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Perceptions on the impact of plastic & mobile money / (Eco-cash) on agricultural productivity in Zimbabwe's smallholder farming communities: A case of Insuza ward in Matabeleland North Region

Chisango Future Fortune T

Senior Lecturer; Zimbabwe Open University, Faculty of Agriculture, Harare, Zimbabwe

Abstract
Zimbabwe's perennial challenges of cash crisis agitated major transformations in the mode of doing business and transacting in the banking system to facilitate trade and commerce particularly at micro-level. Technological advancement in this regard has witnessed the development of anumber of innovative products to facilitate payment for goods and services by consumers. Though customers have shown varying preferences over the usage of the new innovations with plastic money shooting up to 17.6%, it is generally perceived that uptake by farmers is however facing strong resistance as they remain sceptical and insist on the use of hard cash and bartering. The study conducted in Insuza ward of Matabeleland North Region therefore sought to to assess how ordinary Zimbabweans view impacts of plastic and mobile money/ (eco-cash) on agricultural productivity particularly focusing on the country's marginalised rural commfunities. To generate the required data a stratified sampling procedure based on demographic characteristics was used to draw a sample of 100 participants from the ward's population of 842 inhabitants. The population was stratified to ensure homogeneity in terms of the variables under investigation to minimise variability in observed outcomes of interest per stratum as alluded to by (Chimedza, Chipoyera and Mupambireyi, 2004). A questionnaire and individual household interviews were used for purposes of gathering the relevant data from respondents. A Likert scale guided the design of the questions and presentation of the findings. The study therefore opined that though farmers need education on the package of the new technologies it is paramount that the challenges bedevilling the Zimbabwean economy are addressed to restore confidence in investors and the generality of the rural populace. Furthermore farmers should not be viewed as laggards; as suchit is imperative that new technologies should borrow from the indigenous technology systems for relaxed acceptance and adoption by local communities. Indigenous technology systems should instead provide the foundation upon which new innovations that aredemand driven and community based are implemented.

Keywords: Economic impacts, Plastic& mobile money, Plastic cards, ATM (Automated Teller Machine), POS (point of sale) Debit & Credit cards, Electronic Banking, Information Technology

1. Introduction
The introduction of advanced technology based systems in Zimbabwe's banking services resulted in major transformations in terms of how financial institutions and other players in the sector offered services to clients. Use of plastic and mobile money/ eco-cash has come as a form of convenience to ease the liquidity and cash crisis facing the country and fuelling catastrophic effects on the general public particularly smallholder farmers in the rural communities. Though the innovation was becoming a viable option for interaction between financial service providers and their customers as cited by Rotchanakitumnuai and Speece, (2004) [4] its uptake by farmers is however facing strong resistanceas these are sceptical and insist on their traditional habits of transacting in hard cash and bartering. The Zimbabwean government through its Reserve Bank/ the central financing institution is therefore exploring ways to encourage the use of plastic and mobile money and foster its adoption by the rural populace. As the country manoeuvres to become cashless economy stakeholders should direct their effort on educating the public to restore confidence in the local banking sector which was eroded during the hyperinflationary period. It is also imperative that such an initiative would need heavy capitalisation in installing automated teller machines (ATMs), Swiping Points of Sale (POS) and eco-cash service outlets in remote areas to improve on accessibility by the generality of the populace in the countryside. Plastic and mobile money should be accepted as a developmental facet which apart from withdrawing money on ATMs or transacting on a Point of Sale (POS) in a retail market, is a technology which enhances security, portability, 24 hour accessibility to account balances, and eases payment of monthly utility bills or transfer funds between accounts as cited by Kaseke, (2012) and FBC, (2010). It is however pathetic that as the government seems to be advocating for the new technologies the general public appears to be in a dilemma as they lack knowledge on the benefits of the package associated with the innovation. It is against such a background that the study to capture participants' perceptions on impacts of plastic and mobile money/ (eco-cash) particularly Zimbabwe's smallholder agricultural productivity was carried out in Insuza ward of Matabeleland North Region.

2. Background of the study
Zimbabwean economy has for decades depended and flourished on agriculture and smallholder farmers were pivotal in producing bulk of the food which was consumed locally while the commercial sector was inclined to intensive specialized activities for cash and generation of foreign currency through exports. Agriculture in Zimbabwe used to

employ 67 per cent of the population, which accounted for about 4, 2 million people in the production and manufacturing sectors. Investing in the sector was thus imperative that it would help in creating more jobs in the country. The advent of fast track land reform FTLR, indigenization and community share ownership programs however witnessed a backward shift in agricultural activities as the production curves commenced to take a nose dive trend leading most smallholder farmers fail to produce even enough to suffice the nutritional requirements of their households. The catastrophic impact of these programs did not spare the country's productive and banking sectors as their coffers dried up owing to the central bank's inability to lure direct foreign investment and incentivize the thriving local manufacturers to boost production. There forms presented unique challenges for the Zimbabwean banking sector which witnessed withdrawal of some players in the sector and closing shop of many financial institutions. The liquidity crisis paralyzed the entire banking sector. Without a sound and effective banking system Zimbabwe found it tough to revive and redirect its economy. In a country where politics takes precedence over economic activities the banking system becomes vulnerable to complex hassles which may cripple its operations and discredit its brand image; true case of the Zimbabwean scenario.

The banking system in Zimbabwe should therefore be allowed space to realign and direct focuson real challenges of cash crisis and those posed by the technological advancement as the country intends to become a moneyless nation, but with citizens transacting as usual in the immediate future. As noted elsewhere mere technological advancement or introduction of innovative products cannot on its own improve the state of affairs, customers as an integral component need to be educated and appraised to embrace the technologies positively. Hence imperative that banks should offer an ideal package of services and products but taking cognizance of the customers' needs, preferences, perceptions and convenience as cited by Sushma and Patil, (2014) [6]. With the introduction of plastic and mobile money/ (eco-cash) banks' services became so liberalised that a customer would access crucial services anywhere and at the most convenient time to the client. Advancement in information technology has also made it possible for Zimbabwean banks to deliver products and services efficiently and improve their customer base without necessarily opening new branches in the countryside. The current banking trends have neutralized the traditional jinx, where banks were only concerned with acceptance of deposits from customers and lending surplus money to suitable customers at some rate of interest (Deva, 2005) [1]. The rural populace in most African nations; with Zimbabwe not an exception preferred banking in form of livestock particularly cattle and a few with liquid cash would bury it in metal tins and trunks.

The main reason behind the nationalization of Zimbabwe's Reserve Bank RBZ was to give the government more control of credit delivery systems in order to support and sustain the new much opposed agrarian reform FTLR of the year 2000, while discharging sound social obligations in the fragmented resettlement areas. As directed by the central bank RBZ the country's major farmers' financing institutions such as the agricultural development bank Agri-bank and Commercial Bank of Zimbabwe CBZ were mandated to uplift the neglected areas like agriculture, small scale mining and SMES as these have become the major drivers of the country's economy. While fulfilling the social objectives, the cost of banking operations increased, their coffers dwindled as they were dealing with non-banking and depositing business community; thus profitability of such banks declined and those that succumbed had to down size and close shop in some branches. Policies following the FTLR ushered in a new era which effected a paradigm shift in the country's financial sector. As such Zimbabwe's banking industry witnessed severe challenges and to curtail the catastrophic effects of such difficulties it had to adopt new information technology and computer application innovations. To ease the eminent cash crisis the new technologies replaced the traditional banking with a wide range of plastic and mobile money packages comprising e-banking products and services. ATM (Automated Teller Machine), Internet Banking, Credit Cards, PC banking, Debit Cards and Smart Cards constituted the main items used under the new technologies. Poor adoption of the innovation particularly by the rural populace has incapacitated the use of plastic money to make strides across the economic divide and register meaningful contribution on the country's economy. As smallholder farmers stumble to realize the relevance of such transformations in the banking sector and in advancing rural livelihoods education is key in appraising the rural households of the new technologies. It is therefore against this backdrop that a study aimed at capturing the rural populace's perceptions on impacts of plastic and mobile money was carried out in Matabeleland North Region.

It is opined that Zimbabwe has only two switching systems namely Visa and Zim-switch. Visa is assumed to be a switch that covers both local and foreign transactions whereas Zim-switch is a local switch specifically meant for transacting within the borders of Zimbabwe. The country's market is dominated by debit and credit cards which are functional online. Credit cards include international Visa and Master Cards and these are issued out by banks such as Standard Chartered Bank, NMB, CBZ and ZB Bank. Most of the card products operating in Zimbabwe are debit cards which allow access to funds by clients through ATMs and POS terminals.

2.1 Statement of the problem

The emergency of plastic and mobile money in Zimbabwe triggered a lot of activity in telecommunications and the banking sector, as institutions scrambled for a share grab in the hybrid financial services. The agricultural sector also adopted the new technologies to ease challenges faced by farmers on procurement of inputs and marketing of agricultural produce. Though the initiative was a viable option for interaction between financial service providers and their customers, its uptake by farmers is however facing resistance as they remain sceptical and insist on their traditional ways of transacting in hard cash and bartering. To break the jinx the Zimbabwean government through its central bank RBZ is therefore exploring ways to encourage the use of plastic and mobile money and foster its adoption by the rural populace who constitute the largest proportion of the country's population. As the country manoeuvres to become a cashless economy the study opined that stakeholders had to direct their effort on educating the public to restore confidence among the rural households which fizzled out during the hyperinflationary period.

2.2 Research Objectives

The objectives of the study were;

- To ascertain farmers' preferences on modes of transacting and establish whether they understand and appreciate the role of plastic and mobile money in agricultural pecuniary transactions
- To establish whether rural households are acquainted with the benefits and challenges associated with adopting plastic money and eco-cash facilities as medium of transacting in agriculture
- To identify measures to be taken to improve adoption and uptake of plastic money and Eco-cash as new innovation in rural agriculture

3. Research methodology

The intention of the study was to assess how ordinary Zimbabweans perceive economic impacts of plastic and mobile money/ (eco-cash) on economic activities particularly agricultural productivity in the country's smallholder marginalised communities; with particular reference to Insuza ward in Matabeleland North Region. A descriptive survey design which is a scientific investigation normally used to study large and small populations through selecting and studying large samples chosen from the largest population in order to discover the relative incidents or distribution of variables on a specific area of study Kirlinger, (1973) [5] was used. Stratified sampling procedure based on demographic characteristics was employed to draw a sample of 100 participants from the ward's population of 842 inhabitants for purposes of data collection. The population was stratified to ensure homogeneity in terms of the variable under investigation to minimise variability in observed outcomes of interest per stratum as alluded to by (Chimedza, Chipoyera and Mupambireyi, 2004) [2]. A questionnaire and household interviews were used to generate the required data from the respondents. A Likert scale guided the design of the questions and presentation of the findings.

4. Results and discussions

Farmers' preferences on mode of transacting

Respondents were asked to identify the mode of transacting they prefer to use when procuring inputs and marketing agricultural produce and the following was observed;

Table 4.1: Preferences on the Mode of transacting

Mode of payment	No. of Users	No. of Users as a Percentage
Cash only	40	40%
Eco-cash only	20	20%
Cash and Eco-cash	30	30%
Swipe/visa cards	8	8%
Registered bank transfers	2	2%
Cheque	0	0%

A probe into users' preferences on the transaction/payment mode desired the indication was that the majority of farmers constituting forty percent favoured cash only as a medium of exchange as they regard it a traditionally acceptable means which is easy and not associated with the hussles of distorted additional transaction costs. Twenty percent of the respondents however indicated that they preferred Eco-cash only as it is time saving and can be accessed at the user's convenience even at odd hours of the day. Thirty percent of the participants nevertheless showed interest in both Cash and Eco-cash transactions citing convenience and the ease of doing business where the user is flexible to use more than one option. It was however saddening to note that only eight per cent of the participants had an inclination on the modern technology of the plastic money where purchase is effected through swiping at ATMs, POS terminals in retail outlets and pay-pal for international transactions. This indicated that diffusion and adoption of plastic money as a new innovation in Zimbabwe's rural communities was failing to break through hence the need for extension of knowledge on the use of the new technology to the rural populace. Only two percent of the participants insisted on the use of bank transfers RTGS as they circumvent the risk of moving with huge sums of money by users. It was observed that cheques are no longer in use in Zimbabwe's rural communities as indicated by zero percent response rate of users.

Benefits in using plastic and mobile money

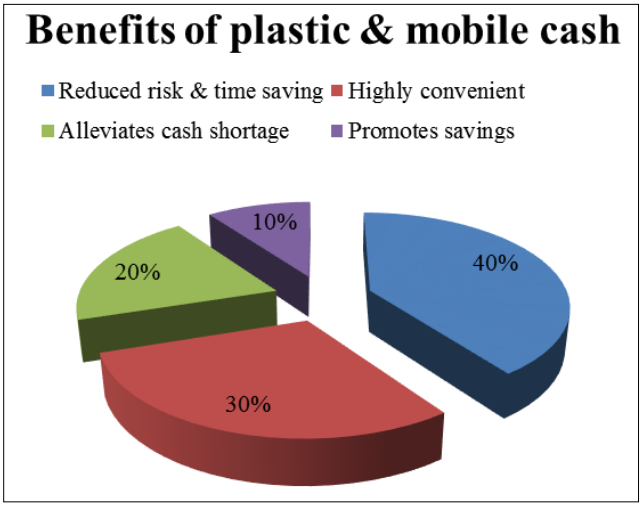

Fig 4.1: Benefits of using plastic money

Forty percent of the respondents indicated that use of plastic money reduces the risks associated with transacting on hard currency/cash which is bulky and readily usable without further security checks being applied apart from the serial numbers and the water-mark features. They cited the need for secret pin numbers and user-names for visa-card holders as an effective security feature which offers plastic and mobile money an edge over hard cash as it reduces the risk of theft and fraudulent vices. the participants also indicated that the technologies were time saving as they reduced queues in banking halls as compared to the conventional systems where clients jostle for the scarce hard cash. Twenty percent of the respondents however ascribed to the notion that the innovation was a positive strategy in alleviating cash shortages particularly during these trying moments when the country's economy is bleeding heavily and experiencing stern liquidity challenges. Only ten percent of the participants showed that the use of plastic and mobile money promote the desire to save among clients; this however does not apply in a failing economy where all citizens toil for meagre disposable incomes for basics and the propensity to save diminishes drastically to the zero mark.

Perceptions on Challenges on the use of plastic and mobile money/Eco-cash

Tables 4.2a & 4.2b: Challenges on the use of plastic and mobile money/Eco-cash

Challenges in using plastic money	Frequency	Percent
Sometimes cards are not read	5	5%
Banks offline	10	10%
Bank not on Zim-switch	7	7%
Transaction fails after debiting	11	11%
high charges	10	10%
Swiping time consuming	15	15%
Needs high level of literacy	12	12%
Ease to forget PIN	8	8%
Not user friendly to the disabled/blind	9	9%
Not user friendly to the old citizens and the illiterate	13	13%
Total	respondents	100

Challenges associated with eco-cash	Frequency	Percent
Transactions to wrong recipients	12	12%
Difficult to operate	23	23%
High operational costs	25	25%
Disrupted by network failure	30	30%
Fraudulent cases by some agents	10	10%

Tables 4.2a & 4.2b above highlight some of the challenges encountered by respondents in using plastic and mobile/ eco-cash facilities respectively. Fifteen percent of the participants indicated that use of plastic money through swiping is time consuming as the service provision depends heavily on the availability and efficiency of internet connectivity and cited that banks are usually offline. Thirteen percent of the respondents cited that the facility is not user friendly as it was a prerequisite that clients had to know and punch their correct secret pin; a security item, before commencement of any transaction. Twelve percent of the participants however indicated that the innovation needed high level of literacy for users to access the service. On mobile/ eco-cash technologies a significant number of respondents constituting thirty percent expressed disgruntlement over failure to access service due to network challenges which are mostly a result of power outages in the country. Twenty-five percent of the participants retorted that the operational costs/ charges by service providers were exorbitant hence prohibitive to the generality of the rural populace. Twenty-three percent echoed same sentiments as on plastic money that the facility was not user friendly particularly to the old citizens and those with impaired vision/ the blind. They indicated that the facility also required some level of literacy to facilitate transacting through mobile phones.

5. Conclusions

This study focused on the perceptions of the rural populace on impacts of plastic and mobile money/ (eco-cash) on agricultural productivity in Zimbabwe's smallholder farming communities. It was observed that the usage of plastic money and eco-cash facilities was to a larger extent influenced by individual factors such as knowledge; users' resources such as information, peer influence and lifestyle patterns in societies. It was imperative that these had an impact on the diffusion and adoption of plastic money and eco-cash as new technologies in Zimbabwe's rural communities. In terms of use of plastic money, the study concluded that literacy, age and disability particularly visual impairment had a significant effect on the adoption and use of the innovation by rural households. High level of illiteracy in rural communities was thus observed to be the major contributory factor in the slow and poor uptake of new technologies in the country's marginalised areas. With reference to benefits of using plastic and mobile money, it was established that though the majority of the respondents had knowledge on the merits of the new technologies, they however cited the current economic crisis that has paralysed the banking sector as the major prohibitive block as it has left most farmers with diminished levels of bankable incomes. And as the country moves towards embracing the controversial bond notes, a local token currency assumed equivalent to the US dollar, the rural populace is sceptical about accommodating the new technologies particularly the plastic money due to fear of the unknown and distorted charges associated with the use of the systems. The study therefore opined that though farmers need education on the package of the new technologies it is paramount that the challenges bedevilling the Zimbabwean economy are addressed to restore confidence in investors and the generality of the rural populace. Farmers are not laggards it is therefore imperative that new technologies should not be divorced from the indigenous technology systems; these should instead provide the foundation upon which new innovations that are community based and demand driven are implemented.

6. Recommendations

- The study opines that though farmers need education on the package of the new technologies it is paramount that the challenges bedevilling the Zimbabwean economy are addressed to restore confidence in all stakeholders and the generality of the rural populace.
- The rural populace needs to be educated particularly at this juncture when the country moves towards embracing the controversial bond notes, a local token currency assumed equivalent to the US dollar, as the rural populace is sceptical about accommodating the new technologies particularly the plastic money due fear of the unknown and exorbitant charges associated with the so called new technologies.
- For rapid acceptance and adoption of new technologies farmers should not be regarded as laggards, they need to be accorded their dignity and allowed to participate through community based participatory approaches for undertakings intended to benefit them, it is thus imperative that new technologies should not be divorced from the indigenous technology systems; these should instead provide the foundation upon which new innovations that are community based and demand driven are implemented.
- User friendly gadgets such as POS terminal machines and handsets – to cater for the disadvantaged section of the society such as the aged, illiterate and physically handicapped especially the blind should be availed for users. The rural populace in Zimbabwe mainly comprises the aged, illiterate and the disabled as the young energetic citizens migrate to seek employment elsewhere. The study established that the use of braille POS terminal machines and phones can be a sound option to ease the challenges faced by the blind while gadgets that perform/ work on

verbal instructions or audio commands can be ideal for the aged and illiterate citizens.

- The adoption of electronic banking and eco-cash facilities can be improved by advancing network availability to minimise disruptions for users. Thus installation of network boosters in rural areas to reduce network congestion is highly commendable.
- Demand curve for plastic money has ascended by 17.6% and as of the last quarter of the year 2016, 20 000 POS outlets have been installed countrywide these are still insufficient and unevenly distributed as they are congested in urban centres it is therefore critical that to improve on accessibility by farmers more of such points need to be established in all agro-dealer outlets across the country.

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