

# UC Irvine

## Papers

### Title

Change we don't believe in? Coin attitudes, resistance, and use in post-redenomination Ghana

### Permalink

<https://escholarship.org/uc/item/9x66n7xf>

### Journal

International Journal of Business and Behavioral Sciences, 3(6)

### Authors

Dzokoto, Vivian A

Twum-Asante, Maxwell

Opore-Henaku, Annabella

et al.

### Publication Date

2013-06-01

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial License, available at <https://creativecommons.org/licenses/by-nc/4.0/>

Peer reviewed

## **Change we don't believe in? Coin attitudes, resistance, and use in post-redenomination Ghana**

\*Vivian A. Dzokoto<sup>1</sup>, Maxwell Twum-Asante<sup>2</sup>, Annabella Opare-Henaku<sup>3</sup>, & Evan Anderson<sup>4</sup>

<sup>1</sup>Department of African American Studies, Virginia Commonwealth University, 1000 W. Franklin Street, Richmond VA 23284-2509, <sup>2</sup>Department of Psychology, Fayetteville State University,

<sup>3</sup>Department of Psychology, Virginia Commonwealth University, 806 W. Franklin Street, Richmond VA 23284-2018, <sup>4</sup>Department of Psychology, University of Central Arkansas

\*vdzokoto@vcu.edu

### **Abstract**

*A currency redenomination re-introduced coins into the Ghanaian economy. Anecdotal observations, media reports, and previous research suggested that coins were not as easily integrated into Ghanaian financial transactions as paper bills were. The purpose of this study was to understand this resistance to coins as a form of money and investigate prevailing attitudes to coins as a medium of exchange. In study 1, we assessed self-reported attitudes to coins. Studies 2 and 3 assessed coin size estimations and coin recognition rates respectively as indirect indicators of attitudes to coins. Study 4 explored the probability of "lost" coins of different values being picked up from pavements in Ghana's capital city, whereas Study 5 indirectly explored attitudes to coins and other forms of money used in Ghana using their typicality ratings. Collectively, the results suggest that resistance to coins was not universal, but was related, in part, to their financial value.*

**Keywords:** *Ghana, currency redenomination, consumer attitudes, coins*

---

### **1. Introduction**

Consumer resistance to any product can occur when its adoption and use requires significant alterations in the consumers' value systems, as well as their "established behavioral patterns, norms, habits and traditions (Kleijnen, Lee & Wetzels, 2008). " This resistance can lead to negative attitudes towards the product, resulting in its outright rejection (and hence non-adoption), postponement of use, or outright opposition, and thus, a market failure for the product. Negative consumer attitudes towards products are undesirable, especially, when consumers can choose between products like wine bottle caps (Garcia & Atkin, 2002), organically modified food (Bredahl, 2001), and online shopping (Grabner-Kraeuter, 2002; Lennon, Kim, Johnson, Jolly, Damhorst, & Jasper, 2007). Consumer resistance to products is even more problematic when product adoption is mandatory, such as in the use of new currency after redenomination. Other instances of resistance are observed when governments institute mandatory policies like switching from one system of weights and measures to another, or driving on another side of the road. This paper explores consumer attitudes and resistance to coins introduced in Ghana after redenomination in 2007.

Media reports (e.g., Apeadu, 2010; Dogbvi, 2010; www.peacefmonline.com, 2010) as well as qualitative research (e.g. Dzokoto & Mensah, 2010; Dzokoto, Mensah, & Opare-Henaku, 2011)

that explored the 2007 currency redenomination program in Ghana showed a general unfavorable attitude and significant consumer resistance towards the newly introduced coins (1, 5, 10, 20, and 50 Ghana pesewas), and 1 cedi (equivalent to 100 pesewas). Although coins were initially introduced into Ghana's economy while the country was a British colony, they have not been a consistent part of the country's financial system due to inflation. Prior to the 2007 currency redenomination, cash transactions in Ghana involved the use of wads of paper notes (irreverently referred to as bricks) for even the most meager of purchases. The introduction of the new Ghana cedis and pesewas, thus, meant the introduction of a significantly more portable means of exchange, as well as the re-introduction of coins.

Whereas the portability of notes in the new currency was a welcome feature, the pesewa coins were not similarly received (Dzokoto, Mensah, & Opere-Henaku, 2011). Many Ghanaians reported a general dislike of many of the physical characteristics of coins. Because coins were perceived as distinctly more cumbersome to store and carry, as well as more likely to get lost, the use of coins required establishment of new money handling habits. Even poor Ghanaians living on less than 2 US dollars a day actively discarded some of the lower denomination coins such as the 1 pesewa. Coins use requires extra cognitive effort when doing conversions to determine the "real" value of goods and services. In contrast to new note to old note conversions which involve the addition of 4 zeroes, coin to old note conversions involve additional steps (for example, one has to use decimals, or a set of different rules depending on the value of the coin) that are not straightforward.

In sum, the introduction of coins in post-redenomination Ghana brought about significant alterations in consumers' established money handling behaviors. Reported behaviors suggestive of resistance to the reintroduction of coins include self-reports of limited use of coins (e.g. never saved them), customers' refusal to accept coins as change from vendors, and coins being blamed for post-redenomination price increases (Dzokoto, Mensah, & Opere-Henaku, 2011).

## **2. Overview of Studies**

There is a general dearth of research on consumer attitudes to coins in the twenty first century. This situation is not surprising given the mundane, non-problematic nature of coins in countries in which they have been in regular circulation for decades or even centuries, coupled with the generally decreasing use of coins due to the availability of electronic financial transaction tools even for small purchases in western countries. In primarily cash-driven economies, however, coins — when part of the recognized and actively utilized legal tender — represent an object that most people will encounter and may have to use on a daily basis. On the one hand, in these economies, consumer resistance to mandatory money is associated with financial loss on individual and national levels. Consumers lose valuable money by refusing to use coins, whereas the state that spends resources to mint the coins loses money when consumers fail to use the coins. On the other hand, resistance to mandatorily introduced money creates the illusion of empowerment for consumers. An examination of monetary

dynamics between citizens and the state through the study of attitudes to coins is important for economic policy. Such an inquiry needs to be based on theoretical conceptualizations drawn from the literature on consumer behavior and attitudes. It is important to identify the cultural and experiential factors that affect money-handling behavior and currency use practices in the context of rapid currency change.

The goal of the present series of studies was to explore consumer resistance to coins in post-redenomination Ghana through a multi-method assessment of attitudes towards coins. Utilizing ratings of attitudes, beliefs, and intentions towards coins, coin size estimation and recognition tasks, a “lost” coin experiment, and typicality ratings of money, these studies explored the prevailing attitudes towards coins in Ghana.

### **3. Study 1: Coin Attitudes**

Attitudes are states of mental and neural readiness, “*organized through experience*” that exert “*directive or dynamic influence upon the individual’s response*” to all related objects and situations (Allport, 1935, pg.810). Fishbein and Ajzen (1975) identify three basic features of attitudes: Attitudes are learned; attitudes predispose action; and actions stemming from attitudes are “consistently favorable or unfavorable toward the object (pg. 6).” Fishbein and Ajzen point out that attitudes are generally inferred from observed consistency in behaviors, which can take the form of observing responses or sets of responses in the presence of a given stimulus, different responses in regard to the same stimulus, and multiple responses at different points in time. While there are a huge variety of attitude assessment tools and response forms, all attitude measurements are based “on responses to single statements of belief or intention (Fishbein & Ajzen, pg.105).” Standard attitude scaling is designed to isolate a set of belief or intentional statements.

Observable behavior and explicitly expressed perception of value are two methods by which inferences concerning attitudes towards money can be made. In the case of Ghana, the purposeful throwing away of 1 pesewa coins, as well as the numerous interviewees who volunteered that they neither valued the Ghanaian pesewas and did not perceive their value to be the same as their equivalent in the old currency (Dzokoto, Mensah, & Opare-Henaku, 2011) are two useful attitude indices. Despite behaviors that suggest negative attitudes towards coins, there has not been any quantifiable assessment of attitudes towards coins in Ghana to date. Because of this gap, we undertook Study 1 to explore the attitudes of Ghanaians towards coins in circulation post redenomination. Based on the very low use of the 1 pesewa coin for business transactions (see Dzokoto, Mensah, & Opare-Henaku, 2011), we hypothesized that there would be significantly more negative attitudes towards the 1 pesewa coin as compared to the rest of the coins.

#### **3.1 Method and Procedure**

One hundred and forty seven Ghanaian adult volunteers were recruited from two sites for this study. Volunteers at the first site were undergraduates at a private university in Accra, whereas those from the second site were high school graduates, college students, and working

adults, all patrons at an educational resource center also in Accra. The study was conducted in English, which is Ghana's official language, and the post-primary language of formal instruction in schools.

The participants completed a 26-item, country-specific questionnaire that measured coin-specific attitudes (e.g. coins are awkward to handle), behaviors (e.g. I discard the 5 p coins when I obtain it as change), and intentions (e.g. I plan to save my coins for a rainy day). Items in the questionnaire were based on data from previous qualitative studies on currency redenomination (e.g. Dzokoto & Mensah, 2010; Dzokoto, Mensah, & Opare-Henaku, 2011) and use of coins in Ghana. We used a Likert type scale with anchors 1 representing strong disagreement with the statement, and 7 indicating strong agreement with the statement. A pilot test of the questionnaire enabled us improve on the comprehension and face validity of the items.

### **3.2 Results and Discussion**

The results showed that the participants had a more positive attitude toward notes than coins. Most participants reported a preference for the 1 Cedi note as compared to the 1 Cedi coin ( $M= 5.08, SD=2.10$ ). They also preferred to receive a monetary amount totaling 2 Cedis in notes rather than in coins ( $M=5.42, SD= 1.8$ ), and would not give someone coins in appreciation for their service or assistance ( $M=4.53, SD=2.00$ ). The participants concurred less with statements such as "I like using coins ( $M=4.58, SD=1.92$ )" and "I value coins highly ( $M=4.61, SD=1.70$ )." However, while notes were preferred, respondents were not in favor of eliminating coins altogether as shown by their disagreement with the statement: "I think all prices should be rounded up to the nearest Cedi so we can do away with coins ( $M=2.62, SD=2.53$ )," and agreement with the statement: "I make it a point to collect all my change after a purchase ( $M=5.67, SD= 1.73$ )." Respondents also tended to disagree that coins are for poor people ( $M=1.76, SD=1.63$ ) and that giving coins in church collection is insulting ( $M=2.64, SD=2.08$ ). Whereas the 1-pesewa coin was often discarded, the other coins were used and discarded at similar rates (see Figure 1).

We compared responses to the statements: "I prefer being given 2 cedi in notes rather than in coins" and "I would use coins in my everyday financial transactions." The comparison (see Fig. 2) showed that 68% of the participants had a high preference for notes and the least intention to use coins in their daily business transactions. There was, thus, a match between the attitudes of the participants and their intentions to use coins.

The results from Study 1 showed that whereas coin usage is an integral part of commercial activities in Ghana, coins are not considered appropriate in some circumstances, thus making them less useful than notes. Attitudes towards coins in this study showed a more complex, non-homogenous stance than what previous research and media reports (see e.g. Apeadu, 2010; Dogbvi, 2010; www.peacefmonline.com, 2010; Dzokoto & Mensah, 2010; Dzokoto, Mensah, & Opare-Henaku, 2011) suggest.

#### 4. Study 2: Coin Size Estimation

According to Feldman & Lynch (1988), memory and memory accessibility can be good indices of attitudes, beliefs, and intentions. They state that using memories as a measure of attitude increases the chance that a judgment is made by previously formed cognitions rather than judgments that were formed while taking an attitude survey, for example. Unfortunately, studies on memory and various perceptual attributes of money have generally yielded low levels of performance even in countries where people do not harbor negative attitudes towards coins. For example, studies conducted in East Africa (Munroe, Monroe, & Daniels, 1969), England (Lea, 1981, Furnham 1983, Furnham & Spencer-Bowdage , 2003), Hong Kong (Dawson, 1975), and Canada (Vroom, 1957) show that size estimation of coins in everyday use as well as coins out of circulation is poor. Such findings suggest that memory for coins and their size estimation would even be lower in countries where negative attitudes towards coins are prevalent. This money size illusion has been theorized to be impacted by socioeconomic status (Bruner & Goodman, 1947), inflation (Lea, 1981), perceived coin value (Dawson, 1975), concurrent emotional states (McCurdy, 1956), and the attitude of the public towards a given coin (e.g. loss of confidence in a currency due to inflation) which can persist even after a money object is withdrawn from circulation (Leiser & Izak, 1987).

The relationship between memory and attitudes is complex. What memories are accessible to a person is a function of the time that has elapsed since the most recent activation of the memory (Brown, Preece, Hulme, 2000); amount of interfering material (Jenkins & Dallenbach, 1924; May, Hasher, & Kane, 1999); elaboration and rehearsal of the original information (Cowan, 2001; Jonides et al., 2008) ; characteristics of memory and rate of decay (Peterson & Peterson, 1959); motivation for the initial encoding (Weiner, 1966); and available retrieval cues (Miller & Laborda, 20011). Memory for surface details of coins that are part of everyday life has been shown to be poor in countries with non-negative attitudes to coins such as the United States (Nickerson and Adams, 1979; Kosslyn & Rabin, 1999), England (Jones, 1990), Japan (Kikuno, 1991), and France (Nicolas, Marchal, & Guida, 2004). The amount and accuracy of coin-specific information recalled was not predicted by age (in adults), type of coin, period of coin circulation (Nicolas, Marchal, & Guida, 2004) or coin size (Jones, 1990), but rather by whether the encoding of features was intentional or incidental (Marmie & Healy, 2004), whether the subject was a child or an adult (Kikuno, 1993), and the meaningfulness, redundancy, identifiableness, and discriminativeness of the coin's surface features (Jones, 1990). Horner and Comstock (2005) observed that gross features, such as size, color, and edging are important features used to discriminate among coins such that when surface details of coins are obscured, gross features can be used as accurately as surface details in identifying coins. We hypothesized that if valuable objects are perceived as larger than they actually are (Dawson, 1975; Furnham, 1983; Lea, 1981; Smith, Fuller, & Forrest, 1975) then coins of higher value will be overestimated more often than coins of lower value.

#### **4.1 Method and Procedure**

Thirty-two participants recruited from an educational resource center completed a paper-and-pencil size judgment task as part of a larger study. Participants were presented with a series of circles of varying sizes and asked to identify the size that corresponded to specified coins. The relative position of the correctly sized circle was changed for subsequent items to minimize guessing. Size judgments were made for 1, 5, 20, 50 pesewas coins, and the 1-cedi coin.

#### **4.2 Results and Discussion**

Accuracy in size estimation increased with increase in coin value except for the 1-cedi coin (See Table 1). Eighty-seven and half percent (87.5%) of the participants drastically underestimated the size of the 1 pesewa coin as compared to the other coins, whereas the size of the 1-cedi coin was over-estimated by 71.9% of the participants.

The results of this study are consistent with previous findings that coins that are more valuable are perceived as larger than less valuable ones (Bruner & Goodman, 1947). Lea (1981) found a similar coin-overestimation effect in the United Kingdom after decimalization, thus suggesting that a change in currency could be associated with perceptual changes (Lea, 1981).

#### **5. Study 3: Exploring Coin Recognition**

The process of getting to know a new currency requires intentional examination of new notes and coins in order to determine distinguishing features that would facilitate their rapid identification during currency transactions. Also, the characteristics of the new notes and coins featured prominently in country-wide public education campaign preceding the launch of the new currency. The New Ghana cedi notes bear images of the founding fathers of the nation (known as the Big Six) whereas the pesewa coins bear images of Ghana's most important natural and human resources. The examination of coins and their identifying images should predict a high level of performance on coin memory tasks. However, the poor performance (such as under and over-estimations by 0.97 to 2.07cms (Dawson, 1975; Furnham & Spencer-Bowdage, 2003; Lea, 1981; Munroe, Monroe, & Daniels, 1969; Vroom, 1957), on coin memory tasks in countries where consumers have more positive attitudes to coins than in Ghana may suggest that our sample will have even poorer performance on coin recognition tasks. We tested this assumption with a study of the recognition of coins in circulation in Ghana.

#### **5.1 Method and Procedure**

One hundred and forty-seven volunteers from various universities and educational resource centers throughout Ghana answered a 4-item multiple choice questionnaire that required them to identify the Ghana cedi and pesewa coins from manipulated images (e.g. smaller coins were made larger to ensure visibility of markings whereas identifying marks were blurred in others). Each question required the identification of one of the six new Ghana coins, namely 1 cedi, 50, 20, 10, 5, and 1-pesewa coins.

#### **5.2 Results and Discussion**

Although 147 volunteers participated in the study, only 137 responded to the question on the 1 cedi. A similar pattern was observed across other responses. Of the 137 participants who responded to the question on the 1 cedi, 95.6 % accurately identified the coin, whereas the 50 pesewas had a 100% identification accuracy rate ( $N=134$ ). The 20 pesewas coin ( $N=136$ ) was accurately identified by 95.6% of the participants, and the 10 pesewas coin by 90% ( $N=100$ ) of the respondents. A large number of the participants (89.3%;  $N=131$ ) accurately identified the 5 pesewas, whereas the 1 pesewa coin was accurately identified by 89.0% ( $N=127$ ) of participants.

The results also showed that identification was higher for higher value coins (50 pesewas, 1 cedi, and 20 pesewas, respectively) as compared to lower value coins. Identification was lowest for the 1-pesewa coin. In comparison to the research done by Jones (1990) and Marmie & Healy (2004), the respondents in study 3 scored much higher than those in previous research. Jones (1990) found that participants in his study were unable to recall accurately the features of the British penny and the British 50 pence coin when asked to draw the coins features on a blank template (1990). Marmie and Healy (2004) also reported that participants had difficulty accurately recalling the features of both the US penny and the mercury dime. Most likely, this difference is explained by the fact that our task involved recognition whereas the previous studies involved free recall. We infer from the results that the poor identification of the 1-pesewa coin was related directly to the negative attitude of Ghanaians towards the coin.

#### **6. Study 4: The Perceived Value of “Lost” Coins**

Study 1 showed a difference in attitude between the 1-pesewa coin and the rest of the coins in circulation in Ghana. Our two subsequent studies (2 & 3) supported this trend. Given that none of these previous three studies (study 1, 2 & 3) explored in vivo behavior towards coins, we conducted an experiment to investigate whether attitudes towards coins suggested by the results of the three previous studies discussed above would be consistent with observable behaviors in real life settings. Furnham (1985) developed an unobtrusive method for behavioral assessment of perceived value of coins. Using a “lost” object technique, coins were individually dropped on pavements at various locations in a British town, and paired observers noted whether the passersby who saw each coin picked it up. The results showed a positive correlation between the value of the coin and its probability of being picked up. To explore the relationship between people’s attitudes and their behaviors towards coins, we replicated the “lost” coin experiment by Furnham (1985) and Boustead et al. (1992).

We designed a replication of Furnham’s (1985) study to assess indirectly the attitudes of Ghanaians to coins. We predicted that passersby would be more likely to pick high valued “lost” Ghana cedi coins than less valued coins. We also hypothesized that the perceived value of the coin, and the age and gender of the participants would predict coin pick-up behaviors. Finally, we predicted that whether the passerby was walking alone or in a group would affect the likelihood of the coin being picked up.



## 6.1 Method and Procedure

Six (1 cedi, 50 pesewa, 20 pesewa, 10 pesewa, and 1 pesewa) of the seven Ghanaian coins introduced with the redenomination were placed strategically in public spaces, such as on sidewalks and bus-stops, in parts of Accra, Ghana's capital city. Coins were placed during daylight hours at selected locations one at a time. The cut off time for a dropped coin to be picked up was 45 minutes after the drop. Locations for coin drops were based on the ease of visibility of the coin (given the physical nature of the surroundings), the amount of human traffic, and the absence of small-scale vendors nearby. Coins were dropped only on actual pavements (and not on unpaved walkways and footpaths). Sites that had extremely heavy human traffic (e.g. pavements where hawkers congregated) were avoided because the "lost" coin would not be easily seen. Similarly, places with extremely low human traffic (e.g. no passerby over a period of 5 minutes) were excluded. Places with moderate to significant amounts of litter were also avoided.

Pairs of observers positioned as unobtrusively as possible within sight of the coins noted whether pedestrians spotted them. We operationally defined coin sighting as a passerby looking directly at the coin, and/or physically responding to the presence of the coin. Recorded behaviors included a change in walking pace, a sudden stop, a change in facial expression (e.g. smile or surprise), or a verbal exclamation. Coin sightings confirmed by both observers were included in the data whereas those confirmed by only one observer (e.g. if the second observer was uncertain that a passerby had actually seen or picked the coin) were excluded. Observers also noted the approximate age (young or old), gender, whether a passerby was alone or in a group, how long it took for each coin to be picked up, and any relevant context-specific behaviors (e.g. in one case, the person walking with the coin-sighter laughed when an attempt was made to pick up the coin).

## 6.2 Results and Discussion

A total of seventy (81) non-tarnished coins (1 cedi, 50 pesewa, 20 pesewa, 10 pesewa, and 1 pesewa) were dropped in different locations at different times in public spaces in Accra (see Table 2). The coins were spotted 239 times by males ( $N = 134$ ), females ( $N = 103$ ), and both ( $N = 2$ ). Forty-nine (49) of the passersby were classified as old (40 years and above), and the remaining 190 were young (below 40 years old). Twenty-nine (29) of the passersby who spotted the coins were walking in a group, and 210 were walking alone. Sixty-four (64) of the passersby who spotted the coin also picked it up. Six of the coins were never picked within the allotted time (45 minutes), and 4 were never spotted.

The probability of picking a lost coin, after a passerby had spotted it, was calculated as a function of the number of passersby who actually picked it up divided by the total number of people who spotted the coin. The probability of picking a lost 50-pesewa coin (0.48) was higher than for a 1 cedi (0.41), 20 pesewa (0.41), 5 pesewa (0.31), and 10 pesewa (0.18) coin respectively. The probability of picking up a lost coin was higher for males (0.31) than for females (0.20). Older people were more likely to pick up a lost coin (0.31) than young passersby

(0.26). The probability for a passerby in a group to pick up a lost coin was higher (0.59) than for those who walked alone (0.22). If a coin was not picked up in the time allowed, it was replaced with a coin of a different value. Relative to the other coins, it took a shorter time for a 50 pesewa coin to be picked ( $M = 5$  minutes) than for 20 pesewa ( $M = 8$  minutes), 1 cedi ( $M = 10$  minutes), 5 pesewa ( $M = 10$  minutes), 10 pesewa ( $M = 13$  minutes) and 1 pesewa ( $M = 45$  minutes). Location did not have a significant effect on the probability of a coin being picked up.

A standard logistic regression analysis was conducted to assess whether gender, age, and number of people walking together significantly predicted whether or not a passerby would pick up a lost coin. When all 3 predictor variables were considered together, they significantly predicted whether a passerby would pick a lost coin or not,  $\chi^2 = 24.34$ ,  $df = 5$ ,  $N = 239$ ,  $p < .001$ , indicating that as a set, the predictors reliably distinguished between those who picked the sighted coin and those who did not pick. The effect size of the predictors was small, with Nagelkerke  $R^2 = .141$ . According to the Wald criterion only the number of people walking together reliably predicted the picking of a lost coin ( $\chi^2 = 16.34$ ,  $df = 1$ ,  $p < .001$ ). The change in odds associated with a change in walking in a group was  $-1.79$  (CI  $.070 - .398$ ), indicating that a passerby walking alone was 1.79 times less likely to pick a lost coin. With all predictors included in the model, 74.1% of cases were correctly predicted. However, accurate classification of cases from all 3 predictors was high for the prediction of not picking coins (96%) but poor for the prediction of picking coins (14.1%). Thus while number of people walking together at the time of spotting a lost coin reliably distinguish between the probability of picking or not picking a coin, the distinction was not strong.

Although the results of study 4 did not confirm the linear relationship between coin value and pick up behavior reported in other studies (Boustead et al., 1992; Furnham, 1985), there was a general trend towards such a relationship, with higher value coins (the 1 cedi, 50 pesewa, 20 pesewa) having higher probabilities of being picked than lower value coins (10 pesewa and 1 pesewa). The low pick up rate for the 1 pesewa coins was an indirect indicator of the negative attitude towards the coin. The results were similar to those reported elsewhere in this study. Not only was the 1 pesewa the least likely to be picked; it was never picked up at any location at which it was dropped. It must be noted, however, that of all coins it was also the least likely to be spotted.

### **7. Study 5: Typicality Rating of Money**

The general findings in the foregoing studies is that coins ranked low in acceptability as compared to notes, and hence do not make as good money as the old Ghana Cedi. Contrary to the expectations of the policy planners, the attitudes of Ghanaians towards coins have generally not been as favorable as those towards notes. Furnham and Argyle (1998) have pointed out that although money may have a legal status, its commercial acceptability is as important as its legality to merit consideration as "good money." According to the authors, other qualities of good money include its recognizability, portability, durability, stability, and

homogeneity (equal acceptability). Although the new currency included coins, their intended purpose to be recognized as good money at par with notes appears to have fallen short.

Despite the apparent setback with the reintroduction of coins, different forms of money are used concurrently within any given society. Rumiati and Lotto (1996)'s exploration of Italian research participants' concept of the money yielded 3 major categories of money: ready money (notes and coins), bank money (various bank products such as accounts, plastic, checks), and money substitutes (e.g. money orders and traveler's checks). An average size bank in the Western hemisphere today will offer at least the following banking products: savings accounts, checking accounts, debit/ATM cards, credit cards, and savings certificates (certificates of deposits).

Money options in Ghana post redenomination include banknotes and coins, plastic money (debit and ATM cards), checks, bank accounts, and various investment opportunities due to the introduction of the Ghana Stock Exchange in 1990 ([www.gse.com.gh](http://www.gse.com.gh)), with cash being the primary medium of exchange. Although Ghana is considered a predominantly cash society, non-cash payment forms with stored value cards similar to electronic cards used worldwide have been introduced at different times by different organizations into the country. For instance, the Social Security Bank (SSB) introduced the 'Sika' card (Emoney), which enables holders to conduct transactions without the use of cash. The Mondex card developed by England's National Westminster Bank in 1990 was introduced in Ghana in May 2000 (Oluniyi, 2008). Subsequently, various banks have introduced other electronic cards such as the 'Etranzact', the Visa card, MasterCard (Oluniyi, 2008); and the E-zwich (BOG, 2008). With the co-existence of many other forms of money in Ghana it was our expectation that typicality ratings would further show other aspects of the attitudes Ghanaians have for the redenomination and their general adjustment to the new currency. Specifically, we expected that the participants would rate the new currency including cashless forms of money more typical than the old currency.

### **7.1 Method and Procedure**

Ninety-nine (99) undergraduate volunteers from an economics class at a university in Ghana completed a questionnaire modeled after Rumiati and Lotto (1996). Participants rated the typicality of 35 Ghanaian money exemplars on a 7 point Likert-type scale (1= very atypical, 7 = very typical). The exemplars rated included notes and coins from the old and new currency, as well as cashless forms of financial transactions.

### **7.2 Results and Discussion**

The means and standard deviations of the typicality ratings are shown in Table 1. ATM cards were rated the most typical exemplar of the Ghanaian concept of money, while the 200-cedi coin in the old currency was rated least typical. Interestingly, ATM cards and Savings Accounts were rated more typical exemplars of money than any of the cash options. This outcome suggests a slight trend toward some cashless forms of financial transactions in Ghana. Of the cash options, the 5 and 20 new Ghana cedi notes were rated more typical than any of

the other notes and coins in circulation, and the 1-pesewa coin was rated the least typical of the new currency, which is consistent with the reported shortage of this coin in circulation. The new currency notes were rated more typical (4.98 – 5.14) than the new currency coins (4.17 – 4.89).

For cashless representations, cheques (5.21), bank drafts (5.21), and personal cheques (4.92), which have been in the financial system longer, were rated more typical than the Sika card (4.58) and ezwich/smart cards (4.63), newer arrivals on the financial scene. Yet, ATM cards were rated as more typical than the older forms. Traveler's cheques were rated least typical in the cashless category, which makes sense given that this medium is not used for within-country transactions. Financial investments in the form of Treasury Bills (4.88) were rated the most typical exemplar of money in that category.

The mean typicality ratings of the new currency ranged from 5.27 to 4.17, while the mean typicality ratings for the old currency ranged from 4.14 to 3.51. The small sample size precluded the running of a factor analysis to determine whether the structure of the Ghanaian respondents' concept of money was similar to Rumiati and Lotto's categories of ready money, bank money, and money substitutes. The difference between composite mean scores for the old and new currency mean typicality ratings was significant, indicating that the new currency was considered a more typical representation of the concept of money than the old currency,  $t(83) = -4.32, p < .001$ .

The findings showed that although Ghana is considered to be mostly a cash-based society, cashless products rated high as typical exemplars of the concept of money in this study. This is an indication that while cash is still a very important part of day-to-day financial transactions, other products such as ATM cards, investments, and checks are also considered typical representations of the concept of money in Ghana. Adaptation to the new currency was shown by the currency being rated as a more typical exemplar of money than the old currency. That participants in this study consistently rated the new coins as less typical of money (4.58 for 50 GP to 4.17 for 1GP) showed an overall negative attitude towards coins generally, and specifically to the 1 pesewa coin.

A number of factors undoubtedly influenced this outcome. First is the general nearly impractical nature of coins as a medium of business transactions. Coins are not only heavier than bank notes; their general smallness in value relative to paper money means that one has to carry more in terms of volume and weight in order to accomplish what less volume and weight in paper money can accomplish. Second, there are even other better ways of completing business transactions without the use of money, whether in the coins that are more traditional or bank notes.

The proliferation of non-cash payment forms — at least in the location where the study was conducted — in terms of ATM cards and other electronic forms of cash that are easier to use would suggest that coins would be rated as less typical of money. Third, the success of the currency re-denomination exercise and reintroduction of coin culture were predicated on the

successful control of inflation by the government. It is fair to say that the failure to keep inflation to a low level is perhaps one of the most important reasons for the low ratings given to coins as money by participants. Indeed, the inability to conduct any meaningful business transactions because of inflationary pressures and the increase in prices of goods and services that require the use of greater and heavier quantities of coins made it less likely that participants would come to view coins as typical of money.

## **8. General Discussion and Conclusion**

Over the past 500 years, money in the West African country of Ghana has undergone significant changes. It has transitioned from gold dust, *Cypraea moneta* and *Cypraea annulus* (cowrie shells) in the slave trade period (Guyer, 1999) through the British West African currency during the period of British colonial rule (Fuller, 2008), to several versions of post-independence currencies, culminating in the current version introduced by the Bank of Ghana in 2007. While currency change policies and implementation in different countries have been well documented, it is only recently that the experiences of people adapting to currency changes have been studied (see for example Gamble, 2006; Gamble, Gärling, Västfjäll, & Marell, 2005; Marques & Dehaene, 2004; Missier, Bonini, & Ranyard, 2007; Mussweiler & Englich, 2003; Raghuram & Srivastava, 2002; Ranyard, Burgoyne, Saldanha, & Routh, 2005). Given that every generation in Ghana has experienced a form of currency change, it was important to understand the nature of people's adaptation to the new currency forms, in order to inform policy makers about important aspects of currency redenomination. Furthermore, because West African countries have long expressed their intention to form an economic union using a single currency, the understanding of the process and problems associated with redenomination is important for these countries.

The studies presented in this paper examined attitudes (and attitude-related indices) towards newly introduced Ghanaian coins subsequent to Ghana's 2007 currency redenomination. Because the new currency was the medium of post-redenomination financial transactions, consumer attitudes towards the newly introduced money was an indicator of the success of the currency redenomination from the perspective of consumers. Although redenomination may be economically reasonable, it does not guarantee the automatic acceptance and integration of the new currency into the commercial activities of the society. Whereas economic factors like inflation may dictate the decision to redenominate a currency, it is the psychological aspects of the money that largely determines its adoption by consumers. Money that is easier to use within the socio-cultural context will result in positive attitudes and faster consumer adoption, whereas those that are not will be slower to be accepted or may be marginalized as shown in our data.

Whereas previous media reports (Apeadu, 2010; Dogbvi, 2010) and previous research (Dzokoto, et al., 2010; Dzokoto, Mensah, & Opare-Henaku, 2010; Dzokoto, Mensah, & Opare-

Henaku, 2011) have reported a generally negative attitude towards the new coins, results from the foregoing studies have shown that attitudes were not homogenously negative. Results from Study 1 found that in general, the new coins were preferred less than notes. Coins were considered inappropriate to be given as gift and tips. However, coins were not completely abhorred, with 59% of the sample reporting that they liked using coins and 56% stating that they valued coins highly. Coins had, therefore, become accepted as part of the new currency, with 83% of the sample reporting that they always made it a point to collect all their change after a purchase, and 75% of participants disagreeing that prices should be rounded up so that coins could be done away with. The acceptance of the new money by consumers was demonstrated by the high recognition rates of the coins in Study 3. However, participants in the study performed extremely poorly on the size estimation tasks in Study 2. A consistent finding throughout all the studies was the marginalization of the 1 pesewa coin, which was especially noticeable in Study 4, where no participants picked up a “lost” 1 pesewa coins in public.

Collectively, the results showed that the new Ghana coins were less preferred than previous notes with the most negative attitude and subsequent marginalization directed at the lowest denomination of coins rather than towards all coins. The marginalization of the 1-pesewa coin reflected a discrepancy between the official national legal tender and the reality of the actual money objects used in everyday financial transactions post-redenomination. The marginalization of the 1-pesewa coin showed that it was economically wasteful and costly for the Bank of Ghana to mint the coins. The irony is that the rejection of the 1-pesewa coin is also costly for the consumer because it leads to its rejection by vendors, thus leading to price rounding to the nearest 5 pesewa. Consumers also purchased more items than needed by the consumer in order to avoid change that included the 1-pesewa coin. Appeals by the government for the public to use the 1-pesewa coins did not result in attitudinal or behavioral change.

What makes an object money has as much to do with its designation as a medium of exchange and store of value by the authorities (legal status) as it does with its acceptance by consumers – its commercial acceptability (Furnham and Argyle, 1998). This point reinforces the idea that societies can, and do imbue objects with affective, symbolic, and behavioral qualities (Mitchell & Mickel, 1999) and that these imbued characteristics can at times impact the circulation rates of money in the economy irrespective of what the actual face value predicts (Furnham& Argyle, 1998). It is important for policy makers to consider culturally relevant designs and meanings in addition to economic considerations when planning currency redenomination. Money and money objects have previously been described as symbolic referents, social systems, material practices (Gilbert, 2005), and political statements ((Mudd & Fagin, 2008; Helleiner, 1998; Fuller, 2008). The results of the present studies have added another dimension: that money could be considered a consumer statement.

Whereas money is an inevitable aspect of modern living, we argue that as a consumer product, it is influenced by factors that go beyond the laws of demand and supply. In typical

consumer behavior discourse, money is a medium of exchange that can be utilized to purchase commodities far more often than as a commodity in its own right. The results of our studies and others reported in the literature, however, show that money can be conceptualized as a consumer product that is subject to consumer attitudes. Hence, consumer theory can also help us understand factors that shape the consumer's decision to use or refrain from using various money objects. Whereas factors like consequent attitudes and behaviors concerning money as a product are particularly evident after the introduction of a new currency in a developing economy like Ghana, similar approaches can be taken to understand the use of money objects in developed economies, (for example, in the adoption and use of money-technology interfaces such as debit and credit cards, online banking, and mobile money).

## References

- Allport, G.W. (1935). In C. Murchison (Ed.). *A handbook of social psychology*. Worcester, Mass.: Clark University Press, pp. 798-844.
- Apeadu, M. (2010, June 21). We should use the one pesewa coin. *Daily Graphic*, p10.
- Ashley, W.R., Harper, R.S., Runyon, D.L. (1951). The Perceived size of coins in normal and hypnotically induced economic states. *The American Journal of Psychology*, 64, 564-572.
- Boustead, E., Cottee, K., Farquhar, R., Jonas, R., Walter, J., & Webley, P. (1992). The perceived value of a new coin. *Journal of Social Psychology*, 132, 143-144.
- Bredahl, L. (2001). Determinants of consumer attitudes and purchase intentions with regard to genetically modified foods – Results of a cross-national survey. *Journal of Consumer Policy*, 24, 23-61.
- Brown, G.D.A., Preece, T., & Hulme C. (2000). Oscillator-based memory for serial order. *Psychological Review*, 107, 127-181.
- Bruner, J., & Goodman, C. (1947). Value and need as organizing factors in perception. *Journal of Abnormal and Social Psychology*, 42, 33-44.
- Cowan, N. (2001). The magical number 4 in short-term memory: Current consideration of mental storage capacity. *Behavioral and Brain Sciences*, 24, 87-185.
- Dawson, J. (1975). Socio-economic differences in size judgments of disc and coins by Chinese primary VI children in Hong Kong. *Perceptual and Motor Skills*, 41, 107-110.
- Dogbevi, E. K. (2010). *Bank of Ghana to modify one pesewa coin*. Retrieved January 3, 2011 from <http://www.ghanabusinessnews.com/2010/04/20/bank-of-ghana-to-modify-one-pesewa-coin/>.
- Dzokoto, V, Mensah, C., Twum-Asante, M., & Opare-Henaku, A. (2010). Deceiving our minds: A qualitative exploration of the money illusion effect in post-redenomination Ghana". *Journal of Consumer Policy*, 33, 339-353.
- Dzokoto, V. A. & Mensah, E. C. (2010). Making sense of a new currency: An exploration of Ghanaian adaptation to the new Ghana cedi. *Journal of Applied Business and Economics*, 10 (5), 11-18.

- Feldman, J.M., & Lynch, J.G. (1988). Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior. *Journal of Applied Psychology, 73*(3), 421-435.
- Fishbein, M., & Ajzen, I (1975). *Belief, attitude, intention, and behavior: an introduction to theory and research*. Reading, MA :Addison Wesley Publishing Company.
- Fuller, H. (2008). Civitatis Ghaniensis conditor: Kwame Nkrumah, symbolic nationalism and the iconography of Ghanaian money 1957 – the golden jubilee. *Nations and Nationalism 14* (3), 520–541.
- Furnham, A. (1983). Inflation and the estimated size of notes. *Journal of Economic Psychology, 4*, 349-352.
- Furnham, A. F. (1985). The perceived value of small coins. *Journal of Social Psychology, 125*, 571-575.
- Furnham, A., & Spencer-Bowdage, S (2003). Inflation and the estimated size of withdrawn notes and coins. *Journal of Socio-Economics 32*, 351–354.
- Gamble, A. (2006). Euro illusion or the reverse? Effects of currency and income on price evaluations. *Journal of Economic Psychology, 27*, 531–542.
- Gamble, A., Gärling, T., Västfjäll, D., & Marell, A. (2005) Interaction effects of mood induction and nominal representation of price on consumer choice. *Journal of Retailing & Consumer Services, 12*, 6, p397-406.
- Garcia, R., & Atkin, T. (2002). Coo-petition for the diffusion of resistant innovations: A case study in the global wine industry. Institute for Global Innovation Management Working Paper, 05-002 (pp. 1–22).
- Gilbert, E. (2005). Common cents: Situating money in time and place. *Economy and Society, 34*, 3, 357-388.
- Grabner-Kraeuter, S. (2002). The role of consumers' trust in online-shopping. *Journal of Business Ethics, 39*, 43–50.
- Guyer, J. (1999). Comparisons and equivalencies in Africa and Melanesia. In Akin D, Robbins J, eds. (1999). *Money and Modernity: State and Local Currencies in Melanesia*. Pittsburgh, PA: Univ. Pittsburgh Press, 232–45.
- Helleiner, E. (1998). National Currencies and National Identities, *American Behavioral Scientist, 41*, 1409-1436.
- Horner, J.M., & Comstock, S.P. (2005).What are the important visual features for coin discrimination? *Applied Cognitive Psychology, 19*, 1211-1218.
- Jenkins, J. G., & Dallenbach, K. M. (1924). Obliviscence during sleep and waking. *American Journal of Psychology, 35*, 605-612.
- Jones, G.V. (1990). Misremembering a common object: when left is right. *Memory and Cognition, 18*, 174-182.
- Jonides, J., Lewis, R. L., Nee, D. E., Lustig, C. A., Berman, M. G., & Moore K. S. (2008). The mind and brain of short-term memory. *Annual Review of Psychology, 59*, 193-224.



- Kikuno, H. (1991). Memory for distinctive and common features of coins. *Psychological Reports*, 69, 867-870.
- Kikuno, H. (1993). Schema of coins and memory for features of coins. *Perceptual and Motor Skills*, 77, 1235-1238.
- Kleijnen, M; Lee, N, & Wetzels, M. (2009). An exploration of consumer resistance to innovation and its antecedents. *Journal of Economic Psychology* 30, 344–357.
- Kosslyn, S. M., & Rabin, C. (1999). The representation of left–right orientation: A dissociation between imagery and perceptual recognition. *Visual Cognition*, 6, 497–508.
- Lea, S. (1981). Inflation, decimalization and the perceived size of coins. *Journal of Economic Psychology*, 1, 79-81.
- Leiser, D., Izak, G. (1987). The money size illusion as a barometer of confidence: the case of high inflation in Israel. *Journal of Economic Psychology* 8, 3, 347-356.
- Lennon, S. J., Kim, M., Johnson, K. K. P., Jolly, L. D., Damhorst, M. L., & Jasper, C. R. (2007). A longitudinal look at rural consumer adoption of online shopping. *Psychology & Marketing*, 24, 4, 375–401.
- Marmie, William R., & Healy, Alice F. (2004). Memory for common objects: brief intentional study is sufficient to overcome poor recall of us coin features . *Applied Cognitive Psychology*, 18, 445-453.
- Marques, J. F., & Dehaene, S. (2004) Developing intuition for prices in Euros: Rescaling or relearning prices? *Journal of Experimental Psychology Applied* 10, 148–155.
- May, C. P., Hasher, L., & Kane, M. J. (1999). The role of interference in memory span. *Memory & Cognition*, 27, 759–767.
- McCurdy, H. (1956). Coin perception studies and the concept of schemata. *Psychological Review*, 63, 160-168.
- Merritt, C., & Fowler, R. (1948). The pecuniary honesty of the public at large. *Journal of Abnormal and Social Psychology*, 43, 90-93.
- Miller, R. R., & Laborda, M. A. (2011). Preventing recovery from extinction and relapse a product of current retrieval cues and memory strengths. *Current Directions in Psychological Science*, 20, 325-329.
- Missier, F., Bonini, N., & Ranyard, R. (2007). The euro illusion in consumers' price estimation: An Italian–Irish comparison in the third year of the euro. *Journal of Consumer Policy*, 30, 4, p337-354.
- Mitchell, T., & Mickel, A. (1999). The meaning of money: an individual-difference perspective. *Academy of Management Review*, 24, 3, 568-578.
- Mudd, D. A. & Fagin, M. (2008). *Money and sovereignty as expressed in gold coinage*.
- Munroe, Robert L. , Munroe, Ruth H. and Daniels, Robert E.(1969) Effect of status and values on estimation of coin size in two east African societies. *The Journal of Social Psychology*, 77, 1, 25-34.

- Mussweiler, T., & Englich, B. (2003). Adapting to the Euro: Evidence from bias reduction. *Journal of Economic Psychology, 24*, 285-292.
- Nickerson, R S., & Adams, M. J. (1979). Long-term memory for a common object. *Cognitive Psychology, 11*, 287-307.
- Nicolas, S., Marchal, A., & Guida, A. (2004). La Mémoire d'une pièce d'Euro. *Revue Européenne de Psychologie Appliquée, 54*, 247 – 250.
- Peacefmonline.com News (2010). *Pesewa coins rusting...50 & 20 Ghp worse affected*. Retrieved January 3, 2011 from <http://peacefmonline.com/news/20100/44479.php>.
- Peterson, L. R., & Peterson, M. J. (1959). Short-term retention of individual verbal items. *Journal of Experimental Psychology, 58*, 193-198.
- Raghubir, P., & Srivastava, J. (2002). Effect of face value on product valuation in foreign currencies. *Journal of Consumer Research, 29*, 335–347.
- Raghubir, P., & Srivastava, J. (2002). Effect of face value on product valuation in foreign currencies. *Journal of Consumer Research, 29*, 335–347.
- Ranyard, R., Burgoyne, C. B., Saldanha, G., & Routh, D. A. (2005). A qualitative study of adaptation to the euro in the republic of Ireland: I. Attitudes, the 'euro illusion' and the perception of prices. *Journal of Community and Applied Social Psychology, 15*, 95-107.
- Rubin, D.C., & Kontis, T.C. (1983). A schema for common cents. *Memory and Cognition, 11*, 335-341.
- Smith, H. V., Fuller, R. G. C., & Forrest, D. W. (1975). Coin value and perceived size: A longitudinal study. *Perceptual and Motor Skills, 41*, 227-232.
- Surowiecki, J. (2009). Change we can't believe in. *New Yorker*; 8, 17, p42.
- Tajfel, H. (1957). Value and the perceptual judgment of magnitude. *Psychological Review, 64*, 192-204.
- Vroom, V. H. (1957). Effect of design on estimation of size of coins. *Canadian Journal of Psychology/Revue canadienne de psychologie, 11, 2*, 89-92. doi: 10.1037/h0083699.
- Weiner, B. (1966). Motivation and memory. *Psychological Monographs: General and Applied, 80*, 1-22. doi: 10.1037/h0093896.
- Yamauchi, K.T. & Templer, D.I. (1982). The development of a money attitude scale. *Journal of Personality Assessment, 46*, 522–528.

## **Acknowledgements**

The authors are indebted to Mrs. Nancy Keteku for permission to recruit research participants. The authors also wish to thank and Bernice Affotey, Aku Hayfron, and Esther Sankah for recruitment assistance; Sandra Lyn, Akyaa Boakye-Dankwa, Kristyn Dawson, Michelle Cosely, Kariss Rogers, and Gabriella Millard for research assistance; and students of the 2010 Virginia Commonwealth University Ghana Study Abroad Class for their involvement in the pilot data collection phase of the "lost" coin experiment. Finally, the authors wish to acknowledge Dr.

Edwin Mensah for discussions that led to the development of the series of studies presented in this paper.

## Coin Attitude Questionnaire

Read each statement carefully. Respond in a manner that best represents your experience.

**1 = Strongly Disagree**

**2 = Disagree**

**3 = Slightly Disagree**

**4 = Neither Disagree or Agree**

**5 = Slightly Agree**

**6 = Agree**

**7 = Strongly Agree**

1. I discard 1p coins when I get them as change
2. I discard 5p coins when I get them as change
3. I discard 10p coins when I get them as change
4. I discard 20p coins when I get them as change
5. I discard 50p coins when I get them as change
6. I discard 1 cedi coins when I get them as change
7. I do not have a place in my wallet/purse/bag to keep coins
8. I prefer the 1 cedi note to the 1 cedi coin
9. Giving coins in church collection is insulting
10. I would prefer being given 2 cedi in notes rather than in coins
11. Coins are awkward to handle
12. I do not consider coins to be "real money"
13. I like using coins
14. I think all prices should be rounded up to the nearest cedi so we can do away with coins
15. Coins are for poor people
16. If someone were giving me money (under 5 cedis), I would prefer it in notes rather than coins
17. I value coins very highly
18. The more coins you have, the better off you are
19. I would not give coins as a thank you to someone for something they did for me
20. I always aim to use the coins I receive
21. If I have a high number of coins, I would not carry them with me
22. I would not use coins in my everyday financial transactions
23. I plan to save my coins for a rainy day
24. I make it a point to collect all my balance, even if it is in coins
25. I never intend on keeping my coins
26. I always keep a few coins for emergencies

## Tables

Table 1: Accuracy of coin estimation

Coin	Estimation Rate (%)		
	Under Est.	Accurate Est.	Over Est.
1p	87.5	9.4	3.1
5p	68.8	31.3	--*
20p	43.8	50.0	6.3
50p	15.6	59.4	25.0
1cedi	--*	28.1	71.9

\* Underestimation and overestimation respectively were not options for these two items based on the size of the circles included in the study material for those items.

Table 2: Frequency of sighted and picked coins

Coin	Dropped	Sighted	Picked	Not Picked
1p	16	37	-	37
5p	13	39	12	27
10p	13	72	13	59
20p	13	32	13	19
50p	13	27	13	14
1cedi	13	32	13	19
<b>Total</b>	<b>81</b>	<b>239</b>	<b>64</b>	<b>175</b>

**Figures**

