

ELECTRONIC FUEL CARDS: CHALLENGES AND BENEFITS

A STUDY OF TOTAL PETROLEUM GHANA LIMITED FUEL CARD (TOMCARD)

By

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A Thesis submitted to the Institute of Distance Learning,

**Kwame Nkrumah University of Science and
Technology**

**In partial fulfillment of the requirement for the degree
Of**

COMMONWEALTH EXECUTIVE MASTERS IN BUSINESS ADMINISTRATION

Institute of Distance Learning, KNUST

July 2012

DECLARATION

I hereby declare that this submission is my own work towards the Commonwealth Executive Masters Business Administration and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

All glory and honor go to God for giving me the strength, health, wisdom and determination to start and complete this project work. I dedicate this project to my family, to my husband Lawrence, for the interest in this project and for his continuous support and love.



ACKNOWLEDGEMENTS

First and foremost, I am grateful to Almighty God for his protection and mercies. I am indebted to many people whose immense contribution led to the success of this study. I believe my efforts alone will not have been enough to complete this project successfully.

Special appreciation goes to my supervisor, Mr. Jonathan Nii Okai Welbeck, whose insightful comments and guidance encouraged a good write up.

Again, I duly acknowledge and appreciate the various authors whose works served as props to support my research findings.

I also express my profound gratitude to all personalities whose advice, suggestions and contributions helped to make this project work a success especially my family, Mr. Emmanuel Bawa, Mr. Daniel Gyamfi and Mr. Albert Cofie.

ABSTRACT

This study investigates the challenges and benefits of Tomcard, an electronic fuel card of Total Petroleum Ghana Limited and examine why people prefer physical cash transactions to the Tomcard. Though electronic payments have several benefits for users, patronage in developing economy including Africa has always been below average. Though Total Petroleum Ghana Limited introduced electronic payment in 2003, the proportion of sale through the fuel card has not increased much. Therefore, this study gathered data in a field survey of two hundred (200) users of Tomcard from ten (10) companies. The random sampling technique was employed at the various companies because it gives each member of the population an equal chance of being selected for the study. The tools used for the collection of the primary data were questionnaires and interview. The study found that the Tomcard is a better alternative to cash transactions, safe and offered better security. Furthermore, it is more convenient to use as compared to cash, reduces misuse of cash and risk of theft. The use of fuel cards also enables users to budget for specific products and services. However, the challenges of using the Tomcard include the difficulty of accessing top up at the station, unclear and faded receipts, restrictive payments and top ups and unavailability of detailed reports via SMS or Web. Furthermore, users bear greater liability for fraudulent transaction. These challenges may explain why patronage of the Tomcard may not have improved much. The study therefore recommends that in order to encourage more people to use the Tomcard, TPGL should make access to top ups easier, load cards on time and fix frequent breakdown of electronic payment terminals promptly. Besides, TPGL should arrange for users of the Tomcard to check top up via text or short code as well as access their detailed reports by SMS and the Web.

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CHAPTER ONE

INTRODUCTION

1.1 Background

According Gyamfi (2011), the Ghanaian business environment is still predominantly cash based such that most retail points depend on cash payments at the point of sale, and this has been so with the fuel marketing companies as well. This practice gives room for widespread malpractices, especially by drivers of corporate organizations and company cars, due to issues of identification, verification and efficient monitoring. Some progressive institutions adopted the use of prepaid and postpaid fuel coupons for fuel purchases but this did not help matters much due to some peculiar challenges associated with the approach. Persons issued with the coupons exchange the coupons for cash, or use the coupons to purchase the fuel into unauthorized vehicles since there have not been any effective tracking system on vehicle consumption and mileage to prevent this practice.

A response to mend this gap has been the introduction of the electronic fuel card by three of the leading fuel marketing companies in the country. Although, the features of the cards vary across companies, they all seek to eliminate cash transactions at the point of sale, provide information to customers on consumption and facilitate monitoring of vehicle usage. Anybody, large, medium, or small fleet owners can all enjoy the benefits of the Tomcard. It is a smart fuel card and a secured mode of payment for fuel from Total service stations. The Total Tomcard is a prepaid and postpaid rechargeable card and works under the same principles of a smart card. The card is currently being used by a significant number of the following: Financial institutions, Non-

Governmental Organizations, Ministries, Departments and Agencies of the Government, Manufacturing companies and fleet operators e.g. haulage companies

Total Petroleum Ghana Limited (TPGL) has the largest network coverage in Ghana (with not less than 210 service stations right across the eastern and southern corridors of the country) and has also remained at the forefront of several innovations, largely driven by ever-changing trends of the consuming public. It was the first fuel marketing company to introduce the fuel card (Tomcard) on the Ghanaian market in 2000. It is a smart fuel card that is a secured mode of payment and enables one to control fuel expenditure. Reducing cash transactions in an economy comes with several benefits for both consumers and industry. On the part of consumers, there is safety, security, convenience, flexibility in transaction and saving of valuable time with electronic transactions. Furthermore, consumers transact business in a more simplified manner and can take advantage of considerably reduced hidden cost of transacting business. On the supply side, service providers who operate by means of cashless transactions reduce operational costs, overheads expenditures and enjoy security of payments (Nilson, 2003).. The above mentioned benefits contribute to promoting growth and eventually contribute to development. Hence, the introduction of the Total Tomcard is one way of getting closer to cashless economy in the oil marketing industry in Ghana.

1.2 Problem Statement

Modern trends indicate that electronic payment systems have become a significant element in all trade and commerce activity globally. Electronic payments extend from under one dollar to multi-million dollar transactions. Despite the benefits that electronic payments systems has

brought to other economies such as the western developed countries, economies in Africa, which are still in the early stages of applying electronic payment systems are yet to experience its maximum economic and operational impact, (Ackorlie, 2009).

Gyamfi (2011) concluded that the Ghanaian commerce environment is still predominantly cash based such that most retail points depend on cash payments at the point of sale, and this has been so with the fuel marketing companies as well. “An interview with Mr Chris Chinebuah, Chief Executive Officer of Bulk Ship and Fuel Trade in our World – Ghana newsletter estimated that Ghana imports about 65,000 barrels of oil every day and with the oil find in Ghana, it is estimated to have 1.5 billion barrels of crude oil as a reserve”. This shows that the Petroleum industry has become a key component in the country. Some institutions like Bank of Ghana, Westec Securities, and Nestle Central West Africa adopted the use of coupons for fuel purchases but this did not solve eradicate cash transaction. Persons issued with the coupons often exchange it for cash, or use the coupons to purchase the fuel into unauthorized vehicles since there is not any effective tracking system on vehicle consumption and mileage to prevent the practice. This has led to widespread malpractices, especially by drivers of corporate organization and companies due to issues of identification, verification and efficient monitoring. Complain by some company’s show that most of their drivers exchange fuel for cash, which have led to drivers being investigated. One of the efforts to curb the problem has been the introduction of electronic fuel card by the three leading fuel marketing companies in the country (Total Petroleum Ghana Limited, Shell Ghana Limited and Ghana Oil). While the features of the cards vary across companies, they seek to eliminate cash transactions at the point of sale, provide information to customers on consumption and facilitate monitoring of vehicle usage. However, its patronage is very low in the country (Gyamfi, 2011). Even though Total Petroleum Ghana

Limited is the market leader in the Petroleum industry with about 28% market share and first to introduce the fuel card, it has recorded a low patronage of the electronic fuel card (Tomcard). In addition, with about twenty eight thousand, three hundred and fifty three (28,353,000) white products (diesel and petrol) in volumes sold on the network of Total in April 2012, only four thousand seven hundred and seven (4,707,000) volumes of the networks are sold on the card. It has been in the interest of Total Petroleum Ghana Limited to at least convert 25% of its white product sales (diesel and petrol) into electronic sales every month. Following from the above, the study intends to assess the consumers' challenges and benefits in order to assign empirical reasons for the low patronage of the electronic fuel card.

1.3 Objectives of the Study

1.3.1 Main Objective

To examine the challenges and benefits of an electronic fuel card payment system (Tomcard) and why people prefer physical cash instead of the Tomcard

1.3.2 Specific Objective

1. To identify the types of fuel cards available in the Ghanaian market.
2. To identify the main challenges and benefits derived when using Total Petroleum Ghana Limited fuel card (Tomcard)

1.4 Research Questions

1.4.1 Main Research Question

What are the benefits and challenges derived from using the Tomcard and why people still prefer physical cash instead of the Tomcard?

1.4.2 Specific Research Questions

The following questions are formulated to help provide the means to achieving the above stated objectives;

1. What are the types of fuel cards available in the Ghanaian economy?
2. What are the main challenges and benefits users encounter when using Total Petroleum Ghana Limited fuel card (Tomcard)

1.5 Significance of the Study

The study is important because it brings to light the advantages and satisfaction derived from using the Tomcard.

This study would be beneficial to Total Petroleum Ghana Limited as it would bring out any shortfalls in their operations.

Also, the study will give the reasons why people prefer cash in making transactions at the service stations instead of the Tomcard as a control tool in managing cash which is the most fragile asset of every organization and finally, it will add to existing literature on the uses of the Tomcard.

1.6 Scope of the Study

Although reaching objective conclusion at the end of this study may have implication for all oil marketing companies with the fuel card, the study will focus on Total Petroleum Ghana Limited and users of the Tomcard. Total Petroleum Ghana Limited is a leader of the oil marketing companies and the first to introduce the fuel card in the Ghanaian economy. Being the leader, it is often the target of criticism for poor customer service and satisfaction at the service stations making it important to focus more closely on these issues.

1.7 Methodology

Primary data was derived from the participants in the form of users of the Tomcard. The main tools used in the data collection were questionnaire and interview. The statistical package for social sciences (SPSS) was used in transforming, running of cross tabulation and the excel (2007) was used in designing the bar graphs, histograms and pie charts.

1.8 Limitations

Data was gathered from the use of random sampling making the result unlikely representative of the attitude of users of Tomcard. The selection of some users of Tomcard was not representative enough for generalization for the oil marketing companies with the fuel card in Ghana. Familiarity of the researcher with users of Tomcard resulted in responses from them not being their true position hence affecting the validity of the result (self-selection). The sampled population of 200 was not representative of the attitude of the users Tomcard

1.9 Organization of the Study

The study has been organized into five chapters. Chapter one gives a general introduction to the study. It discusses the background to the study, the statement of the problem, the study objectives, research questions, significance of the study, and the scope and limitation of the study.

Chapter two addresses scholastic articles relating to the study in the form of literature review. Sub-headings relating to electronic payment definitions, various types of electronic payments, types of cards, Tomcard, are analyzed.

Chapter three looks at the methodology, analysis, interpretation of data techniques used for the collection of data and description of the population (users of Tomcard).

Chapter four addresses the presentation of the findings and analysis and interpretation of the data collected.

Chapter five summarizes the findings, draw conclusions and makes recommendations based on the study.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews both literature theoretical and empirical relevant to the study. Areas of review include background to electronic payment systems (cashless transactions), types of electronic payment (cashless transactions), cashless transactions in Ghana, benefits and challenges of the electronic payment, types of cards used for the fuel card and the fuel card of Total Petroleum Ghana Limited Tomcard.

2.1 BACKGROUND TO ELECTRONIC PAYMENT SYSTEMS (CASHLESS TRANSACTIONS)

In today's world many people across the globe make payments electronically rather than in person or cash. Vassiliou (2004) defines electronic payment as a form of financial exchange that takes place between the buyer and seller facilitated by means of electronic communication. According to (Cobb, 2004), the value of electronic payments goes way beyond the immediate convenience and safety of cards to a greater sphere of contributing to overall economic development.

A payment system is a system (including physical or electronic infrastructure and associated procedures and protocols) used to settle financial transactions. Electronic payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services. Even though there are many electronic payment systems, a user uses the system only if he has trust in it. A system will be accepted if it supports several properties such as atomicity, consistency, isolation, durability and various security issues.

There are several payment markets that can be identified each using specific forms of money. “The business-to-consumer (B2C) payment is used in commercial activities where the merchant is paid directly by consumer for goods and services” (Radu, 2003). This type of payment is also called retail payment. The direct payment between two persons is called person-to-person (P2P). Administration-to-consumer (A2C) payment addresses the payment of taxes toward the government. Finally, the payment intervening between companies buying and those offering products and services is referred to as Business-to-Business (B2B) (Radu, 2003).

The vending adage, “no cash, no purchase” is now being replaced by “no cash, no problem” (Attoh, 2008). Over the past decade, Africa and indeed the world as a whole has experienced major innovations in payment systems due to advancements in computer technology and deregulation of financial market. The innovations have brought about various alternatives to cash for transacting business. Now, individuals have wide a range of payment instruments to choose from such as credit card, debit card, fuel cards, cheques and electronic cash cards and to some extent, mobile phones (Banda and Mdwazika, 2007). Therefore, cashless transactions are the payment of goods and services using an acceptable electronic debit or credit card, fuel card, cheques, mobile phones and other devices that do not involve the use of cash or physical money. With the developed economies already leading in the use of card payment systems, widespread interest in expanded opportunities for cashless transactions are beginning to become prevalent in the rest of the world (Kasavana, 2004). According to Kasavana (2004) and Banda (2007), the slow rate of adoption of cashless transactions in the past can be attributed to customer reluctance to use cards for small dollar (low value) transactions, lack of operator experience with new technology, perceived high costs, users attachments to the use of physical cash and zero costs incurred in using cash from the users perspective. These concerns have obviously been laid to

rest as evident in the recent escalation in use of cashless media such as pay-at-the-pump for gasoline, speed pace purchasing and most recently the adoption of credit or debit cards acceptance restaurants. From a vendor's perspective, the cost of hardware, software and transaction processing errors have declined to make cashless transaction a much more appealing option. In fact, a report by Nilson (2003) states that credit card transactions are expected to be one of the growth areas for the payment processing industry in the United States. According to the report, economists point to the fact that credit card transactions volume doubled between 1992 and 1998. In 2003, credit and debit cards payment exceeded cash payments for the first time; thereby rendering card purchasing the preferred payment method of US customers. This trend is predicted to accelerate with credit purchases growing at the rate of 7% per annum and debit transactions expanding at the unprecedented rate of 21% annually (Kasavana, 2004).

2.2 TYPES OF ELECTRONIC PAYMENT (CASHLESS TRANSACTION)

Payment card covers a range of different cards that that can be presented by a cardholder to make a transaction. Typically a payment card is backed by an account holding funds belonging to the cardholder, or offering credit to the cardholder. The payment of goods and services in cashless transactions can be done using the card media, the communication media such as the mobile phone and the internet. Ideally, stakeholders seek a cashless medium that is secure and can be used to complete transactions at the same time as (or faster than) cash transactions.

2.2.1 Card media

These are a variety of card products that can be used to complete cashless transactions. The more obvious examples of card media are debit card, credit card, charge card, stored-value card and fleet or fuel card.

2.2.1.1 Debit Card

A debit card is also known as a bank card or check card and is a plastic that provides an alternative payment method to cash when making purchases. The word debit in accounting means to subtract. Functionally, it can be called an electronic cheque, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the internet, and so there is no physical card. The use of debit cards has become widespread in many countries and has overtaken the cheque and in some instances cash transactions by volume. Like credit cards, debit cards are used widely for telephone and internet purchases, and unlike credit cards the funds are transferred from the bearer's bank account instead of having the bearer to pay back on a later date. Debit cards can also allow withdrawal of cash, acting as the automated teller machine (ATM) card for withdrawing cash and as a cheque guarantee card. Merchants can also offer 'cash bank' or 'cash out' facilities to customers, where a customer can withdraw cash along with their purchase (investopedia.com, 2010).

2.2.1.2 Credit Card

A credit card is part of the system of payments named after the small plastic card issued to users of the system. It is a thin plastic card, usually 3-1/8 inches by 2-1/8 inches in size that contains

identification information such as signature or pictures and authorizes the person named on it to charge purchases or services to his account – charges for which he will be billed periodically. In other words, it represents an established credit line against which payments are deferred through creation of a loan from a sponsoring financial institution. Electronic verification systems allow merchants to verify in a few seconds that the card is valid and the credit card customer has sufficient credit to cover the purchase, allowing the verification to happen at time of purchase. It is the main means of conducting cashless transactions in the United States from a study conducted in 2005 due to its widespread acceptance (Briones and San Jose, 2005). A credit card is different from a charge card, where a charge card requires the balance to be paid in full each month. In contrast, a credit card allows the consumer to ‘resolve’ their balance, at the cost of having interest charged. Most credit cards are issued by local banks or credit unions, and come in specified shape and size.

2.2.1.3 Charge Card

A charge card is a means of obtaining a very short term usually around one month loan for a purchase. It is similar to a credit card, except that the contract with the card issuer requires that the cardholder must each month pay charges to it in full – there is no ‘minimum payment’ other than the full balance. Since there is no loan, there is no official interest. A partial payment or no payment results in a severe late fee as much as 5% of the balance and the possible restriction of future transactions and risk of potential cancellation of the card.

2.2.1.4 Stored-valued Card

A stored- value card refers to monetary value on a card not in an externally recorded account and differs from prepaid cards where money is on deposit with the issuer similar to a debit card. One

major difference between stored-value cards and prepaid debit cards is that prepaid debit cards are usually issued in the name of individual account holders, while stored-value cards are usually anonymous. The term stored-value card means the funds and or data are physically stored on the card. With prepaid cards the data is maintained on computers affiliated with the card issuer.

2.2.1.5 Fleet or Fuel card

A fleet or fuel card is used as a payment card most commonly for gasoline, diesel and other fuels at gas stations. Fleet cards or fuel cards can also be used to pay for vehicle maintenance and expenses at the direction the fleet owner or manager. The use of a fleet can also eliminate the need for cash carrying, thus increasing the level of security felt by fleet drivers. The elimination of cash also makes it easier to prevent fraudulent transactions from occurring at a fleet owner's expenses. Fleet cards are unique due to the managers' ability to receive real time reports and set purchase controls with their cards helping them to stay informed of all business related expenses.

In its infancy in the United Kingdom, fuel cards were only printed with the company name, vehicle registration and a signature strip on the reverse. No electronic data was stored. Fueling sites would verify the company, vehicle registration (on the forecourt) against the card and also the signature written on the back. The site would allow access to the fuel once the seller's receipt had been signed for and cross checked against the one written on the back of the card.

Initially, fuel card networks were very small and based around truck roads and main haulage routes. For example, in 1983, the key fuel site networks consisted of only seven stations. Therefore, they were initially targeted at haulage or delivery companies. A few years later, cards became embossed rather than printed. This was to provide the cards with greater longevity so

frequent use would not rub off the printed information. Due to lack of electronic data on the fuel cards at this stage, transactions were recorded by the stamping the card onto a manual transaction sheet further detailing data, time, volume grade of fuel and registration was hand written. During the mid to late 1980's fuel cards began to use magnetic strip technology. This meant fuel cards could be processed by a retailer electronically and reduced the human risk of error when recording transaction details. Magnetic strips also enabled fuel card providers to increase fuel card security by ensuring that personal identification numbers (PINs) were encoded into the card. Although it should be noted that when the magnetic strips is swiped through a fuel card reader, the transaction is still only verified by checking signatories. In the advent of outdoor terminals, these PINs became compulsory to re-fuel. The reason behind moving from magnetic strips to smart chip technology was due to the fact that the magnetic strip could be cloned and the data written onto a dummy card. Also, the use of fuel cards was far heavier than that of debit and credit cards, and therefore it became apparent that the magnetic strip began to wear out quicker.

The advent of fleet cards in the United States can be traced back to the 1960's and 70's when key stops and stand-alone card locks were used by independent marketers and filling station owners. The first commercial fuel cards resembled a credit card with a name and a company logo on them. When a customer entered a fueling station, the cashier would take down the customer's name and company information to authenticate ownership of the card. This process was time consuming and was vulnerable to fraudulent transactions. With the advent of computers and computer software in the 1980's, the development of the fleet card industry quickly expanded. The invention of the magnetic stripe and magnetic card reader allowed petroleum marketers to control fuel pump transactions, leading to today's wide range of fleet card security features and state of the art reporting systems to track all of your fleet expenses. These "intelligent" systems

make fleet management convenient and secure, as fleet card owners are able to track fleet fuel use with increased accuracy, receiving reports in real time on the fueling habits of one's fleet. Business owners are able to limit employee fueling by time of day and day of week, as well as the restricting the amount of purchase.

Typically, the majority of businesses using fuel cards are those which heavily rely on motor vehicles on a day to day basis, such as transport, haulage, courier services. One of the primary reasons a business will use a fuel card is to obtain (potentially) significant savings both on the current price of fuel and on administrative costs. It would be normal business to receive a single weekly invoice, payable by direct debit; this replaces the manual reconciliation of individual paper receipts which could, for larger organizations, number in the hundreds each week. A number of additional benefits are available for users of fuel cards from a supplier offering an e-business capacity.

In most cases, fuel cards can provide fuel at a wholesale price as opposed to standard retail. This way, discount fuel can be purchased without needing to buy in bulk. Furthermore, the management and security concerning fuel purchases is greatly improved via the use the use of fuel cards. These features often prove themselves attractive to businesses, especially with those operating large fleets which can sometimes be in thousands of vehicles.

2.2.2 Communication media

The use of mobile phones in transacting business is gradually becoming a very popular means of cashless transaction especially among the developing economies whose citizen database is still an issue. M-Commerce (or mobile commerce) is any transaction involving the transfer of ownership or rights to use goods and services which is initiated and/or completed by using

mobile access to computer-mediated networks with the help of an electronic device (Tiwari and Buse, 2007). Simply put, it is the act of transacting business using the mobile phone without exchanging physical cash.

2.3 CASHLESS TRANSACTIONS IN GHANA

Business transactions in Ghana are gradually evolving from once exclusively cash-based transactions to the adoption of cashless media of business transactions. Since the introduction of the banking sector, there has been several cashless media that has been introduced. It is however necessary to state that the banks have not been the only sector to introduce cashless media innovations as several NGO's, telecommunication industries like MTN and Airtel, oil industries like Total Petroleum Ghana Limited, Shell Ghana and Ghana oil are also generators of some cashless media.

The use of cheques as a means of payment of goods and services began almost immediately after the introduction of the banking sector. These cheques however were/are being used for the payment of more expensive purchases rather than small purchases. Thus, it had almost no influence on the cash-based economy in Ghana. The first attempt at initiating an innovative medium of cashless transactions was the introduction of "sika card" by SG-SSB formerly SSB. This card which was similar to a world-wide smart card was expected to reduce dependency on physical cash as it will be used for payments of goods and services as well as debiting for cash at designated merchant points (Ghana Web, 17th edition May 1997). However, this card was only used by Ghanaians as a tool for retrieving cash and debiting their accounts.

ProCredit Ghana (2007), and Bank of Ghana are also into discussions about the implementation of the use of Credit transfer in Ghana for the payment of utility bills, school fees and other bills. The medium, according to ProCredit, will be faster, convenient and reliable. Another product by a financial institution in Ghana is Mondex by Ghana Commercial Bank – a smart card that was expected to be used for the purchase of goods and service but was discontinued due to low patronage.

The telecommunications industry in Ghana, specifically MTN and Airtel, previously Zain, have introduced some cashless media that is being patronized by Ghanaians. These are the MTN MobileMoney and Airtel Money. MobileMoney and Airtel money are a cash management service available on the mobile phone or internet. They are about facilitating money transfer for the Ghanaian market. However, the service can also be used for the reloading of airtime units and for payment of utility bills, goods and services (All about Airtel Money, 2008). These services are provided to MTN and Airtel subscribers in conjunction with banks and operated through authorized merchants who facilitate the service on behalf of the banks. Although these products could have made a great impact as a cashless media, Ghanaians are reluctant in using these media as they still make physical purchase of MTN or Airtel airtime and payment of utility bills even though a whopping 50% extra bonus can be enjoyed by using the MTN MobileMoney to buy airtime (What is MobileMoney,n.d.). Justification for this reluctance is unknown since the study was not focused on these cashless media.

With the recent upsurge in the number of cashless media being introduced into the economy, the then government of Ghana in association with the Bank of Ghana, the regulator of the banking and financial sector, decided on the need to introduce a national payment system that can serve as a means of changing the cash-based system of Ghana to the cashless society in the long run.

This led to the rolling of the E-zwich, a national payment and settlement system that creates an electronic clearing house for all banking and financial institutions, as well as a biometric identification technology that allows card holders to perform business and financial transactions such as funds loads and transfers, and payments for goods and services including bills, both offline and online (Hesse, 2008).

Other cashless media are the Point of Sale payment system by Women's World Banking Ghana, ATM Visa electronic cards by several banks such as Standard Chartered Bank and the Fuel card (Tomcard) by Total Petroleum Ghana Limited.

2.4 BENEFITS OF ELECTRONIC PAYMENT

A study by the Federal Reserve Financial Service Policy Committee indicates that electronic payment transactions in the United States have exceeded cheque payments for the first time in history. The total number of electronic transactions equaled 44.5 billion dollars in 2003, while the number of cheques paid totaled 36.7 billion dollars. Obviously a trend among consumers can be identified; consumers are becoming more comfortable in doing business electronically and using a digital medium to conduct their business.

According to the study by (Fiallos & Wu, 2005), the arrival of the internet has taken electronic payments and transactions to an exponential growth level. Consumers could purchase goods from the internet and send unencrypted credit card numbers across the network, which did not provide much security and privacy. But a wide variety of new secure network payments schemes have been developed as consumers became more aware of their privacy and security.

Digital Money has significant benefits for financial institutions, banks and merchants (Fiallos & Wu, 2005). Digital Money is an electronic payment technology, which can provide anonymous flexible electronic payment, like paper cash, but with added security requirements needed for internet transactions. In a related work by Lee, et. al. (2004), a secure electronic cash system can guarantee anonymity of legitimate users as well as provide traceability about illegally issued cash or laundered money. If illegal activity did take place, it can cancel anonymity of the digital cash in order to protect the bank (Lee, et. al, 2004) added that since digital money can trace double spending, and double spending protects content by exposing the double spender's identity, digital cash is a full proof way of guarding against illegal distribution of intellectual property and materials.

Digital Money can also be used to deter illegal content copying and distribution by inserting tracing content factors into the digital cash payment scheme that prevents users from duplicating activity. By using this function, legal anonymous purchasers can spread contents to other paying anonymous users while abiding by copyright laws. Using digital money in industries like digital entertainment can increase the demand for products through easier and safer dissemination channels. Digital Money can trace who is illegally reproducing and distributing copyrighted intellectual material, therefore increasing security for authors and at the same time deterring lost revenue and sales for digital media entertainment companies (Lee, et. al., 2004).

Digital Media entertainment, as well as intellectual property providers and distributors, can also implement this technology and its safety features in order to ensure greater copyright compliance between consumers (Fiallos & Wu, 2005). By adopting such a method of payment and distribution, software and intellectual property piracy can be controlled and eventually eliminated. Digital Money can provide financial institutions with decentralized structures, faster

transactions and decision making processes, and more cost effective ways of doing business (Fiallos & Wu, 2005).

Electronic payments as argued by (Cobb, 2005) have a significant number of economic benefits apart from their convenience and safety. These benefits when maximized can go a long way in contributing immensely to economic development of a nation.

Automated electronic payments help deepen bank deposits thereby increasing funds available for commercial loans – a driver of all overall economic activity. According to Cobb (2005), efficient, safe and convenient electronic payments carry with them a significant range of macro-economic benefits. “The impact of introducing electronic payments is as keen to using the gears on a bicycle which adds an efficiency to the an economy, and kicks it to a higher gear, adds better controlled consumer and business credits, and notches up the economy velocity even further.” (Cobb, 2005)

“While the high level of cash transactions creates an opportunity for the electronic payment industry, it also imposes cost on local economies. Cash has to be minted, securely transported, counted and reconciled, kept secure and maintained for re-use time and time again. The payment cost is high, and will always remain high whereas the costs of electronic systems are fixed. Once the infrastructure has been built the costs transaction is very low” (Cobb, 2005).

When cardholders use their cards at the point of sale, they are helping to keep money in the institutions who issued them. Electronic payment system can help displace shadow economies, bring hidden transactions into the systems which issued them and increase transparency, confidence and participation in those institutions. (Cobb, 2005)

As also mentioned by Al Shaikh (2005), there is a correlation between increase in point of sales volumes and rise in demand deposits. “Automated electronic payments act as a gateway into the banking sector and a powerful engine for growth. Such payments draw cash out of circulation and into the bank accounts, providing low costs funds that can be used to support bank lending for investment. The process creates greater transparency and accountability, leading to greater efficiency and better economic performance” (Al Shaikh, 2005)

Similarly Hord (2005), observes that electronic payment is very convenient for the consumer. In most cases, one only needs to enter ones account information – such as the credit number and shipping address once. The information is then stored in a database on the retailer’s Web server. When you come back to the Web site, you just log in your username and password.

“Completing a transaction is as simple as clicking your mouse: All you have to do is confirm your purchase and you’re done” (Hord, 2005).

Hord (2005) further emphasizes the fact that electronic payments lower costs for businesses. The more payments that are processed electronically, the less money is spent on paper and postage. Offering electronic payment can also help businesses improve customer retention. “A customer is more likely to return to the same e-commerce site where their information has already been entered and stored” (Hord, 2005)

According to Cobb (2005), “electronic payments can thus lower transaction costs and stimulate consumption and gross domestic products, increase government efficiency, boost financial intermediation and improve financial transparency”. She further added that “Government plays a critically important role in creating an environment in which these benefits can be achieved in a way consistent with their own economic development plans”

Humphrey et al. (2001) also support the fact that the introduction and use of electronic payment instruments holds the promise of broad benefits to both businesses and consumers in a form of reduced costs, greater convenience and more secure, reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks. One such benefit is that electronic payments enable bank customers to handle their daily financial transactions without having to visit their local bank branch. Electronic payments products could save merchants time and expense in handling cash (Appiah and Aggyemang, 2006).

According to Humphrey, Pulley and Vesala (2000), the resource cost of a nation's payment system can account for three percent of its gross domestic products. Since most electronic payments cost only about one-third to one-half as much as paper based non cash payment, it is obvious that the social cost of a payment system could be considerably reduced if it is automated (Appiah & Agyemang, 2007). Automating and streamlining electronic payments made from self-serve channels such as ATMs, branch office terminals and point of sale (POS) systems can reduce paper based errors and costs .

A research work carried out by Visa Canada Association in collaboration with Global Insight (A leading economic and financial consulting firm) revealed that electronic payments provides transactional efficiency to consumers, merchants, banks and the economy. Electronic payments have contributed one hundred and seven billion Canadian dollars to the Canadian economy since 1983 and represented nearly 25% of the four hundred and thirty seven billion Canadian dollars cumulative growth in the Canadian economy over the same period.

According to Ackorlie (2009), Ghana has lagged way behind most of the world (including many of its peers in Africa) in the general quest to boost micro economic activity by reducing the role played by physical cash in daily transactions and by encouraging the creation of a cashless society.

However, experts in the financial sector have stressed that unless something radically innovative, functional and savvy is introduced, which accounts for attitudes as well as the huge unbanked population, the country's dream of building a functionally cashless society in the shortest possible time could be elusive (Ackorlie, 2009).

2.5 CHALLENGES OF ELECTRONIC PAYMENTS

Electronic payments despite its numerous benefits come with its own challenges even in the developed world. The general challenges and discussed followed by the specific challenges in developing economies especially Africa. The identified challenges as revealed by previous research works are security, infrastructure, regulatory and legal issues and socio-cultural challenges.

2.5.1 Security

The security of information and data is crucial in all Information systems. Security is the practices, procedures and technology put in place which ensures that information is safeguarded from modification or accidental change (integrity), unauthorised access (confidentiality), and is readily available (availability) to authorized users on request.

Electronic payment systems are no exception; an unsecured e-payment system may not get trust from users. Trust is very critical to ensure acceptance from users. According to Worku (2010), e-payment and e-banking application represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm customers. “It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking applications” (Worku, 2010). A secure electronic financial transaction has to meet the following requirements:

2.5.1.1 Integrity and Authorisation

Integrity is defined as the accuracy, completeness and validity of information in accordance with business values and expectations (CISM Review Manual, 2006). Integrity of payment systems means that no money is taken from users unless a payment is authorized by him. In addition, users might require not receiving any payment without their explicit consent; this is desirable when users want to avoid unsolicited bribery (Asokan et al. 2000).

2.5.1.2 Confidentiality

Confidentiality is defined as the protection of sensitive or private information from unauthorized disclosure (CISM Review Manual, 2006). Some parties involved may wish confidentiality of transactions. Confidentiality in this context means the restriction of the knowledge about various pieces of information; the identity of payer/payee, purchase content, amount etc. Typically, participants intractability are desired, the requirement may be to limit this knowledge to certain subsets of the participants only (Asokan et al, 2000).

2.5.1.3 Availability and Reliability

Availability is ensuring that information systems and data are ready for use when they are needed; often expressed as the percentage of time that a system can be used for productive work. All parties require the ability to make or receive payments whenever necessary (Asokan et al, 2000).

2.5.1.4 Enhancing E-payments Security

According to Taddesse & Kidan (2005), the most common method of securing e-payments is using cryptographic based technologies such as encryption and digital signatures. Applying these technologies reduce speed and efficiency and as a result compromise has to be made between efficiency and security. The following are some of the technological means to secure e-payments:

- ❖ **Secure Electronic Transaction (SET):** This is an open standard developed by Master Card and Visa to provide a solution to security problems for online credit card payment system (Ullah, 2010). This is achieved by providing digital certificates for both customer and merchant. According to Taddesse & Kidan (2005), this did not find acceptance because it was complicated and required both customer and merchant to download 5MB of software.
- ❖ **3D Secure** is a Visa alternative to Secure Electronic Transaction and does not require a certificate to authenticate (Ullah, 2010)
- ❖ **Smart Card Security:** Data stored on a smart card is encrypted and cannot be assessed without a password or personal identification number and thus provide strong security.

Taddesse & Kidan (2005) argue that magnetic strip cards i.e debit cards, credit cards, etc are being replaced by smart cards.

Proper policies, procedures and appropriate Government laws must also be put in place to ensure technologies provide maximum security.

2.5.2 Infrastructure

Infrastructure is necessary for the successful implementation of electronic payments. Proper infrastructure for electronic payments is a challenge (Taddesse & Kidan, 2005). For electronic payments to be successful there is the need to have reliable and cost effective infrastructure that can be accessed by majority of the population.

Electronic payment communication infrastructure includes computer network such as the internet and mobile network used for mobile phones. In addition, banking activities and operations needs to be automated. A network that links electronic payment institutions for clearing and payment confirmation is a prerequisite for electronic payment systems (Taddesse & Kidan, 2005).

Mobile network and internet are readily available in the developed world and users usually do not have problems with communication infrastructure. However, in Africa, mobile networks and internet are not readily accessible. “Poor communication infrastructure is one of the reasons that hinder the e-payment systems in Africa” (Taddesse & Kidan, 2005). According to Worku, (2010), low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvement in e-commerce in Ethiopia. A study by Microfinance Nigeria indicated that efforts by the Nigerian Government and other financial and ICT stakeholders to move Nigeria’s payment system from cash-dependent platform to the globally accepted electronic driven alternative may be impeded by dearth of critical

telecommunication infrastructure. In developing countries, many of the rural areas are unbanked and lack access to critical infrastructure that drives electronic payments. According to Microfinance Nigeria (2010), some of the debit cards technologies like the automated teller machines are still seen by many as unreliable for financial transactions, as stories told by people suggest that they could lose their money through fraudulent deductions, debits and other lapses for which the technology had been associated with by many over the last few years.

In a related work Nepal, Mishra (2008) observes that telecommunication and electricity are not available throughout the country, which negatively affects the development of e-payments. According to Mishra, the development of information and communication technology in Nepal is a major challenge for e-payments development. Since ICT is in its infant stages in Nepal, the country faces difficulty promoting e-payment development.

2.5.3 Regulatory and legal issues

National, regional or international set of laws, rules and other regulations are important requirements for the successful implementation of e-payment schemes. Some of the major elements include rules on money laundering, supervision of commercial banks and e-money institutions by supervisory authorities, payment system oversight by central banks, consumer and data protection, cooperation and competition issues (Taddesse & Kidan, 2005). According to Taddesse & Kidan (2005), the virtual and global nature of e-payment also raises legal questions such as which jurisdiction will be competent and about applicable laws in disputed cases, validity of electronic, electronic contracts and electronic signature. A legal and regulatory framework that builds trust and confidence supporting technical efforts is an important issue to be addressed in implementing e-payments. As indicated by Worku (2010), lack of a suitable

legal and regulatory framework for e-payment in Ethiopia's, an African country is a challenge. According to Worku (2010), Ethiopia current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-payments and e-commerce including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies. In a related work, Mishra (2008) argues that no laws and regulations have been promulgated to cover the legal status and issues of e-payments. This matter has been given high priority and a legal framework is expected soon (Mishra, 2008).

National regulation and legal framework that aligns with regional and international agreements is crucial in creating a certain and reliable environment (Tadesse & Kidan, 2005).

2.5.4 Socio-Cultural Challenges

Cultural and historical differences in attitudes and the use of different forms of money (e.g. use of credit card in North America and use of debit card in Europe) complicate the task of developing an electronic payment system that is applicable at international level (Tadesse & Kidan, 2005). According to Tadesse & Kidan (2005), differences in the degree of the required security and efficiency among people of different cultures and level of development aggravates the problem.

Consumer's confidence and trust in the traditional payment systems has made customers less likely to adopt new technologies. New technologies will not dominate the market until customers are confident that their privacy will be promoted and adequate assurance of security is guaranteed. (Tadesse & Kidan, 2005). New technologies also requires the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods.

2.6 TYPES OF CARDS USED FOR THE FUEL CARD

In general cards can be classified into four types according to time of appearance and the storage capacity.

2.6.1 Embossed Card

Embossing is the oldest technique for adding machine-readable features to identification cards. The embossed characters on the card can be transferred to paper using simple, inexpensive devices, and they can also be easily read visually (by humans). The nature and location of the embossing are specified in the ISO 7811 standard.

2.6.2 Magnetic-Stripe Card

The fundamental disadvantage of embossed cards is that their use creates a flood of paper exactly the shape and size of a credit card. Smart cards are particularly useful components of computer systems that need to address data security, personal privacy, and user mobility requirements. The amount of data processed by a smart card program is usually quite small and the computations performed are typically quite modest. Smart cards can be divided into two groups, which differ in both functionality and price.

2.6.2.1 Memory cards

Memory cards are much less expensive and much less functional than microprocessor cards. Memory cards do not have the ability to process data but can store data.

2.6.2.2 Microprocessor card

Microprocessors can store and process data. Microprocessors Card can have many functions such as storing data, make calculations, process data, manage files, and execute encryption

algorithms. It makes possible sophisticated and portable data processing applications such as contact and contactless credit/debit cards, transit payment cards and GSM Subscriber Identity Modules.

2.6.3 Smart Card

The smart card is the youngest and cleverest member of cards. Its characteristic feature is an integrated circuit embedded in the card, which has components for transmitting, storing and processing data. The data can be transmitted using either contact on the surface of the card or electromagnetic fields, without any contacts. The fundamental characteristics and functions of smart cards are specified in the ISO 7816. Smart cards offer several advantages compared with magnetic-stripe cards. The main important advantages are that, the maximum storage capacity of a smart card is many times greater than that of a magnetic-stripe card. Secondly, the most important advantages of smart cards is that their stored data can be protected against unauthorized access and manipulation. Since the data can only be accessed via a serial interface that is controlled by an operating system and security logic, confidential data can be written to the card and stored in a manner that prevents them from ever being read from outside the card. Such confidential data can be processed only internally by the chip's processing unit. Smart cards can be divided into two groups, which differ in both functionality and price.

2.6.3.1 Optical Memory Card

For applications where the storage capacity of smart cards is insufficient, optical cards that can store several megabytes of data are available. However, with current technology these cards can be written only once and cannot be erased. The ISO/IEC 11693 and 11694 standards define the physical characteristics of optical memory cards and the linear data recording technique used with such cards. Up to now the use of optical memory cards has been severely limited by the

high cost of equipment for reading and writing this type of card. One application for optical memory cards is recording patient data in the medical sector, since their large storage capacity allows even X-ray images to be stored on a card.

2.7 THE TOMCARD

The introduction of a fuel card by an Oil Marketing Company (OMC) is a novelty which has a great potential of attracting a large number of both corporate and individual customers to it. A fuel card enables customers to do away with pocket cash payments anytime they purchase fuel and other products, and also assists with managing and tracking fuel expenses; especially in case of corporate institutions that run a fleet of vehicles. The fuel card may also be extended to cover other products and services which are available at the service stations of the OMC as well, thereby improving its usefulness. To the OMCs a widespread use of fuel card by customers will go a long way to improve on customer loyalty which is very essential in a business environment where product and price differentiation is very minimal.

Total Petroleum Ghana Limited (TPGL) was the first to introduce the fuel card into the Ghanaian market in 2003. The Tomcard brand name has seen quite an appreciable level of market penetration over the period. In the late 2008, Ghana Oil Company (GOIL) also introduced its own fuel card service under the brand name of advantage. The Shell cards do have almost the same features as Tomcard and it is known as the Shell Card. The introduction of Goil and Shell into the market ended Total's monopoly.

Some key security features of the Tomcard are that, it is impossible to duplicate and also allows for customization to meet client needs and requirement. The Tomcard offers a four digit personal identification number (PIN) to prevent unauthorized usage. Confidential PIN codes and drivers'

codes are in place of signatures and there is limited risk in the event of loss of the card. Other features and controls of the Tomcard are as follows: the Tomcard concept is based on a chip that allows for purchases of petroleum products and other services from the Total Tomcard network only; credits for the card can be picked at any of the Tomcard stations or head office of Total Petroleum Ghana Limited. However, all payments for credits on the cards are made at the head office and area offices. The system can provide information on each card and detailed report to a customer about the usage of the card. For example, name of the company or institution, name of user, vehicle registration, product and service.

Each of the cards can be restricted according to the requirements of the customer. These are:

- ❖ Geographical area: It could be used in one or more zones. Thus card usage can be restricted according to regions or zones.
- ❖ Temporal transaction: Allows the card to be used on specified days or on all days. Thus the card can be customized to be used on specific days. i.e Monday to Friday or Saturday and Sunday.
- ❖ Consumption restriction: Monitor the consumption per period such as per day, week and month. Fuel consumption by each card can be restricted in terms of litres that can be purchased per day, per week or month.
- ❖ Product/Service restriction: This enables the card holder to purchase products specified on the card. For example the product on the card can be restricted to only diesel, petrol or a combination of the two etc.
- ❖ Tank capacity: This restriction ensures that purchases are made in excess of the tank capacity of the vehicle for the card.

It is for this reason that the Total Tomcard has been described as the most reliable and efficient means of making purchases at the service stations. The Tomcard is the number one card already being used by major companies and institutions in Ghana. Having been in operation for over ten years, the Tomcard is the most reliable means of transacting business at most Total service stations across the country.

The Tomcard meet the requirement of the best fuel management system. It has been tried and tested over the years by many companies, organizations and institutions. Some of the corporate organizations and institutions using the Tomcard include but are not limited to the following companies: Vodafone, Scancom, Airtel, Kasapa, Standard Chartered Bank, Barclays Bank, United Bank for Africa, Fidelity Bank, Ecobank, Stanbic Bank, National Investment Bank, Ghana Commercial Bank, Guinness Breweries, Nestle Ghana Limited, Unilver, Ghacem, Toyota Ghana Limited, Multimedia group, Pasico, GCnet etc.

2.11 BACKGROUND OF TOTAL PETROLEUM GHANA LIMITED

Total is a multinational energy company committed to leveraging innovations and initiative to provide a sustainable response to humankind's energy requirements. The strong historical heritage of the company dates as far back as 1994 when a subsidiary was inherited from BP Ghana, which was followed by a series of transitions from Elf oil to TotalfinaElf. This coupled with a great respect for quality, standards, achievements and safety, propelled the subsidiary to forefront of the industry. As the fourth largest publicly-traded integrated oil and gas company and a world class chemicals manufacturer,

Total operates in more than 130 countries across the oil industry chain, from oil and gas exploration and production to the gas downstream and refining, marketing, trading and shipping. The technical skills and expertise of their 95,000 employees worldwide are their most important competitive advantage. United by a shared culture, these exploration, production, refining, marketing and chemicals specialists have made Total a sound, resilient enterprise, focused on their core businesses and enjoying unmatched growth opportunities.

In addition to conducting their business according to the highest standards of professional behaviour, they maintain an ongoing commitment to transparency, dialogue and respect for others. They are strategically dedicated to meeting the challenges faced by all their businesses when developing natural resources, protecting the environment integrating their operations into host country cultures, and dialoguing with civil society.

On September 5, 2005 Exxon Mobil Corporation announced that Exxon Mobil Affiliates had signed to sell to Total the affiliate's shares in fuels and lubricants businesses in 14 African countries. The agreement covered Exxon Mobil in Chad, Djibouti, Ethiopia, Eritrea, Ghana, Guinea, Liberia, Malawi, Mauritius, Mozambique, Sierra Leone, Togo, Zambia, and Zimbabwe. Following the agreement, Total Outré Mer purchased the 60% equity stake from Mobil Holdings, UK had in Mobil Oil Ghana Limited. Total Outré Mer had acquired Mobil Oil Ghana Limited which became an affiliate of Total in Ghana the completing the first phase.

This transition was subject however to the approval of the Securities and Exchange Commission. Upon receipt of approval from the SEC, the two affiliates of Total in Ghana namely Total Ghana and Mobil Oil Ghana merged to form the new company Total Petroleum Ghana Limited. This

move by Total was in line with the corporation's vision of reinforcing and consolidating its position as the number one oil company in Africa.

With 50 years of Total's operations in Ghana came a huge recognition of the Total brand as number one and the market leader amongst the Ghanaian investing and consuming public. Today, the company is more visible and very well represented across the ten regions of Ghana, having strategic locations in major cities and towns. The overriding principle guiding Total's operations is the Group's well-known insistence on quality products and safety of the environment as well as individuals. This is reflected in TPGL'S daily operations which are conducted in a safe manner that ultimately merits and earns total customer satisfaction. To further ensure that their processes guarantee top quality customer service, it is the first oil marketing company in Ghana to acquire the International Organization Standards (ISO) quality management standards certification (ISO 9001:2008)



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the description of the study population, sample, analysis and interpretation of data techniques used in the collection of data.

3.2 Study Population

The study was conducted among users of the electronic fuel card of selected companies in Accra. However, the study focuses on customers who usually make their fuel purchases at the Total Petroleum Ghana Limited fuel stations. Therefore, the study population was users of the Tomcard.

3.3 Study Sample

Sample for the study was two hundred (200) of the entire users of the Tomcard from ten selected companies in Ghana.

NO	COMPANIES	NUMBER OF EMPLOYEES ON TOMCARD	NUMBER OF USERS SELECTED
1	Standard Chartered Bank	872	30
2	Barclays Bank	472	25
3	Fidelity Bank	474	25
5	United Bank for Africa	182	15
6	Guinness Ghana Limited	250	20

7	Enterprise Insurance Co. Limited	354	20
8	Polyproduct Ghana Limited	74	15
9	Olam Ghana Limited	351	20
10	Scancom Ghana Limited	754	30
	Total	3783	200

3.4 Data Collection Methods

3.4.1 Sampling Techniques

The researcher employed random sampling for the study. The random sampling technique was also employed at the various companies because it gives each member of the population an equal chance of being selected for the study.

3.4.2 Data Requirement

The study used primary source of data. Primary data was derived from the participants in the form of the users of the Tomcard.

3.4.3 Research Tools

The main tools used for the collection of primary data were questionnaires and interview. The questionnaires were structured, containing closed ended questions. The closed ended questions provided respondents with options to choose from as answers. In order to confirm and guide the questions in the questionnaires, five (5) heads of the transport sections were interviewed. .

Retrieval rate of questionnaire that was administered was 80 %. hence not all the questionnaires distributed were answered and returned.

3.5 Data Analysis

Data gathered from the field survey was analyzed using Statistical Package for Social Sciences (SPSS) software and Microsoft Excel Spreadsheet (2007). The SPSS was used for data transformation, running of cross tabulation and percentages while the Microsoft Excel was used in designing the bar graphs, histograms and pie charts.



CHAPTER FOUR

ANALYSIS AND PRESENTATION OF RESULTS

This chapter captures the demography of respondents, findings of the study, as well as the discussions from the field survey.

4.1 PERSONAL INFORMATION OF RESPONDENTS

In order to get some background information about the respondents, questions about their gender, age and net monthly income were asked. Below are the results received in relation to their background information.

4.1.1 Gender

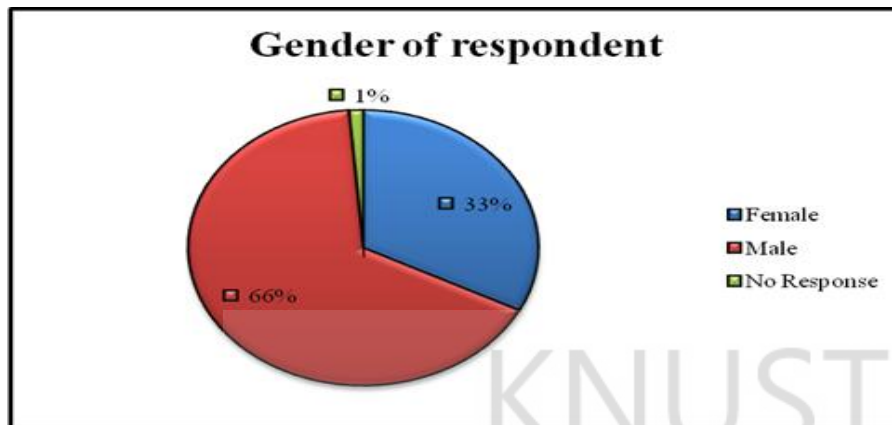
Table 4.1: Gender of respondents

Gender	Frequency	Percentage
Female	52	32.5
Male	106	66.3
No Response	2	1.3
Total	160	100

Source: field survey, July 2012

As indicated in the diagram above, majority of the respondents are males representing 66.3% of the total sample. The rest represent females with a number of 52 representing 32.5%. This does not necessarily mean that more males use the Tomcard than females but may be due to the fact that their total population was less at the time of the random sampling.

Figure 4.1: Graphical representation of Respondents' Gender



Source: field survey, July 2012

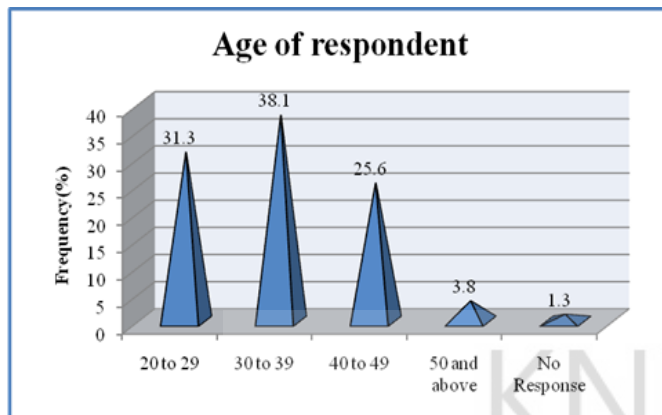
4.1.2 Age

Table 4.2: Age of respondents

Age	Frequency	Percentage
20 to 29	50	31.3
30 to 39	61	38.1
40 to 49	41	25.6
50 and above	6	3.8
No Response	2	1.3
Total	160	100

Source: field survey, July 2012

Figure 4.2: Graphical representation of Respondents' Age



Source: field survey, July 2012

From figure 4.2, most of the respondents in the study were those in the 30 – 39 age group representing 38.1% of the total sample. The second highest was within the 20 – 29 age group with a representation of 31.3% and the third highest was the 40 – 49 age group of 25.6%. The age group of 50 and above had a representation of 3.8%. There was another group which preferred to remain unanimous representing 1.3% of the total sample.

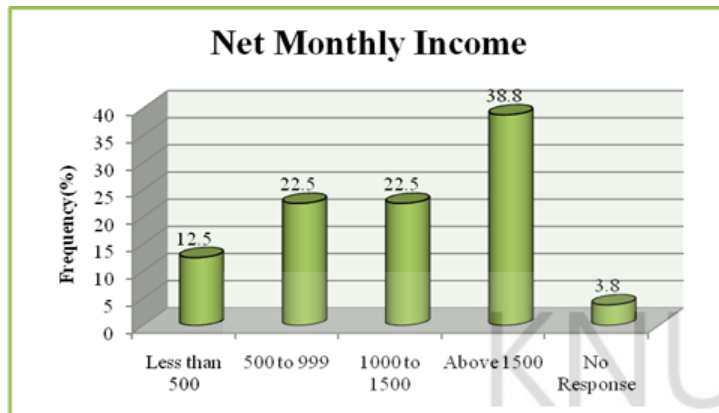
4.1.3 Net Monthly Income

Table 4.3: Net Monthly Income

GH¢	Frequency	Percentage
Less than 500	20	12.5
500 to 999	36	22.5
1000 to 1500	36	22.5
Above 1500	62	38.8
No Response	6	3.8
Total	160	100

Source: field survey, July 2012

Figure 4.3: Graphical representation of Respondents' Net Monthly Income



Source: field survey, July 2012

From figure 4.3, it can be seen that 38.8% of the total sample population earn above GH¢1500 per month. Users between GH¢500 to GH¢999 and GH¢1000 to GH¢1500 net monthly income represent 22.5% each. From the field survey, it shows that net monthly income earners between GH¢500 to above GH¢1500 are the majority of people using the Tomcard. This means that people with less than GH¢500 net monthly income are not interested in using the Tomcard.

4.2 USAGE OF THE TOMCARD

In order to answer the research question as to the usage of the Tomcard, respondents were asked whether or not they know other fuel cards on the Ghanaian market, how long they have been using the Tomcard, what percentage of monthly net income is loaded on the Tomcard and how often they use the card.

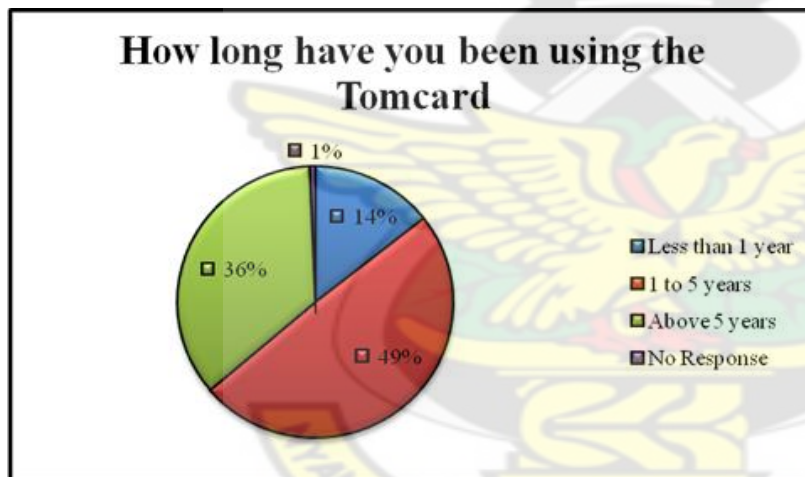
4.2.1 How long users have been using the Tomcard

Table 4.4: For how long have you been using the Tomcard

Number of year	Frequency	Percentage
Less than 1 year	23	14.4
1 to 5 years	79	49.4
Above 5 years	57	35.6
No Response	1	0.6
Total	160	100

Source: field survey, July 2012

Figure 4.4 Graphical representation of how long respondents have been using the card Tomcard



Source: field survey 2012

From the above diagram, 49% of the total sample population has been using the Tomcard between 1 to 5 years now, and 36% have been using the Tomcard for over 5 years. 14% of the sample population has used the Tomcard for less than a year and respondents who could not determine how long they have used the Tomcard is 1% which is insignificant.

This shows that since the introduction of the Tomcard in 2000, only 36% of the sample population started using the Tomcard till 2006 when about 49% of the sample population joined. 14% of the total sample population has used the Tomcard for less than a year. From Figure 4.4, it can be deduced that the patronage of the fuel card for new clients who joined reduces yearly.

4.2.2 Percentage of net monthly income loaded on the Tomcard

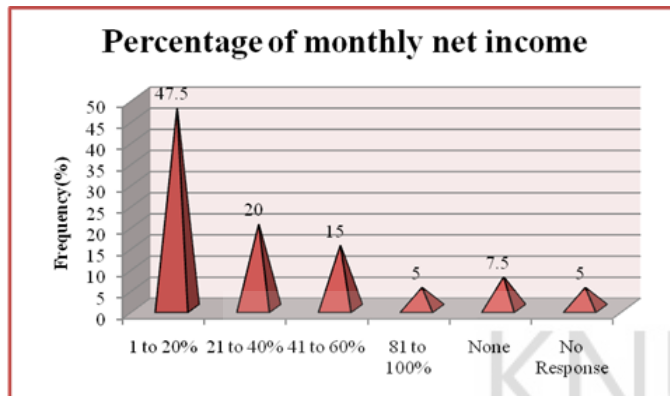
This was aimed at finding out the percentage of the respondents' monthly net income loaded on the Tomcard. The options available in the questionnaire and the responses received are shown below.

Table 4.5: Percentage of monthly net income loaded on the Tomcard

Income percentage	Frequency	Percentage
1 to 20%	76	47.5
21 to 40%	32	20
41 to 60%	24	15
81 to 100%	8	5
None	12	7.5
No Response	8	5
Total	160	100

Source: field survey, July 2012

Figure 4.5: Graphical representation of percentage of monthly net income loaded on the Tomcard



Source: field survey, July 2012

Figure 4.5 indicates the results of the field survey in relation to the percentage of income loaded on the Tomcard. It is observed that about 47% of the respondents load 1 to 20% of net monthly income which means that users do not load significant portion of their net monthly income on the Tomcard. 5% of the respondents load a significant portion of their income on the Tomcard and 5% of the respondents gave no response.

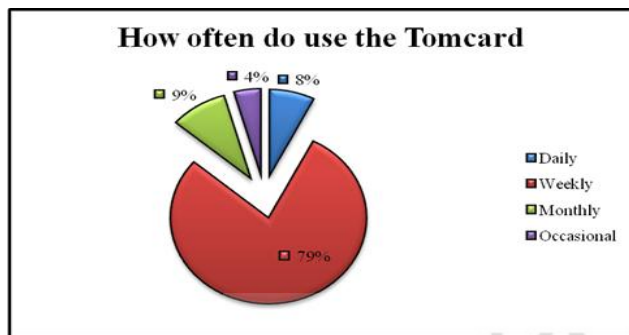
4.2.3 Frequency of usage of the Tomcard

Table 4.6: How often do you use the Tomcard?

Usage	Frequency	Percentage
Daily	12	7.5
Weekly	126	78.8
Monthly	15	9.4
Occasional	7	4.4
Total	160	100

Source: field survey, July 2012

Figure 4.6: Graphical representation of how often the respondents use the tomcard



Source: field survey, 2012

From the chart in figure 4.6, it can be deduced that 79% of the respondents use the Tomcard weekly, while 9% of the respondents use the card monthly. 8% of the respondents use the card daily and 4% use the Tomcard occasionally. This means that majority of the respondents use the Tomcard weekly.

4.2.4 Knowledge of other fuel cards on the Ghanaian market

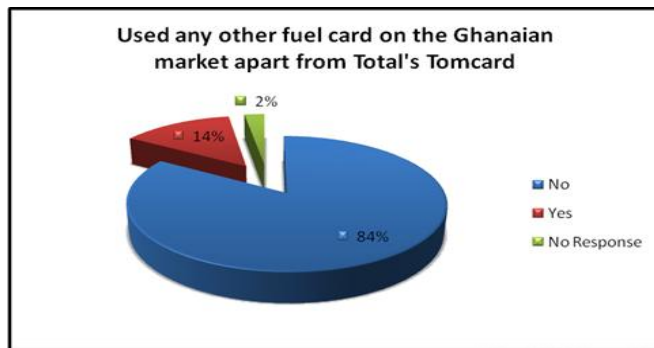
To know whether the respondents know and have used other fuel cards apart from the Total's Tomcard, the respondents were asked a question about the above subject with the options to choose from "Yes" and "No" and also to list the relevant cards.

Table 4.7: Whether respondents have used any other fuel card on the market apart from Total's Tomcard

Response	Frequency	Percentage
No	134	83.8
Yes	22	13.8
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.7: Graphical representation of the respondents' knowledge of other fuel cards



Source: field survey, July 2012

From figure 4.7, 84% of the respondents have not used any other fuel card apart from the Total Petroleum Ghana Limited's fuel card (Tomcard). The 14% of the respondents who answered yes, only 4% of them have actually used other fuel cards like the Shell card and the Goil Advantage card. Only 10% have heard about the other types of fuel cards on the Ghanaian market but have not used them before. This means that majority of people have heard about and have used the Tomcard than the other fuel cards in Ghana.

4.3 BENEFITS OF THE TOMCARD

This was aimed at determining the benefits users derive from the use of the Tomcard and also to reflect their feelings and extent to which they agree with the statement, the likert scale was used.

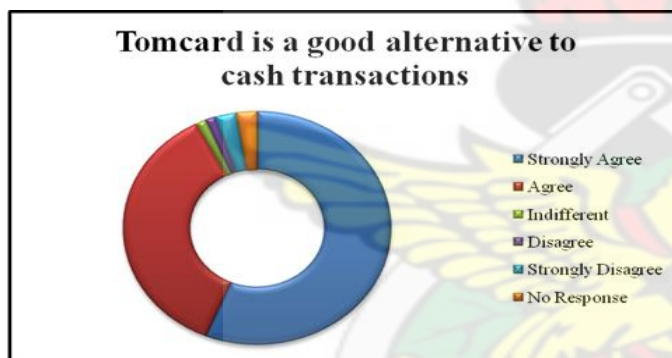
4.3.1 The Tomcard is a good alternative to cash transaction

Table 4.8: Tomcard is a good alternative to cash transactions

Response	Frequency	Percentage
Strongly Agree	90	56.3
Agree	58	36.3
Indifferent	2	1.3
Disagree	2	1.3
Strongly Disagree	4	2.5
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.8: The Tomcard is a good alternative to cash transactions



Source: field survey, July 2012

From table 4.8, over 90% of the respondents concluded that the Tomcard is a good alternative to cash transactions, which means that the Tomcard is beneficial. The number of respondents who were indifferent and those who disagrees are less than 10% of the total sample population, showing majority of the respondent agreed that the Tomcard is a better alternative than cash transactions and are in favour of the Tomcard.

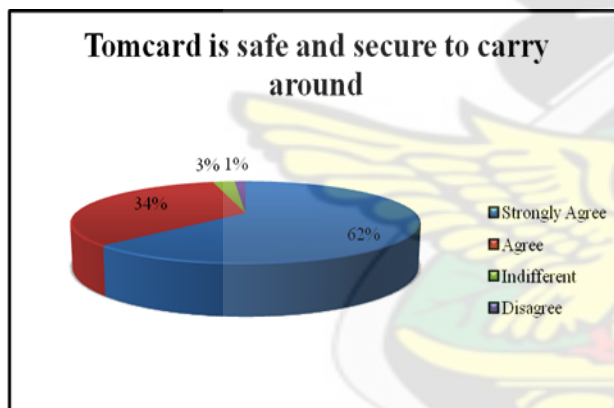
4.3.2 The Tomcard is safe and secure to carry around

Table 4.9: Tomcard is safe and secure to carry around

Response	Frequency	Percentage
Strongly Agree	100	62.5
Agree	54	33.8
Indifferent	4	2.5
Disagree	2	1.3
Total	160	100

Source: field survey, July 2012

Figure 4.9: Graphical representation of the safety and security of the Tomcard



Source: field survey, July 2012

From the above diagram, over 95% of the respondents strongly agree and agree that the Tomcard is safer and secure to carry around as compared to cash. This means that the Tomcard is not as bulky like cash when it is in your wallet or pocket which makes it more secured. Only 1% of the respondents disagree with the statement and 3% of them were indifferent.

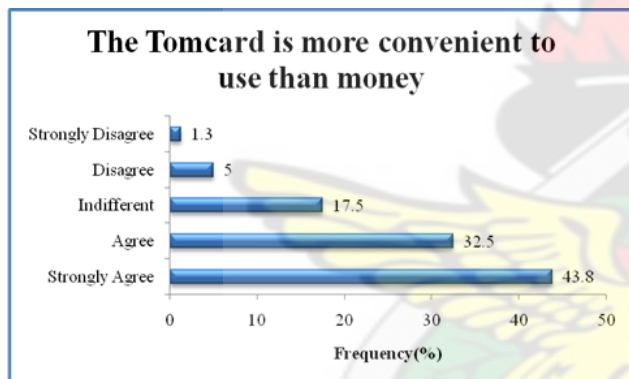
4.3.3 Tomcard is more convenient to use than money

Table 4.10: Tomcard is more convenient to use than money

Response	Frequency	Percentage
Strongly Agree	70	43.8
Agree	52	32.5
Indifferent	28	17.5
Disagree	8	5
Strongly Disagree	2	1.3
Total	160	100

Source: field survey, July 2012

Figure 4.10: Graphical representation of the reliability of the Tomcard



Source: field survey, July 2012

From the above statistics it shows that a reasonable size of respondents of 43.8% strongly agrees to the fact the Tomcard is more convenient to use than to money. 32.5% agree that it is very convenient. Only a total of 6.3% of the total respondents disagree to it being more convenient to use than money.

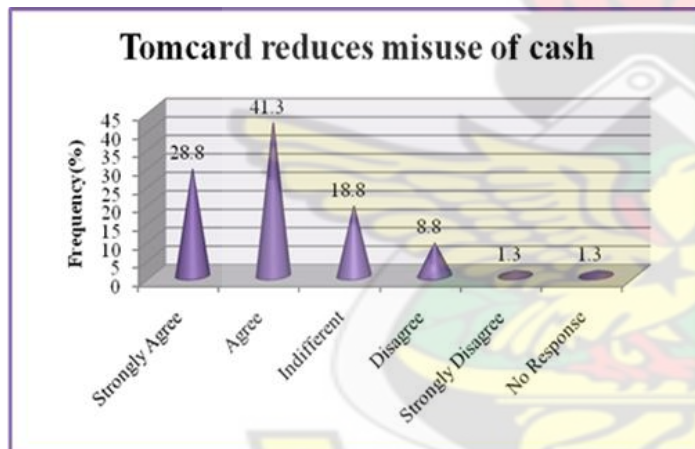
4.3.4 Reduces misuse of cash

Table 4.11: Reduces misuse of cash

Response	Frequency	Percentage
Strongly Agree	46	28.8
Agree	66	41.3
Indifferent	30	18.8
Disagree	14	8.8
Strongly Disagree	2	1.3
No Response	2	1.3
Total	160	100

Source: field survey, July 2012

Figure 4.11: Tomcard reduces misuse of cash



Source: field survey, July 2012

From figure 4.11, it shows that 70% of the total sample population agrees that the Tomcard helps reduce misuse of cash and helps budget for specific products and services. Only 10.1% disagreed with the statement and 1.3% gave no response.

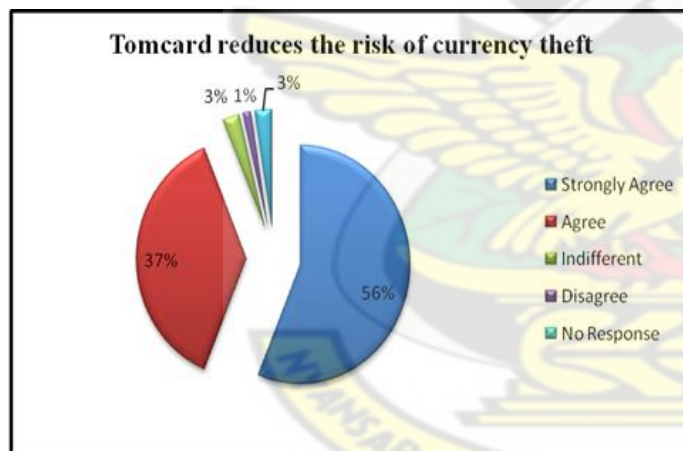
4.3.5 Tomcard reduces the risk of currency theft

Table: 4.12 Reduces the risk of currency theft

Response	Frequency	Percentage
Strongly Agree	90	56.3
Agree	60	37.5
Indifferent	4	2.5
Disagree	2	1.3
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.12: Tomcard reduces the risk of currency theft



Source: field survey, July 2012

From the total number of respondents, 93% were of the view and agree to the assertion that the Tomcard reduces the risk of currency theft with just about 1% of the respondents disagreeing. The rest representing 6% were either indifferent or had no response at all to it. Such results can be based on the fact that misplacing or losing your Tomcard guarantees you back your money loaded on the card.

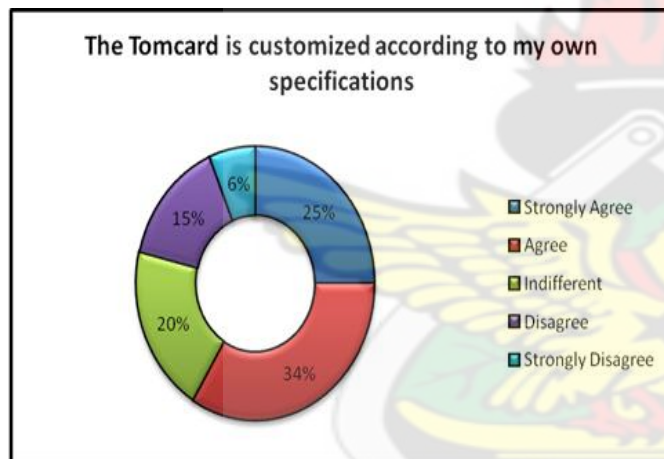
4.3.6 Tomcard is customized according to my own specifications

Table: 4.13 customized according to my own specifications

Response	Frequency	Percentage
Strongly Agree	40	25
Agree	54	33.8
Indifferent	32	20
Disagree	24	15
Strongly Disagree	10	6.3
Total	160	100

Source: field survey, July 2012

Figure 4.13: The Tomcard is customized according to my own specifications



Source: field survey, July 2012

From figure 4.13, it is observed that 59% of the respondents agree that the Tomcard is customized according to their own specifications which are flexible for them. Also, it can be customized to meet the requirements of the customer. 20% of the respondents were indifferent because they do not have a say in customization of the card; their company specifies the specifications they want on the Tomcard.

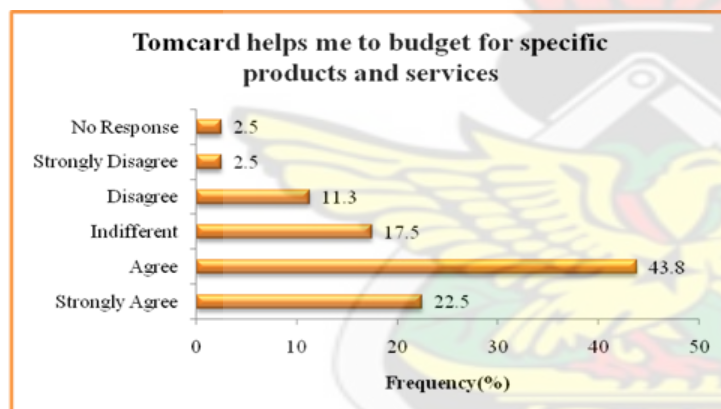
4.3.7 The Tomcard helps to budget for specific product and services

Table 4.14: Helps me to budget for specific products and services

Response	Frequency	Percentage
Strongly Agree	36	22.5
Agree	70	43.8
Indifferent	28	17.5
Disagree	18	11.3
Strongly Disagree	4	2.5
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.14: Tomcard helps to budget for specific products and services



Source: field survey, July 2012

From figure 4.14, it can be deduced that 66.3% of the sample population agreed that the Tomcard helps them to budget for specific products and services. This is because the Tomcard helps the card holder to purchase products specified on the card. For example the product on the card can be all products, which can buy goods and services sold at the total service station, restricted to only diesel, petrol or a combination of the two.

4.3.8 Other benefits of the Tomcard

These are some other benefits majority of the total sample population agreed that they enjoy when they use the Tomcard.

- The Tomcard is portable and easy to handle
- The Tomcard helps to access card balances at any given time and at any Total service station
- Safety and security in using the Tomcard because it has a good system to safeguard information
- The Tomcard avoids over consumption leading to a significant saving
- The Tomcard may get lost but the amount on the card is not lost

4.4 CHALLENGES OF THE TOMCARD

This was aimed at determining the challenges users of the Tomcard face. Some of the challenges facing users of the Tomcard could explain why the patronage of the Tomcard is low.

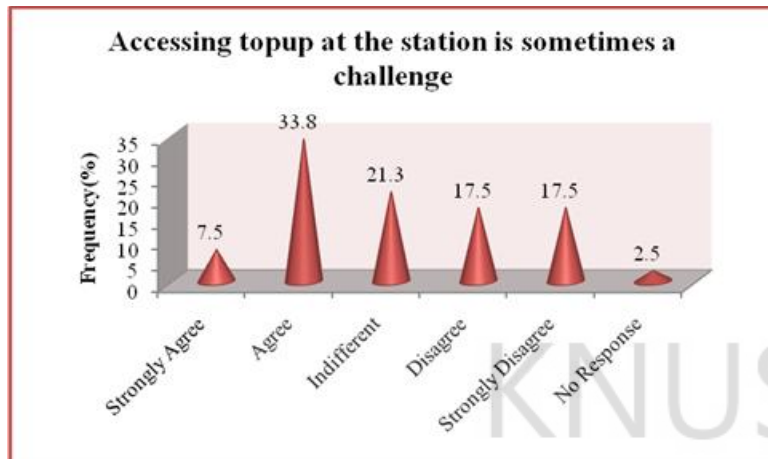
4.4.1 Accessing top up at the station is sometimes a challenge

Table: 4.15 Accessing topup at the station is sometimes a challenge

Response	Frequency	Percentage
Strongly Agree	12	7.5
Agree	54	33.8
Indifferent	34	21.3
Disagree	28	17.5
Strongly Disagree	28	17.5
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.15: Accessing top up at the station is sometimes a challenge



Source: field survey, July 2012

From figure 4.15, 33.8% of the total sample population agreed that accessing top up at the station is sometimes a challenge. This happens because transactions can only be accessed when point of sale terminal is not online or does not communicate with the polling server.

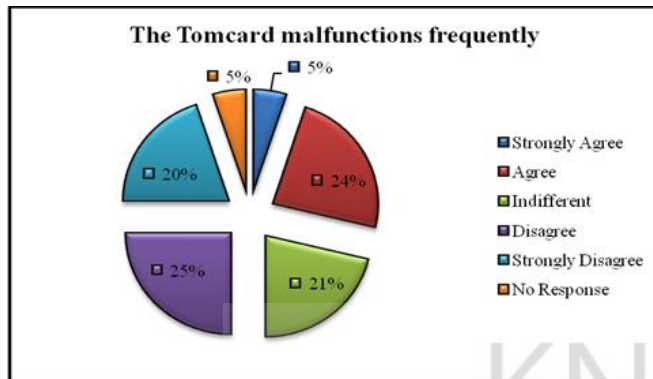
4.4.2 Frequent malfunction of the Tomcard

Table 4.16: The Tomcard malfunctions frequently

Response	Frequency	Percentage
Strongly Agree	8	5
Agree	38	23.8
Indifferent	34	21.3
Disagree	40	25
Strongly Disagree	32	20
No Response	8	5
Total	160	100

Source: field survey, July 2012

Figure 4.16: The Tomcard malfunctions frequently



Source: field survey, July 2012

From table 4.16, 23.8% of the respondents agreed that Tomcard malfunction frequently. This is so because when the point of sale terminal is not charged to its minimum, it blocks the chip of the card and makes it unable to use. Sometimes the frequent malfunction is as a result of the user of the Tomcard keying their personal identification number thrice, when this happens the card gets blocked and it has to be sent to the Total head office to be revalidated. The Tomcard cannot be used when it expires and has to be sent to Total head office to be revalidated.

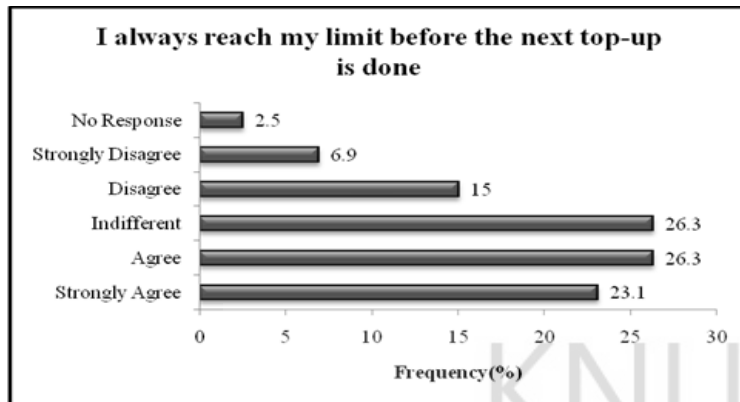
4.4.3 Always reach my limit before the next top up is done

Table 4.17 I always reach my limit before the next top-up is done

Response	Frequency	Percentage
Strongly Agree	37	23.1
Agree	42	26.3
Indifferent	42	26.3
Disagree	24	15
Strongly Disagree	11	6.9
No Response	4	2.5
Total	160	100

Source: field survey, July 2012

Figure 4.17 I always reach my limit before the next top up is done



Source: field survey, July 2012

From the above diagram, 26.3% of the respondents always reach their limit before the next top up is done. When this happens they have to use cash to make purchases before the next top up is done. 26.3% of the sample population was indifferent; they neither agree nor disagree with the statement.

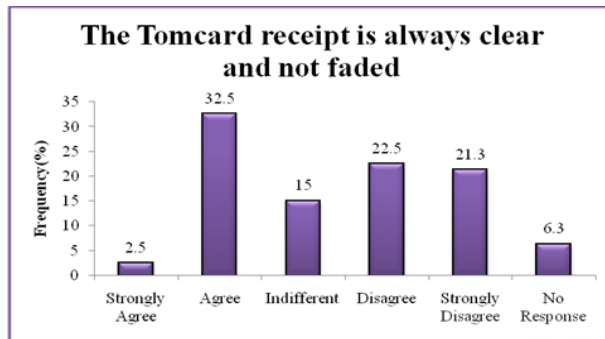
4.4.4 Tomcard receipt is always clear and not faded

Table 4.18: The Tomcard receipt is always clear and not faded

Response	Frequency	Percentage
Strongly Agree	4	2.5
Agree	52	32.5
Indifferent	24	15
Disagree	36	22.5
Strongly Disagree	34	21.3
No Response	10	6.3
Total	160	100

Source: field survey, July 2012

Figure 4.18: Tomcard receipt is always clear and not faded



Source: field survey, July 2012

From the diagram above, 43.8% of the total sample population agreed that the Tomcard receipt is always not clear and faded and 35% of the respondents disagreed. 6.3% of the respondent was indifferent.

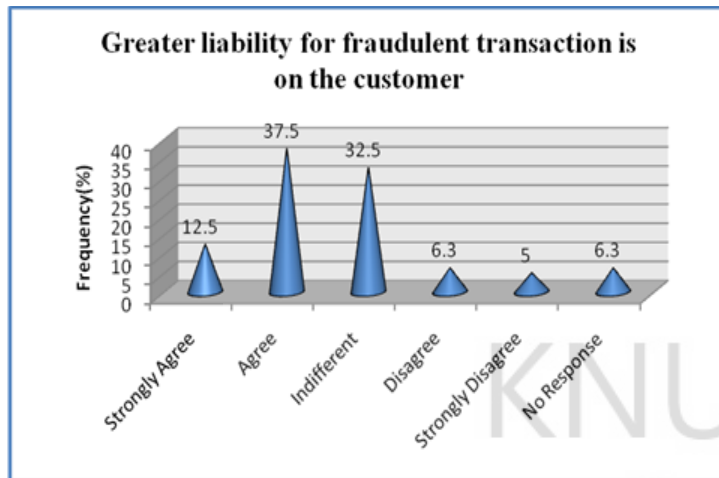
4.4.5 Greater liability for fraudulent transaction is on the customer

Table 4.19: Greater liability for fraudulent transaction is on the customer

Response	Frequency	Percentage
Strongly Agree	20	12.5
Agree	60	37.5
Indifferent	52	32.5
Disagree	10	6.3
Strongly Disagree	8	5
No Response	10	6.3
Total	160	100

Source: field survey, July 2012

Figure 4.19: Greater liability for fraudulent transaction is on the customer



Source: field survey, July 2012

From figure 4.20, 50% of the total sample population was of the view that greater liability for fraudulent transactions from the Tomcard is placed on the customer. This is so because; the personal identification number is solely to be kept by the user of the Tomcard. 32.5% of the respondents were indifferent and 11.3% of the respondents disagree with the statement.

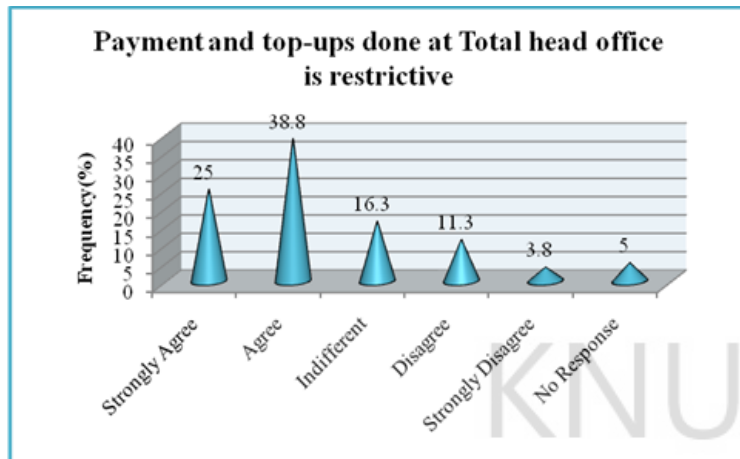
4.4.6 Payment and top ups are restrictive

Table 4.20: Payment and top-ups done at Total head office are restrictive

Response	Frequency	Percentage
Strongly Agree	40	25
Agree	62	38.8
Indifferent	26	16.3
Disagree	18	11.3
Strongly Disagree	6	3.8
No Response	8	5
Total	160	100

Source: field survey, July 2012

Figure 4.20: Payment and top up are restrictive



Source: field survey, July 2012

From figure 4.20, 63.8% of the respondents are of the view that the payment and top ups done at only Total head of are quite restrictive. 15.10% of the respondents disagree with the statement and 16.3% of the respondents was indifferent. Only 5% gave no response to the statement.

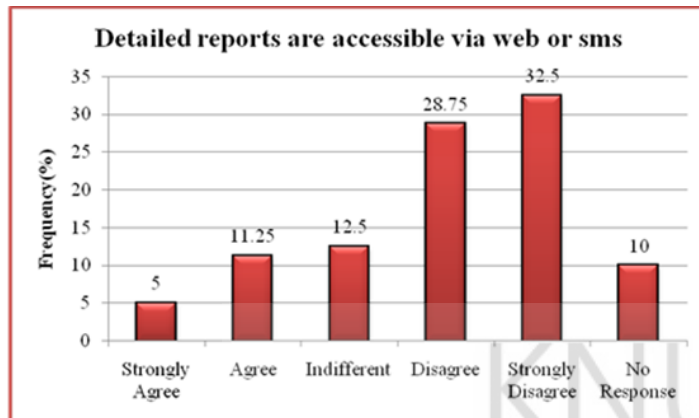
4.4.7 Detailed reports are accessible via Web or SMS

Table 4.21: Detailed reports are accessible via Web or SMS

Response	Frequency	Percentage
Strongly Agree	8	5
Agree	18	11.25
Indifferent	20	12.5
Disagree	46	28.75
Strongly Disagree	52	32.5
No Response	16	10
Total	160	100

Source: field survey, July 2012

Figure 4.21: Detailed reports are accessible via Web or SMS



Source: field survey, July 2012

Figure 4.21, 61.25% of the respondents disagree that that detailed reports are accessible via Web and SMS and 16.5 agree that, they are able to access detailed reports via web and SMS. This is because when they request for their card report, it is sent to them through their email.

4.4.8 Other challenges of the Tomcard


- Postpaid cards are limited to only two (2) clients on Tomcard
- Sometimes faulty electronic payment terminals are used at the service stations
- Recharge sometimes delays

4.5 Fuel Card Reporting

4.5.1 Fuel Card Reporting 2011

Country: GHANA

Table 23

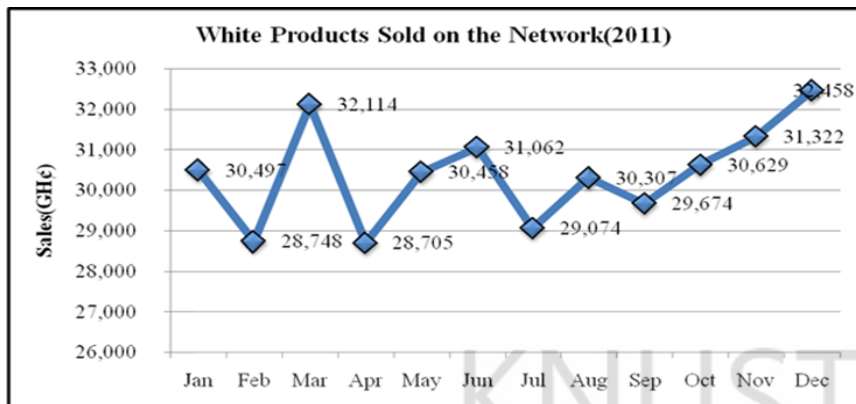


	Number of station	% of station with EPT	White product sold on the network*	White product sold on the card 2011*	Penetration rate 2011 ***	% of sale on electronic card	Active cards (in the last 6 months)
January	210	80.95%	30,497	3,312	0.109	10.86%	14,224
February	210	80.95%	28,748	3,339	0.116	11.61%	14,256
March	209	83.25%	32,114	3,882	0.121	12.09%	14,397
April	208	83.65%	28,705	3,730	0.130	12.99%	14,379
May	208	83.65%	30,458	3,856	0.127	12.66%	14,632
June	206	86.89%	31,062	4,204	0.135	13.53%	14,847
July	208	86.06%	29,074	4,179	0.144	14.37%	14,969
August	208	86.06%	30,307	4,384	0.145	14.47%	14,911
September	208	86.06%	29,674	4,349	0.147	14.66%	14,890
October	208	86.06%	30,629	4,495	0.147	14.68%	14,879
November	208	86.54%	31,322	4,748	0.152	15.16%	15,189
December	208	86.54%	32,458	4,895	0.151	15.08%	15,290

Card penetration rate = $\frac{\text{WP sold on the card}}{\text{WP sold on the network}}$

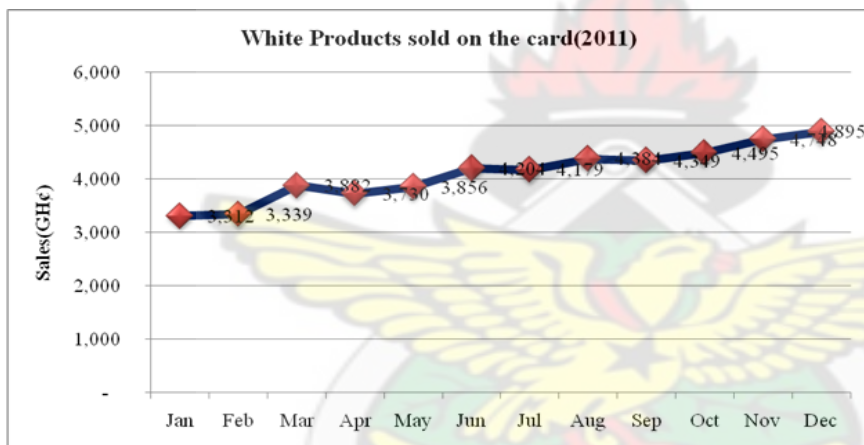
Source: Fuel card monthly report 2011

Figure 4.22.1



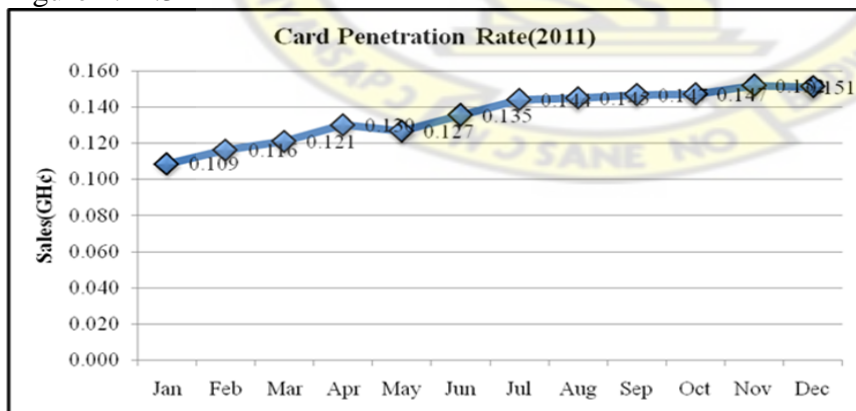
Source: Fuel card monthly report 2011

Figure 4.22.2



Source: Fuel card monthly report 2011

Figure 4.22.3




Source: Fuel card monthly report 2011

4.5.2 Fuel Card Reporting

Table 4.23

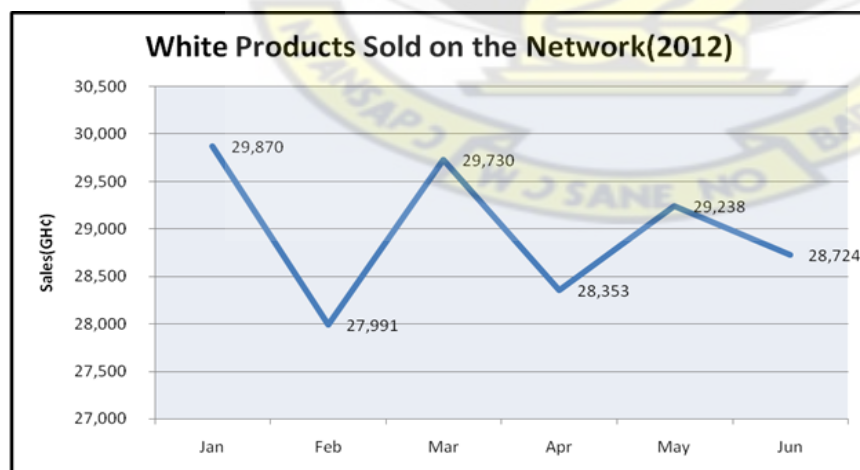
Country: GHANA

 Fuel Card reporting 2012	Number of stations	% of station with EPT	White product sold on the network*	White product sold on the card 2012*	Penetration rate 2012 ***	% of sale on electronic card	Active cards (in the last 6 months)
January	212	86.79%	29,870	3,899	0.131	13.05%	15,396
February	216	85.19%	27,991	4,463	0.159	15.94%	15,705
March	216	85.19%	29,730	4,918	0.165	16.54%	16,167
April	216	85.19%	28,353	4,707	0.166	16.60%	16,298
May	216	85.19%	29,238	4,663	0.159	15.95%	16,878
June	218	84.40%	28,724	4,528	0.158	15.76%	17,178

*** Card penetration rate = $\frac{\text{WP sold on the card}}{\text{WP sold on the network}}$

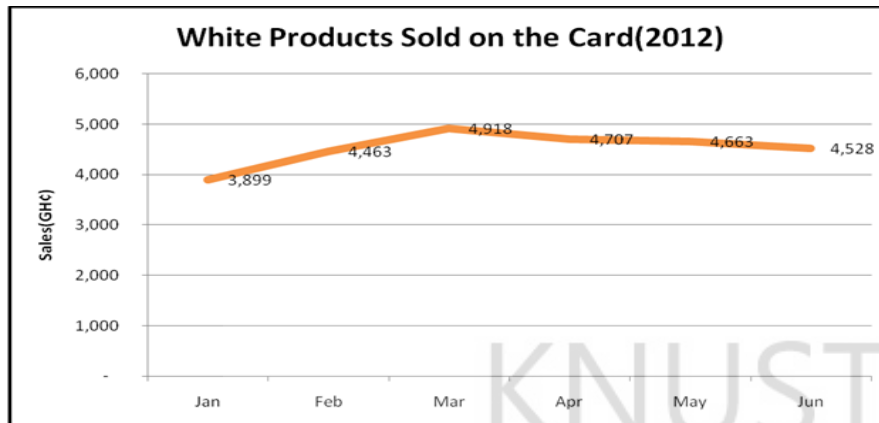
Source: Fuel card monthly report 2012

Figure 4. 23.1



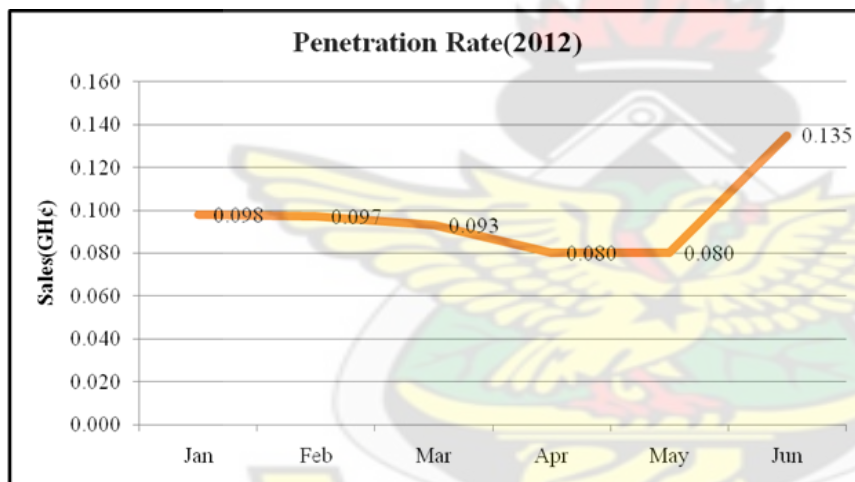
Source: Fuel card monthly report 2012

Figure 4.23.2



Source: Fuel card monthly report 2012

Figure 4.23.3



Source: Fuel card monthly report 2012

Table 4.22 shows the white product sold with the Tomcard out of the total white products (diesel and petrol) sold on the network (Total Petroleum service stations) for the year 2011. Table 4.23 also shows the white products sold with the Tomcard out of the total white products sold on the network white product from January to June 2012. Even though it is of great interest to Total Petroleum to convert at least 25% of its white products sales onto electronic sales every month, the company was able to record at least only 15% to 16% between February to June 2012. Similarly, in the year 2011, the company achieved an average of 14% of sales through the

Tomcard. It is observed that the penetration rate increased gradually in small proportions for 2011 as is seen in table 4.22 from January to April. It fell in May and rose again from June to November before it fell again drastically in December. This is demonstrated more clearly in figure 4.22.2. However, as indicated in figure 4.23.2, the use of Tomcard increased a bit more sharply in 2012 from January to April after which it fell slightly in May and June, following a similar pattern in 2011.

4.6 Types of Fuel Cards available on the Ghanaian market

Apart from the Tomcard from Total Petroleum Ghana limited, the other two (2) fuel cards on the Ghanaian market are the Shell card from Shell Ghana Limited and the Goil Advantage from Ghana Oil Company Limited. The Shell cards do have almost the same features as the Tomcard.

But the Advantage card gives four different options for customers to choose from and these cards comes with slightly different services and package. The Advantage black star is ideal for top level executives and the Advantage extra which is ideal for corporate individuals has SMS transaction notification. Also, the Advantage fleet which is ideal for company and private fleet have added security in the form of embossed vehicle number on the card with optional zonal restrictions, whiles there is no maximum and minimum loading for the Advantage standard which is ideal for individual drivers but has limited services and it is prepaid only.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter summarises the findings of this study in relation to the objectives that were set out at the beginning of this research and necessary recommendations are made.

5.1 FINDINGS

The study was conducted to determine why the electronic fuel card (Tomcard) has not been accepted as a substitute to cash transactions in the Ghanaian economy with prime focus on users of the Tomcard.

Two hundred users were engaged but only one hundred and sixty responded in the study. These users were spread across selected companies in Accra and were chosen randomly in the various companies.

The study was conducted to answer the following research questions:

1. What are the types of fuel cards available in the Ghanaian economy?
2. What are the main challenges and benefits users face when using Total Petroleum Ghana Limited fuel card (Tomcard)

In the course of the study however, other research questions were also addressed that aided in answering the above research questions. Some of the statements in this questions include:

1. The Tomcard is a good alternative for cash transactions
2. The Tomcard is safe and secure to carry around
3. The Tomcard is more convenient to use than money

4. The Tomcard reduces misuse of cash
5. The Tomcard reduces the risk of currency theft
6. Payment and top ups for the Tomcard is restrictive
7. Greater liability for fraudulent transactions often placed on customer
8. The Tomcard receipt is always clear and not faded
9. Always reach my limit before the next top up is done
10. Sometimes accessing top up at the station is a challenge

From the study, majority of the respondents revealed that the Tomcard is a good alternative to cash transactions, safe and secure to carry around, reduces the risk of currency theft, customized according to their specifications, helps to budget for specific products and services and reduces misuse of cash.

It was also revealed that people are not using the Tomcard due to the difficulty in accessing a point of payment or reloading. Thus, proximity to a payment center becomes a challenge. Users within the Greater Accra, Volta Region and Eastern Region have to make payment and collect the Tomcard at a centralized point at the Total Head Office located in the central city of Accra. This makes it difficult for people to personally own a Tomcard unless the companies they work with compulsorily use the Tomcard as a means of fuel allowance for their various staffs.

Furthermore, it was revealed that the challenges and inconveniences that users of the Tomcard encounter when accessing the fuel card at the service stations are due to network issues – The Tomcard works with a chip provided by a telecom operator – discourages them continuing the use of the fuel card and rather stick to cash since it becomes more convenient. It is quite frustrating to pay for the top up and then not able to use at it the service station.

Over 60% of the respondents reported that they are not able to access the detailed report via the Web or SMS but can only get detailed report on their Tomcard unless they request through email or in writing which makes it difficult to track their records.

5.2 CONCLUSION

The challenges faced by the Tomcard users are key justifications why people prefer cash transactions to the Tomcard at the Total Petroleum Ghana Limited service stations. This also discourages users of the Tomcard to personally load money apart from those done by their companies unto the fuel card for usage. From the study, even though there are challenges and empirical reasons why people are not using the Tomcard, 78.8% of the respondents concluded they have no intention of switching to another fuel card company.

Almost 90% of the respondents reported that currently they are somehow satisfied with the Tomcard but there is much room for improvement in service delivery. Total Petroleum as a company must show real commitment in terms of logistics, training and human resource development to promote the fuel card.

5.3 RECOMMENDATIONS

In order to ensure rapid growth rate of the fuel card payment system which inadvertently will gear the Ghanaian economy towards the realization of its dream of becoming a cashless economy, the five heads of transport who were willing and available for the interview made the following recommendations;

1. Most companies should be put on the postpaid system, whereby they only come to the Total Head office to make payment of all the Tomcards they have used for the month than always sending a request before the Tomcards are loaded
2. They should be able to access their detailed report at any point in time through the Web or SMS as compared to having to request before reports are sent to them
3. Also, they should be able to access their top ups immediately after payments
4. Finally, there should be improvement on service delivery

Based on the research findings the following recommendations would help increase the patronage of the Tomcard;

1. Should implement forecourt control project. This is where the point of sale terminal can be linked directly to the pump so that as the fuel is being dispensed, payment can be made through the Tomcard. This will prevent users of the Tomcard from exchanging fuel for cash
2. Use of extranet by customers to access their Tomcard transactions in the comfort of their homes, offices or wherever they may be
3. Should implement payment systems at the commercial banks to evidence payment to company by its customers
4. Directing loadings of Tomcards at the service stations should be implemented. This is whereby customers can walk to any Total station on Tomcard and makes payments and gets their Tomcards loaded immediately instead of travelling all the way to Total head office and area offices to make payment before their Tomcards are loaded
5. All Total service stations should be equipped with the electronic payment terminal
6. To extend the postpaid card option to more customers

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APPENDIX

RESEARCH QUESTIONNAIRE

I am a Commonwealth Executive Masters in Business Administration (CEMBA) student of the Kwame Nkrumah University of Science and Technology, Kumasi. As part of my studies, I am carrying out a research on the topic “Electronic Fuel Card: Challenges and Benefits - A study of Total Petroleum Ghana Limited Fuel Card (Tomcard)”.

I shall be grateful if you could please spend some few minutes to answer the following questions as candidly as you can. This is an academic exercise and the information obtained will be treated as confidentially as possible.

PART A: DEMOGRAPHY

1. GENDER

() Male

() Female

2. AGE

() Less than 20 () 20 – 29 () 30 – 39 () 40 – 49 () 50 and above

3. AVERAGE NET MONTHLY INCOME in GH¢

() Less than 500 () 500 – 999 () 1,000 – 1,500 () Above 1,500

PART B: FUEL CARD INFORMATION

1. How long have you been using the Tomcard?

() Less than 1 year

() 1 – 5 years

() Above 5 years

2. What percentage of your monthly net income is loaded on the Tomcard?

☐ 1 – 20% ☐ 21 – 40% ☐ 41 – 60% ☐ 61 – 80%

☐ 81 – 100% ☐ None

3. How often do you use the Tomcard?

☐ Daily ☐ Weekly ☐ Monthly ☐ Occasional

4. Do you know and have used any other fuel card on the Ghanaian market apart

From the Total's station

☐ Yes ☐ No.

If yes, please list them

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Please rank the following on the scale of 1 - 5, i.e. 1 = Strongly Agree, 2 = Agree, 3 = Indifferent, 4 = Disagree, 5 = Strongly Disagree to reflect your feelings and the extent to which you agree with the statement. Please tick the box where applicable.

	Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
5. The Tomcard is a good alternative to cash transactions					
6. The Tomcard is safe and secure to carry around					

7. The Tomcard is more convenient to use than money					
8. The Tomcard reduces misuse of cash					
9. The Tomcard helps me to budget for specific product and services					
10. The Tomcard reduces the risk of currency theft					
11. The Tomcard is portable and easy to handle					
12. The Tomcard is customized according to my own specifications					
13. I am able to access my card balance at any given time when I visit any Total Service Station					
14. I feel safe in using the Tomcard because it has good systems to safeguard my information					
15. The Tomcard avoids over consumption leading to a significant savings for me					
16. The Tomcard may get lost but the amount on the card is not lost					
17. The Tomcard always comes with a personal identification number					
18. I am able to access the Tomcard at all Total service stations					
19. The Tomcard Helps me to know the amount of fuel I consume at any given time					
20. The Tomcard system operating hours and locations are convenient for me					

21. Payment and credit top ups for the Tomcard is only done at the Total Head office and other designated regional head office which quite restrictive					
22. Detailed reporting is accessible by web or text					
23. Always get my transaction details anytime I request for it					
24. Greater liability for fraudulent transaction often placed on customer					
25. The Tomcard receipts is always clear and not faded					
26. Faulty electronic payment terminals are always used at the stations					
27. I always reach my limit before the next top up is done					
28. Frequent malfunction of the Tomcard					
29. Sometimes accessing my top up at the station is a challenge					
30. The customer attendant at the fuel station always check my card balance before serving me					
31. The customer attendant always offers me the best service at the station					
32. The customer attendant always directs me on the forecourt					
33. The customer attendant always does not interfere when I am entering my personal identification number					
34. The customer attendant is always polite					

35. I have no intention in switching to another fuel card company					
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36. Overall, how will you rate your level of satisfaction as a Tom Card user?

() Very satisfied () Satisfied () Dissatisfied () Very Dissatisfied

37. Do you have any recommendations you think will help make the system a better one?

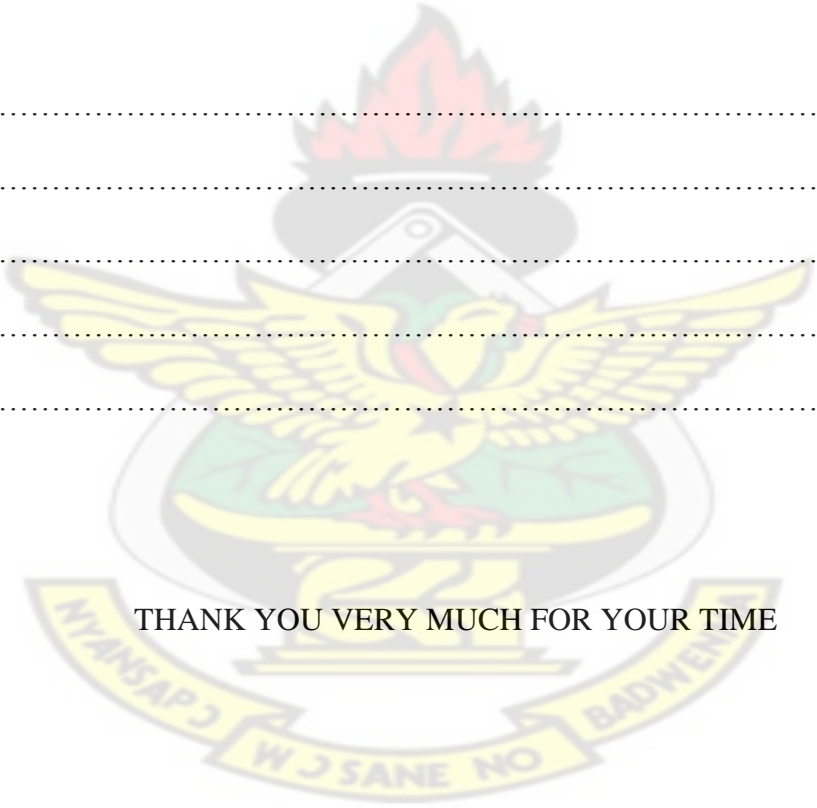
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THANK YOU VERY MUCH FOR YOUR TIME