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Formal microsaving: A PRISMA-compliant systematic review of its exogenous determinants

Edward A. Osifodunrin and J.M.D. Lopes

Abstract: *This paper reviews the determinants of formal microsaving (FMS), while also X-raying literature-documented conceptual sub-elements/sub-constructs of formal microsaving development (FMSD). This is with the intention to sensitize stakeholders as to what works for FMS and what doesn't. The paper also offers an overview of the state of research in this academic sub-domain, with suggestions/guides for related future research agenda. Analysis of 301 articles was undertaken using PRISMA. The paper's analysis affirms that the identified determinants were varied, using only a limited set of empirical methodologies. The geographical focus of most of the relevant studies were on Asia/Africa, with other regions largely ignored. The paper presents a novel review of the determinants of FMS. Also, the identified deconstructed sub-elements of FMSD could further sensitize researchers of its hitherto unknown multidimensional nature. Consequently, this could enhance the expansion of relevant empirical/theoretical knowledge with the additional possibility of initiating/influencing relevant global policy regeneration towards microsaving development.*

Keywords: systematic review, determinants, formal microsaving

Introduction

THE CRITICAL TASKS OF HARNESSING and managing the determinants of multi-pronged advances in formal microsaving are at the very core of microsaving development and the socio-economic goal of enhancing poor peoples' access to formal microsaving services (FMSS). In this paper, formal microsaving development (hereinafter FMSD) is delineated as a multidimensional concept capturing the access, depth, efficiency, and sustainability of formal microsaving, with a view to constantly optimize these four dimensions for the benefits of relevant stakeholders. Sequel to writing this paper, a cursory analysis on some of the available national financial inclusion strategies (NFIS) of sovereign members of the Alliance for Financial Inclusion (AFI) was conducted. This analysis was to unveil the specific strategies/plans of policy makers (NFIS custodians) towards the identification and optimization of these

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'FMSD determinants', in the achievement of financial development in their various jurisdictions. Shockingly, and to the best of the authors' knowledge, no such plan was formally documented. This paper, at the very least, presents the primary information, useful literature- cum evidence-based facts for any such policy plan, even for any microfinance institution (MFI) adequately motivated to increase its formal microdeposit base.

In brief, the current paper proceeds with the rationale/objectives of the review, followed by the analytical framework, the eligibility criteria, and the systematic literature search. Lastly, the paper presents a concise description of the reliability/validity of the review, followed by the review's findings and conclusion. It is pertinent to note here that PRISMA 2020, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (as outlined in Page et al., 2021), was deployed as a useful methodological tool to guide the presentation/rigour of pertinent sub-sections of the review.

The rationale and objectives of the study

In the first instance, and to the best of the authors' knowledge, no study has ever provided a PRISMA-compliant systematic review of literature focusing on the exogenous determinants of microsaving; or more specifically, the exogenous determinants of the sub-constructs of FMSD. Furthermore, the major justification for this review is ultimately hinged on the various socio-economic benefits of formal microsaving, derivable by the low-income groups in any arbitrary developing country. Consequently, this study considers it worthwhile to specifically reveal the following for FMSD policy makers, researchers, and future studies:

(a) The current paper provides a comprehensive evidence-based guide for global FMSD policy makers on 'what works' (i.e. which exogenous factors promote FMSD) and 'what doesn't' (i.e. which exogenous factors impede FMSD) across varying geographies/contexts and stakeholders. It also conveniently points policy makers to knowledge sources for their respective deeper inquiries/analyses.
(b) It is considered non-trivial to evince literature-documented conceptual sub-elements or possible sub-constructs of FMSD; this is with the aim of further revealing FMSD's core essence towards providing current/future conceptual and empirical insights into its constituents, structure, and measurement.
(c) This review also considers it worthwhile to outline literature-chronicled exogenous determinants of formal microsaving, spanning its demand and supply sides. In other words, factors affecting formal microsaving, but exogenous to micro-/nano-enterprises, economically active poor (EAPs), EAP groups, households, microfinance institutions (MFIs), and other formal microsaving providers were the primary focus of this review. It is assumed that when factors exogenous to the consumers/providers of microsaving are cautiously identified and enhanced for improvement, then microsaving actors (via market structures and competition) are better motivated/prepared towards focusing on endogenous activities, internal

policies/strategies, and products that can, indeed, enhance the growth of microsaving and overall financial development. According to Sherraden et al. (2003), exogenous factors strongly influence the act of saving, even sometimes stronger than endogenous factors like income and some intrinsic demographic factors. No doubt, this argument has partly led to the emergence and advancement of the institutional theory of saving, a by-product of the asset-building (theoretical/empirical) research and a subset of the new institutional economics. Consequently, AFI (2010) noted that 'in virtually every country in the world, the existing supply of savings services falls short of the demand from low-income populations'. Over a decade later, and in this realm of formal microsaving, even with various innovation, technology, and other contemporary positive factors, the situation is still largely the same, especially among the rural dwellers and actors in the informal sectors (RDAIS). In line with the CGAP's country-level savings assessment (CLSA), further described below, the paper identifies (as much as possible) extant exogenous factors promoting or inhibiting the demand/supply of formal microsaving.

(d) The review also determines the extent and depth of empirical works carried out on 'the determinants of microsaving' between 2003 and 2021, as a proxy to ascertain how established/matured this academic sub-domain is.

(e) On the issue of data for empirical studies in this academic sub-domain, this review examines relevant literature as to the (un)availability of accurate/robust secondary data.

(f) The study also maps the details of extant methodologies deployed, so far, in the research trajectory espoused by the academic sub-domain under review.

(g) Also, the review creates a useful overview of the mentioned academic sub-domain by providing the impact of reviewed articles and their specific contribution to knowledge, among other insights.

(h) Lastly, the review re-affirms (or in some cases reveals) whether some already established exogenous determinants of microfinance also influence microsaving. This is based on the premise that microfinance development is deemed to conceptually/practically encapsulate microsaving. For this analytical purpose, Table 1 captures some of these determinants established by the collective scholarly efforts of Suesse and Wolf (2020), Nyanzu et al. (2019), Khan et al. (2019), Hermes and Hudon (2018), Chikalipah (2017a, b), Mahyar (2017), Adams and Tewari (2017), GSMA (2016), IMF (2016), Beck and Maimbo (2013), Ndambu (2011), Reid (2010), Cull et al (2009), Hardy et al. (2002), Fidler and Paxton (1997), and many more researchers.

Analytical framework

This section outlines the proposed focal points to observe (for crucial analyses) in the course of this study. In other words, this section provides the objective list of what was considered 'analyses-crucial' in all the reviewed articles. For the records, the framework covered the various methodologies used, contribution to knowledge, empirical findings documented in each article, categories of study

Table 1 Some established exogenous determinants of microfinance

S/N	*Major classes*	*Some constructs/variables*
1.	Macro-economic variables	GDP, inflation, GDP per capita, financial liberalization, rate of unemployment, tax-related proxies, prevailing monetary policy, size of the informal sector, degree of formalization, etc.
2.	Macro-institutional variables	Political stability, level of corruption, government effectiveness, regulatory quality, control of corruption, availability of alternative financial structure such as non-interest finance, etc.
3.	Geographic and demographic variables	Population density, geographic isolation and remoteness, natural resource endowment, population size, etc.
4.	Technology and financial cum physical infrastructure	Level of domestic technology creation, level of diffusion of recent and old technology/innovation, level of individual technical skills, availability of the following:
		efficient electronic payment system, central switch, ubiquitous and diverse e-payment channels, mobile money services cum m-banking, electronic citizens' identity management system, biometric technology, digital collateral registry, and other microfinance-friendly market infrastructure
5.	Health and related variables	COVID-19 and other health-related factors as pioneered by Malik et al. (2020)
6.	Other variables	Culture, trust, language, religious and ethnic characteristics, etc.

Note: Please note that some of the constructs/variables listed could seemingly overlap two or more of the major classes provided, especially in the macro-economic/macro-institutional variables

respondents, geographical focus of studies, journals/authors, list of independent variables, and list of all conceptual sub-elements or sub-constructs of FMSD investigated as dependent variables. This documented analytical framework provides a strict/formal and systematic approach to extracting relevant information from primary studies (i.e. the reviewed articles).

Eligibility criteria and systematic literature search

This section of the study focused on all peer-reviewed articles authored, globally, on factors inhibiting/promoting formal microsaving. Additionally, queries of keywords (as listed in the second column of Table 2) were developed using the Scopus and WorldCat databases. Based on this search, a total of 301 articles were initially aggregated; and via a meticulous review process, a final group of 28 papers (see Appendix B) were short-listed. Although it is possible for the search to have inadvertently omitted some relevant articles, considering the current budding stage of the research sub-domain, and the number of papers selected, it is arguable that the final selection was quite a comprehensive/representative sample of literature focusing on the determinants of formal microsaving. In other words, all other works outside this specific academic sub-domain were summarily excluded after due review.

The foregoing solely formed the basis of relevant articles as captured in the last column of Table 2. Subsequently, in the course of the painstaking burrowing through

Table 2 Details of the literature search

Database	*Keywords*	*Inclusion criteria*	*No. of retrieved articles*	*No. of relevant articles*
Scopus (accessed 24 Feb 2021)	Microsavings	Years: 2003 to 2021 Peer-reviewed articles in English Language only	133	**16**
WorldCat (accessed 24 Feb 2021)	Microsaving	Years: 2003 to 2021 Peer-reviewed articles in English Language only	14	**2**
WorldCat (accessed 24 Feb 2021)	Micro-saving	Years: 2003 to 2021 Peer-reviewed articles in English Language only	11	**5**
WorldCat (accessed 24 Feb 2021)	Micro-savings	Years: 2003 to 2021 Peer-reviewed articles in English Language only	60	**5**
WorldCat (accessed 24 Feb 2021)	Microdeposit	Years: 2003 to 2021 Peer-reviewed articles in English Language only	9	**0**
WorldCat (accessed 24 Feb 2021)	Microdeposits	Years: 2003 to 2021 Peer-reviewed articles in English Language only	56	**0**
WorldCat (accessed 24 Feb 2021)	Micro-deposit	Years: 2003 to 2021 Peer-reviewed articles in English Language only	8	**0**
WorldCat (accessed 24 Feb 2021)	Micro-deposits	Years: 2003 to 2021 Peer-reviewed articles in English Language only	10	**0**
		Total	**301**	**28**

academic literature, the information provided in Table 2 specifically captures the searched database(s), keywords, inclusion criteria, and other relevant information.

The reliability and validity of the review

In the quest to justify the reliability of this review, focus is initially given to the automated search strategy employed on the Scopus/WorldCat databases as detailed above. This strategy largely reduced reviewer's bias, increased the repeatability, consistency, and transparency of the search, while enhancing the possibility of gathering as many relevant articles as possible, subject to the eligibility criteria. Subsequently, the review clinically examines each of the 28 relevant articles via cautious manual coding and focus on the unit of analysis outlined in the analytical framework, and as eventually summarized in Appendix A. Additionally, this review has made efforts to reduce all forms (intentional or accidental) of literature-identified pollutants, distortions, and biases. In order to guarantee the foregoing,

each of the steps/procedures in this review was repeated at least once to affirm the repeatability/reliability of the process. According to Yin (2014), the ability of even a single reviewer to repeatedly obtain the same (or very similar) results is, indeed, another approach to guarantee reliability.

On the issue of validity, this review gathers as many relevant articles as possible to boost the representativeness and comprehensiveness of its sample articles; this was carried out to enhance the generalizability of its findings. Also, the importance/impact of these 28 short-listed articles (vis-à-vis this emerging academic sub-domain) were highlighted (by simply using total citations) as captured in Appendix B; this is to provide useful proof of the quality, prominence, and strength inherent in the selected articles for the review. As this novel review was conducted in an emerging academic sub-domain, comparing its findings with extant and similar systematic literature reviews (as additional affirmation of its validity) was quite a challenge. Notwithstanding this challenge, as most of the exogenous determinants of microsaving are under the purview of various socio-economic, cultural/political institutions, the institutional theory of savings (championed in Sherraden et al. (2003) and Sherraden (1991)) really supported and upheld the empirical outcomes of this review. Lastly, the strict tabular output (as suggested in Massaro et al., 2016) provided in Appendix A contributed immensely in standardizing and exposing hitherto hidden insights of the research evolution and trend in this emerging academic sub-domain.

The review's findings and directions for future research

(a) The evinced literature-documented conceptual sub-elements or sub-constructs of formal microsaving or FMSD are 'microsaving behaviour', 'microsaving rate', 'microsaving funds mobilization', 'microsaving adoption by EAPs', 'microsaving cost performance', and 'microsaving outreach'. However, none of the 28 empirical articles exploring the 'determinants of microsaving' considered even the slightest need to highlight the definitional, evolutional, and conceptual underpinnings of the extant sub-elements or sub-constructs of FMSD. Increased focus on this crucial information in future empirical studies might evince new insights in this academic sub-domain. For instance, merely enhancing the focus and scrutiny on the definitional, evolutional, and conceptual basis of 'microsaving behaviour' alone (with all its psychological and socio-cultural underpinnings vis-à-vis its determinants) might bring forth 'future research insights' towards knowledge expansion and depth. Moreover, the inclusion of 'cost performance' as a sub-construct of FMSD only emerged in 2018, further expanding the list of investigated sub-constructs of formal microsaving.

(b) In consideration of all the possible determinants or independent variables listed in Table 1, only inflation, interest rates, GDP, geographic cum distance-related factors, financial education, technology, social capital, social network, institutional impact, subsidy, culture, employment, and financial liberalization (proxied with access to microcredit) have been empirically examined in

literature, with various sub-elements or sub-constructs of FMSD as dependent variable. Other variables have been largely ignored in extant studies, with sometimes overwhelming focus on only a few of these stated determinants. Some of these ignored variables are listed here as GDP per capita, tax-related proxies, prevailing monetary policy, size of the informal sector, degree of formalization, political stability, level of corruption, availability of alternative financial structure such as non-interest finance, population/population density, and natural resource endowment. Future studies would do quite well in investigating the possible impact of these variables on the various sub-constructs of FMSD.

(c) Honohan (2005) provided one of the earliest academic hints as to the dearth of useful/accurate data in the microfinance domain. Almost two decades later, more data are now obviously available (at least in relative terms); however, in many other microsaving/microfinance data instances, the situation is still largely the same. The lack of accurate, robust, and extensive secondary datasets is still often noted by empirical researchers in the microfinance domain (see WEF, 2008; Martin et al., 2013; Ledgerwood et al., 2013; Nyarondia, 2017, among others). Consequently, it was observed that, of the 28 relevant/extant, empirical studies reviewed (and captured in Appendices A and B), a whopping 17 of these studies had to necessarily gather primary data from rural dwellers, MFIs and their customers, EAP households/groups, and so on via questionnaires, interviews, and other methods. It was observed that none of the 28 articles specifically documented gathered data from micro-/nano-enterprises, a possible indication that these categories of businesses still (largely) lack research/policy attention (notwithstanding their (in)formality), and may experience possible barriers in accessing formal microsaving. Future studies should do more (where possible) to gather data from these classes of microsavers.

(d) On the methodology deployed in these 28 extant studies, descriptive statistics, inferential statistics, correlational/regression analyses were the most common, with few randomized control trials and natural field observations. As far as these 28 articles are concerned, the methodological pattern of studies (since the first relevant study was published in 2006) remained fairly stable up to the most recent publication in 2021; perhaps, there is need (in future studies concerning this academic sub-domain) to introduce other methodological diversities to possibly expand knowledge and create newer/deeper insights. Considering the 2006–2021 period for this academic sub-domain, only one study (Aron, 2018) used the systematic review methodology to affirm that 'technology' indeed predicts 'increased microsaving' in the mobile money space.

(e) It is quite ironic that some countries often considered as champions of microfinance (e.g. Bangladesh, Indonesia, Bolivia, Peru) did not receive exclusive individual focus from any of the 28 peer-reviewed studies on evincing possible exogenous factors that have promoted/inhibited microsaving in these jurisdictions. Even with the glaring successes the Grameen Bank, Bank Raykat

Indonesia (BRI), and BRAC have recorded in microsaving, none of the short-listed articles exclusively focused on evincing the exogenous factors responsible for their individual successes. Future empirical studies would do well to note and act on these gaps.

(f) Since the first set of studies in this academic sub-domain appeared in 2006, perhaps due to the 2008 global financial crisis, scholars globally were seemingly disinterested/reluctant to focus on this sub-domain between 2007 and 2010, creating a four-year research dearth in this specific academic milieu. On the other hand, research publication in the sub-domain peaked with six publications in 2016 alone, essentially focusing on almost all the regions of the world.

(g) On the evolution of determinants, inflation, real interest rate, and geographic remoteness were the pioneers to be examined (for the first time) in 2006, with 'social network' introduced for examination in 2011. Following the advent/wide spread of mobile phones and mobile money, 'technology' and 'innovation' were introduced/investigated in 2013 as determinants, 'financial knowledge/education' then appeared in 2014, with 'labour formality', 'government transfers', and 'remittances' also investigated as microsaving determinants for the first time in 2015. In addition, 'culture' and 'receipt of subsidy by MFIs' debuted as determinants in 2016, while 'social capital' and 'institutional quality' were the last set of exogenous determinants added to the academic discourse in 2018.

(h) Considering the very limited relevant studies available in literature on the specific theme of this paper and the even fewer examined studies listed in Appendix B, it is quite safe to conclude that 'the determinants of microsaving' as an academic sub-domain is still at the budding stage. This declaration is quite necessary in order to draw researchers' attention to this research theme and to further explore all the research lacunas evinced.

(i) The primary geographic location/focus of these reviewed studies was mostly in the rural areas of developing countries in Africa and Asia, with just a few located in the United States, Europe, and Latin America. As to the journals/authors, no dominant one was observed, as each of the 28 articles came from different authors/journals, further affirming that the research domain is still relatively nascent. Notwithstanding the foregoing, the impact of the 28 articles (proxied by their total citations) was captured in Appendix B.

In a very laudable microsaving development effort, the Consultative Group to Assist the Poor (CGAP) (in collaboration with other stakeholders) has developed/sustained a very useful tool (Country-Level Savings Assessment Tool (CLSA)), which has been deployed in some developing countries. The CLSA is usually a very comprehensive countrywide study commissioned to clinically identify and analyse the policies, practices, strengths/weaknesses, barriers, opportunities of microsaving, and related saving activities (formal/informal) within a nation. It also captures all socio-economic, political, cultural, technological, demographic, institutional, and other factors that could affect microsaving, especially as it concerns the RDAIS.

Specific insights and recommendations for policy makers

(a) For inflation, three out of the four articles that examined the inflation-microsaving nexus (Anafo et al., 2016, Samantaraya and Patra, 2014, together with Horioka and Wan, 2006) indicated the significant long-term influence of inflation on microsavings, often observed as having an inverse relationship. However, Přívara and Trnovský (2021) pointed out that inflation (only in the short-run) does not have a significant influence on microsaving. This is possibly justified by the theoretically/empirically recognized lag/delay (as corroborated in monetary economics by Friedman (1972) and Batini and Nelson (2001), among others) between changes in monetary policy variables (which cascade through the various transmission mechanisms) and when these changes actually affect real variables such as microsaving and employment. Consequently, NFIS custodians, monetary authorities, and other relevant policy makers must collaborate to assiduously ensure that FMSD and the savings of RDAIS are well considered in the management of monetary policies. Similarly, as evidence (Mensahklo et al., 2017; Njenga et al., 2018) shows that higher interest rates attract microsavers quite well, policy makers should also be very mindful of this in their monetary and financial inclusion efforts.

(b) Alimukhamedova et al. (2017), Ashraf et al. (2006), and Pedrosa and Do (2006) all agreed that RDAIS's extreme geographic distance from microsaving service providers is a major barrier for the efficient mobilization of microsaving and for FMSD. In removing this barrier, anecdotal evidence suggests that technology can offer workable solutions; however, Ky et al. (2018), Mensahklo et al (2017) and Sullivan et al. (2013) provided the only empirically backed evidence that technology is ably positioned to reduce the transaction costs incurred in providing microsaving services in remote/rural locations, coupled with other documented benefits. Hence, NFIS custodians should cautiously redouble their efforts in driving FMSD using technology and related innovations.

(c) On the narrative of using social networks and other interpersonal cum group-based approaches to attract more RDAIS into the microsaving net, Flynn and Sumberg (2017) and Drolet (2011) provided rare empirical evidence as to the effectiveness of harnessing all forms/elements of social networks in driving microsaving demand and FMSD. Similarly, in Osifodunrin and Lopes (2021), the surveyed RDAIS and financial inclusion experts mostly agreed that social networks drive microsavings and related services. Based on the foregoing, NFIS custodians are strongly advised to further exploit the strategy of encouraging and incentivizing existing microsavers to champion the campaign for spreading microsaving, especially within their social networks.

(d) As already stated, and outlined for implementation in some NFISs, policy makers should strive more to promote extensive financial literacy programmes (especially among RDAIS) to educate them on the intricacies/benefits of microsaving; this is primarily to enhance better microsaving behaviour. Pertinently, Přívara and Trnovský (2021), Steinert et al. (2018) and Sayinzoga et al. (2016) provided concrete empirical evidence, affirming that, indeed, financial literacy predicts better microsaving behaviour. Surprisingly, Saqib et al.

(2016) empirically revealed 'education' as a significant negative determinant of microsaving. This was recorded only in urban areas, possibly suggesting that educated urban dwellers are less active in the microsaving segment.

(e) Based on the seeming neglect of micro- and nano-enterprises in the formal microsaving space, it is recommended, here, that policy makers should pay more attention to tremendously easing the entire process of formalization for these enterprises in all sectors of the economy and to further incentivize them to access formal microsaving. It is believed that as these enterprises have more unfettered access to formal microsaving, they are also likely to draw other nano-enterprises and even RDAIS into the formal microsaving net.

(f) As re-affirmed by Hulme et al. (2009) and Martin et al. (2013), providing a conceptual (yet operational) definition for formal microsaving with cross-country suitability and validity is quite a challenge. This is especially true due to the various dichotomies that exist between its core essence and how it actually operates in various developing and even developed nations, with the lack of consensus on 'who qualifies as EAP?' and 'which amount or account balance qualifies as microsaving?' worsening this complication. Consequently, regulators, theorists/researchers, and practitioners must then synergize their future efforts to arrive at some form of universally acceptable middle ground. This is to enhance critical cross-country comparative analyses on microsaving data assets, among other reasons.

(g) Lastly, as policy makers are increasingly advised to foster more consultation and other participatory mechanisms in policy making, this paper reiterates this call that the very conscious involvement of RDAIS in design, implementation, and governance of microsaving-related programmes is quite crucial. As analogically presented in Mukherjee (2004), the unique insights of these excluded RDAIS and their practical suggestions towards a solution might be unprecedented and effective. Also, Osifodunrin and Lopes (2021) provide a more detailed account of an empirically-validated participatory financial inclusion hypothesis and its accompanying policy. Other crucial policy-centric insights can still be deduced from the summarized analytical framework captured in Appendix A.

Conclusion

This review of exogenous factors promoting/inhibiting formal microsaving is quite novel and unique in literature, especially as it champions a fresh attempt at re-examining and revealing the core essence and extant sub-constructs of FMSD towards enhancing future policy, empirical, and theoretical research. The review has also provided some qualitative/quantitative knowledge on the academic sub-domain in focus. For instance, the number of articles relevant to this discourse vis-à-vis the years in focus (2003 to 2021) and how the articles evolved, coupled with their geographical focus and other details, as captured in Appendix A provided new insights. In addition to the findings already provided above, further literature insights derived and considered useful for future academic directions are discussed below.

After scanning through the literature on the theories underpinning formal microsaving and the academic attempts made to thoroughly examine/validate them

with actual national/regional datasets, it was observed that there are fewer studies that have focused on African countries like Nigeria and other ECOWAS countries compared to other developing countries in Asia and Latin America. It is then opined that (for future research) more clinical country-focused evaluation of these theories vis-à-vis the actual datasets on microsaving (and even datasets on regular household saving) could reveal new insights towards theoretical expansion, policy regeneration, and welfare enhancement in the region.

In the second instance, and as to the obvious (dis)similarities observable between regular saving and microsaving, extant literature provided little or no theoretical, empirical, or even mere data-centric comparative analysis, leaving another strong hint as to one of the many areas where future studies and interested researchers can focus. However, this paper anecdotally suggests that these (dis)similarities could be most observed on the following dimensions:

- the values/amounts and frequencies of saving;
- the societal status and the intrinsic socio-economic conditions of savers;
- geographic location and the economic sector/formality of savers;
- the psychology/purpose and motivation for accessing the formal saving services;
- the distinction in licensing/regulatory/supervisory/prudential requirements and market segments of various saving services providers;
- the disparities in some financial/administrative costs related to the two saving market segments (i.e. regular savings and microsaving), with emphasis on returns on saving;
- the extent/depth to which they could be affected by the various exogenous factors listed in Appendix A;
- other differences in the pattern of savers' transactions and similar profile-specific characteristics peculiar to these two saving market segments.

Doubtless, this review is not without its fair share of limitations and omissions, even with its sole dependence on Scopus and WorldCat databases. It is arguable that (even for a budding academic sub-domain such as the one reviewed) other sterling academic and professional resources such as books, archival materials, and other media must have been inadvertently/intentionally omitted. A very good instance of these omissions are the reports generated from the CLSA conducted on some developing countries, which were intentionally omitted in order to standardize the sources of articles reviewed. Also, as guided by Massaro et al. (2016), reviews conducted on emerging research fields should expand their searches to include publications of prominent conferences organized in the emerging fields. However, this was not done in this review, in order to strictly base the review's input on output from automated searches, especially as there are no databases capturing academic publications from conferences on microsaving. Consequently, this omission and even future releases of more theoretical/empirical contributions in this academic sub-domain would certainly affect the validity of the findings in this review.

At this juncture, it is then hoped that this review and the subsequent empirical analyses that would follow (from the same authors) would serve as seminal precursors to similar or related future studies and even improve policies/practices towards FMSD.

Appendix A: Summary of analytical framework

S/N	*Years of relevant articles*	*No. of relevant articles published in the year*	*Geographical focus of studies*	*Independent variables (IDV)*	*Sub-elements or sub-constructs of microsaving used as dependent variables (DV)*	*Methodologies used*	*Datatype (primary or secondary data)*	*Categories of study respondents (if any)*	*Overall impact of all IDVs on DVs (positive, negative, or mixed)*
A1	2003–2005	Nil	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A2	2006	3	China, Philippines and Niger	Inflation, income growth rate, real interest rate, and geographic remoteness	Microsaving rate, microsaving adoption	Correlation/ econometric analysis and random control trial	Both	Rural dwellers/ Households and MFIs	Mixed
A3	2007–2010	Nil	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A4	2011	1	Egypt	Social network	Saving practices	Field observation of microsavers in their natural environment	Primary	Individual microsavers	Positive
A5	2012	Nil	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A6	2013	1	Kenya	Technological innovation (subscription to Kickstart Mobile Money Services)	Growth of microsaving schemes	Field experiment executed on customers of Kickstart Mobile Money Services	Primary	Customers of Kickstart Mobile Money Services	Positive

(Continued)

(Continued)

S/N	*Years of relevant articles*	*No. of relevant articles published in the year*	*Geographical focus of studies*	*Independent variables (IDV)*	*Sub-elements or sub-constructs of microsaving used as dependent variables (DV)*	*Methodologies used*	*Datatype (primary or secondary data)*	*Categories of study respondents (if any)*	*Overall impact of all IDVs on DVs (positive, negative, or mixed)*
A7	2014	2	India and United States	Inflation, GDP, dependency ratio, interest rates, and financial knowledge	Rural household savings	Econometric analysis, descriptive statistics, multivariate analysis	Secondary	Individuals and households	Mixed
A8	2015	2	Ethiopia and Latin American countries	Demographic variable, income, home ownership, labour formality, government transfers, remittances	Microsaving rate and behaviour	Structured questionnaire, correlation/ regression analysis	Both	Individuals and households	Mixed
A9	2016	6	Ghana, Rwanda, Nigeria, Germany, United Kingdom, Pakistan, and other parts of the world where MIX gather data	Inflation, income, age, employment, culture, 'receipt of subsidy by MFIs from donors', innovation, financial education	Household microsaving volume, microsaving rate, microsaving behaviour, microdeposits, and MFI mobilization of microsaving funds	Regression, Tobit model, analysis of covariance (ANCOVA)	Both	Individuals, households, customers of MFI, smallholder farmers	Mixed

(Continued)

(Continued)

S/N	*Years of relevant articles*	*No. of relevant articles published in the year*	*Geographical focus of studies*	*Independent variables (IDV)*	*Sub-elements or sub-constructs of microsaving used as dependent variables (DV)*	*Methodologies used*	*Datatype (primary or secondary data)*	*Categories of study respondents (if any)*	*Overall impact of all IDVs on DVs (positive, negative, or mixed)*
A10	2017	4	Uzbekistan, Tanzania, Zambia, Uganda, Ghana, and Switzerland	Geographic remoteness, technology, social network, and culture	Microsaving rate, microsaving contribution, household microsaving	Descriptive/ inferential statistics, correlation/ regression analysis	Both	Individuals, MFIs, stakeholders of MFIs	Mixed
A11	2018	5	South Africa, Kenya, Uganda, Burkina Faso, and Ethiopia	Financial education, technology, social capital, and institutional quality	Microsaving contributions, microsaving behaviour, microsaving cost performance	Randomized field experiment, systematic review, structured questionnaire, regression/ correlation analysis	Both	Individuals, households, rural pastoralists	Mixed
A12	2019	1	Sub-Saharan Africa (SSA)	Institutional impact	Microsaving behaviour	Econometric analysis	Secondary	Households	Mixed
A13	2020	2	Thailand	Level of education, age, gender	Microsaving fund, microsaving cost performance	Regression analysis	Both	Clientele of a microsaving scheme	Mixed
A14	2021	1	The Baltic states	Foreign capital, economic fluctuation, demographic factors	Microsaving rate	Regression analysis	Secondary	Households	Mixed

Appendix B: 28 short-listed articles and their total number of citations

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