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# Unveiling the Real Digital Savings: An Exploratory Study on Emerging Enablers of Financial Inclusion

*Research-in-Progress (Developmental Paper)*

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## Abstract

Digital savings has become an enabler of financial inclusion and economic empowerment in developing countries. However, questions still arise over the category of consumers these existing digital savings products intend to serve. Existing literature points to the benefits that a savings account provides – financial health, buffer for emergencies, a foothold for investments, etc. While the new players have stepped in to bridge the exclusion gap left by the traditional banks, a select customer segment is being excluded by default. The product and service offerings from current providers boast of exceptional digital experiences, aesthetic user interfaces, fancy dashboards, trackable transaction tools, and convenience, individuals without access to the internet and across the digital divide are not being targeted. Consequently, this degrades the financial inclusion drive. Similarly, the context of digital savings remains undefined leading to key misconceptions in the subject. This paper examines whether digital savings includes or excludes the unbanked and low-income population who need such services. For digital savings to achieve its full potential in financial inclusion, this paper argues that providers need to consider users without internet access in their delivery of digital savings products. Thus, it becomes imperative to examine whether the expected users are the apparent consumers of such products and services.

**Keywords:** *Developing economies, Digital savings, Financial inclusion, Innovation, Information Systems, Internet, Mobile, Unbanked and Underserved*

## **1.0 Introduction**

Saving is a logical financial activity, especially for individuals with low incomes (Barry, 2018). It provides a buffer for emergencies, facilitates consumption smoothing and investments, and an essential tool for poverty alleviation (Karlan et al., 2014; Goldberg, 2014; Mauldin et al., 2016). Similarly, saving tends to increase earnings by generating interest (Lwanga Mayanja and Adong, 2016) or help establish a financial footprint to access loans (Finney and Davies, 2011; Barry, 2018). As valuable as this suggests, many people struggle to save actively and sufficiently (Barry, 2018). Barriers to saving such as access and availability of suitable savings products, high fees, resource, and institutional constraints, and distrust in financial institutions constrict effective saving culture (Kast et al., 2012; Dupas and Robinson, 2013; Somville and Vandewalle, 2015; Barry, 2018).

Efforts by formal traditional institutions to provide appropriate savings tools have yielded limited success. Hence, the emergence of innovation-driven digital solutions to bridge the exclusion gap (Nan, 2018). However, there is a continuing misconception of digital savings. While most literature and existing solutions providers theorise saving digitally as a form of digital savings and use them interchangeably; not all electronic saving schemes represent digital savings within the financial inclusion context. Consequently, a segment of individuals without access to the online network is excluded by default.

Information Systems (IS) involves a collection of information technologies (IT) and their interaction with various actors (Boell and Cecez-Kecmanovic, 2015). Hence, technology can hardly make an impact *in silos* – dissociated from its users (Nan, 2018). Against this backdrop, this paper intends to address the following research questions:

1. *What is the mismatch between digital savings in principle and practice?*
2. *Are existing digital savings platforms designed for the unbanked and those without internet access?*

The study seeks to conceptualise digital savings within the framework of financial inclusion. We question whether existing digital savings products only cater for individuals with online access, consequently excluding people without access to internet services. Expected findings from this research serve to deepen knowledge and unmask whether existing digital savings products promote financial inclusion among the intended users or have been polarised by those already in the financial ecosystem.

## **2.0 Literature Review**

Savings is integral to financial development. Access to savings products at formal financial institutions is thus crucial to enable the financially underserved to meet their savings

obligations (World Bank, 2019). With an estimated global population of 1.7 billion unbanked adults, such statistics unmask the dynamics of the people living in developing economies. While the adult population in this region indicates a strong proclivity for saving, access to such products is limited. On the one hand, this stems from the premise that this category of individuals is expensive and unprofitable to serve (Hughes et al., 2012); hence, they are excluded by access to formal saving methods (Allen and Panetta, 2010). On the other hand, the financial infrastructure is far from being fully developed to serve the needs of the excluded.

Existing traditional institutions concentrate on serving individuals within proximity of their banking infrastructure. From research, low-income individuals explore alternative variegated methods, often informal, to meet their saving needs. These schemes often fail to meet traits desired by the unbanked, such as reliability, security, flexibility, and convenience (Hughes et al., 2012). Hence, availability trumps desirability. Moreover, these informal methods are often characterised by high cost, insecurity, and susceptibility to loss (human error, fraud, theft, and fire), as they are predominantly cash-based (Hughes et al., 2012).

Recognising this exclusion, alternative non-bank, IT-driven solutions are emerging and are presented with great promise (Allen and Panetta, 2010); howbeit, with uneven success so far (World Bank, 2019). With the emergence of these digital savings platforms comes the misuse of the term. Existing literature has failed to conceptualise digital savings. On the one hand, digital savings refers to savings products offered via digital channels by regulated deposit-taking institutions (World Bank, 2019). On the other hand, they are alternative digital saving methods tailored to the needs of the unbanked. While these constructs are different in models, design, and structure, digital savings cannot be conceptualised in abstraction from the context of financial inclusion.

## **2.1 Financial Inclusion**

Financial inclusion refers to the provision of and access to affordable formal financial services by every member of an economy through overcoming barriers and inabilities that constrict disadvantaged groups from having access to such services (Diniz et al., 2012; Chakravarty and Pal, 2013). Such services include savings products, payment, and remittance services, insurance, bank accounts and advisory services (Wale and Makina, 2017), which enable the unbanked manage their finances, raise living standard, escape from poverty, reduce risk vulnerability, and drive assets acquisition (Diniz et al., 2012; Wale and Makina, 2017; Fomum and Jesse, 2017). For the digital technologies to bridge the existing exclusion gap, and understand the usage of such innovations, there is the need to focus on the intended users these services were designed for – the unbanked.

## **2.2 Traditional methods and the emergence of digital platforms**

In most developing countries, formal financial service providers have experienced limited success in bridging the financial exclusion gap among the unbanked population. While banks and other financial institutions have proven more effective in reaching people in urban areas, a large population remains unserved in remote locations (Allen and Panetta, 2010). To meet their saving needs, individuals use informal saving tools such as keeping cash at home, burying money, cooperative societies, and/or investment risky assets such as livestock and jewellery (Vandewalle, 2015; Lwanga Mayanja and Adong, 2016; Ouma et al., 2017; Demirguc-Kunt et al., 2017; Nan, 2018), which are all prone to loss (Ashraf, 2009; World Bank, 2019).

To close this gap, digital platforms have emerged over the last decade to placate the concerns of the unbanked (Nan, 2018). The advent of financial technology has envisioned the design of customer-oriented products. Consequently, driving financial inclusion through digital means has become a topical concern among researchers, policymakers, and other stakeholders in both developed and developing economies (Chakravarty and Pal, 2013; Wale and Makina, 2017). Although many of these products are targeted at the unbanked population, there is little knowledge about the users in practice. For example, in principle, M-Shwari targets the unbanked population. However, in congruence with Nandhi (2012), Nan (2018) finds that these electronic savings platforms are used as complementary, rather than standalone accounts, and mostly attractive to people with higher income and existing formal saving methods. Perhaps, this can be attributed to the transaction channels or whether these platforms are limited to a specific segment of users – those with internet-enabled devices.

## **2.3 Digital Savings**

Digital savings methods remain a panacea for financial inclusion barriers (Kast et al., 2012; Dupas and Robinson, 2013). For example, digital channels can stimulate accessibility and convenience by eliminating distance to travel and high-cost sensitivity associated with traditional savings methods (Women's World Banking, 2015). This agrees with Goldberg (2014) who argues that technology improves the provision and capability of saving products. However, while the concept has been proposed as an enabler of financial inclusion, many of the available products rely on the use of the internet for transaction completion.

Unique saving products targeted at meeting the needs of the unbanked have been tested using mobile connectivity. For example, mobile money services such as M-Pesa have proven the “*ubiquity of mobile technology*” has the potential to offer affordable and secure financial services to a vast population of unbanked individuals in developing economies (Nandhi, 2012). Similarly, EKO – a mobile money platform in India, serves as a mobile savings account that enables the unbanked individuals to engage in safe and efficient savings activities (Nandhi, 2012). M-Shwari, a mobile savings product in Kenya, equally targets the unbanked.

Across the spectrum of these digital savings, existing solutions can be classified into three groups:

- **Internet-enabled mobile applications:** these integrate the latest technologies such as AI and appealing UI designs in delivering innovative savings solutions with a thrilling digital experience for users. This is the most common form of digital savings and is mostly inundated by users with access to other formal savings services. Traditional and digital financial institutions also operate in this domain.
- **Offline mobile savings products (USSD or SMS):** these products and services are tailored for households within remote areas with no access to formal financial services nor internet-enabled facilities. Users initiate financial services and consummate transactions by sending an SMS to secure shortcodes or dial USSD codes provided by the service provider.
- **Agent model:** some savings service providers acquire and register agents in remote locations to enable the penetration of their digital products and services. Rather than travel over a long distance to the nearest financial institution, users can visit nearby agents' kiosks to initiate or receive financial services.

## 2.4 Research Gaps

As described in the previous sections, while many digital savings products attempt to increase financial inclusion in principle, what is offered to consumers negates the archetype of financial inclusion. For instance, Nan (2018) finds out that M-Shwari, one of the savings products in developing countries, is less dominated by the financially excluded. This among other pieces of evidences points to the need to examine the provider-user architecture in detail.

### Limited focus on users

The underlying conundrum of financial inclusion is the distribution of financial services (Nan, 2018). As a result, the low penetration of financial infrastructure constricts financial inclusion. Digital savings can address the barrier associated with distance and time (Nan, 2018); hence, it becomes a promising channel to actualising financial inclusion (Nan, 2018). While the central focus has been on adoption, intention to use, usage (Demombynes and Thegeya, 2012) and socioeconomic benefits (Somville and Vandewalle, 2015), the literature on digital savings have overlooked the users of existing solutions, and whether they represent the intended users (Nan, 2018). Following the call by Nan (2018) for user-focused research on emerging digital financial inclusion, a study on users of digital savings, therefore, helps to profile users to identify the financially excluded and measure accurately the level of exclusion. It equally deepens our insights on the usage and value derived from the use of digital savings.

### **Low insights on existing offerings**

The need to build financial health is pivotal across all social classes of humanity, just as financial exclusion affects different categories of the divide. However, while the new players in digital financial services have pledged to solve the exclusion gap and present themselves as the holy grail of the unbanked, product features, appealing user interfaces and technology underpins of these platforms are tailored to the social behaviour attributes of a specific set of consumers – the millennials, digitally savvy, and the banked (Anand and Omusi, 2020). Thus, consumers who fall outside this category are excluded by default. Extant literature on digital savings is limited, so are insights on the composition of existing offerings. Therefore, a study to examine the stature of digital savings products and services concerning serving the needs of the unbanked is expedient.

### **Information Systems (IS) element overlooked**

While barriers to the adoption and use of savings methods have been examined within the psychological and societal views (Gutter et al., 2012; Thaler and Benartzi, 2004), constraints relating to Information Systems (IS) use have been overlooked. Although elementary barriers from scholarly expositions such as resource constraints and poor financial infrastructure inhibit the adoption of formal savings, the presence of more complex barriers cannot be discounted. Following the call by Nan (2018) to theorise the reasons for the low take-up and resistance to digital financial inclusion by intended users within the sociotechnical perspective, there is a need to examine the technical attributes of digital savings that influence the take-up and usage.

## **3.0 Methodology**

Using an inductive approach of theory building, this research will examine the social phenomenon of digital savings and answer the research questions. Being that literature on this subject is almost non-existent, the research will follow an exploratory design using a mixed-methods strategy. The first part will focus on an extensive study of the current providers of digital savings in a developing economy. This will provide a deeper understanding of the ecosystem and mappings of the market offerings. For the second part, semi-structured interviews will be conducted with users and non-users of digital savings products to form the qualitative data. This will enable the researchers to enter the social world of the participants to gain a detailed understanding of their perception of digital savings. Creswell and Poth (2018) recommend between 20 to 30 interviews will provide rich data to saturate emerging concepts. Each interview is expected to last for at least 30 minutes (DiCicco-Bloom and Crabtree, 2006). The interview transcripts will provide insights into the match/mismatch between existing offerings and consumer needs. Finally, insights from this qualitative data will

present rich thick descriptions for the phenomenon and form the constructs that will be measured via online surveys. Surveys will be distributed via the researchers' social networks. For analysis, NVivo will be used to grind out concepts from the interview transcripts, while the quantitative data from the survey will be analysed using a statistical tool.

To understand the level of mismatch, we examine usage or non-usage along the following constructs:

- **Demographics:** this records data of the characteristics of respondents, including users and non-users of digital savings.
- **Channel:** this considers the tools used in accessing digital savings, whether mobile apps, SMS, or USSD. This provides insights on users' preferred savings channels and what providers have made available to them. It equally identifies whether internet connectivity is needed to access these platforms and possible mismatch between offerings and needs.
- **Devices:** this identifies what categories of mobile devices are mostly used for accessing digital savings platforms, e.g. basic, feature, or smartphones.
- **Frequency:** this provides insights on the level of usage of digital savings products and services
- **Satisfaction:** if digital savings intends to drive financial inclusion, then the provision of and access to such formal financial services may indicate more satisfaction among first-time users than the banked population (Fomum and Jesse, 2017).

#### **4.0 Expected contributions**

Theoretically, the findings intend to provide critical insights and deepen knowledge of the focal impact of digital savings in driving financial inclusion. This enriches a rich knowledge for further research on financial inclusion within the IS field. Practically, it helps providers and relevant stakeholders to identify a possible mismatch between their propositions and needs of the unbanked. Furthermore, it distils possible polarisation of digital savings solutions, thereby precluding the financially excluded – those whom the services were intended a priori – by default. Understanding the sociotechnical inhibitors of usage can provide a basis for strategy redirection and service reposition tailored to the needs and characteristics of the underserved.



## References

- ALLEN, H. & PANETTA, D. 2010. Savings groups: what are they? Washington, DC: The SEEP Network
- ANAND, M. & OMUSI, N. 2020. Cowrywise inspires young Nigerians to save and invest. *Catalyst Fund* [Online]. Available from: <https://bfa-global.com/insight-type/blogs/cowrywise-inspires-young-nigerians-to-save-and-invest/>.
- ASHRAF, N. 2009. Spousal Control and Intra-Household Decision Making: An Experimental Study in the Philippines. *American Economic Review*, 99(4), pp. 1245-1277.
- BARRY, N. 2018. Digital savings—what do we know about the impact on clients? Available from: <https://www.financedigitalafrica.org/blog/2018/10/digital-savings-what-do-we-know-about-the-impact-on-clients/> [Accessed 2 October 2019].
- BOELL, S. K. & CECEZ-KECMANOVIC, D. 2015. What is an Information System? *2015 48th Hawaii International Conference on System Sciences*. Kauai, HI, USA: IEEE Computer Society.
- CHAKRAVARTY, S. R. & PAL, R. 2013. Financial inclusion in India: an axiomatic approach. *Journal of Policy Modeling*, 35(5), pp. 813-837.
- CRESWELL, J. W. & POTH, C. N. 2018. *Qualitative inquiry & research design: choosing among five approaches*, Thousand Oaks, California, SAGE Publications.
- DEMIRGUC-KUNT, A., KLAPPER, L., SINGER, D., ANSAR, S. & HESS, J. 2017. The Global Findex database: measuring financial inclusion and the Fintech revolution.
- DEMOMBYNES, G. & THEGEYA, A. 2012. Kenya's mobile revolution and the promise of mobile savings. *World Bank Policy Research Working Paper* [Online]. Available: <https://openknowledge.worldbank.org/bitstream/handle/10986/3275/WPS5988.pdf?sequence=1>.
- DICICCO-BLOOM, B. & CRABTREE, B. F. 2006. The qualitative research interview. *Medical Education*, 40(4), pp. 314–321.
- DINIZ, E., BIROCHI, R. & POZZEBON, M. 2012. Triggers and barriers to financial inclusion: the use of ICT-based branchless banking in an Amazon county. *Electronic Commerce Research and Applications*, 11(5), pp. 484-494.
- DUPAS, P. & ROBINSON, J. 2013. Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. *American Economic Journal-Applied Economics*, 5(1), pp. 163-192.
- FINNEY, A. & DAVIES, S. 2011. Towards a nation of savers. Available: <https://www.bristol.ac.uk/media-library/sites/geography/migrated/documents/pfrc1105.pdf> [Accessed 17 October 2019].
- FOMUM, T. A. & JESSE, A. M. 2017. Exploring the relationship between financial inclusion and assets accumulation in South Africa. *International Journal of Social Economics* 44(12), pp. 2157-2172.
- GOLDBERG, J. 2014. Products and policies to promote saving in developing countries. *IZA World of Labor*, 74(pp. 1-10).
- GUTTER, M. S., HAYHOE, C. R., DEVANEY, S. A., KIM, J., BOWEN, C. F., CHEANG, M., CHO, S. H., EVANS, D. A., GORHAM, E., LOWN, J. M., MAULDIN, T., SOLHEIM, C., WORTHY, S. L. & DORMAN, R. 2012. Exploring the Relationship of Economic, Sociological, and Psychological Factors to the Savings Behavior of Low- to Moderate-Income Households. *Family and Consumer Sciences Research Journal*, 41(1), pp. 86-101.
- HUGHES, N., IVATURY, G., PETRIDES, J. & RUTHERFORD, S. 2012. Liquidity and savings in the age of M-PESA. *Innovations*, 6(4), pp. 1-16.
- KARLAN, D., RATAN, A. L. & ZINMAN, J. 2014. Savings by and for the poor: a research review and agenda. *Rev Income Wealth*, 60(1), pp. 36-78.
- KAST, F., MEIER, S. & POMERANZ, D. 2012. Under-savers anonymous: Evidence on self-help groups and peer pressure as a savings commitment device. *NBER Working Paper* [Online]. Available: <https://www.nber.org/papers/w18417> [Accessed 02 October 2019].
- LWANGA MAYANJA, M. & ADONG, A. 2016. A pathway to financial inclusion: Mobile Money and individual savings in Uganda. Kampala, Uganda: Economic Policy Research Centre (EPRC).
- MAULDIN, T. A., HENAGER, R., BOWEN, C. F. & CHEANG, M. 2016. Barriers and Facilitators to Saving Behavior in Low- to Moderate-Income Households. *Journal of Financial Counseling and Planning*, 27(2), pp. 231-251.
- NAN, W. 2018. Who are the users of digital innovation for financial inclusion? The case of M-Shwari *Twenty-fourth Americas Conference on Information Systems*. New Orleans.
- NANDHI, M. A. 2012. Effects of mobile banking on the savings practices of low income users - the Indian experience. Institute for Money, Technology & Financial Inclusion.

- OUMA, S. A., ODONGO, T. M. & WERE, M. 2017. Mobile financial services and financial inclusion: is it a boon for savings mobilization? *Review of Development Finance*, 7(1), pp. 29-35.
- SOMVILLE, V. & VANDEWALLE, L. 2015. Saving by default: evidence from a field experiment in rural India. *International Economics Department Working Paper Series* [Online]. Available: [http://repec.graduateinstitute.ch/pdfs/Working\\_papers/HEIDWP01-2015.pdf](http://repec.graduateinstitute.ch/pdfs/Working_papers/HEIDWP01-2015.pdf) [Accessed 05 October 2019].
- THALER, R. H. & BENARTZI, S. 2004. Save More Tomorrow (TM): using behavioral economics to increase employee saving. *Journal of Political Economy*, 112(1), pp. S164-S187.
- VANDEWALLE, L. 2015. *A simple way to encourage saving among the poor* [Online]. World Economic Forum. Available: <https://www.weforum.org/agenda/2015/05/a-simple-way-to-encourage-saving-among-the-poor/> [Accessed 5 October 2019].
- WALE, L. E. & MAKINA, D. 2017. Account ownership and use of financial services among individuals: evidence from selected sub-Saharan African economies. *African Journal of Economic and Management Studies*, 8(1), pp. 19-35.
- WOMEN'S WORLD BANKING 2015. Digital savings: the key to women's financial inclusion?
- WORLD BANK 2019. Financial inclusion beyond payments: policy considerations for digital savings. Washington DC: World Bank.