# Title: Assessing The Impact Of Mobile Money Transaction On Direct Banking: A Case Study Of The Ghanaian Banking Industry

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**Abstract: Technology has change the way and manner banking services are conducted in recent times. Banking transactions are now done through mobile phones. Interestingly, traditional banking has lost several customers to MMT revolution and the way businesses are conducted. This study was designed to assess the impact of MMT on the traditional banking using the Ghanaian banking industry. A well-structured questionnaire was used to solicit information from Three Hundred and Ten randomly selected users of MMT services. Data collected was statistically analyzed. The study found significant proportion, 97% of the respondents, patronizing MMT services due to its accessibility and readiness. Basic services offered by MMT operators include money transfer services, airtime purchases, utility bills payments, deposit and cash out services. Result of the study showed a significant association between MMT and direct banking, denoted by the chi-square value ((X2 (8)> = 5.776, p = 0.027)). The study found out that MMT have influences on customer retention, new customers acquisition, customer loyalty thereby reducing the banks customer base. Despite the significant impact of MMT on direct banking, MMT users are faced with some challenges such as network connectivity, high fraudulent attack rate, slower adaption rate, security issues and lack of technical know-how.**

**Keywords: Mobile; Money; Transaction; Direct;**

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Banking

## 1. Introduction

Mobile money transfer has become a very significant phenomenon to both practitioners and researchers. It is a term used to describe financial transaction via mobile devices such as cell phone, tablet, and among others (Anyasi & Otubu, 2009). In the words of Tiwari, Buse and Herstatt (2006), mobile banking is referred to as any transaction which lay emphasis on transfer of ownership or right to use a particular service or goods, which is initiated and/or completed by using mobile access to computer-centered networked backed with underlying data base.

According to Al-Jabir (2012), mobile banking is normally performed through short message services (SMS) or the internet. Aside these traditional means of undertaking mobile banking activity, advancement in technology has made other platforms available for easier transaction. In recent time, mobile banking has taken a swift paradigm to the utilisation of mobile application and web-application to facilitate easier mobile transaction. This advancement in technology has changed the approach to business operation, especially the banking organization (Al-Jabri, 2012). The use of the internet and M-banking platform has not only resulted in easier access transaction services but has increased the magnitude of customer satisfaction and other related benefits. This has compelled a lot of individuals to switch from traditional banking system to digital banking.

Bradley and Stewart (2003), noted that the change from the traditional banking to mobile banking has compelled banks to design strategies and dimensions to acquire new customers and retain old customers. Bradley and Stewart (2003), argued that banking

institutions have no option than to adopt mobile banking to reduce both administrative and operational cost. Nevertheless, the reduction in the operational cost is achieved with an increase in customer base and commitment (Bradley and Stewart, 2003).

### 1.1. Problem statement

Mobile Money Transfer was originally implemented in Kenya in 2007 and eventually spread to other African countries of which Ghana is of no exception. The aim of this financial transaction technology was to organize, institutions, wholesalers, retailers and individuals to improve and secure all financial transactions (Omwansa 2009). Mobile money service has gain momentum and has proven to be successful due to certain attributes such as affordability, easier accessibility, and flexible payment system and among others (Mbogo 2010). The technological discovery is considered easy to use yet effective and reliable with the potential to extend financial services to the unbanked or those preferring cheaper financial services.

Captivatingly, a lot of users complain of the excessive cost of transaction associated with mobile money transfer. However it is more expensive to maintain a bank account as compared to MMT account. Equally, the needs for payment and transactional services are usually not well served by the conventional banks since they do not always find it easy nor cost effective to adopt a full package for the banking services (Higgins, Kendall & Lyon, 2012). MMT is argued to be a very effective and efficient tool for promoting business growth due to its reliability, accessibility, and efficient money service support system that promotes cashless transaction thereby reducing the risk associated with financial transaction. These benefits on the other hand imposes excessive consequences on the traditional banks whose customers are gradually shifting from indigenous banking to mobile banking and potential customers proving grim to traditional banking services. A research (Higgins, Kendall & Lyon, 2012 and Jack & Suri 2011) shows that nearly 80% of customers of traditional banks own an MMT account and few (20%) owns a bank account without MMT account. It is viable to say those MMT customers are eventually outnumbering the customers of traditional banks. Financial institutions invest a lot of money in infrastructural and technological development in order to stay in business and provide secured and satisfactory services to customers. Yet, the increased competition generated by the telecommunication companies through

MMT services has virtually impaired on the banks strategic plans. Sadly, there are few identifiable studies that examine the impact of the MMT on the banking sector that presents a vivid descriptive analysis of impact of MMT on the traditional banking in Ghana. It is based on this gap that a research is compelled to assess the impact of MMT on traditional banking.

### 1.2. Objective of the study

The purpose of the study is to assess the impact of mobile money transfer on traditional banking in Ghana

### 2. Methods

### 2.1. Research design

This research adopts a descriptive research design together with mix method approach to finding solution to the effects of MMT service on direct banking. The descriptive research design is significant for this research as it encompasses the use of quantitative and qualitative method in finding solutions to the topic under study (Kumar, 2011). It is important to note that the researcher does not have intensions of providing causal relationships nor experimental effects in this study and for that reason, finds the descriptive research design the most appropriate tool to use.

### 2.2 Population of the study

The target population for the study comprises of all MMT service operators in the New Juaben Municipality in the Eastern Region of Ghana (MTN Mobile Money, Airtel Money and Tigo Cash and Vodafone cash only), user of MMT service and staffs of some selected banks (Fidelity Bank, GCB, and Universal Merchant Bank) in the municipality.

### 2.3 Sample size and sampling technique

Due to the large population size and the complex nature of the target population, operators and industry players, there was the need to adopt a mechanism to determine the appropriate sample size for the study. The study therefore adopted a formula proposed by Barlett et al. (2001) to determine the sample size for the study as noted below:

$$n = \frac{S^2(x)(y)}{(E)^2}$$

$$N = \frac{1.96^2 * 0.28 * 0.72}{0.05^2} = 310$$

n= sample size

s= Number of standard deviation for a chosen confidence interval level

x= proportion of the population that experience issue you are interested in

y=proportion of the population that do not experience issue you are interested in

e= allowable margin of error

The total sample size for the study is 310. A sample size of 310 is appropriate because the researcher believes that a sample size of 310 is large enough to project the true reflection of the entire population.

## 2.4 Sources of Data

The primary source of data for this study was obtained from MMT service operators, users, and staffs of some selected banks in the New Juaben Municipality via the use of close-ended questionnaires with interview conducted among some of the staffs of the banks under consideration in order to obtain vital information which the researcher was not able to put on paper. For this study, secondary data used were journals, magazines, books, documentation, and the Internet materials.

## 2.5 Data analysis.

The data collected from the field was computed using statistical package for social scientist (SPPSv20.0). More than one statistical data computation technique was used to process the data. Statistical technique such as mean, standard deviation, correlation analysis and variance was used to compute the data. These techniques were employed because it was able to test the internal consistency, average, validity, dispersion, variance and the relationship between the dependent and independent variables.

## 3. Data Analysis And Discussions

### 3.1 Accessibility of MMT services on direct banking

This section of the report examines the accessibility of MMT effect on the direct banking. In all, five variables were measured thus; access to services, frequency of access, breakdown assessment, influences on the use of the services and the alternative.

The study examined accessibility of MMT services, the results showed 75.3% of the agreed getting access everywhere while the remaining 24.7% indicated not having access all the time; this may be due to network problems which one hears all the time. However, the inference drawn is that MMT service are easily accessed everywhere both in the rural areas and urban areas. But this notwithstanding, conscious efforts must be made by the mobile networks operating the mobile money services to make sure that accessibility to the services is easily obtained all the time no matter where one may find himself/herself. This also may serve as an opportunity for some of the networks operators to win

the customers of other network operators who are not offering better services or whose networks system are ineffective in offering MoMo services to their clients.

Considering how frequent respondents uses MMT services, the results from figure 2 showed 45% of the respondents noted very often, 30.3% noted often and 24.7% stated not often. This implies that majority of the respondents' uses MMT services on regular basis. This could be attributed to the fact that MMT services are easily accessed everywhere within a short possible time. The result supports Tiwari and Buse (2006) that users of MMT services often use the services due to proximity and simplicity. One can also postulate that due to long queues experienced in the banking sector in accessing certain services, most of them will prefer to have their money with them especially on their phones for any financial transactions at anytime, anyplace and anywhere.

The study also assessed respondent's usage of their traditional accounts after subscribing to the MMT services. The results showed 42% of the respondents noted they use the account very often, 33.3% noted often and 24.7% mentioned sometimes. The results however appeared to indicate no change in the use of the traditional bank account as a result of the MMT services subscription. The inference drawn is that despite the huge number of respondents subscribed to MMT services, there is no significant change in the usage of traditional banking services. This can be attributed to the fact that there are some services and payment which cannot be done through MMT services. For instance in an interview section with few respondents it was revealed that they are still holding unto their traditional banking services because their monthly salaries are paid through the banking system. Moreover, some respondents expressed that they feel insecure to keep huge sum of money in their MMT accounts. Also their banks are able to provide loan services to customer as compared to MMT service operators. The security encryption used by most venders or agents are technically considered to be weak. Usually venders and users of MMT are given "4 Digit Pin Code" to use for authorization and authentication. This finding confirms Feintein (2013), concluding that the security issues surrounding the use of MMT is not strong enough to convince mobile user to save large among of money in their MMT wallet.

The study probed into the use of the services in the phase of accessible bank service. Respondents were

asked that, if banks were more accessible, would they still use the MMT service. The result showed interesting findings. The study showed only 8(2.7%) of the respondents said "Yes" whiles the remaining 292(97.3%) of the respondent said "No". This implies that majority of the users of MMT services consider it as an alternative to traditional banking. The result suggests also that because banks are less accessible, patronage of MMT services which is more accessible has increased. It could be inferred from here that accessibility play significant role to the use of the services. This finding concur with Gyamfi (2011) whose work on Ghanaian Small Business financing concludes that accessibility of liquid cash is paramount to the Ghanaian businesses irrespective of the cost.

The output in the chi-square table shows that there is strong association between MMT and direct banking. This is denoted by the chi-square value ($X^2$ (8)> = 5.776, $p$ = 0.027). The determinant of association between two variables is denoted by p-value. When the P-Value is less than 0.05 (p< 0.05), it is said that there is association between the two variables under consideration. It is observed that the P-Value in the chi-square test is less (<) 0.05 which means that there is 27% chance that the two variables are independent. Arguably, the chi-square test provides strong evidence to conclude that there is association between MMT and direct banking. The findings are in closes association with that of Manz and Neck (2012), they established a p-value of (0.042). This implies that the advent of MMT service influences the patronage of direct banking services. This association may be as a result of the synchronization of customers MoMo accounts with that of their traditional bank accounts.

**3.2 Services subscribed on MMT**

The next component assessed by this study is the services subscribed to on MMT by respondents. The results showed that the highest services subscribed to is "money transfer" followed by "buying airtime" and "transfer to and from bank" recording 287(95.7%), 186(62%) and 135(45%) users respectively. The result also showed that 114(38%) of respondents also uses it in 'payment of school fees'. Deducing from the analysis, it can be realised that the most prevailing service respondents are subscribed to is the mobile money transfer services. An interview section with some respondents revealed that, they use mobile money service because it easier to send money to family, friends and any other person who matter within a short

possible time, and also it is easily accessible in the rural areas. This finding support Al-Jabri, (2012), concludes that MMT services have become a common means of transferring money domestically. Al-Jabri, (2012), further postulate that MMT services in the near future will emerge the commonest medium of money transfer locally.

It was however surprising to note that about 135 (45%) of the respondents who said they do transfer to and from their bank accounts using their MMT services, some of them earlier on did indicate in table 3 (about 218 respondents) that they do not have bank accounts; so the question then is, did they understand the question that was asked or they were confused? Probably some may be thinking it is futuristic service they will subscribe to.

**3.3 Impact of MMT efficiency and proficiency on direct banking**

With respect to efficient and proficient of MMT services, respondents were asked to assess the efficiency and proficiency of the services being offered to them. And majority of the respondents 192(64%) were of the view that MMT services are efficient and proficient. About 62(20.7%) of the total respondents neither agreed nor disagreed that MMT services are efficient and the remaining 46(15.3%) of the total respondents disagreed on the variable provided. The results suggest that significant proportion of the respondents consider the MMT services subscribed to as efficient and proficient. This finding support the study conducted by Ching et al. (2011), on the factors affecting the effectiveness of Malaysian mobile banking implementation which found out that the perceived effectiveness, usefulness, ease of use, risk, relative advantages and personal innovativeness are the factors which justifies MMT services to be efficient. However, the efficiency measure of this study is viewed from the stand point of timeliness, cost of operations, realistic interest rate on savings, reliability of network and accessibility.

When users were asked about the timeliness of the MMT services. The results showed a mean of 2.59 and a standard deviation of 1.217 indicating the data is skewed to the left suggesting that more respondents either strongly agreed or agreed that the MMT services they are hook on is rendered timely whiles the fewer proportion were opposed to the timely delivery of the services. The normal distribution curve is also skewed to the left confirming the earlier submission. The study found 128(42.6%) of the total respondents either agreed or strongly agreed that MMT services are timely whiles

103(34.3%) were undecided and 69(23%) of the respondents believed the services are not timely and express either strong disagreement or disagreement. This may boil down to the networks system being down/slow when it matters most.

With regards to cost of operation, respondents were asked about the efficiency of MMT services and the results showed slightly significant proportion 135(44%) of the total respondent either strongly disagreed or disagreed that the cost of operation is low. Also, the results found 74(24.7%) of the total respondents to be undecided about the cost involved and the remaining 91(30.4%) expressed either agreement or strong agreement to the variable. The results showed a mean of 3.19 and a standard deviation of 1.525 suggesting the data is slightly skewed to the right and the normal distribution curve also skewed to the right. The results lend credence to the conclusions that respondents considered the cost of operation as discouraging. Most of the respondents were looking at it in terms of the charges/fees they pay when utilizing the MMT services but failed to recognize that "time" is also a cost especially if they have to be delayed in making their financial transactions using the MMT services.

Concerning high interest rate on the MMT savings; the study asked respondents if the interest rate paid by their MMT service provider could be considered as high. The result showed 130(43.3%) of the total respondents either agreed or strongly agreed that interest paid on savings in their MoMo accounts are high; with 72(24%) of the total populations undecided and the remaining 98(32.6%) either disagreed or strongly disagreed. The results further suggest that only few respondents are comfortable about the interest paid on their savings by the MMT services providers. The result also showed a mean of 3.31 and a standard deviation of 1.381 suggesting that the data is skewed to the right and that majority of the respondents are opposed to the variable. It implies further that the interests paid to the respondents are dissatisfactory. The normal distribution curve also points to the fact that more users are dissatisfied with the interest rate paid on savings. The respondents were of the opinion that, looking at the huge amount of profit the networks make with these their MMT services and the meager amount they pay as interest on their saved money, the network operators are cheats.

The next interest of the research is the proficiency of the services rendered. The results displayed that

proportionally, 150(50%) of the total respondents either strongly disagreed or disagreed that the MMT services are proficient whilst 41(13.7%) of the total respondents were undecided and 109(36.3%) of the respondents either agreed or strongly agreed. A mean of 3.3 and a standard deviation of 1.207 of the responses suggested the data is slightly skewed to the right and that implies that significant proportion of the respondents consider the MMT services not to be proficient. The normal distribution curve also corroborates with earlier findings. It follows that operators needs to enhance variables linked to proficiency to enable users become confident in the services being offered. The results somehow cast doubts on these network operators when they seems to portray to the public that they are on top of issues bothering the technical aspect of their operations as they keep on telling the public of the deployment of advance technology in their operations management and even go beyond castigating against those stealing their equipment in their various sites as evil, causing network proficiency to dwindle.

Results for Network consistency and reliability was assessed. The results showed that 155(51.6%) of the total respondents either strongly disagreed or disagreed whiles 10(3.3%) were undecided. Also 135(45%) of the total remaining proportion either strongly agreed or agreed. The result showed a mean of 3.14 and a standard deviation of 1.44 suggesting the data is skewed to the right slightly and that implies that users are more in disagreement to the variable than opposed to the variable. This confirmed that the proficiency level is low in providing customers with reliable and consistent services. These if not addressed can lead to distrust of network operators in the provision of efficient and effective MMT services thereby collapsing the trending innovation of having a cashless society in some quarters.

## 3.4 Effect of MMT services on customer base of Traditional Banks

Here the research is geared towards examining the effect of the subscription of the MMT services on the customer base of the traditional bank.

The first questions posed was, have you open a new bank account since you started using the MMT services. The results show that highly significant proportion 253(84.3%) of the users indicated 'No' whilst the remaining 47(15.7%) only indicated opening a new account since. The results suggest that majority of the users have no need for new account since they started using the services. This makes the MMT services a

threat to the traditional banking services which of course should put the traditional banks in position of being innovative to synchronizing their system with that of the mobile network operators in order to keep their customers and even admit more customers into their fold. However, this makes the customers to be "king" indeed since they will decide as to who they would save with, with considerations to interest paid, accessibility, timeliness, fees charged, reliability and so on.

The next variable under consideration is the effective operation of the account. The study asked users about how effective their bank accounts are being operated since they started using the MMT services. The result showed 135(45%) of the users describing it as "effective" and 91(30.3%) described it as "not effective" and the remaining 74(24.7%) described it as "somewhat effective". A mean of 2.85 and a standard deviation of 0.857 were recorded. It points out that significant proportion of the respondents effectively operated their traditional bank accounts despite subscribing to MMT services. It shows that not all financial transactions can be done using the MMT services which makes the banks have a competitive edge in those aspects.

The study further examined the respondents on the last visit to the bank. The results showed that 151(50.3%) of the total respondent indicated not being able to remember the last visit to the bank. This was followed by 117(39%) of the total respondents who mentioned more than one month now and 25(8.3%) of the respondents says they visited their bank less than a month now. Also the results showed 7(2.3%) of the total respondents indicate visiting their bank in less than a week. This suggests that more users are not visiting their bank as they use to, as a result of the MMT subscription. This seems to demonstrate that customers will only use or patronize the traditional banking services if such services cannot be provided by the mobile network operators (MMT).

The findings in Table 2 were obtained based on the responses provided by the respondents pertaining to the objective "influences of MMT service on customer base of traditional banks". The variables in Table 1 was measured using the 5 likert scale (5= strongly agree, 4=agree 3=neither agree nor disagree 2= disagree and 1=strongly disagree). Since 4 and 5 both stands for agree and strongly agree, a means score of 4 is required to draw a conclusion on the variables. Deducing from the analysis in Table 2 every variable account for a mean

score of at least 4.

The variable which suggest that MMT services reduces the possibility to acquire new customers recorded the largest mean score with a mean distribution of "4.05" and Standard. Deviation of 0.79. This implies that MMT service affect the number of new customers acquired by the traditional banks. That is to say that the customer base of most traditional banks is likely to reduce since it's relatively difficult to gain new customers due to the rapid increase in the MMT service subscription.

The study also established that the introduction of MMT service influences customers to switch from traditional banking services to MMT service. This variable recorded a mean distribution of (Mean = 4.03, Std. Dev. = 1.05). Further interrogation with some respondents in an interview section revealed that customers of the traditional banks do not completely switch to MMT service but most money transfer services which were conducted through the banking system are now better off with MMT services. This finding supports the view of Okogbue (2011), that the telecommunication companies in Ghana who are into mobile financial services have upper hand over traditional banks in terms of target audience. The telecommunication company widely focuses on all customers, not just the most profitable ones among them unlike the traditional banks. However, the study found out that the variable which states that MMT service influences the effectiveness of customer retention programs designed by the banks recorded the least mean score (Mean = 3.58 and Std. Dev. = 0.94), followed by the variable "MMT service influences customers attitude towards banking services" with a mean distribution of 3.66 and Standard Deviation of 1.00. These results give the impression that banks are not wasting their time and other resources in trying to retain and or woe customers to open an account with them (banks) since the MMT services have less or no influential effect on customer retention programs and their attitude towards traditional banking services.

Arguably, it is observed (from Table 2) that MMT services affect the customer base of most banking institution. This result corroborated the findings of earlier studies (Bale & Akpan, 2009, Abdulqadir, 2010) which established that most banks allocates significant funds towards advertisement and the use of suitable advert methods/means, yet their customer base decreases while MMT service subscription increases.

**3.5 Challenges associated with MMT service in the**

**New Juaben Municipality**

This section presents on the challenges associated with the adoption and use of MMT services in the new Juaben municipality. Respondents were made to express their opinions on the perceived challenges militating against MMT services and the study revealed that 32.3% of the respondents are of the view that network connectivity issue is a major challenge to the adoption of MMT services. This implies that convenience that comes with MMT services has been hindered by network connectivity problem. About 28.3% also noted poor security mechanism. It is believed that a lot of mobile users are skeptical to the adaption and use of mobile money transfer services due to lack of trust and confidence in the security mechanism of the system. Also, about 17.5% of the respondents mentioned higher rate of fraudulent attack. MMT service users are venerable to hackers and fraudulent attack due to lack of security consciousness and weaker authentication pin code. The poor security mechanism and higher rate of

fraudulent attack may be because of the unscrupulous ways many fraudsters are using to defraud unsuspecting customers and agents huge sums of money without the network operators being able to apprehend those fraudsters. About 11.7% mentioned lack of technical knowhow and 10.2% were of the view that slower rate of adaptability is a challenge to the development of MMT services. Most MMT service users are not technically equipped with the required knowledge that will help them to use the services with less security threat. It is apparent to say that MMT services in the New Juaben Municipality is heavily milled with network connectivity challenges coupled with security issues. These findings support the views of Williams, Stewart, and Slack (2005) who argued that MMT service adoption in most developing countries are challenged with unreliable network system and poor attitude towards its usage in financial transactions.

**4. Conclusion**

The mobile money transfer services are increasingly

**Table 1 Relationship between MMT and direct Banking**

|  | Value | Df | Asymp. Sig. (2-sided) |
| --- | --- | --- | --- |
| Likelihood Ratio | 7.152 | 8 | .520 |
| Linear-by-Linear Association | .571 | 1 | .450 |
| N of Valid Cases | 50 |  |  |

Source: Field survey 20 17

**Table 2. Influences of MMT service on customer base of traditional banks.**

| Item | Mean | Std. Dev. |
| --- | --- | --- |
| It influences customer loyalty | 4.00 | 0.92 |
| It reduces the possibility to acquire new customers | 4.05 | 0.79 |
| It influences customers to switch to MMT service | 4.03 | 1.05 |
| It influences customer retention attitude | 3.97 | 1.24 |
| It influences the trust level and commitment to traditional banking service | 3.99 | 1.04 |
| It influences the effectives of customer retention programs | 3.58 | 0.94 |
| It influences customers attitude towards banking services | 3.66 | 1.00 |
| It compels traditional banks to invest a lot in promotional strategies | 4.01 | 0.88 |
| Reduction in sales and profit | 3.77 | 1.01 |

Source: Survey data, 2017

gaining momentum in both developed and developing countries. Drawing emphasis from the remarkable contribution of MMT ventures to the economic development of Kenya, South Africa and other African

countries, there is no denial of the fact that the mobile money industry as measured by the number of deployment and accessibility around the world has grown tremendously and now competing keenly with

traditional banking services.

Based on the findings of the study, it is observed that mobile users have access to MMT services. The subscription of MMT services among respondents has reduced usage of banks for some transactions. The frequency of usage of MMT services has increased among respondents causing a drastic decline in traditional banking usage. The most common services rendered and patronized by MMT users is the transfer or receiving of cash. The service has become the common medium of fund transfer among users. Few of the MMT users have connected their bank account to their MMT account. Interestingly, only few respondents are reported to have a bank account. However, the study established a significant relationship between MMT services and direct banking. That is to say that MMT services influences traditional banking operation and growth.

This influence is rooted in efficiency and proficiency of MMT service and its proximity to customers.

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