combined TAM, the original variables of extended technology acceptance model (TAM2) (Venkatesh& Davis, 2010) and Diffusion of Innovation Theory (DIT) along with perceived risk, trust and relative advantage to investigate factors influencing electronic cash transfer adoption in Ethiopia.

The figure below shows that, perceived risk, relative advantage, trust and convenience are the independent variables that are believed to have a changing effect on the dependent variable of electronic payment adoption.

Figure 3: Conceptual Framework.



Source: Kabir, M.R. (2013).

In line with the stated research questions and objectives in chapter one, the theoretical and empirical work reviewed in the second chapter and the conceptual framework provided in the above figure, this study proposed the hypotheses stated in the chapter one to be tested the factors that affect electronic cash transfer adoption.

CHAPTER THREE

3. METHODOLOGY OF THE RESEARCH

3.1. Research Approach

The research can be classified in two research approaches. These are qualitative research and quantitative research.

Qualitative research involves studies that do not attempt to quantify their results through statistical summary or analysis. It seeks to describe various aspects about behavior and other factors in the social sciences and humanities. In this kinds of research data are often in the form of descriptions, not numbers. It typically involves in-depth interviews, group discussions and observations without formal measurement (Philip and Adrian, 2009).

Quantitative research is the systematic and scientific investigation of quantitative properties, phenomena and relationships. The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses pertaining to natural phenomena. It usually starts with a theory or a general statement proposing a general relationship between variables. Quantitative researchers favor methods such as surveys and experiments, and will attempt to test hypotheses or statements with a view to infer from the particular to the general (Kothari, 2004).

This student researcher carried out quantitative research to describe factors affecting the adoption electronic payment system in Ethiopia the case of M-Birr and Ethiopian Productive Safety Net Program (PSNP) by collecting quantitative data from program beneficiaries. In addition the effect of the independent variables (perceived risk, trust, convenience, and relative advantage) on dependent variables, the adoption of electronic payment is quantitatively measured by this study.

Research may be deductive or inductive. Deductive research approach begins with the development of a theory or hypothesis and later a development of a strategy to test and verify or reject its claims. So it is thinking from general to specific. On the other hand, the approach is inductive where the research begins with an observation of a phenomenon in an environment, followed by data collection through which a theory is developed and generalized. Since this study used applied empirical theories which test factors affecting the adoption of electronic payment

system, use of quantitative approach has been appropriate (Kothari, 2004). Therefore, the study is deductive.

3.2. Research Design

Research can be classified as descriptive, explanatory and exploratory depending on the specific purpose that the research tries to address. Descriptive research sets out to describe and interpret what kind of study to make. It looks at individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyze and interpret the entities and the events that constitute the various fields of inquiry. It aims to describe the state of affairs as it exists. On the other hand, explanatory research aims at establishing the cause and effect relationship between variables (Philip and Adrian, 2009).

The research approach is predominantly quantitative in nature which involves the use of primary and secondary data in order to answer the research questions and achieve its research objective. This research is a case-based analysis about the factors that affect electronic payment adoption in the case of M-Birr and Ethiopian Productive Safety Net Program beneficiaries. This research is descriptive research design as there were many variables already studied and existed in the phenomena. Descriptive study is one in which information is collected without any manipulation.

The research work also explanatory type of researches which looks for the relationship among the different factors as per the conceptual model. The student researcher explored important variables which affect electronic payment system adoption in the case of M-Birr and Ethiopian Productive Safety Net Program by collecting data from the program households/beneficiaries.

3.3. Population and Sampling Design

3.3.1. Sample Design

Mugenda and Mugenda (1999) define population as an entire group of individuals, events or objects having common observable characteristics.The populations of this study are PSNP electronic-cash transfer households/beneficiaries who have been using the prevalent cash transfer method and the current M-BIRR electronics cash transfer method in four regional states, namely Oromia, SNNP, Amhara and Tigray Regional States. The survey of this research was focused on PSNP households/beneficiaries who have been starting to collect their payments using electronic

cash transfer system at the beginning of 2017 and end of 2018. New enrolments of 2019 were not considered in the population of the research as the new households/beneficiaries do not have enough experience in using the new M-BIRR electronics cash transfer method. Therefore, the research population were limited to the existing number of PSNP electronic payment beneficiaries in 2018. See table below.

Year	Region	No. of weredas	No. of kebeles	Total Existing No. of HH's Served with e-payment	Percentage proportional	No. of Questionnaire
2017	Oromiya	2	29	13,000	(39,594/128,596)≈ 31%*390	120
2018	Oromiya	4	126	26,594		
	Sub Total	6	155	39,594		
	Amhara	4	88	44,874	(44,874/128,596) ≈35%*390	136
	SNNPR	3	128	27,672	(27,672/128,596) ≈22%*390	85
	Tigray	2	57	16,456	(16,456/128,596) 12% *390	49
	Sub total	13	399	115,596		
2017 & 2018	Grand Total	15	428	128,596		390

Source: MoFEC Annual Report, 2018

As stated above, the total study population in the four regional states were **128, 596** as of December 31, 2018 in 15 different *Woredas.* Out of this total electronically paid household, total numbers of Households receiving through electronic payment in Amhara were 44,874; in Oromiya were 39,594, in SNNP were 27,672 and in Tigray were 16,456.

The research took all number of woredas for the sample size of respondents from the four regional states which constitute 100% of the total population. This representative sample experienced both the traditional and the electronic social cash transfer methods. The four Regional States were purposely selected because these regions are the only places that were convenient for the researcher to conduct the survey.

To calculate the sample size a formula by Kothari (2004) was used.

$n = \frac{Z^2\ pqN}{e^2\ (N-1)+z^2\ pq}$ Where*;*

n=number of sample size

N= size of study population

e= level of confidence to have in the data or the acceptable margin of error (the precision) which is 95% for this study.

z=standard variation at a given confidence level.

p = population reliability (or frequency estimated for a sample of size n)

q = Standard variation at a given confidence level.

See the table below for the actual sample calculation using Kothari (2004) formula.

Description and Calculation	**Regional Sates**				
	Oromia	**Amhara**	**SNNPS**	**Tigray**	**Total**
Population (N)	39,594	44,874	27,672	16,456	**128,596**
Percentage of total	31%	35%	22%	12%	**100%**
Level of significance	95%	95%	95%	95%	
Error term (e)	0.05	0.05	0.05	0.05	
Esqrd	0.0025	0.0025	0.0025	0.0025	
Population reliability (p)	0.5	0.5	0.5	0.5	
Standard Deviation at given confidence level (q)	0.5	0.5	0.5	0.5	
Normal reduced variable (z)	1.96	1.96	1.96	1.96	
Zsqrd	3.84	3.84	3.84	3.84	
p+q	1	1	1	1	
Pq	0.25	0.25	0.25	0.25	
Zsqrd*pq	0.96	0.96	0.96	0.96	
esqrd*(N-1)	80.00	105.10	64.50	38.50	
Zsqrd*pqN	8,519.71	10,774.25	6,644.05	3,951.09	
esqrd*(N-1)+Zsqrd*pq	85.46	106.06	65.46	39.46	
SampleSize: Zsqrd*pqN/esqrd*(N-1)+Zsqrd*pq	**120**	**136**	**85**	**49**	**390**

Based on the above formula and population size, the researcher had total sample size of 390 households/beneficiaries from the four Regional States. The researcher distributed a total of 390 questionnaires to PSNP beneficiaries of four purposely sampled Regional States (Amhara, Oromia, SNNP and Tigray Regional States).

The *Woredas* were purposely selected based on the number of Households who benefited from both the prevalent and the electronic cash transfer methods. Since the population is geographically disbursed, the researcher contacted each respondent face to face and guided them in completing the questionnaire. Therefore, a multi stage sampling technique was employed to select the sample locations as Philips and Adria, 2009 suggest for such dispersed population. First, purposive sampling was used to select *Woreda*s from each Regional States. Second simple random sampling was used to select households in each *kebele* from the group of project participants who have received PSNP cash transfers through manual and M-BIRR e-payment. Respondents located in four Regions were Oromiya (A/T/J/Kombolcha, Boset, Chiro, Fadis, Haromaya & Merti), Amhara (Habru, Angolela Tera, Dawachafa & Libokemkem), SNNP (Borecha, Halaba & Humbo) and Tigray region across two weredas (T/koraro and Enderta respectively).

3.4. Instrument and Procedures

In order to address the research objectives properly and effectively the student researcher gathered data based on the questionnaire generated from the conceptual model adopted for the research project, namely extended Technology Acceptance Model (TAM). Data types for the research included the following: Personal profile of sample users, their perception about electronic payment perceived convenience (perceived usefulness and perceived ease of use), relative advantage (cost and time), user's trust and perceived risk with the adoption of electronic payment system.

The main original data were collected as part of this research from targeted interviews and questionnaires of transfer recipients under the PSNP M-BIRR electronic payment stakeholders' *in* the *Oromia, Amhara, SNNP* and Tigray regions. In addition, the researcher analyzed a sample of project participant transaction records from M-BIRR, which provided detailed records of participant's M-Birr account usage. In addition, the periodicals and documents of World Bank and Food Security were reviewed so as to seek information related to PSNP.

3.4.1. Targeted Interviews

Targeted interviews were conducted with individuals belonging to three main groups: Key informants, Oromia Credit and Saving Share Company and Amhara Credit and Saving Institution branch managers (3), and M-Birr agents. Interview questions were varying considerably for professionals depending on their work and domain of expertise.

3.4.2. Key Informant Interviews

The Key informant interviewees in this study were the e-payment coordinators in MoFEC, BoFED, MFI's and M-BIRR technology service providers that included top level managers, middle level managers and lower level managers. This made it easy to get adequate and accurate information necessary for the research.

3.4.3. MFI's Branch Managers and their Mobile Money Agents' Interviews

MFI branch managers and M-Birr agents were asked a series of largely standardized questions about how the M-BIRR/PSNP pilot influenced their work, what challenges they faced, and what opportunities they saw for improvement. A recording device was used with the informed consent of the participants to enable discussion in the local language and translation-transcription into English afterwards. Per the informed consent given by the participants, any quotes cited will not identify the beneficiary individually. Likewise, explicit consent was given for all photographs included in this study.

3.5. Questionnaires (Surveys) of Transfer Recipient Household's

Primary data was obtained using self-administered questionnaires. Primary data included fact, assumptions and premises contained in various documentary sources (Kothari, 1990). The questionnaires with both open and closed ended questions were used to collect both qualitative and quantitative data to answer related questions.

The respondents were recipients of M-BIRR mobile transfers under the pilot program for at least one year and have experienced the prevalent PSNP manual cash payment method for more than three years. The researcher contacted each respondent face to face and guided them in completing the questionnaire as most respondents needed clarification in filling the

questionnaires. The questionnaires were conducted in a community and care was taken to avoid distraction to the extent possible. Questionnaires were run by the researcher whereby the researcher took notes on non-verbal communications, monitored the answers, and guided the progression of questions.

The researcher emphasized that the individual respondents' feelings were important, that there were no wrong answers, and that participants were free to disagree with one another or try to form a consensus.

The questionnaires were self-administered by the researcher and each questionnaire was coded and only the researcher knew which person responded. The coding techniques were used for the purpose of matching the completed questionnaires with those delivered to the respondents. The responses that were gathered from transfer recipients are the most original and significant, being used to evaluate most hypotheses. Questionnaires were organized with the cooperation of local MFI branch managers.

3.6. Data Analysis and Presentation

The data analysis of this research was based on descriptive statistics such as frequency, percentage, mean and standard deviation, inferential statistics and multiple-regression. The descriptive statistics were used mainly to understand the users' profiles and the perception of users towards the convenience, trust, relative advantage and risk of electronic payment system adoption which could help the researcher to answer the research questions related to users' perception. In order to explain the relationship between the variables of the study, correlation and multiple regressions were used. The student researcher used Statistical Package for Social Science (SPSS) to analyze the data. This software has been widely used by researchers as a data analysis technique. Both descriptive as well as inferential statistics are used to analyze the data.

Key informants interviews and Branch /Agents Interviews were interpreted against the subject in question. Financial reports and other secondary documents were also used to cross-check the validity of primary data collected through questionnaires and interviews.

The collected data was coded, tabulated and presented according to each independent and dependent variable.

The regression model for the empirical investigation in estimating Factors that might explain the adoption of Electronic Cash Transfer in Ethiopia is given as follows:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$

Model specification for this particular study is:-

$ECT = \beta 0 + \beta 1\ (PT1) + \beta 2\ (CON2) + \beta 3\ (PR3) + \beta 4\ (RA4) + \varepsilon \ldots$

Where: ECT = Adoption of Electronic cash Transfer in Ethiopia

PT = Perceived Trust

CON = Convenience

PR= Perceived Risk, and

RA = Relative Advantage while B1, B2, B3 and B4 are coefficients of determination and ε is the error margin.

3.7. Reliability and Validity

3.7.1. Reliability

Reliability refers to a degree to which measurements used can yield suitable results because they are free from errors. According to Hair, Black, Babin, & Anderson, (2010) reliability is the assessment of the degree of consistency between multiple measurements of a variable.

This study used the Cronbach's alpha to assess the reliability of the variables. According to Field (2005) and Tan &Teo, (2000), Cronbach's alphas of the sub-scales ranged from 0.690 to 0.925 which indicate an acceptable internal consistency and reliability measures for the questionnaires meaning that if the results exceed the minimum alpha of 0.690 the constructs measures will be deem reliable. In this study the measures has been taken as reliable when the cronbach's alpha value has been found to be 0.7 or above.

3.7.2. Validity

The collected questionnaires were proved for their validity through a pilot study. Pilot study is believed to be an important component in the data collection process. It simply means as small-scale trial run of all the procedures planned for use in the main study. Pilot testing of an instrument, such as questionnaires administered for research purposes, is the standard in social sciences. There are obvious benefits of carrying out a pilot study researchers can enumerate. They are an opportunity to test hypotheses, allowance for checking statistical and analytical procedures, a chance to reduce problems and mistakes in the study and the reduction of costs incurred by inaccurate instruments. Moreover, researchers can seek information from the participants in the pilot study to determine the degree of clarity of questions and to identify problem areas that need attention (Simon, 2011). According to (Simon, 2011), a sample of 10-20% of the total sample size for the actual study is a reasonable number of participants to consider enrolling in a pilot. Following this conviction, this study tested the validity of the questionnaire by taking 10% of its total sample size.

CHPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

In line with the discussion in the methodology part of this study, data collected using different techniques were analyzed. A total of 390 questionnaires were distributed to Productive Safety Net Program beneficiaries of four purposely sampled Regional States (Oromia, Amhara, SNNP and Tigray Regional States). Out of the total 390 questionnaires, 372 useable questionnaires were obtained (95.4% response rate).

In the following sections various demographic variables such as gender, age and family status of the sample respondents were analyzed. Then after data related to factors influencing the adoption of electronic payment system were organized conceptual model consisting of convenience, perceived risk, credibility and relative advantage were discussed using descriptive and inferential statistics. In addition to questionnaire, the researcher conducted an interview with Key Informants in MoFEC, MFI'S, MOSS and PSNP agents regarding electronic cash transfer methods on PSNP.

The basic assumptions are that cash transfer quality dimensions including convenience, predictability, protection, accessibility, performance and financial services largely influence beneficiary's satisfactions. A descriptive method of analysis was chosen as a suitable method to study the relationships. Results of the analyses are discussed in this chapter.

4.2. Reliability Test

In order to ensure internal consistency among the items included in each of the scales, Cronbach's coefficient alpha is estimated. Higher Alpha coefficients indicate higher scale reliability. Specifically, (George & Mallery 2003) suggested that scales with 0.60 Alpha coefficients and above are considered acceptable.

As shown in table 2 for the reliability test Cronbach's Alpha coefficients for adoption of electronic payment system respondents range from 0.746 to 0.835. Based on the examination of the research scales and constructs, it can be concluded that each variable represents a reliable and valid construct.

Table 2: Reliability test

Construct	Number of Item	Cronbach's alpha
Trust	6	0.775
Convenience	7	0.763
Risk	9	0.835
Relative advantage	5	0.746
Adoption of e-payment system	7	0.833
Overall Reliability	**34**	**0.790**

Source: *Survey Result, SPSS (2019)*

4.3. Demographic Profile of Respondents

The participants on survey questionnaires gave different personal data. Beside these differences they expressed different responses towards the cash transfer method and the factors that influence their satisfaction. The demographic profile of respondents, who participated in this study, is shown below:

Table 3: Respondents' Demographic profile

Variable	Classification of Variables	Frequency	Percentage
Gender	Male	193	**52%**
	Female	179	**48%**
Age	20-30	47	**13%**
	31-40	117	**32%**
	41-50	80	**21%**
	51-60	52	**14%**
	Above 61	76	**20%**
Family Status	Married	284	**76%**
	Unmarried	32	**9%**
	Spouse Deceased	56	**15%**
No. of Children	0-3	143	**38%**
	8-Apr	184	**49%**
	Above 8	45	**13%**
No. of Dependents (under 18 years old, or disabled/needing daily care)	0-3	161	**43%**
	8-Apr	123	**33%**
	Above 8	88	**24%**

Source: *Survey result, 2019*

As depicted in table 3, the number of male and female participants is almost equal which rendered an unbiased judgment for the study. On the other hand, the highest age classes of the participants are youngsters and adults below the age of 40. Most of the respondents (76%) are married and have 4 to 8 children's and 0-3 dependents under their custody.

4.4. Descriptive Analysis

The first part of the questionnaires asked demographic information of respondents and the second section asked basic research questions that intended to acquire information regarding trust, convenience, perceived risk, relative advantage and electronic payment system adoption of cash transfer program in Ethiopia.

4.4.1. Factors Influencing Adoption of Electronic Cash Transfer in Ethiopia

It is important for electronic cash transfer technology service providers to understand the factors which influence or affect the adoption of electronic cash transfer technology in order to be able to provide services which meet the beneficiaries' expectations and needs. Humanitarian cash transfer program households/beneficiaries' were also requested to rate how important the identified factors were influencing their decisions to use electronic cash transfer technology ranging Likert's method of strongly disagree to strongly agree on a numerical scale. The results of the responses are as shown in the table below:

Table 4*:* Responses on perceived trust/credibility, convenience, perceived risk and relative advantage.

	No. of Respondents	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
Perceived Trust	372	2.6414	1.13942	1.00	4.00
Convenience	372	3.8383	.73519	1.00	5.00
Perceived Risk	372	2.8869	.93862	1.25	5.00
Relative Advantage	372	3.8473	.88458	1.33	5.00

Source: Survey results, SPSS (2019)

From the above table 4 based on the average mean score calculated from the beneficiaries' responses, the respondents agreed that Relative Advantage is the major factor that affects adoption of electronic cash transfer technology. The second major factor is Convenience. Perceived risk and perceived trust are placed 3rd and 4th ranks as per the beneficiaries' responses.

4.4.2. Trust of Electronic Payment System Adoption

A five point likert scale is used to measure respondents' responses concerning trust of electronic payment system. Where: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Table 5: Descriptive Statistics on trust of Electronic Payment System adoption

Item	Respondent			
	Frequency	**Percent**	**Mean**	**Standard Deviation**
Perceived Trust:				
1= Strongly Disagree	9	2.4	**4.075**	**0.875**
2=Disagree	11	3.0		
3=Neutral	44	11.8		
4=Agree	188	50.5		
5=Strongly Agree	120	32.3		
Total	**372**	**100**		

Source: *Survey Result, SPSS (2019)*

Credibility construct were subdivided into various parts, which included ability, integrity and benevolence/goodwill. With regard to trust of electronic payment system adoption, table 5 indicates that combined mean of the trust determinant elements are 4.075 which can be rounded to 4. However, the standard deviation statistics tell there is significant deviation from the mean on both sides.

4.4.3. Convenience of Electronic Payment System Adoption

A five point likert scale has been used to measure respondents' responses concerning convenience of electronic payment system: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Table 6: Descriptive Statistics on convenience of e-payment system adoption

Item	Respondent			
	Frequency	**Percent**	**Mean**	**Standard Deviation**
Convenience:				
1= Strongly Disagree	6	1.8	**4.28**	**0.762**
2=Disagree	15	4.0		
3=Neutral	25	6.7		
4=Agree	158	42.5		
5=Strongly Agree	168	45.0		
Total	**372**	**100**		

***Source**: Survey Result, SPSS (2019)*

As shown in the table 6 above, the descriptive statistics combined mean of the convenience is 4.28 that means the respondents agree with the statement that electronic payment system enable the users to accomplish tasks more quickly is easier for the users to carry out tasks is easy to learn using the system. It is easy to use electronic payment system to learn accomplishes tasks and interaction with electronic payment system does not require a lot of mental effort.

4.4.4. Perceived Risk of Electronic Payment System Adoption

A five point likert scale is used to measure respondents' response concerning risk of electronic payment system: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Table 7: Descriptive Statistics on perceived risk of Electronic Payment System

Item	Respondent			
	Frequency	**Percent**	**Mean**	**Standard Deviation**
Perceived Risk:				
1= Strongly Disagree	21	5.6	**2.43**	**1.078**
2=Disagree	53	14.3		
3=Neutral	90	24.2		
4=Agree	111	29.8		
5=Strongly Agree	97	26.0		
Total	**372**	**100**		

Source: *Survey Result, SPSS (2019)*

The study required to determine if users/beneficiaries, perceived risk towards electronic payment system would affect their adoption of the service. Perceived risk is seen from different perspectives. As defined by Lee (2009), five risks can be described for electronic payment system as follows: Performance risk, privacy risk, financial risk, social risk and time risk.

As shown in the table 7 above the descriptive statistics the combined mean of the perceived risk is 2.43.The respondents were asked that electronic payment services may not perform well because of network problem which is performance risk. Providing personal privacy information over M-birr agent may not be safe. Electronic payment services may not perform well and process payments incorrectly. The respondents were worried about using M-birr/electronic payment system because other people may be able to access their account. The third and fourth questions were about social risk and the respondents answer nearly neutral. The fifth question was that poor network in some areas may take a lot of time to do transactions through M-Birr agent which is time risk. Hence the responses were 26.0 percent strongly agreed, 29.8 percent agreed, 24.2 percent neutral, 14.3 percent disagreed and 5.6 percent strongly disagreed. Finally, the respondents agreed with the statement that perceived risk towards electronic payment system would affect their adoption of the service.

4.4.5. Relative Advantage of Electronic Payment System Adoption

A five point likert scale is used here again to measure respondents' responses concerning relative advantage of electronic payment system: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Table 8: Descriptive Statistics on relative advantage of e-payment system

Item	Respondent			
	Frequency	**Percent**	**Mean**	**Standard Deviation**
Relative Advantage:				
1= Strongly Disagree	6	1.6	**4.29**	**0.737**
2=Disagree	13	3.5		
3=Neutral	54	14.5		
4=Agree	151	40.6		
5=Strongly Agree	148	39.8		
Total	**372**	**100**		

***Source**: Survey Result, SPSS (2019)*

As shown in the table 8 above the descriptive statistics the combined mean of the relative advantage is 4.29. That means the respondents agree with the statement that the electronic payment system access is inexpensive to use compared to manual cash transfer, the electronic payment transaction fee is inexpensive. It doesn't take much time to learn about the use of electronic payment system. The adoption of electronic payment service enables beneficiaries to get payment service quickly and electronic payment service is faster than manual cash payment service.

4.4.6. Electronic Payment System Adoption

A five point likert scale is used to measure respondents' response concerning electronic payment system adoption: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Table 9: Descriptive Statistics on electronic cash transfer adoption

Item	Respondent			
	Frequency	**Percent**	**Mean**	**Standard Deviation**
Electronic Cash Transfer System Adoption:				
1= Strongly Disagree	5	1.3	**4.14**	**0.778**
2=Disagree	12	3.2		
3=Neutral	43	11.6		
4=Agree	179	48.1		
5=Strongly Agree	133	35.8		
Total	**372**	**100**		

Source: *Survey Result, SPSS (2019)*

Finally, the respondents were asked adoption of electronic cash transfer system and as can be seen from table 9 above, the responses were the following: Descriptive statistics on the combined mean of the electronic cash transfer system adoption is 4.14 with that of 35.8 percent strongly agreed, 48.1 percent agreed, 11.6 percent neutral, 3.2 percent disagreed and 1.3 percent strongly disagreed.

Respondents trusted use of electronic cash transfer system fulfills their needs. Electronic cash transfer system is a convenient option that suits their lifestyle. The third questions responses were respondents use electronic cash transfer system because of convenience as compared to manual based cash transfer system. The forth questions responses were respondents use electronic cash transfer system service for various types of transactions. The fifth questions responses were respondents intend to use electronic cash transfer system regularly. The sixth questions responses were respondents believe that it is valuable for them to adopt electronic cash transfer system. Lastly, respondents recommend others to use electronic cash transfer system.

4.5. Diagnostic Test for Multiple Regression Analysis

4.5.1. Normality

A normal distribution is one of the importantly assumed statistical procedures. Normal distributions take the form of a symmetric bell shaped curve. The standard normal distribution is one with a mean of 0 and a standard deviation of 1 (Garson, 2012). Severe asymmetry then is stated to be the result of strong outliers. A common test for normality is to run descriptive statistics to get skewness and kurtosis. Skewness should be within +2 and -2 range, if the data is normally distributed. Kurtosis is the peakedness or flatness of a distribution and this distribution shall also commonly fall between +2 and -2, although a few other authors according to (Garson, 2012), are more lenient and allow kurtosis to fall within +3 and -3.

Following the above justification, the normality test was done for four variables on SPSS, which resulted in all the variables' skewness to fall within +2 and -2 range and all the variables' kurtosis to fall within +3 and -3 range. Consequently, the data utilized for this research was found to be normally distributed.

Table 10: Test of Normal distribution

Variable	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error		Std. Error
Trust	**372**	**-1.271**	**0.125**	**1.693**	**0.249**
Convenience	**372**	**-1.152**	**0.125**	**1.741**	**0.249**
Risk	**372**	**0.761**	**0.125**	**-0.112**	**0.249**
Relative Advantage	**372**	**-1.195**	**0.125**	**2.152**	**0.249**
e- Cash Transfer adoption	**372**	**-1.297**	**0.125**	**2.057**	**0.249**

Source: *Survey Result, SPSS (2019).*

4.5.1. Auto-Co linearity

Multi-colinearity test is useful in knowing whether there are inter-correlations among independent variables.

Table 11: Test of Multi-co linearity

Model		Multi co linearity Statistics	
		Tolerance	**Variance Inflation Factor (VIF)**
1	(Constant)		
	Trust	.751	1.331
	Convenience	.750	1.334
	Risk	.862	1.160
	Relative Advantage	.720	1.389

***Source**: Survey Result, SPSS (2019)*

As observed from table 11 above, the values of Variance Inflation Factor (VIF) for all independent variables or factors are less than 10 (Gareth James, 2013). Hence, there is no multi-co-linearity among independent variables. Therefore, it is possible to use correlation and multiple regressions analysis.

The table below shows the inter item correlation which gives us the correlation coefficients for items in the study's scale. This matrix is especially relevant because this study has not carried out a factor analysis which might cause a problem because the overall alpha might be affected by the number of items being analyzed. Therefore, we need to use the inter item correlation table to check and see if the items interrelate well.

Table 12: Inter Item Correlation

Model	Trust	Convenience	Risk	Relative Advantage	Electronic Cash Transfer Adoption
Trust	1	.346	-.270	.448	0.316
Convenience	.346	1	-.324	.421	0.472
Risk	-.270	-.324	1	-.219	-0.356
Relative Advantage	.448	.421	-.219	1	0.489
e-Cash Transfer Adoption	0.316	0.472	-0.356	0.489	1

Source: *Survey Result, SPSS (2019)*

4.6. Regression Analysis

The following table shows the non-standardized and standardized regression weights for the variables and the result was discussed and interpreted below along with regression model.

Table 13: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.615[a]	.378	.371	.43661
a. Predictors: (Constant), Relative Advantage, Risk, Convenience, Trust				

Source: *Survey Result, SPSS (2019).*

Table 13 above provided by SPSS, which gives summary of the model. This summary gives the R and R^2 of the model that has been derived. R has the value of 61.5% which represents the overall correlation between electronic cash transfer system adoption and the factors.

The R^2, which is the coefficient of determination, was found to be close to 37.8% which means that the factors can account for 37.8% of the variation in electronic cash transfer system adoption. There may be many factors that can explain the variation in the adoption of electronic cash transfer system in Ethiopia. But the model used in this study which includes the four factors can explain close to 40% of it. In other words, 60% of the variation in electronic cash transfer system adoption in Ethiopia cannot be explained by these four factors and that there must be other variables that have influence on the outcome.

Table 14: ANOVA

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	42.998	4	10.750	56.389	.000[b]
	Residual	70.724	371	.191		
	Total	113.722	375			
a. Dependent Variable: Electronic Cash Transfer Adoption						
b. Predictors: (Constant), Relative Advantage, Risk, Convenience, Trust						

Source: *Survey Result, SPSS (2019)*

The next part of the SPSS output reports an analysis of variance (ANOVA). The summary table shows the various sums of squares described the table 14 above and the degrees of freedom associated with each. From these two values, the average sums of squares (the mean squares) can be calculated by dividing the sums of squares by the associated degrees of freedom. The most important part of the table is the F-ratio, which is a test of the null hypothesis that the regression coefficients are all equal to zero. Put in another way, this F statistic tests if the R proportion of variance in the dependent variable accounted for by the predictors is zero and the table also shows the associated significance value of that F-ratio (Field, 2009). For this data, F is 56.389, which is significant at p <0.001 because the value in the column labeled *Significance* is less than 0.001. This result tells us that there is as less than 0.1% chance that an F-ratio of this size would

happen, if the null hypothesis proposed about F-ratio were true. Therefore, the regression model overall predicts electronic cash transfer system adoption well.

Table 15: Coefficients

Coefficients[a]						
Model		**Un-standardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	1.630	.293		5.567	.001
	Trust	.018	.044	.019	.407	.684
	Convenience	.311	.053	.277	5.852	.001
	Risk	-.157	.034	-.203	-4.594	.001
	Relative Advantage	.343	.051	.327	6.763	.001
a. Dependent Variable: Electronic Cash Transfer System Adoption						

***Source**: Survey Result, SPSS (2019)*

B= Beta

Std. Error= Standard Error Sig= significance

The regression equation for the empirical investigation in estimating Factors that might explain the adoption of Electronic Cash Transfer in Ethiopia is the following:

$Yi = \beta 0 + \beta 1X1 + \beta 2\ X2 + \beta\ 3X3 + \beta\ 4X4 + \varepsilon\ldots$

$Y = 1.630 + 0.018X1 + .311X2 + (-0.157X3) + 0.343X4 + \varepsilon\ldots$

Hypothesis 1 stated that trust has a positive and significant influence on the adoption of electronic cash transfer system.

Based on table 15 and justifications provided in the preceding paragraphs, trust has no significant relationship with the dependent variable of electronic cash transfer adoption, where the t- statistic value was calculated to be 0.407 at p value > 0.05. The value of the coefficient of trust was also found to be 0.018 which means that this finding did not support H1. This means the issues of integrity, ability and goodwill are things that technology service providers need to revise so that they can create a positive image in the eyes of their users. The finding was also consistent with the results by other researchers studies by Al-Jabri and Sohail, (2012), Tan and Teo (2000), Luo (2010) and Gu (2014).

Hypothesis 2 stated that convenience has a positive and significant influence on the adoption of electronic cash transfer system.

The second hypothesis testing provided that the coefficient of convenience was calculated to be 0.311, which indicates that keeping other factors constant, a unit change in convenience causes a 31.1% increase in the adoption of electronic cash transfer system. The relationship of the independent factor convenience (whose t-statistic value was found to be 5.852 at p-value of 0.001) with that of the dependent variable electronic cash transfer system adoption is found to be positive and statistically significant, which leads to the acceptance of H2. The meaning is that the factors perceived ease of use and perceived usefulness are important motivating factors in influencing adoption of electronic cash transfer system services in Ethiopia.

Hypothesis 3 stated that perceived risk has a negative influence on the adoption of electronic cash transfer system.

Based on table 15 coefficient of perceived risk was calculated to be -0.157. The relationship of the independent factor perceived risk (whose t-statistic value was found to be -4.594 at p-value of 0.001) with that of the dependent variable electronic cash transfer system adoption is found to be negative. From Hypothesis H3, perceived risk was found to have a significant negative influence on electronic cash transfer system adoption, meaning that H3 was supported. Respondents perceived a risk when using electronic cash transfer system services which discourage them from adopting electronic cash transfer system services. It is important for the technology service provider/M-Birr to ensure security for their clients in order to remove the

uncertainty among users. The finding was in other previous studies by Koenig-Lewis (2010). They investigated the factors that influence electronic cash transfer adoption in Germany using Technology Acceptance Model. The findings of the study indicated that perceived risk is a significant indicator for the adoption of electronic cash transfer system services in Germany. On the other hand, there are other studies that came up with similar findings which include the study by Brown (2003). They investigated the predictors of electronic cash transfer system adoption in South Africa. Variables that were identified included perceived risk and consumer banking needs but the findings revealed that perceived risk had a major negative influence in adoption of electronic cash transfer system services in South Africa.

Hypothesis 4 stated that relative advantage has a positive influence on the adoption of electronic cash transfer system.

Based on the results of this study, users of electronic payment system perceived that electronic cash transfer would make a positive contribution in their lives in terms of cost and time. The findings of the regression analysis confirmed the effect of relative advantage on electronic cash transfer adoption. The result indicated that the variable was significant on electronic cash transfer adoption with $\beta = 0.343$ and $p<0.05$. This means that relative advantage contributes 34.3% towards electronic cash transfer adoption. In this case (hypothesis H4) relative advantage was found to have a significant positive influence on electronic cash transfer system adoption for humanitarian cash transfer program in Ethiopia. The finding was consistent with past studies by Cruz (2010) and Laukkanen (2007). The findings revealed relative advantage had a significant positive influence on adoption. This result indicate that, if electronic cash transfer system technology service provider paid attention to the element of cost and time users will most likely be willing to adopt the service because users pay attention to issues of time and cost. This means the greater the relative advantage of using the service the more likely the user will be willing to adopt electronic cash transfer services.

Table 16: Summary of Hypothesis (H1-H4) Result

No	Hypotheses	Results	Reason
H1	Trust positively influences the adoption of electronic cash transfer system.	Rejected	Correlation results, Rho=0.316 , Pr<0.01, Alpha=0.05 Regression result ß= .019, sig. 0.684
H2	Convenience positively influences the adoption of electronic cash transfer system.	Accepted	Correlation results, Rho=0.472 , Pr<0.01, Alpha=0.05 Regression result ß= 0.277, sig. 0.000
H3	Perceived risk negatively influences the adoption of electronic cash transfer system.	Accepted	Correlation results, Rho= -0.356 , Pr<0.01, Alpha=0.05 Regression result ß= -0.203, sig. 0.000
H4	Relative advantage positively influences the adoption of electronic cash transfer system.	Accepted	Correlation results, Rho=0.489 , Pr<0.01, Alpha=0.05 Regression result ß= 0.327, sig. 0.000

From the proceeding discussion and summary table of hypothesis the most influencing factor is the relative advantage as represented by cost and time which have positive impact on the adoption of electronic cash transfer system. This result indicates that, if technology service provider/M-Birr paid attention to the elements of cost and time, users will most likely be willing to adopt the system because users value most time and cost. The next one is convenience represented by perceived usefulness and ease of use. Convenience has positive relationship with electronic cash transfer service adoption. Users also perceive electronic cash transfer service and ease of use as useful while they consider perceived risk as negatively influences the adoption of electronic cash transfer system. The sources of users' perceived risk of electronic cash transfer system as per the finding of the research are performance risk, social risk, time risk, privacy risk and financial risk. The last one which is trust has no significant relationship with the dependent variable electronic cash transfer system adoption. This means, the issues of integrity, ability and goodwill are things that need to be revised. So that the technology service provider/M-Birr can create a positive image in the eyes of its users.

4.7. Targeted Interviews

4.7.1. Key Informant Interviews

Key informants were interviewed from Ministry of finance electronic payment coordination office and asked a series of questions about Factors Affecting the Adoption of PSNP electronic transfer and subsequent challenges associated to its implementation.

The key informants responded that convenience, trust, risks and relative advantages are the main factors that influence electronic transfer as compared to manual cash distribution. According to the respondents, electronic payment brought Productive Safety Net Program (PSNP) beneficiaries to modern financial services. The respondents also highlighted that electronic transfer improved accessibility of PNP transfers to beneficiaries through providing payments in their villages and giving a full month for collection.

The respondents also noted that electronic transfer is advantageous from implementation perspective as it simplifies the cash transfer logistic arrangements, promotes good governance and supports the growth of local economy.

The key challenges mentioned by the respondents were the perceived trust of electronic transfer which makes difficult the scalability of the service to all PSNP weredas. Low awareness level among the PSNP stakeholders limits the full utilization of electronic transfer. Resistance to change and limitation of telecom infrastructure availability were also mentioned by respondents as challenges for the adoption and further expansions.

4.7.2. Micro Finance Institution Branch Managers Interviews

Fifteen (15) Micro Finance Institutions' branch managers one from each woreda involved in the pilot study were interviewed as part of this paper's field research. They were asked a series of questions about how convenience, trust, risks and relative advantages of electronic transfer services for the PSNP e-payment Program supported their branch business activities and relationships with the communities to which they are meant to provide financial services.

According to the branch managers, the PSNP electronic cash transfer has had many positive significant influences on their daily businesses, which they reported as overwhelmingly favorable. This is despite reporting that the M-BIRR system allows clients to withdraw more

easily because of the agent networks Proximity to them which reduced wait times at payment place/center.

The branch managers also reported the improvement of transfer to beneficiaries due to the introduction of electronic payment. They explained the speed, convenience and security of electronic transfers as advantages to beneficiaries. They also mentioned that PSNP electronic transfer program is linking their branch financial services to rural PSNP beneficiaries.

Branch managers also reported that the Micro Finance Institution is better known and viewed more favorably by the communities since the pilot began. The comfort that their branches created for the PSNP beneficiaries in terms of reduced travel distance and waiting times for services at branches, increasing financial literacy, awareness, spreading the agent Network and increase in convenient interactions improved acceptance of their branches by the rural communities.

Despite reporting that the system was simple and convenient for branches, Managers cited lack of public awareness as a major issue and think it will take time and resources (in program budgets) to explain the system and train PSNP beneficiaries in financial Literacy.

Managers also reported that the mobile payment system and their regular financial services are highly complementary and that they intend to further integrate the two. In the Future, managers hope to expand financial services to PSNP beneficiaries such as disbursing loans and collecting loan repayments through the service. They also plan to continue mobilizing savings in dedicated savings accounts more easily through the services to avoid travelling up to 40km as is the case now.

4.7.3. PSNP M-BIRR Agents Interviews

A total of fifteen M-BIRR agents in the targeted woredas were interviewed as a part of this research. None of the agents had the M-BIRR business as their sole vocation; rather, they offered the service in conjunction with other small businesses such as a shop.

All of the agents reported that offering M-BIRR services was a way of making extra income and that they felt it was an important service for their communities. The agents explained that their main benefit is when they see the PSNP beneficiaries satisfied with the electronic transfer process. Agents reported that electronic transfer is very important for beneficiaries as it protects

their transfer and gives them full authority over their transfer. Agents also reported that PSNP beneficiaries are happy with the convenience and speed of electronic transfer they provide to them.

Significant here also is that, store owners reported that offering the service attracted clients who subsequently bought products from their stores. All of the agents reported that they felt the commissions paid to them for services provided were too low. This was stressed more by those running shops and offering the services than by those offering products. All of the agents reported helping recipients use the M-BIRR system. They also reported that it was not uncommon for users to forget their PIN code, have trouble navigating the interface, or not knowing whether or not they received a transfer. Several attributed this to illiteracy and a basic lack of familiarity. Two of the agent Reported seasons of increased activity in line with the six-month transfer period for Most PSNP recipients. Importantly, those whose businesses were suited to it reported explicitly that PSNP recipients would come for the M-BIRR service and buy consumables or other products from their business. They reported increasingly accepting payments for this through M-BIRR, which suggests less of a need to cash-out. This is an ancillary benefits for the Micro Finance Institution.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

In the context of fast M-BIRR e-Payment transfer adoption in to further PSNP Weredas, this study was focused on investigating Factors Affecting the Adoption of M-BIRR electronic transfer system on Productive Safety Net cash transfer Program (PSNP) in Ethiopia. The research was aimed at answering four basic questions that could help understand e-payment adoption in different way:

- How does the convenience (perceived usefulness & perceives ease of use) affect user adoption of electronic payment in Ethiopia?
- How does perceived risk affect user adoption of electronic payment in Ethiopia?
- How does trust (ability, integrity and benevolence) influence user adoption of electronic payment in Ethiopia?
- How does relative advantage affect user adoption of electronic payment in Ethiopia?

In answering these questions, the student researcher has found out several important implications on the adoption of M-BIRR electronic transfer system on Productive Safety Net cash transfer Program (PSNP). In this section, based on the regression analysis findings outlined in chapter four, the conclusion is presented followed by some recommendations to provide insight in-to factors that influence the effectiveness of electronic cash transfer adoption in case of M-Birr and Productive Safety Net Program in Ethiopia.

The study provides an understanding of the factors that influence electronic cash transfer adoption in Ethiopia by incorporating the four constructs, namely perceived risk, relative advantage (time and cost), trust and convenience (PEOU and PU).These factors were used as explanatory variables for the purpose of this study and the effect of these variables on electronic cash transfer adoption was the main concern of this work. Following this, 390 questionnaires

were distributed to users/beneficiaries of M-Birr and Productive Safety Net Program in Ethiopia, after testing the validity of the instrument through pilot study.

Among the distributed questionnaires, only 372 useful responses were added to the SPSS Software program where the descriptive analysis of the data is assigned to the different categories of gender, age, family status, total children and dependent of respondents.

Multiple regression analysis for the independent and dependent factors was used in order to carry out the study. After analyzing the results the study established that convenience and relative advantage were found to have significant positive influence on electronic cash transfer adoption because they had a strong influence on adoption of humanitarian electronic cash transfer. For that reason, humanitarian electronic cash transfer beneficiaries tended to use electronic cash transfer services based on its perceived ease of use, perceived usefulness, time and cost saving. Perceived risk was also found to have a significant negative influence on humanitarian electronic cash transfer adoption. This paper confirms that there is no relationship between trust and electronic cash transfer adoption. Regarding demographic factors, the findings revealed that the number of male and female participants is almost equal or balanced which rendered an unbiased judgment for the study. On the other hand, the highest age classes of the participants are found to be youngsters and adults below the age of 40. Most of the respondents (76%) are married and have 4 to 8 children's and 0-3 dependents under their custody. The influence of demographic variables such as gender, age, family status, total children and dependents of use on electronic cash transfer adoption was not extensively explored to determine whether they can be influencing factors.

5.2. Recommendations

Based on the findings discussed in chapter four, this study proposes the following recommendations.

- Productive Safety net Program (PSNP) and technology service provider (M-Birr) should consider taking advantage of value-adding characteristics for the beneficiaries on electronic cash transfer system in promoting perceived usefulness. In addition, they should continue to innovate and invest in electronic cash transfer systems which allow beneficiaries' to have more alternatives and get more values from electronic cash transfer systems.
- Productive Safety net Program (PSNP) and technology service provider (M-Birr) should develop more aggressive marketing activities to inform users/beneficiaries about the system. They should inform users of the conveniences and other advantages that come with the system which users/beneficiaries might not be aware of. They should emphasize more on the accessibility, saving of time and ease of use that have been seen to encourage adoption of the system according to the results of the research.
- On the contrary, Productive Safety net Program (PSNP) and technology service provider (M-Birr) should assure users/beneficiaries that the factors which have been found to discourage them from adopting the system such as risk of loss and system failure are almost non-existent. The research has investigated their presence and users/beneficiaries' experiences in their use of electronic cash transfer. There is no reason to be reserved from adopting the system as they will miss out on its benefits.
- Humanitarian cash transfer institutions and technology service providers should invest in campaigns and arrange information sessions to demonstrate the features of electronic cash transfer system and their benefits over traditional/manual cash transfer system.
- Given that users'/beneficiaries' greatest perceived risk is receiving or sending money from incorrect account/system, M-Birr should ensure that users/beneficiaries are in a position to recover their cash in the shortest period in case of such a scenario. Users/beneficiaries should also be urged to verify the account/system they are receiving or transferring cash to, to avoid the challenging process that may be involved in retracing the money. To prevent loss of personal account information the technology service

provider/M-Birr should ensure that its system is secure to prevent hacking. In addition, M-birr should ensure that its system is working efficiently and effectively to avoid system failure which may discourage adoption of the system. The technology service provider/M-Birr should assure users/beneficiaries that the risks they perceive in electronic cash transfer are not real as shown by the research results.

- Technology service provider/M-Birr should deploy reliable network infrastructure and system to ensure electronic cash transfer system services operate smoothly so that it can minimize the perceived risk by users/beneficiaries regarding electronic payment technology.
- It is important for M-birr to project higher security when providing electronic cash transfer services and let its beneficiaries know how the security issue is addressed in order to yield higher beneficiaries' acceptance.

5.3. Limitation and Area of Future Study

5.3.1. Limitation of the Study

This study utilized a very small sample size from only four regions in Ethiopia, through convenient sampling due to time and budget constraints. This research used cross sectional data, where data was collected at a point in time via the instrument of survey. Future researchers may use a time series data and bigger samples as well as a different sampling method. Here again they may use their own data collection method to increase the generalizability of the findings with population larger than the one from which the samples for this study were drawn to the entire humanitarian cash transfer institutions and technology service providers.

The variables were limited to only four although there are many other factors that can influence user adoption of electronic cash transfer system that were not included in this study. This research would have provided better results if it included more variables such as financial inclusion, reducing corruption, protection and attitude.

5.3.2. Direction for Future Study

The contribution of demographic factors such as age, gender, family status, total children and dependents toward the adoption of electronic cash transfer was not given much emphasis for lack of immediate relevance for this study. Future researchers may investigate the influence of demographic factors in adoption of electronic cash transfer systems.

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Dear Respondent,

The aim of this questionnaire is to identify the Factors that Influence the Adoption of Electronic payment on Humanitarian Cash transfer Program in Ethiopia. The results of the study are expected to supply to the understanding on the influencing factors of electronic payment adoption on humanitarian cash transfer program in Ethiopia. I would like to assure you that the information you provide will be used only for the purpose of achieving academic award. Thank you for your participation.

Best Regards,

Appendix I: Questionnaire

Section I: Demographic Details

No.	User Demographics	Categories	Mark Applicable with Cross (X)
1	**Gender/Sex**	Male	
		Female	
2	**Age**	18 -29	
		30 -39	
		40 – 49	
		50 – 59	
		Above59	
3	**Family Status**	Married	
		Unmarried	
		Spouse Deceased	
4	**Total Children**		
5	**Dependents**		

Section II: Five Point Likert Scale

Please complete the following questionnaire on scale of 1 to 5. 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree

	Statements to be evaluated	Rating point				
		1	2	3	4	5
Trust						
1	Ability of the M-birr/ Technology service provider has important influence to provide PSNP electronic payment service					
2	M-birr/ Technology service provider has the ability to provide PSNP electronic payment service effectively					
3	Integrity of M-birr/ Technology service provider has important influence in choosing PSNP electronic payment service					
4	Integrity of the M-birr/ Technology service provider will make the PSNP electronic payment a better option than the Manual Cash Payment service					
5	Goodwill of the M-birr/ Technology service provider has important influence in choosing M-birr service					
6	I believe M-birr/ Technology service Provider is trustworthy					
Convenience						
7	Using electronic payment would enable the users to accomplish tasks more quickly					
8	Using electronic payment would make it easier for the users to carry out tasks.					
9	Overall using electronic payment for cash transfer program is useful.					
10	Learning to use electronic payment for cash transfer would be easy					
11	it is easy to use electronic payment for cash transfer program to accomplish my tasks					
12	Interaction with electronic payment for cash transfer program does not require a lot of mental effort.					
13	Using electronic payment for cash transfer program does not require training					
Perceived Risk						
14	Electronic payment services for cash transfer program may not perform well because of network Problems.					
15	Electronic Payment services may not perform well and process payments incorrectly.					

16	I'm sure that if I decided to use electronic payment for cash transfer program and something went wrong with the transactions, beneficiaries, managers and employees would think less of me.					
17	When electronic payment users' bank account incurs fraud or hacking, they will have a potential risk in getting money in PSNP Beneficiaries.					
18	Due to poor network of mobile in some areas may take a lot of time to do transactions through M-birr service.					
19	Providing personal privacy information over M-birr ing may not be safe					
20	I'm worried about using electronic payment because other people may be able to access beneficiaries account.					
21	When transferring money through M-birr, I'm afraid that beneficiaries will lose their money due to careless and mistakes.					
22	Due to transactions errors beneficiaries might be loss of their money					
Relative Advantage						
23	The electronic payment/M-Birr access cost is inexpensive to use comparing to Manual cash transfer.					
24	The electronic payment/M-Birr access transaction cost is inexpensive comparing to Manual cash transaction cost.					
25	It doesn't take much time to learn about the use of electronic payment/M-Birr access					
26	The adoption of electronic payment/M-Birr access service enables to transfer cash quickly					
27	Electronic Payment service is faster than Manual Payment service					
Adoption of Electronic Payment System						
28	I trust that the use of electronic payment/M-Birr fulfills my needs					
29	I find M-Birr/electronic cash transfer is a convenient option that go with humanitarian beneficiaries life style					
30	I use M-Birr/electronic cash transfer because of convenience as compared to Manual based cash transfer.					
31	I use M-Birr/electronic cash transfer service for various types of humanitarian cash payment transactions					
32	I intend to use M-Birr/ electronic cash transfer service regularly					
33	I believe that it is valuable for me & PSNP beneficiaries to adopt M-Birr/ electronic cash transfer system					
34	I recommend others to use M-Birr/electronic cash transfer system					

THANK YOU SO MUCH!!!

Appendix II: Structured Interview Questions

Annex 2: M-BIRR PSNP electronic payment implementing Branches Interview:

Region----------

Zone----------

Wereda----------

Financial Institution name----------

Branch Name----------

Interviewee Full Name----------

Interviewee Position----------

Interviewee Sex----------

Requirements for ALL Interviewee Participants

• Under 35 years old; over 18 years old

• Speak Oromifa, Amharic or Tigrigna

• Worked on PSNP e-payment under his/her current position at least for one year

Interviewee Questions

1. In your opinion what are the advantages and disadvantages of mobile banking?
2. How do you rank electronic payments implementation? (Easy, fair or difficult?) WHY?
3. How PSNP electronic transfer impacted your regular financial activities?
4. What future opportunities do you see in implementing PSNP electronic cash transfer?
5. Are there any pressing challenges that came along PSNP electronic payment implementation?
6. What else you may need to fully utilize electronic payment services if you think the service is advantageous?
7. Do you have any other ideas to say about PSNP Manual payment?
8. Do you have any other ideas to say about PSNP electronic payment?

Annex 3: M-BIRR PSNP electronic payment implementing Agents Interview

Region----------

Zone----------

Wereda----------

Financial Institution name----------

Agent business Name ----------

Agent Full Name----------

Agent Sex----------

Requirements for ALL Interviewee Participants

- Under 35 years old; over 18 years old
- Speak Oromifa, Amharic or Tigrigna
- Worked on PSNP e-payment as an M-BIRR agent at least for two years

M-BIRR PSNP electronic payment implementing Agents Interview:

1. What is your opinion about agent banking business?
2. How does PSNP beneficiary's electronic payment affect your regular business activity?
3. How can you relate this PSNP electronic payment service with your future business plan?
4. What specific support and question that your PSNP customers ask you?
5. Is there any new opportunities and benefits associated with PSNP electronic payment?
6. In your opinions is there any factors that affect the sustainability of this electronic payment service?
7. Do you have any other ideas to say about PSNP electronic payment?