

# **The Changing Face of Money: Preferences for Different Payment Forms in Ghana and Zambia**

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*Mobile Money (MM) is now a popular medium of exchange and store of value in parts of Africa, Latin America and Asia. As payment modalities emerge, consumer preferences for different payment tools evolve. Our study examines the preference for, and use of MM and other payment forms in both Ghana and Zambia. Our multi-method investigation indicates that while MM preference and awareness is high, scope of use is low in Ghana and Zambia. Cash remains the predominant mode of business transaction in both countries. Increased merchant acceptability is needed to improve the MM ecology in these countries.*

## **1. INTRODUCTION**

The materiality of money has evolved over time, evidenced by the emergence of debit and credit cards in the twentieth century (Borzekowski and Kiser, 2008; Schuh and Stavins, 2010). Currently, mobile forms of payment are reaching widespread use in many regions of Sub-Saharan Africa, which is the fastest growing market for mobile phones worldwide (International Telecommunication Union [ITU], 2009). For example, M-Pesa is an extremely popular form of mobile payment in Kenya, possibly due to structural and cultural factors (Omwansa and Sullivan, 2012). However, no major form of money from the twentieth century has been completely phased out, as people exercise preferences for which form of money to use. Based on the evolution of payment methods, the current study explores perceptions and utilization of Mobile Money (MM) in Ghana, West Africa and in Zambia, South-Central Africa. MM is a form of monetary value housed within mobile phones that consumers use to make payments to a second party that are equal to the available monetary value stored in an account; such payments are electronically recorded and exchangeable for cash (di Castri, 2013). MM is similar to mobile banking, but rather than fully accessing bank services, individuals can send, receive, deposit and withdraw money via vendors rather than bank accounts (Okoli, 2013). In 2011, only 29.4% of Ghanaians, and 21.4% of Zambians had

bank accounts, yet both countries have seen a 99% increase in mobile phone subscriptions between 2005 and 2013 (Demirguc-Kunt and Klapper, 2012). MM, however, has not seen the same success in these countries when compared to Kenya. The rest of the paper is as follows. Section 1 surveys recent research relevant to this study by first addressing issues leading to the redenomination of the currency in both Ghana and Zambia, and secondly, exploring some potential factors that may influence the use of different forms of money in both countries. Section 2 provides an illustrative context of the methods employed to carry out the six studies in the paper, and the results. Section 3 presents the discussion of the study. Finally, Section 4 summarizes the conclusions.

### 1.1 Problems Associated with Cash

Cash is used extensively worldwide, yet such practice is associated with numerous issues, such as counterfeiting, handling costs, inefficiency and money laundering (Pietschmann and Walker, 2011). The problems with cash have driven a shift towards noncash payments. For example between 2009 and 2012 in the United States, credit card, private label credit card, and debit card transaction volumes grew at annual rates of 7.6%, 17.1%, and 15.8 respectively (Gerdes et al., 2013). Similarly, Ghana’s Central Bank reported an upward trend in the use of cheques (Bank of Ghana, 2013), and Zambia’s Central Bank reported an increase in the use of debit and credit cards in recent years (Bank of Zambia, 2014). Additional problems with handling cash arise in countries plagued by hyperinflation, where transitions to dollarized economies or recalibration of the official currency through introduction of higher value notes and coins may result.

### 1.2 Official Currency Changes

During the last 30 years many countries have redenominated their currencies in order to replace the large volume of low-value paper notes, and decrease handling costs, (Mosely, 2005). A selection of currency redenominations is presented in Table 1. Ghana redenominated its currency in 2007 (Dzokoto and Mensah, 2010), and Zambia followed in 2013, using the term “rebasement” to describe the redenomination (Bank of Zambia [BOZ], 2012). Although redenomination does not change the value of the currency, it increases ease in transactions and efficiencies in calculations and record systems. Redenomination can also boost consumer confidence in the currency via increased safety and convenience (BOZ, 2012).

**TABLE 1**  
**COUNTRIES CURRENCY REDENOMINATION & YEAR (MOSELY, 2005)**

<b>Country</b>	<b>Redenomination Year</b>
Argentina	1983 & 1985
Bulgaria	1999
Croatia	1994
European Union	1999
Ghana	2007
Latvia	1993
Mexico	1993
Nicaragua	1998
Poland	1995
Romania	2005
Turkey	2005
Ukraine	1996
Zambia	2013

### **1.3 Shifts Toward Redenomination and Cashlessness**

Transitions to electronic forms of money (also known as “cashlessness”) and redenominations have several elements in common. Both transitions involve the recognition that cash is flawed and both are a means to “achieving” a better form of money, yet the approaches thereto differ. Redenomination tries to do away with the faulty cash by replacing it with a less voluminous alternative (of cash). Redenominations are mandatory, which does not allow for individual differences in readiness for change and unprepared consumers often end up paying for their lack of readiness. For example, in the early stages of the redenomination of the Ghanaian cedi there were numerous anecdotal reports of merchants and consumers losing money due to calculation errors in the conversion process (Dzokoto et al., 2010a).

In contrast, a transition to cashlessness focuses on doing away with cash altogether, replacing it with electronic (or mobile-based) representations of the value of the notes and coins (Dzokoto and Mensah, 2010). The introduction of electronic or Mobile Money (MM) is associated with an element of choice, with people generally adopting the new payment system when they are ready to do so. The individually-driven nature of the adoption results in a hypothesized pattern that mirrors a normal statistical distribution of Innovators (2.5%), Early Adopters (13.5%), an Early Majority (34%), a Late Majority (34%), and Laggards (16%; Rogers, 1995). With the increasing availability of mobile devices, it is logical that more people are opting for the convenience of cashless currency for a wide array of purchases.

### **1.4 Factors Influencing the Use of Different Money Forms**

Several factors influence the use of different forms of money. Such choices of payment method are important to explore in research as the payment method arena has seen a recent revolution towards electronic and mobile payment means, and new generations of consumers are seeking more effective ways to make purchases (Schwartz and Ramage, 2014). Information from such research can be applied to financial inclusion initiatives and payment transaction architecture.

#### *1.4.1 Factors in Mobile Money Use*

With the growing use of technology worldwide, consumers across the globe are shifting towards using electronic methods to pay for products and services. Factors that influence consumer’s choice of payment form include knowledge, perceived usefulness, ease of use, accessibility, simplicity of transfer, a high level of divisibility, attractive deals or benefits, familiarity, convenience, trust, need, personal control, transaction time, leverage potential, safety, record keeping, cost, personal traits, and availability of more appealing payment methods (Douthwaite, 1999; Schuh and Stavins, 2010; Tobbin and Kuwornu, 2011). Furthermore, Borzekowski et al. (2008) concluded that consumers in Poland are not likely to obtain debit cards due to perceived lack of opportunity to use the cards. This and similar findings highlight the importance of (i) acceptability among merchants, and (ii) the creation of an ecosystem to support new payment forms. For instance, in the US, while cash has a high level of accessibility through ATM machines, debit and credit card are widely used because of the development of card-based Point of Sale device ecosystems (Humphrey, 2004). Similarly, in many developing countries where debit and credit cards are limited to cities and towns, the use of MM has become very popular.

Like debit and credit cards, MM is convenient because it allows one to purchase products or services, make hotel reservations, pay bills, and transfer money (Mallat, 2007). Factors impacting willingness to use MM include perceived usefulness, perceived ease of use, the eradication of many problems associated with using banks, availability of exact change, and perceived trust (Mallat, 2007; Tobbin and Kuwornu, 2011). Therefore, MM is a practical option in Africa, where the majority resides in rural areas with variable access to banking services. As such, many Ghanaians use MM for transferring funds through the MM providers Airtel, GLO and MTN. Many Zambians use MM for funds transfer as well as paying bills through providers such as Airtel, Zoono, Kazang and MTN. Airtel partnered with Zoono in 2013 to allow Airtel customers to transfer funds with both Zoono and Airtel agents (Worley, 2013). MM accounts in Ghana (5.4 million) and Zambia (3.4 million) have outpaced the number of bank accounts, estimated at 4.5 million bank accounts in Ghana and 2 million bank accounts in Zambia (Malakata, 2014; Owusu-Agyeman and Offe, 2014; Vorster, 2012). Clearly, in both Ghana and Zambia consumer money

*preferences* are shifting from physical cash to electronic payment methods, concurrent with the creation of a MM-based payment ecosystem. The use of MM in daily transactions, however, has been slow to reach its full potential as compared to the rapid uptake of M-Pesa in Kenya.

#### *1.4.2 Status Quo and Materiality*

Choices in decision making are influenced by the status quo, or the alternative choice already employed, because individuals are more familiar with the status quo than uncertain and risky novel possibilities (Masatilioglu and Ok, 2005). If physical money (i.e. cash) is the status quo among the community, one will be less likely to use electronic money, because such alternative forms would carry greater uncertainty and perceived risk for consumer and merchant alike. As such, materiality, a feature of cash, may be an important factor.

According to Miller (2005), materiality is considered the form of something that is real. Jung and Stolterman (2011) suggested that people can detect small differences in the materiality of both tangible and digital objects; these differences in materiality may influence preferences for such objects. As electronic types of money rise in popularity, money becomes increasingly formless, yet people must still be able to recognize the form-less entity as money in order for it to be considered an effective mode of payment (Schillmeier, 2007). A similar principle is at play when a country's official currency changes through the process of redenomination; people must perceive the new form of currency as a valuable material that can be used as a payment method. Therefore, the materiality of money may play a role in determining preferences.

## **2. THE FIVE STUDIES**

This investigation uses a multi-sample, multi-method mode of enquiry to examine preference for and use of different forms of money among consumers and merchants in Ghana and Zambia. The data are representative of multiple viewpoints regarding different forms of money in 2 African samples. Data was collected over a 2-year period.

### **2.1 Study 1: Pairwise Comparisons**

Many studies have asked participants to rate forms of money based on specific attributes or to rate and rank preferences for payment when presented in a list. Examining preferences through payment attributes divides the components of the whole, which detracts from fluency of processing, and shifts the affect associated with the form of money (Mishra et al., 2006). Rating preferences in a list increases the likelihood of a Decoy Effect because the presence of multiple choices will influence preferences between earlier options (Huber et al., 1982). Both methods of examining preferences create limitations to such studies. Pairwise comparisons allow participants to rate preferences for whole forms of money, while only comparing two options at a time, thus facilitating fluent and efficient processing (Mishra et al., 2006). Such general information provides a global picture of preferences and decisions of use in regard to payment methods.

#### *2.1.1 Method*

Using a pairwise comparison procedure, 244 University Students in Ghana were presented with a list of 406 comparisons of different forms of money (e.g. MM versus 1 cedi coin, 1 cedi coin versus 1 cedi note, 20 cedi note versus ATM card, check versus Treasury bill). In total, 29 forms of money were examined. For each item, participants were asked to choose which form of money was preferred out of the pair. If a form of money was preferred over another form by at least 50% of the sample, it was recorded as a "win" in that comparison. Likewise, if a form of money was preferred by less than 50% of the sample, it was recorded as a "loss" in that comparison. Only the results for preferences of money types that are relevant to the research goals of this paper are discussed.

### 2.1.2 Results

The pairwise data indicated a complete preference for Treasury bill over all other forms of money options (See Table 2 and Figure 1). Conversely, there was no preference for Traveller's checks: all other forms of money were preferred over this form of money.

**TABLE 2**  
**COUNT AND PERCENTAGES OF WINS AND LOSSES FROM PAIRWISE SURVEY**

Money Type	Win	Loss	Win %	Loss %
Treasury Bill	16	0	100.00	0.00
Mobile Money	15	1	93.75	6.25
50-cedi note	14	2	87.50	12.50
20-cedi note	13	3	81.25	18.75
10-cedi note	12	4	75.00	25.00
5-cedi note	11	5	68.75	31.25
2-cedi note	10	6	62.50	37.50
1-cedi note	9	7	56.25	43.75
1-cedi coin	8	8	50.00	50.00
E-zwich Smartcard	7	9	43.75	56.25
Savings Account	6	10	37.50	62.50
Checking Account	5	11	31.25	68.75
ATM Card	4	12	25.00	75.00
Prepaid Phone card	3	13	18.75	81.25
Bank Transfer	2	14	12.50	87.50
Bank Draft	1	15	6.25	93.75
Traveller's check	0	16	0.00	100.00

All other forms of money options were chosen at variable amounts throughout the comparisons. For instance, MM had a total of 93.75% of wins, suggesting that it had significantly high preference among respondents when compared to all other forms of money except Treasury Bills.

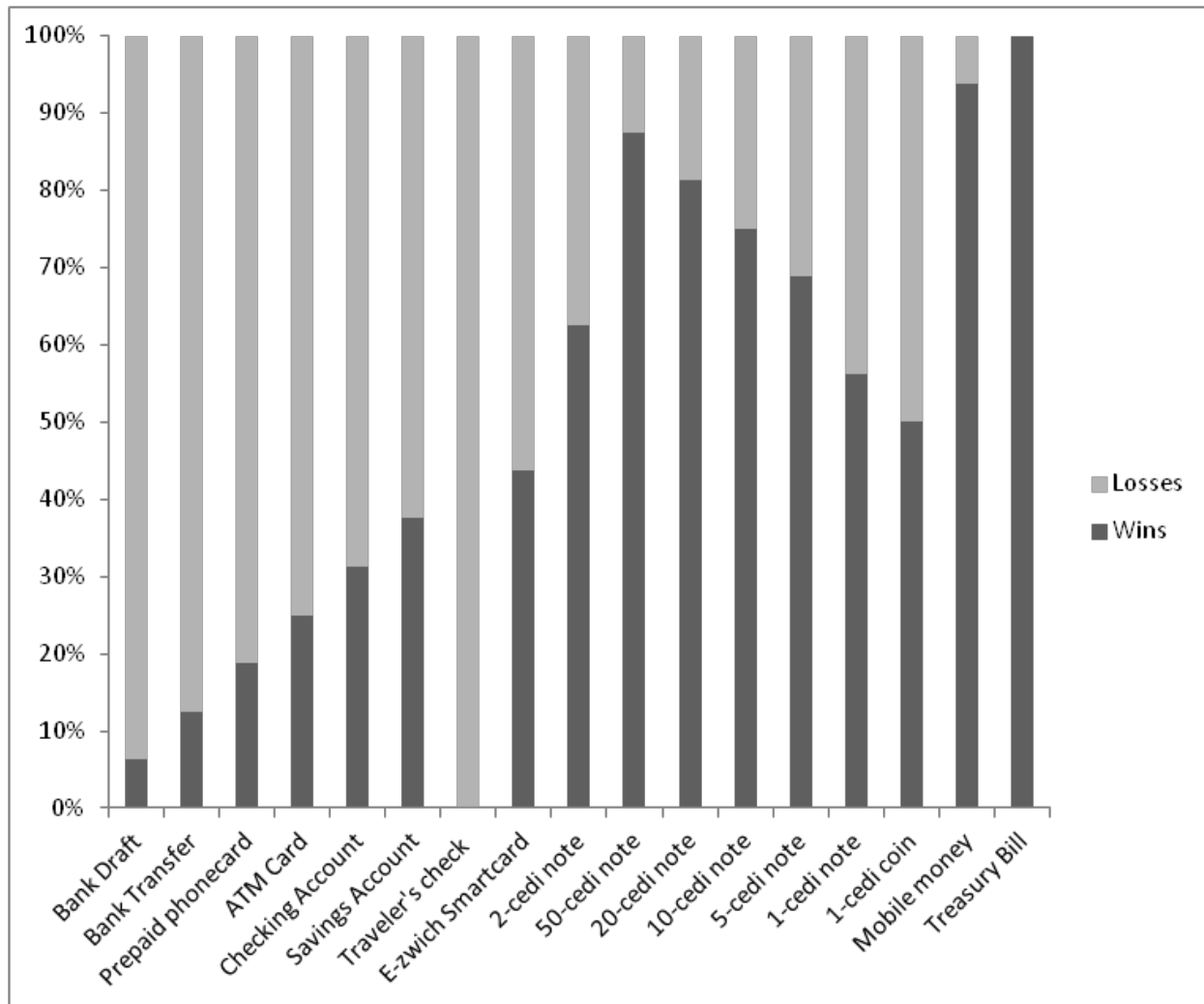
While the data showed that the treasury bill was preferred over all other forms of money, when collapsed into money form categories, average wins show that MM, a highly accessible form of money, was preferred the most, and bank-issued money substitutes, money forms that are not very accessible and require a trip to the bank, were least preferred. Fairly accessible forms of money such as cash, coins and cards were preferred 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>, respectively, as shown in Table 3.

**TABLE 3**  
**CATEGORIZED MONEY PREFERENCES AND RANK IN GHANA**

Money Category	Sum of Wins	Average of Wins	Preference
Bank-Issued Money Substitutes (Bank draft, bank transfer, checking account, saving's account, traveller's check, treasury bill)	30	5	5 <sup>th</sup>
Cash	69	11.5	2 <sup>nd</sup>
Coin	8	8	3 <sup>rd</sup>
MM	15	15	1 <sup>st</sup>
Cards (ATM, Ezwich)	11	5.5	4 <sup>th</sup>

In sum, MM is highly preferred in comparison to various banking products and the lower denominations of currency which are used for everyday business transactions.

**FIGURE 1**  
**WINS AND LOSS PERCENTAGES OF ALL FORMS OF MONEY IN THE PAIRWISE**  
**COMPARISON SURVEY**



## 2.2 Study 2: Spending Diary

Diary study designs are systematic and structured in order to measure constructs close to the occurrence, and have been used in a variety of psychological fields (see Iida et al., 2012). Some advantages of diary designs include bottom-up exploration of psychological processes, examination of situational influences on functioning, the variance of average daily experience, the processes that underlie such changes, and reduced retrospection, memory biases and measurement error (Bolger et al., 2003; Iida et al., 2012).

### 2.2.1 Method

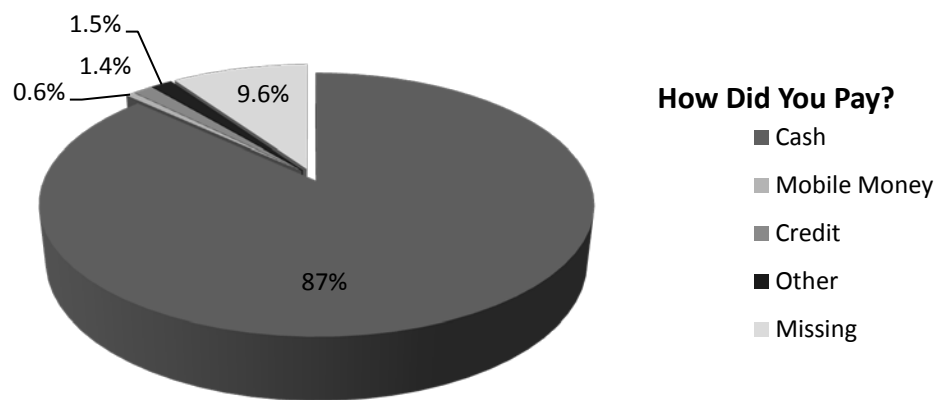
Given the expressed preferences for MM, it was important to explore the extent to which these expressed preferences translated into actual behaviour. A sample of 157 University students in Accra was

asked to keep spending diaries of their purchases for one week. Participants were asked to track what they bought and how they paid for the items that were purchased.

### 2.2.2 Results

Participants reported a total of 1220 cash-based transactions over the course of the week. Cash was the predominant form of payment for daily expenses. Mobile Money accounted for less than 1% of total purchases made over a 7-day period. In all, non-cash transactions made up 2.86% of all reported purchases. The results are summarized in Figure 2. The results clearly show that MM usage in business transactions is at the preliminary stage in Ghana.

**FIGURE 2**  
**MONEY METHOD OF PAYMENT IN STUDY 2**



## 2.3 Mobile Money Use Population Survey

Given the reality that college student spending habits may not necessarily be representative of the national sample, the focus of the next study was Ghanaian adults in Accra. For practical reasons including time constraints and extremely low anticipated return rates, we assessed only the rates at which MM was used by this population instead of collecting spending diaries. Such information provides a general understanding of how much MM use has permeated the markets.

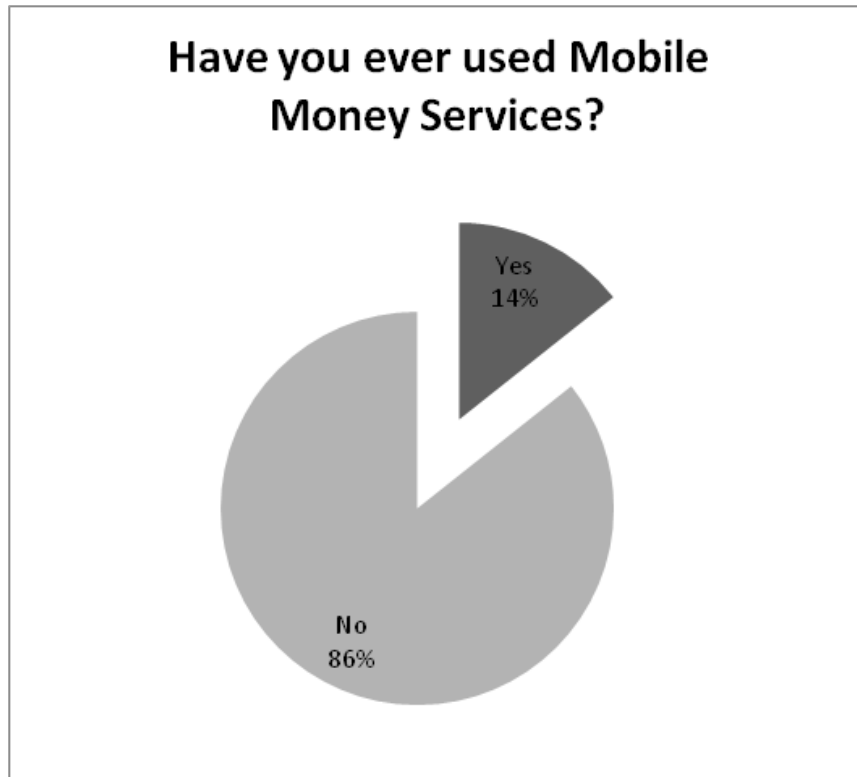
### 2.3.1 Method

1250 adults were recruited from 10 suburbs of Accra in June and July of 2012 to participate in a brief poll about Mobile Money. Recruitment occurred in public areas with high human traffic (e.g. near transportation hubs and markets). The resultant sample was 57% male, with 25% of the total sample who provided their ages being between 19 and 25.

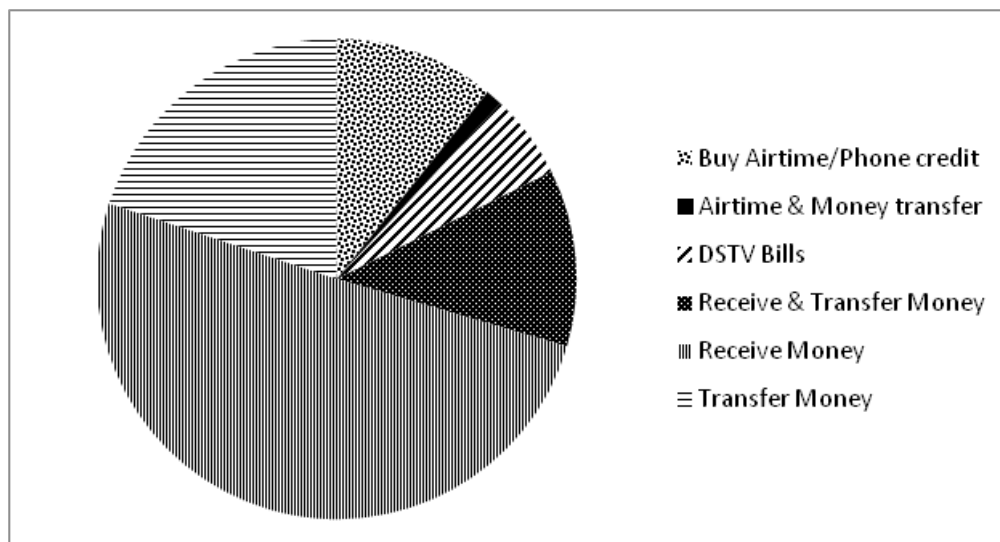
### 2.3.2 Results

A total of 179 males and females (14% of the sample) reported having used Mobile Money at least once, as shown in Figure 3. Uses for MM included receiving money (50%), sending money (20%), sending and receiving money (10%), paying bills (5.6%) and buying airtime (10%), shown in Figure 4. The most popular MM provider in our sample was MTN, which was the first MM provider to launch MM in Ghana. The results are consistent with the spending diary data: MM did not feature prominently in financial transactions. Instead, MM was largely used as a means of money transfer. Given that none of our respondents indicated that they had used MM to save, it can be inferred that MM recipients cash out. Results are summarized in Figures 3 and 4.

**FIGURE 3  
USE OF MOBILE MONEY SERVICES IN STUDY 3**



**FIGURE 4  
PURPOSE FOR WHICH MOBILE MONEY WAS USED IN STUDY 3**



#### **2.4 Interviews with Early Adopters of Mobile Money**

10 in-depth interviews were conducted with early adopters to explore what factors shaped early use of Mobile Money in Ghana. We placed emphasis on personal and situational factors.



#### *2.4.1 Method*

Interviewees were asked to recount events that led up to their first use of MM, and also to recount their use of technology and openness to new products or services. All participants were male adults, employed in various professions. Transcribed interviews were thematically analysed.

#### *2.4.2 Results*

Thematic analysis showed that in all ten instances, the first time use of MM was situation-based rather than personality-driven. Each participant reported that their first MM use was predicated by unexpectedly finding himself urgently needing to send money to someone at a time when the normal means of sending money was not available (e.g. after banking hours, no one available to physically transport money). Mobile Money was recommended by someone external to the situation as a means of solving the problem, and found to be the only viable means of solving the problem at that time. After successful initial use of MM for a money transfer, nine of the ten interviewees reported subsequent use.

### **2.5 Study 5: Interviews with Retailers**

Interviews with retailers served to explore extant and potential use of MM in their businesses. As transactions occur between two participants, it is important to explore the supplier side of payment in order to understand how retailer preferences affect the use of different forms of money among consumers.

#### *2.5.1 Method*

Interviewees included 40 store merchants and store attendants (or store keepers and retail staff), recruited from stores in Malls and Mini-plazas in the Airport area (Accra Mall), and East Legon (a suburb 10 miles Northeast of downtown Accra), and Oxford street in Osu. These areas are among the affluent suburbs in Accra. In addition, 20 Market women selected from various markets around Accra were interviewed.

#### *2.5.2 Results*

According to anecdotal evidence and public discourse from Ghanaian MM users and non-users, most retailers were not using MM in commerce. Limitations to MM use included lack of trust, network problems, and the potential for fraud. Knowledge of MM has increased, but cash is still predominantly used for payment in retail spaces, particularly those patronized by low income Ghanaians.

### **2.6 Mobile Money in Zambia**

While MM in Ghana debuted following the redenomination of the Cedi, the emergence of MM in Zambia overlapped in temporality with the rebasement. As such, the sixth study examined the rebasement's impact on use of cash and MM, as well as Zambian money preference patterns.

#### *2.6.1 Method*

Questionnaires and interviews were employed to examine perceptions and experiences of both the recent rebasement and use of MM in Zambia.

687 participants, 50% middle to high income individuals and 50% low-income individuals were recruited from Lusaka, the capital of Zambia, to complete a questionnaire on preferences of different forms of money, opinions of the rebasement, and the use of MM. Of the sample 50.5% were male, and the majority were between the ages of 25 and 35 (48.9%) and obtained a Tertiary educational level (49.2%). A large proportion of our sample owned a bank account (80.7%), and 71.9% owned a savings account. In contrast, 44.1% had registered for MM and 39.1% reported MM use.

A subset of 34 participants was recruited to participate in interviews, which served to provide more in-depth information than the questionnaires about adjustment to the rebasement, as well as preferences and usage of different forms of money. The interviews were conducted between five and seven months following the rebasement.

### 2.6.2 Results

Results showed that the majority of the participants considered themselves to be adjusting to the new currency 5-7 months post rebase, despite some having challenges early on. About half of the participants (49.9%) stated they either did not have access to credit or loans, or that they had unmet financial service needs. Most participants stated they preferred the new currency (61.8%) and electronic money services (47.1%) over the old currency and did not like carrying coins (91.2%).

**TABLE 4**  
**MM USE IN EARLY POST-REBASEMENT LUSAKA**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Lifetime use of MM		
Has heard about MM	610	90.6%
Has registered for MM	297	44.1%
Has used MM at some point	245	37.1%
Currently uses MM	254	39.1%
What do you use MM for?		
Spending	26	3.8%
Airtime	94	13.7%
Money Transfer	228	33.2%
Saving	28	4.1%
Did not answer	311	45.3%
What do you like about MM?		
Convenient	289	42.1%
Faster	263	38.3%
Safe	131	19.1%
Saving	90	13.1%
Portable	175	25.2%
What do you dislike about MM?		
Complicated	46	6.7%
Network Problems	248	36.1%
Security Issues	60	8.7%
Fraud	80	11.6%
Other	56	8.2%
Did not Answer	197	28.7%
Impact of rebased Kwacha on use of electronic financial systems		
Increase use of MM	63	9.2%
Decrease use of MM	85	12.4%
No effect	389	56.6%
No Idea	102	14.8%
Did not Answer	48	7.0%
Preferred method of financial transactions		
Electronic Money Services	212	30.9%
Rebased Kwacha	246	35.8%
Old Kwacha	60	8.7%
No Idea	86	12.5%
All of the Above	36	5.2%
Did not Answer	47	6.8%

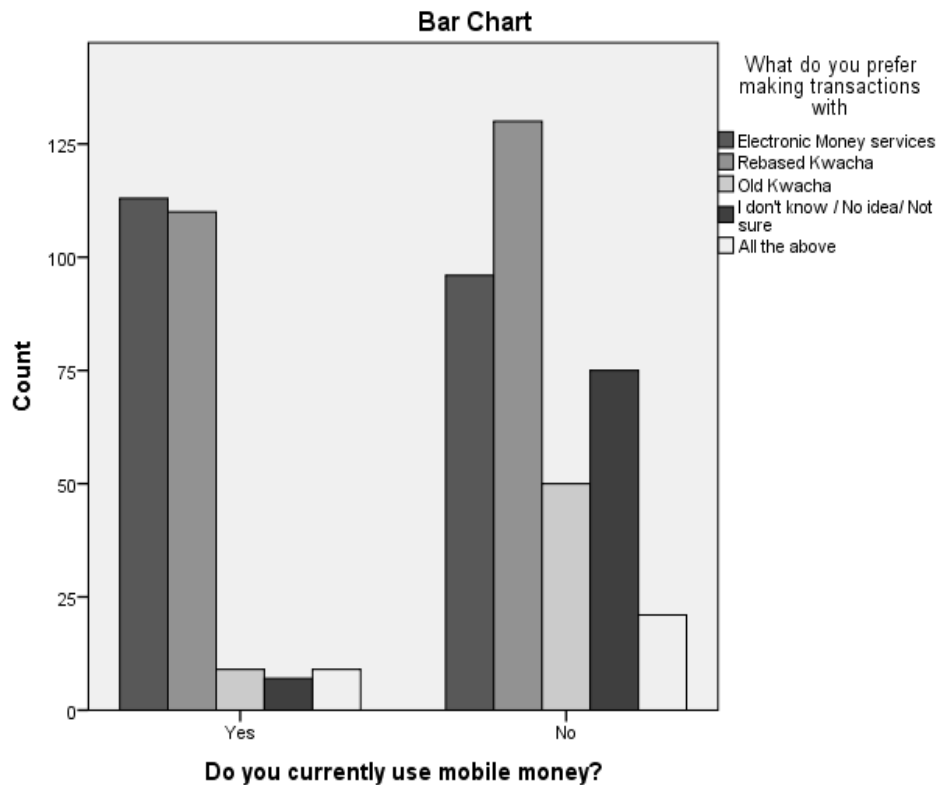
The results showed that the majority of participants (90.6%) had heard of MM, while 39.1% used MM. Money transfer was the most popular use for MM (33.2%), along with remittances, bill payment, buying credit, and payment of goods and services. Positive attributes of MM included convenience, speed, security, savings and portability. The predominant drawback of MM was network problems. Most participants (56.6%) did not think that the rebase impacted the use of MM. Regardless of whether or not participants used MM, the majority preferred to use either electronic forms of money (30.9%) or the rebased kwacha (35.8%) during business transactions. MM non-users preferred the rebased Kwacha over electronic forms of payment. Results are summarized in Table 4, Table 5 and Figure 5.

**TABLE 5**  
**MM USE IN EARLY POST-REBASEMENT LUSAKA: INTERVIEW RESULTS**

Theme	Frequency	Percentage
Rebase Experience		
Adjusting to the new currency	23	67.6%
Harder at first, but easier now	4	11.8%
Banking Needs		
Don't have access to credit or loans	11	32.3%
Have unmet financial service needs	6	17.6%
Preferences		
Prefer new currency	21	61.8%
Prefer both currencies	2	5.9%
Prefer electronic money services	16	47.1%
Prefer the rebased currency to electronic money services	3	8.8%
Prefer using both electronic money services and currency	6	17.6%
Do not like carrying coins (bulky)	31	91.2%
Rebased Kwacha had no impact on electronic money services	21	61.8%
Experience with MM		
Heard about MM	19	55.9%
Heard about it but don't understand	8	23.5%
Know a lot about MM	2	5.9%
Heard about MM	19	55.9%
Registered for MM	12	35.3%
See the benefits of MM	34	100%
See problems with MM	8	23.5%
Perceived Functions of MM		
Remittances	24	70.6%
Bill payment	18	52.9%
Payment of goods and services	12	35.3%
Buying Credit	14	41.1%

Our results indicate that overall, people are adjusting well to the rebase, yet there is limited access to banking services. Zambian participants were aware of MM and saw beneficial uses for MM, but the transition from awareness to daily use is sluggish, possibly due to network problems and other issues. Most of the Zambian sample preferred electronic money services, but only a minority of the sample actually used MM. In addition, the results suggest that the rebased Kwacha has had no perceived effect on the rate of MM use.

**FIGURE 5**  
**PREFERRED FORM OF MONEY FOR TRANSACTIONS OF MM**  
**USERS AND NON-USERS IN ZAMBIA**



**2.7 Overview of Results**

Our results indicate that while the immaterial MM form appears to rank high in terms of preferences of forms of money, actual money behaviours in both Ghana and Zambia do not reflect this preference. MM is used primarily for money transfers, rather than a versatile medium of exchange and store of value-capabilities that the platform provides. The results imply that a more developed ecosystem and stronger networks are needed to increase MM usage and financial inclusion in both Ghana and Zambia.

**3. DISCUSSION**

Despite the poor infrastructure in much of Sub Saharan Africa, access to and use of mobile phones in the region has increased dramatically over the past decade. Between 2005 and 2013, mobile phone subscriptions increased by 86% in Sub-Saharan Africa compared with 29% in Europe. Further, Ghana and Zambia have both seen a 99% increase in mobile phone subscriptions between 2005 and 2013 (ITU, 2014). Such results confirm that Sub-Saharan Africa is the fastest growing mobile phone market in the world, influenced by the scarcity of banking institutions in many rural areas. Countries where a large percentage of the population is unbanked can adopt mobile payment systems as a convenient and highly accessible way to increase financial inclusion (di Castri, 2013).

**3.1 Factors Influencing Preferences and Usage on Different Forms of Money**

Results from the current studies suggest that materiality, accessibility, and acceptability of money may impact individuals’ preferences for different forms of money. In the pairwise survey study, when

money forms were collapsed into categories, the highly accessible forms of money (MM and Cash) were preferred most, whereas the lowest accessible forms (those requiring a trip to the bank) were preferred the least, with the exception of treasury bills, and fairly accessible forms (Coins and Cards) fell in the middle of the preference spectrum. Such results imply that the materiality of money slightly affects preferences, but must at least be recognized as money (Schillmeier, 2007), where accessibility significantly affects preferences.

Results showed that MM may be highly preferred in Ghana and Zambia because as a dematerialized payment method, the attributes of speed and convenience surpass other material forms of money. Douthwaite (1999), suggested that such attributes create a highly usable form of money and Mallat (2007) found that such qualities influence the adoption of mobile payment systems, similar to our findings of reasons for the high preference of MM. Despite such attributes, MM use seems to be limited in scope. In order for a new product, such as MM, to replace another product, like cash, the new product must be capable of outperforming the status quo (Schuh and Stavins, 2010). Our results suggest that MM is advantageous in terms of previous forms of sending money to others, but this does not appear to be the perceived case in the context of everyday retail transactions. Consumers in Ghana and Zambia may not yet recognize MM as real money, unless merchants and consumers clearly understand its uses and benefits.

Another reason Ghanaians and Zambians may not use MM for purchases is that merchants are reluctant to accept MM. The use of MM for non-transfers is constrained by the limits of the extant MM ecosystem. Interviews with merchants indicated that lack of trust, lack of transaction records, unreliable networks and the high possibility of fraud serve as barriers to accepting MM in daily business. Such results are consistent with findings from Owusu-Agyeman and Offe (2014), who found that merchants are unenthusiastic and untrained in regards to MM. Because merchants are hesitant to accept MM, consumers in Ghana and Zambia are unable to use MM to purchase goods and services, despite high levels of preference for MM.

### **3.2 Cash as the Status Quo**

Our results suggest that cash exists as the status quo for payment methods in Ghana and Zambia. This may have been reinforced by the introduction of a more portable version of the national legal tender. People are often hesitant to choose new products where a status quo already exists (Ortoleva, 2010). The status quo is capable of change when opportunities arise for increased familiarization with new products that meet unmet needs. Early MM adopters interviewed in our study were introduced to MM by other consumers at a time of need, consistent with the research that suggests adoption of new products is partly dependent on from whom and how consumers learn about a new product (Rogers, 1995; Tversky and Kahneman, 1981). Positive evaluations from other consumers are more trusted than endorsements from the media and are thus more likely to lead an individual to try a new product (Vishwanath, 2009).

Together, our results suggest an underdeveloped MM ecosystem. According to Jenkins (2008), nationwide MM ecosystems can only be developed through partnerships between all the stakeholders: mobile network operators, banks, agents, merchants, governments, employers, utilities, microfinance institutions, society and users. Such partnerships must exist in order to create environments that serve to enable, support and encourage the use of MM by consumers and retailers alike (Jenkins, 2008). Although such partnerships are emerging within Ghana and Zambia, consumers must be able to use MM to further the development of such an ecosystem. An increase in MM usage will only result from an increase in acceptability among merchants. As such, mobile network providers must provide more merchant and consumer education about the uses and benefits of MM. Increased acceptability of MM will lead to a greater familiarity with the product, thus furthering the diffusion of MM use among more consumers and strengthening the MM ecosystem (Mantel, 2000).

## 4. CONCLUSION

MM applications have emerged as a popular form of money in Africa, Asia and Latin America, but the use of MM in business transactions has been slow to translate into action in some countries, like Ghana and Zambia. Results from the current studies show that MM is highly preferred due to its non-materiality and accessibility, but rarely used (apart from remittances and bill pay) in place of cash due to low merchant acceptability in Ghana and network issues in Zambia. Awareness of and preference for MM has increased in recent years, but an improved network, more knowledge about the uses of MM, and a wider array of opportunities for MM use are needed to strengthen the ecology of MM, thus increasing MM usage in daily spending activities, and financial inclusion worldwide.

We expect that our findings can initiate further methodological explorations regarding the determinants of MM usage in business transactions in other African countries. We also experienced some limitations of our approach, whereby participants' responses regarding their preferences in the surveys may be very spontaneous as well as subjective. Further limitations of MM involve difficult execution, unclear instructions, confusing billing practices, increased cost of products, and lack of merchant acceptance. Other potential problems involved in MM use include unauthorized use, lack of transaction records (receipts), errors in transactions, perceived lack of control, and the faulty reliability of device and network (Mallat, 2007). Despite MM's success to date in Ghana and Zambia, some concerns exist with regard to regulation related to consumer rights and protection. Many of these problems could be eradicated through improvements made by MM companies, as a more stable network would lead more merchants to accept MM, and thus, more consumers could use MM in daily transactions. In order to ensure the success of MM in all developing economies, the above limitations must be addressed.

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