MICROINSURANCE: A PRISMA-COMPLIANT SYSTEMATIC REVIEW OF ITS REGULATORY-, SUBSIDY-, DEMAND- AND SUPPLY-SIDE DETERMINANTS

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Abstract

Guided by the holistic stance of the systems theory and motivated by the ultimate mission to enhance poor people's access to formal microinsurance, the current study innovatively looked beyond reviewing only the determinants of the demand-side of formal microinsurance development (FMID), as narrowly portrayed in the extant literature reviews of Platteau et al. (2017) and Eling et al. (2014). Reviewing and optimally managing the determinants of other sides or dimensions of FMID (i.e., the subsidy-supply-regulatory sides) are also mission-critical for the governance and advancement of formal microinsurance. One hundred sixty-two (162) articles were systematically gathered and analysed using PRISMA (the preferred reporting items for systematic reviews and meta-analyses), with evidence that literature has focused mainly on the impact of various endogenous determinants, while exogenous determinants have been largely overlooked. Amongst 52 articles short-listed, "interest rate" was the only exogenous determinant ever empirically affirmed as a variable influencing FMID. Furthermore, "insurance literacy" and "innovation" were identified as the most investigated endogenous determinants on the demand- and supply-sides of FMID, respectively. The study also evinced the dearth of research in investigating the determinants of the subsidy- and regulatory-sides of FMID. Empirical games and natural experiments were the most probing and revealing methodologies, churning out innate/relational tendencies of research respondents and more interesting evidence than initially envisaged. The geographical research focus was majorly on Asia and Africa. The paper presents more literature gaps, coupled with guides for future policy and market governance.

Keywords: Formal Microinsurance Development (FMID), Determinants, Rural Dwellers and Actors in the Informal Sectors (RDAIS), PRISMA, Systematic Literature Review (SLR), Systems Theory

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1. INTRODUCTION

In many developing countries, formal or conventional insurance (hereinafter FCI) has, over the years, failed to effectively reach rural dwellers and actors in the informal sectors (RDAIS), as well as other excluded low-income groups. As aptly noted by Churchill (2007), these low-income groups can barely manage any form of risks (whether related to life, health, agriculture, property, accidents, or natural disasters) in a sustainable manner, and they are clearly more vulnerable than other higher-earning groups in the society. In response, the concept and practice of microinsurance (a crucial part of the global microfinance movement) have been widely championed and acclaimed, since the late 1990s, to bridge this risk management gap. In a bid to clearly outline and affirm the unique role microinsurance is meant to play, the International Association of Insurance Supervisors (IAIS) and the Consultative Group to Assist the Poor (CGAP) described it as any form of protection against risks that is designed for and accessed by low-income individuals or groups, promoted by different categories of providers, but operating on basic principles of insurance and funded by premiums (IAIS & CGAP, 2007).

Unfortunately, even as microinsurance was specifically designed for low-income groups, its global reach or spread amongst them is still quite limited, due to premium-unaffordability issues and even many more factors (detailed in subsequent sections of this paper) that are either endogenous or exogenous to these low-income groups. Other largely overlooked reasons are the utter exclusion of low-income groups from insurance inclusion policy/product decisions and related governance. In the validated hypothesis presented in Osifodunrin and Lopes (2021), it was noted that for financial inclusion to succeed, all stakeholders from the SSR-sides (supply-, subsidy- and regulatory-sides) in the formal financial services domain must genuinely collaborate and must necessarily involve the low-income groups in crucial decision-making processes via some form of participatory governance well-aligned with participatory insurance inclusion policies. After all, as corroborated by Mukherjee (2004) and Mansuri and Rao (2013), prioritizing the views, needs, solution propositions, and governance perspectives of these low-income groups (having superior knowledge of their local or developmental burden) may give deep and practical policy insights and may greatly enhance policy outcomes.

Notwithstanding the persistent dearth in the global outreach of microinsurance and a few of the indicted reasons outlined above, some academic works have (since the late 1990s) focused their attention on outlining the proven benefits of formal microinsurance. In this regard, the works of Dror and Jacquier (1999), Mosley (2003), Werner (2009), Savitha and Kiran (2015), Dietrich (2017), Janzen and Carter (2019), Hill et al. (2019), and Maroof and Sangmi (2021) are just a few that have itemized the positive roles and impact of formal microinsurance. On the other hand, Will et al. (2021) hinted at the unintended side effects of formal microinsurance in disrupting and stifling the sustainability or operations of some enduring informal risk-sharing networks that have been in existence long before the advent of formal microinsurance. Others, like Agostinho and Cherry (2016), asserted that supply-side microinsurance fraud may sometimes be very injurious to the already vulnerable circumstance of low-income groups.

Even with these critical views against microinsurance, the systematic literature review (SLR) presented in this paper is still largely motivated by the net benefit of microinsurance to sustainably rescue low-income groups from their vulnerabilities to various risks or shocks. The SLR is also justified based on its ultimate focus on improving and guiding related microinsurance policies and related future research with its findings. The threshold of originality evinced in the review also enhances its justification; as to the best of the author's knowledge, no known study has ever provided a PRISMA-compliant SLR (conceptually integrated, reinforced, and explained with systems theory) on the determinants of the various dimensions, sub-constructs or components of formal microinsurance development (FMID). Meanwhile, the preferred reporting items for systematic reviews and meta-analyses (PRISMA) was deployed as an effective methodology to guide this SLR. Other justifications and objectives for this paper are listed below.

This paper certainly acknowledges the importance of reviewing the determinants of the demand side of FMID, as conducted by Platteau et al. (2017) and Eling et al. (2014). However, the inadvertent overlook of the determinants of SSR-sides of FMID (even by empirical studies) may not augur well for the overall advancement and governance of formal microinsurance. In an extremely basic instance, it can be presumed that one of the reasons the RDAIS and other low-income groups are not overly demanding microinsurance products is due to the unrelenting supply of sub-optimal and unsuitable microinsurance products, ultimately lacking in the provision of RDAIS-expected utility and welfare. As noted and validated in Osifodunrin and Lopes (2021), these sub-optimal microinsurance products are partly the consequence of governance-, regulatory- and supply-failures of not actively involving the RDAIS or other low-income groups in the design and governance of products and policies that affect them and their welfare. Also, as noted by Dias et al. (2013), FMID and, particularly, microinsurance demand are greatly enhanced by an enabling regulatory/supervisory environment. Therefore, exploring the determinants of the entire regulatory-, subsidy-, demand- and supply-sides (RSDS-sides) of FMID is considered non-trivial.

This paper opines that the determinants of all sides of FMID must be well-controlled under an optimal market governance mechanism, in order to mitigate conflict of interests amongst stakeholders, moderate interactions and appropriately align or manage these determinants. For instance, an exogenous factor might affect a dimension of FMID positively and then turn around to impact a different dimension negatively. In this light, "effective consumer protection" might sometimes

excessively favour microinsurance subscribers (on the demand side) to the detriment of microinsurers (on the supply side). This paper also wishes to (re)sensitize practitioners, policy makers, researchers, and other relevant stakeholders about what works (and in which specific context(s)) for each of the RSDS-sides of FMID and what does not, in the quest to better manage these evinced determinants towards the overall advancement of formal microinsurance. Researchers are expected to consider the future investigation of more rarely used determinants and expand the body of knowledge in this academic sub-domain. Also, in the global microinsurance policy and governance realms, a review of available National Financial Inclusion Strategies (NFIS) and other accessible microinsurance policy documents of sovereign members of the Alliance for Financial Inclusion (AFI) revealed that (to the best of the author's knowledge) no specific evidence-based plan exist towards the relentless identification and management of factors impeding or enabling the desired level of FMID in these jurisdictions. This paper would, at least, provide an important input (or serve as information repertoire) into such future plan(s).

The SLR assembled possible sub-constructs or components of FMID as a means to further reveal its core essence or structure and inspire future measurement and empirical efforts. The review also determined the extent and depth of empirical works carried out on "the determinants of the various sub-constructs of FMID" between 2000 and 2021, as a proxy to ascertain how established or matured this academic sub-domain is. The current SLR also pointed researchers and other stakeholders to critical details (as documented in literature) resolving the debate on the level (quality and quantity) of available secondary data provided in this emerging academic sub-domain for the benefit of future empirical or policy investigations. For the benefit of related future studies, especially on the need to evolve and advance extant methodologies deployed in this emerging academic sub-domain, the SLR provided a structured timeline on these methodologies and also made informed suggestions on possible ways to enhance these methodologies for future studies.

Also, this paper endeavoured to showcase and appraise relevant studies by evincing their exact individual contribution, noting their academic impact and documenting other bibliometric insights. This SLR also suggests that when significant exogenous determinants are empirically identified and well-managed, it gives microinsurers and other stakeholders the strategic leverage and energy to focus more on core endogenous factors, internal activities (such as microinsurance product envisioning and design), as well as other mission-critical strategies or policies.

Sequel to this introduction, the paper presents a brief literature review in Section 2, followed by the research methodology in Section 3. The SLR's findings are captured in Section 4, discussions are presented in Section 5, and Section 6 concludes the paper.

2. LITERATURE REVIEW

This examination of extant literature covers the (dis)similarities between FCI and formal microinsurance, an outline of the extant exogenous determinants of the various sub-constructs of microfinance market development, and the abridged theoretical background of the review. In consideration of limited space, compliance with PRISMA's format, and preference for enhanced readability, the concise review of all factors influencing all sub-constructs and dimensions of FMID are presented in Appendix (in a systematic evidence table), with key insights further discussed in Section 5.

2.1. Formal microinsurance and FCI

In order to situate the concept and practice of microinsurance on an appropriate historical pedestal, this section of the paper re-visited the definition of microinsurance provided in Section 1. Based on this definition, it is quite safe to note that the origin of FCI and that of formal microinsurance are somewhat intertwined. As a matter of fact, the legal origin of some of the largest surviving providers of FCI (dating back to the 1800s) may be likened to the actual (but unsung) origin of formal microinsurance; since these early FCI providers started centuries ago by focusing, entirely, on supplying risk management services to low-income groups, while the higher-income earners of this specific era largely self-insured (Churchill, 2007). Incidentally, as some of these early FCI providers have now grown into large multinationals, some of them still show significant business interest in microinsurance, while others are largely detached or disinterested in serving the RDAIS and other low-income groups (Chen et al., 2019; Akter et al., 2011; Churchill, 2007). Interestingly, this apparent detachment (of some FCI providers from microinsurance and the low-income population) is also blatantly reflected in some of the fundamental assumptions of some extant theories explaining the demand-side and market development of FCI. As aptly noted in a very unique contribution to literature, these FCI-focused theoretical assumptions specifically overlooked the crucial context of poverty and informality, upon which the concept of microinsurance is majorly situated, resulting in a major theoretical oversight. In consideration of limited space and the specific focus of the current paper, readers are hereby directed to Dror and Firth (2014) for a detailed account of this theoretical oversight and its proposed redress. In light of the numerous operational distinctions between these two market segments (i.e., FCI and formal microinsurance) and their stakeholders (as outlined in Table 1), future theoretical efforts would certainly do well to integrate these markets and their conceptual essence into a single set of arguments and with a homogeneous set of assumptions. This is to redirect relevant scholarly and industry attention toward their shared origin and to further re-emphasize, as well as espouse the conceptual similarities in them.

Table 1. Few literature-documented operational dissimilarities between microinsurance and FCI

S/N	*Formal microinsurance*	*FCI (not offering microinsurance services)*
1.	This market focused entirely on micro/nano enterprises and the low-income households, individuals and groups, mostly operating in the informal sector, financially excluded, and, sometimes, can barely afford even the small premium charged for the small sum insured. Demand is quite low compared to supply here, as most jurisdictions are just contemplating the introduction of compulsory microinsurance products.	FCI focused entirely on high-income and middle-class consumers who are already integrated in the formal finance and other formal sectors and can afford the higher premium charged for the large sum insured. Compulsory insurance products (motor accidents, etc.) are more common here.
2.	Mobile technologies sometimes facilitate the collection of small/frequent insurance premium funded via the consumers' irregular income and cash flows. However, in some cases, cash is still collected.	Direct debit to consumers' bank account is common; other recent innovation/technology can also facilitate insurance premium collection.
3.	Providers are usually driven by a social mission, with occasional inevitable subsidization, largely flexible regulatory regimes, while low profitability is also common (Elango et al., 2019; Chen et al.,2019, etc.)	Higher levels of profitability are not unusual (subsidies are quite rare here, coupled with stricter regulation).
4.	As recently re-emphasized in Platteau and Ontiveros (2021) and earlier noted in more dated works, the consumers here mostly have low insurance literacy. Whenever paid premium did not translate to claims (i.e., the risk insured did not materialize) they often consider insurance policies as unfair or unbalanced and the premium paid as wasted. Providers here also often fail to disseminate adequate information to educate consumers; while consumers sometimes fail or are unable to provide required situational or personal information (with sufficient details) necessary for the insurer to determine actuarially-fair premium.	Consumers here have higher levels of insurance literacy, while supply- and demand-side information failure is lower. Although, Brown et al. (2017) noted that even some consumers of FCI products in developed countries also exhibit some level of insurance ignorance.
5	Usually, the cost incurred (whether in the mitigation of adverse selection and other diverse costs) by microinsurers is much lower and commensurate with the small premiums they charge and their limited profitability.	As opined by Chen et al. (2019), the costs incurred by conventional insurers are much higher even in the mitigation of adverse selection (one of the major challenges in insurance) and similar thresholds are observed in other disparate costs in conventional insurance.
6.	Agostinho and Cherry (2016) insisted that "claims fraud" and other frauds poses a greater threat in microinsurance, making it more unsustainable. This is even more debilitating, as fraud-combating techniques that succeeded in FCI may not necessarily succeed in microinsurance due to lack of necessary data/resources.	Fraud are better managed in FCI and hardly threatens its sustainability.

2.2. The exogenous determinants of microfinance

This sub-section outlines key exogenous determinants (as presented in Table 1) empirically validated in extant literature to influence the various sub-elements of microfinance, so as to leverage them (as a crucial guide), as we in turn evaluate their possible influence on the various dimensions or sub-constructs of microinsurance, which is a crucial part of microfinance.

Table 2. Some established exogenous determinants of microfinance

S/N	*Major classes*	*Some constructs/Variables*
1.	Macroeconomic 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 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 and 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: A couple of these outlined exogenous determinants could belong to two or more major classes adapted from Osifodunrin and Lopes (2022a).

Ultimately, even the hitherto-overlooked determinants in the microinsurance sector (amongst those enumerated in Table 2) are expected to inspire relevant future studies.

2.3. The brief theoretical background of the review

First, in order to provide a more holistic view of the advancement of all facets of formal microinsurance, it is now pertinent to further delineate a significant theoretical element earlier introduced in this paper. The FMID (formal microinsurance development) is depicted in the current paper as a concept that can either be functionally and conceptually assembled or deconstructed, as the specific theoretical analysis (at hand) requires. It is emphasized here that, in order to enhance FMID, adequate attention and effort must be expended to improve not just its demand-side, but also its SSR-sides and, possibly,

other sides or milieus. This multidimensionality is in tandem with the nature and essence of the more established and related concept of financial development (FD). According to Svirydzenka (2016), FD (regarded in this paper as one of the conceptual precursors or superintending concept for FMID) exudes a complex multidimensional nature, with the works of the World Economic Forum (WEF, 2011), Čihák et al. (2012), Murthy et al. (2014), International Monetary Fund (IMF, 2015) and Svirydzenka (2016), providing further conceptual and empirical support for this assertion. As inspired by the foregoing scholarly contributions, a modest attempt is made here to unveil only some aspects of FMID's multidimensionality, as it is proposed here as a combination of the following:

Access, depth, breadth or microinsurance outreach: A state where willing adults, households, groups, micro- and nano-enterprises (notwithstanding their sector of the economy, section of society, gender, caste, disability, geographic remoteness, societal status, connections, and other demographics) are progressively able to effectively demand and enjoy formal microinsurance services in order to sustainably manage the risk(s) associated with natural and man-made disasters such as fires, drought, floods, epidemics, loss of agricultural crops and livestock; loss of human life, permanent disability, accident, risks associated with credit, cyberspace, property and a myriad of other risks. In other words, the specific dimensions of formal microinsurance access are proposed to include: 1) the willingness or motivation of low-income households, groups, micro- and nano-enterprises to take-up or renew microinsurance policies (Platteau & Ontiveros, 2021; Bendig & Arun, 2016; Yao, 2013; Ito & Kono, 2010) and 2) the state where all barriers preventing low-income groups from effectively demanding/enjoying microinsurance services are progressively mitigated or removed. These barriers include behavioural obstacles, non-insurability of some risks, information asymmetry, RSDS-side constraints/impediments, relevant issues about the affordability or social mission of microinsurance, erroneous exclusion of low-income groups from active participation in microinsurance products design and related governance or dynamics, appropriateness or suitability of policies, scalability issues and other barriers captured in Appendix.

Efficiency, effectiveness, governance, and sustainability: A market state where formal microinsurance providers, regulators, governments, providers of capital/subsidy, relevant legal institutions, and other stakeholders optimally reduce transaction costs, moderate governance and interactions for the market and its stakeholders, optimize value and returns to all microinsurance stakeholders, operate competently and continue to improve their performance, effectiveness, or achievement of mandates in a sustainable manner (Chen et al., 2019; Biener et al., 2014; Biener & Eling, 2011). Other desired market conditions, variables, or constructs very related to the foregoing and captured in extant literature include:

1) The focus of Elango et al. (2019) on microinsurance coverage value (which indicates a higher threshold of microinsurance coverage per unit of premium or cost paid by the policyholder). As a higher coverage value is always in the economic interest of the RDAIS, policy makers should rather endeavour to ascertain an optimal value that would favour both the RDAIS and the microinsurance providers.

2) The submission of Minani et al. (2018), Matul et al. (2011), Collins et al. (2009), and Cohen and Sebstad (2005) on the promptness/ responsiveness of microinsurance providers.

3) The hints provided by Minani et al. (2018), Yao (2013), and Akter et al. (2011) on the profitability or viability of microinsurance providers.

4) The cursory idea of Ward et al. (2020) and Ampaw et al. (2019) on the enhanced quality of microinsurance services provided, etc.

5) The contributions of Osifodunrin and Lopes (2022b), Biener et al. (2014), IAIS and CGAP (2007), etc., on overall regulatory discourse in the microinsurance sector.

Second, many studies (including SLRs) in the academic sub-domain of investigating the determinants of any sub-construct of FMID have mostly focused on only one dimension (often the demand side) and largely overlooked the three other dimensions of FMID (i.e., the supply-, subsidy- and regulatory-sides (SSR-sides)). Though this narrow focus or isolation might, sometimes, be necessary to simplify and moderate analyses, however, it must be re-emphasized that all these four sides (in their usual states) are interrelated or interdependent, and, obviously, they are never absolutely isolated. In this paper, we attempted to extend the literature by providing a more holistic approach to the "determinant-FMID" treatise of these sides, using the systems theory (Bogdanov, 1922, 1980; Von Bertalanffy, 1968; Lazlo, 1996; Meadows, 2008; Luhmann, 2013) for the detailed propositions, assumptions, logic and overall essence of systems theory). As the various stakeholders, activities, and sub-systems in these four sides are increasingly interrelated and interdependent, their system's attributes are further consolidated and a more holistic analysis of such system can only result in the production of additional useful information. Against the backdrop of investigating the determinants of an artificially-isolated demand-side (as seemingly conducted by Platteau et al., 2017, and Eling et al., 2014), this novel systemic thinking in the microinsurance sub-sector argues that researchers, practitioners, and other stakeholders may only possess or view an incomplete picture via this isolation. For instance, as the low-income groups falter in the effective demand for microinsurance, this faltering may not be unconnected with the various market ineffectiveness, inefficiencies, imperfections, frictions, and failures (MIIFFs) inherent in the SSR-sides. Specifically, and as observed by Harrison et al. (2022), many low-income individuals have indeed purchased poor quality, sub-optimal, or mismatched microinsurance products that have, inadvertently, worsened their welfare, with the prevalence of ineffective regulatory consumer protection in many developing countries sustaining the continuous supply of these sub-standard or mismatched products. Other systemic interpretations of the microinsurance sector are succinctly listed below.

The microinsurance sector is viewed as an open system consisting of interrelated and interdependent parts (i.e., the RSDS-sides) interacting as sub-systems.

Ideally, the various sub-systems should be studied in their inter-relationships rather, than in isolation from each other. Also, the microinsurance sector (as a whole system) is not just internally affected by its mentioned sub-systems (i.e., the RSDS-sides), but also impacted and responsive to its external environment, such as the FCI sector, fiscal/monetary authorities, and even civil society organisations, etc. Therefore, the various influences of factors exogenous to the microinsurance sector or system are also of importance to this paper.

As the system (i.e., microinsurance sector) is considered open, it receives input from other systems, possibly in the likes of foreign capital for some microinsurers, expertise, technology, innovation, and so on; and possibly gives tax returns, corporate social responsibility projects, and so on, as output. It must be noted that the system approach should generally evaluate and focus on the overall effectiveness of the "microinsurance sector", rather than the individual effectiveness of each of the RSDS-sides.

Ultimately, achieving premium FMID depends upon the optimal interaction, interdependence, and synergy between the RSDS-sides.

It must be noted that other theoretical explanations exist, with their focus on each of these isolated four-sides; for instance, on the demand-side, Platteau et al. (2017) listed five explicatory theories including the "expected utility theory", "ambiguity aversion", "hyperbolic discounting", "loss aversion and prospect theory", with the "discontinuity of preferences at certainty" recognized as the last. The various theories of regulation (positive, normative, government failure, regulatory capture, etc.) gave some form of isolated explanations for the inherent realities and MIIFFs in the regulatory-side of formal microinsurance, while other classical theories explain the subsidy and supply sides of this discourse. In these classical economic theories, subsidy may be deemed a "negative taxation", with the capability to distort microinsurance demand sustainability and pattern (as empirically validated in Yan and Faure, 2021), create some level of inefficiencies in the resource allocation of government, which may eventually lower global welfare. However, its efficient and cautious allocation (such as the risk-adjusted subsidy (RAS) described in Yao et al., 2019) could also enhance FMID.

3. RESEARCH METHODOLOGY

This structured literature review is methodologically guided by PRISMA, which guides and aids scholars in the systematic, transparent, and replicable report of literature reviews and meta-analyses. Although the theory-context-characteristics-methods (TCCM) framework, an alternative SLR methodology, clearly evinces the theoretical-empirical realms of the academic domain to be reviewed, however, the current SLR preferred the simplicity and readability in the output format of the PRISMA methodology. This simplicity is especially necessary to accommodate microinsurers, policy makers, and other industry practitioners as the targeted audience for the current paper, while not overlooking scholars in this academic sub-domain. The following sub-sections represent some of PRISMA's standard output.

3.1. Analytical framework

This sub-section of the paper documents the major analytical focus of the SLR by evincing what was prioritized and captured from all the shortlisted 52 articles reviewed. These prioritized analytical foci include:

- The various factors that could promote/ impede FMID, are designated as independent variables.
- Theoretical sub-constructs of FMID are designated as dependent variables.
- Data gathering approaches and the methodologies used.
- Categories of study respondents (where applicable).
- Geographical/contextual focus of studies.
- Journals/authors and the significance/pre-eminence of their research.
- Articles' empirical findings and contributions to knowledge.

The foregoing list is used as a standard template for the systematic examination of all the articles reviewed.

3.2. Eligibility criteria and systematic literature search

This sub-section of the current paper generally considered peer-reviewed articles authored by scholars around the world. Furthermore, relevant queries of keywords (i.e., "microinsurance" or "micro-insurance", as captured in Table 3) were run within the Web of Science Core Collection (WOSCC). As a result of this search, a total of 162 articles were initially retrieved; after which the first round of meticulous review resulted in the short-listing of a group of 52 papers (see Appendix). These 52 articles were shortlisted by painstakingly reviewing each of the 162 articles to determine whether the article's theme aligns with the following:

1) Hypothesizing and outlining the determinant(s) of the considered sub-constructs of FMID.

2) Providing empirical evidence on how these determinants affect any of the (sub)constructs of FMID and in which context(s) and setting(s).

3) Particular attention is paid to articles focusing on any of the developing countries, especially, the sovereign members of the AFI; while a few articles also focused on a few developed economies.

4) Previous relevant literature reviews (whether systematic or not and however limited in scope they might be) were exempted but were strongly noted for their inherent models/structures, depth, and method of analyses.

Although it is possible for the search to have inadvertently omitted some relevant peer-reviewed articles, it is quite arguable that this group of 52 articles provided a very comprehensive/ representative sample of all extant peer-reviewed literature focusing on items (1) to (4) above. This is especially true when the uniqueness of the academic sub-domain is considered along with its fairly nascent stage of academic stability/maturity. For the records, all other 110 articles not related to this specific academic sub-domain were simply excluded from the ensuing SLR.

The information below specifically provided how the relevant articles (as captured in the fifth column of Table 3) were determined. This information included the searched database(s), keywords, inclusion criteria, and other relevant information.

Table 3. Details of the systematic literature search

Database	*Keywords*	*Inclusion criteria*	*No. of retrieved articles*	*No. of relevant articles vis-à-vis items (1) to (4)*
WOSCC (accessed 09.08.2021)	Microinsurance or micro-insurance	Years: 2000 to 2021 Peer-reviewed articles in the English language only	162	52
Total			**162**	**52**

Source: Query generated from the Web of Science Core Collection (WOSCC).

3.3. The reliability and validity of the review

In order to mitigate the reviews' bias and optimize the repeatability, consistency/transparency, and representativeness of the SLR, the current paper prioritized and chose the automated search strategy by running carefully designed queries on the WOSCC as detailed in sub-section 3.2. Thereafter, in line with the unit of analysis outlined in the analytical framework, this SLR proceeded to manually code the shortlisted 52 articles as cautiously as possible with the eventual output provided in Appendix.

As strongly opined in the submission of Yin (2014), the reliability of an SLR can be guaranteed in situations where a reviewer or a group of reviewers arrive at the same/similar results when steps of an SLR are repeated; hence, every step in the current SLR was repeated at least twice to verify/re-verify the consistency, repeatability/reliability of the tasks' outcome(s) and to mitigate literature-identified pollutants, distortions, and biases.

On the validity of this SLR, ample effort was made to assemble a representative, comprehensive, and sterling sample of articles as necessary inputs, this is to guarantee the generalizability and soundness of the SLR's output and findings. For the records, and to evince the varying quality of the articles used in the SLR, their total citations as reported in the WOSCC and Google Scholar (GS) were captured in Appendix. As the current paper is the first PRISMA-compliant SLR in this academic domain, optimal comparison of its findings with extant works might pose a challenge, however, conscious efforts were made to conduct a possible comparison with fairly similar works. Lastly, the strict tabular output (as suggested in Massaro et al., 2016) provided in Appendix contributed immensely to standardizing and exposing hitherto-hidden insights of the research evolution and trend in this emerging academic sub-domain.

4. RESULTS

In a deliberate attempt to further establish the conceptual essence of FMID, the SLR championed these efforts by providing the following as some of its literature-documented sub-constructs covering the earlier mentioned RSDS sides: "willingness to purchase/renew microinsurance policies", "level/ rate of actual microinsurance demand, take-up or adoption", "level/rate of microinsurance contract renewal or degree of microinsurance client retention", "optimal supply of microinsurance schemes", "subsidy-free scalability of microinsurance", "subsidy-free sustainability of microinsurance", "barrier-free access to microinsurance", "client's show of preference for competing for variants/products of microinsurance", "profitability/viability of microinsurers", "microinsurance efficiency", "social mission orientation or affordable microinsurance", "inclusiveness of microinsurance" and the "willingness of microfinance institution to expand into microinsurance". In close consideration of all these sub-constructs, it is crucial to note that the focus of extant literature has been largely tilted towards the demand-side of FMID, as over 70 per cent of the 52 articles at the core of this SLR dwelled on evincing determinants of FMID's sub-constructs on the demand-side. In a way, this may be quite justifiable, as researchers seemed to be curious to know why the majority of global low-income groups, households or individuals, and micro/nano enterprises are still formally uninsured. However, this over-concentration on a side of formal microinsurance may not augur well for FMID. Factors responsible for the "supply of low-grade or premium microinsurance products", "regulatory efficiency", "effective subsidy regime", "optimal market governance" and other many-sided sub-constructs of FMID are equally mission-critical. Furthermore, only 7 articles explored the determinants of "microinsurers' sustainability, profitability or viability", with 4 articles examining the determinants of "microinsurance efficiency", while 4 articles investigated the determinants of other supply-side sub-constructs of FMID. However, since the earliest of these 52 articles (i.e., Meze-Hausken et al., 2009) was published, research focus has always been on only two sides (demand-supply sides) of the sub-constructs of FMID, and this trend continued even with the latest sets of articles in 2021. Inadvertently, the determinants of the regulatory-, subsidy- and other sides of the FMID equation, have been utterly ignored, as these determinants were not captured or represented, even in all the 162 articles initially retrieved from the WOSCC. Consequently, future empirical studies would do well to espouse factor(s) impeding/promoting effective, efficient, or optimal regulatory regime in the microinsurance sub-sector. Although, subsidy may be regarded as a negative taxation capable of distorting the microinsurance market/demand patterns, its efficient and cautious allocation (such as the RAS described in Yao et al., 2019) could enhance FMID. Unfortunately, the identification of factor(s) capable of impeding/promoting this efficient allocation of subsidies is also utterly ignored in these 162 WOSCC articles. Future studies should focus on identifying these factors, as well as the determinants of other unmentioned sides/milieu of FMID.

Regarding the determinants of the sub-constructs of FMID, "insurance literacy" was clearly recorded as the most dominant, with over 30 per cent of the short-listed 52 articles empirically pondering and affirming its effects on the various demand-side sub-constructs of FMID. This overwhelming researchers' interest in "insurance literacy" is also quite justifiable in the rural/informal sectors of developing countries (mostly serving as the research setting for these 52 articles) where illiteracy is quite prevalent. The relatively dominant determinants are the various demographic variables generated on the RDAIS and the subsidy schemes deployed to make microinsurance more affordable. For the supply-side sub-constructs of FMID (capturing the sustainability, profitability, scalability, viability, or efficiency of microinsurance), the most dominant determinant are the various forms of innovation. These innovations cover technologies (e.g., mobile-enabled microinsurance schemes), innovations in premium payment, channel/product innovation, market-focused innovation, and context-centric innovation in agriculture, medicine, weather/climate change that can enhance the efficiency of associated microinsurance schemes. For instance, in Awondo and Kostandini (2021), the crop-centric innovative introduction of DTMV (drought tolerant maize varieties) significantly increased efficiency by lowering the associated risks and premium in drought-insurance schemes, which further attracted low-income maize farmers to the schemes. Other less dominant determinants on the demand- and supply-sides of FMID are: "trust", "social network", "philanthropy", "regulation and government intervention", "religious beliefs", "microinsurance premium affordability", "state fragility", "severity of weather/climate change", "geographic distance", "interest rate", "internal characteristics of microinsurers" and "information asymmetry". In further analysis, many of the potential determinants listed in Table 2 were conspicuously absent from the 52 articles considered. These include inflation, GDP, financial liberalization (proxied with access to microcredit), GDP per capita, tax-related proxies, prevailing monetary policy, size of the informal sector, degree of formalization, level of corruption, availability of alternative risk management mechanism such as "Islamic Takaful" and the "informal risk-sharing networks", population/population density and natural resource endowment, etc. Consequently, future studies should consider exploring the effects of these potential determinants on FMID and its various sub-constructs.

Honohan (2005) provided one of the earliest academic hints as to the dearth of useful and 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 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 (Nyarondia, 2017; Demirguc-Kunt et al., 2014; Martin et al., 2013; Ledgerwood, 2013; Biener & Eling, 2011; WEF, 2008, etc.). Consequently, it was observed that of the 52 empirical studies reviewed (and captured in Appendix), a whopping 31 of these studies (or 60 per cent) had to necessarily gather primary data from remote/rural dwellers, rural households/groups, farmers/pastoralists, MFIs, and their clients, microinsurers and their employees/clients, laboratory research subjects, and residents of urban areas.

As regards the methodological approaches employed in these 52 core articles, inferential and descriptive statistics, and correlational/ regression/econometric analyses were the most common. Some empirical games were also deployed to reveal some of these FMID's determinants and measure the extent of their effects. Other methods deployed are randomized control trials (RCT), principal component analysis, natural field observations, stated choice experiments, Monte Carlo simulation, laboratory experiments (deriving inspiration from experimental economics), and data envelopment approach (DEA). In critical consideration of all these methods, the empirical games and the natural experiments seem to be the most revealing, and the closest to mapping the exact reality or definitive answers to the research questions under investigation; usually, these methods churn out more interesting facts than initially envisaged. For instance, in the empirical game deployed by Vasilaky et al. (2020), it was quite interesting to note that with higher insurance literacy, rural farmers were significantly attracted to market-priced agricultural microinsurance even when they are significantly more expensive and without subsidy. Future studies would also do well to explore more qualitative methodologies as they could provide a more in-depth understanding of the behaviour of RDAIS, microinsurance consumers/ providers, and other relevant stakeholders.

Considering the geographical/continental focus of the 52 articles, 27 articles (i.e., over 50 per cent) focused specifically on Asia (with rural India and Pakistan being the foci of 12 and 5 articles, respectively), 17 articles focused specifically on rural Africa (with 5 articles focusing on Ethiopia alone), North/South America had just 5 articles (with Peru, Canada, Mexico, the United States, and Colombia receiving attention from 1 article each), while the European country of the Netherlands was also the focus of a single article. Certainly, the overwhelming research attention given to India is not unconnected with the level of microinsurance development in the country, which is in line with the submissions of Da Costa (2013) and Roth et al. (2007). As a matter of fact, "India is reported to have the most dynamic micro-insurance market in the world and the largest weather-index insurance market among developing countries" (Da Costa, 2013, p. 1).

In thorough consideration of all the short-listed 52 articles *vis-a-vis* their seminal and preeminent/ impactful nature (as measured by their level of citation in the WOSCC and GS), Patt et al. (2010), published in the *Journal of Global Environmental Change*, clearly had the over-a-decade advantage and led other articles with 56 WOSCC/129 GS citations. Other leading articles are Elabed and Carter (2015) with 42 WOSCC/111 GS citations, Akter et al. (2016) had 36/75, and Ito and Kono (2010) had 33/134 citations. As highlighted in the Appendix, authors such as Dror, Akter, Panda, and Yao all had more than one publication in the 52 articles. For

the journals, apart from the *Journal of Global Environmental Change*, other journals of note are *The Geneva Risk and Insurance Review* (and its family of related journals), *World Development*, *The Journal of Development Studies,* etc.

Following a thorough analysis of the 52 core articles of this SLR, it was observed that 22 of these articles focus on weather/disaster/index insurance related specifically to agriculture, 15 articles focused on micro health insurance, 11 articles focused on all forms of microinsurance, while only 4 articles examined micro life insurance; with a conspicuous indication of where future studies in this budding academic domain should explore. Expectedly, as agriculture is considered the most dominant occupation in most developing countries, especially in rural areas, the overwhelming focus of research in the agricultural microinsurance sub-sector is quite justifiable. It is to be pertinently noted, here, that even with the level of increase in digitalization and the almost-ubiquitous use of mobile and other technologies in the developing world, coupled with the attendant surge in cyber risks, none of the 52 articles focused on micro cyber risk insurance (MCRI), a possible indication of the dearth of cyber risk management mechanism for the global low-income groups. Also, other non-credit and non-gricultural microinsurance policies that could be specifically beneficial to micro- and nano-enterprises were absent in the reviewed literature.

In this academic sub-domain exploring the determinants of FMID, in order to further evince it as a budding sub-domain using the shortlisted 52 articles as a comprehensive/representative sample, its annual journey only started in 2009 (and not in the year 2000) with just a single article, followed by 2010 (with 5 articles), 2011 (2 articles), 2012 (1 article), 2013 (2 articles), 2014 (5 articles), 2016 (6 articles), 2017 (5 articles), 2018 (3 articles), and 2019 (7 articles). This trickle of articles peaked in year 2020 with just 8 articles, and so far 2021 has generated only 5 articles.

As to the obvious (dis)similarities observable between FCI and microinsurance, 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 in the following dimensions:

1) The values/amounts and frequencies of premium.

2) The societal status and socio-economic conditions of clients in these two markets.

3) Geographic location and the economic sector/formality of clients.

4) The psychology/purpose and motivation for accessing microinsurance or FCI.

5) The distinction in licensing, regulatory, supervisory, or prudential requirements and market segments of various insurers.

6) The disparities in some financial or administrative costs related to the two insurance market segments (with emphasis on viability, sustainability, or profitability).

7) The extent/depth to which the two markets could be affected by the various factors listed in Appendix.

8) Other differences in the pattern of transactions and similar profile-specific characteristics peculiar to these two market segments, etc.

There is a need for future research works in this academic domain to focus more on evincing the determinants of microinsurance efficiency/ sustainability, as conceptual, policy, or industry improvement in these sub-constructs can actually generate more microinsurance demand from the low-income group. For instance, in Awondo and Kostandini (2021), it was noted that various innovations significantly enhanced "microinsurance efficiency" (as proxied by affordable or sustainable premium rates), which might ultimately generate more demand for improved FMID.

5. DISCUSSION

Financial inclusion (FI) policy makers and custodians of NFIS in developing countries have certainly made frantic efforts over the years to reduce financial exclusion, especially in rural areas and amongst various actors in the informal sectors. These efforts are even more intense in microinsurance, as it has been observed in the financial inclusion space that insurance awareness/literacy/inclusion is far lower and many RDAIS consider microinsurance policies as unfair or unbalanced and perceive the premium paid as wasted, whenever the risk insured did not materialize. However, sequel to the extensive literature review of the current paper, the following insights/recommendations to regenerate many of these NFISs and other national microinsurance policies are crucial.

As already imbibed in the NFISs and other policy documents of some jurisdictions, the anecdotal wisdom in encouraging/implementing insurance literacy in order to drive microinsurance demand is already quite prevalent. In necessary affirmation of the foregoing, the empirical works of Platteau and Ontiveros (2021), Lampe and Würtenberger (2020), Vasilaky et al. (2020), and others captured in the Appendix validated this notion. However, others like Bonan et al. (2017) and Takahashi et al. (2016) empirically evinced that insurance literacy had no impact on microinsurance demand. As a matter of fact, Gaurav and Chaudhary (2020) interestingly revealed that after educating very remote/rural farmers about basis risk, the demand for weather-indexed microinsurance surprisingly reduced, significantly, amongst these farmers. Overall, NFIS custodians and related policy makers must know that merely providing insurance education is not a silver bullet. Policy makers must diligently analyse and collaborate with their RDAIS via a thoroughly-implemented and cost-efficient participatory mechanism as guided by Osifodunrin and Lopes (2021) to familiarize themselves with the real needs, suggestions, and solution propositions self-generated by these low-income groups. It is only after the foregoing, can policy makers then provide customized education and well-tailored microinsurance product for the specific needs of the RDAIS group(s) in question. A one-size-fits-all "insurance literacy" and "microinsurance product" approach would often fail. Dias et al. (2013), after a thorough/practical microinsurance market analysis, fully corroborates this recommendation by affirming that "consumer education" should not be the first

step, rather, designing and selling effective as well as value-adding microinsurance products with significant RDAIS inputs should come before "consumer education". It is to be noted here that when RDAIS are grossly involved in the sustainable design/governance of microinsurance policy, they trust it better, embrace it more, and demand/renew such microinsurance contracts/policies, effortlessly.

Policy makers should also be guided by the empirical revelations in Kazianga and Wahhaj (2020), van Asseldonk et al. (2020), and Dror et al. (2018, 2014) that "social networks" positively predict "microinsurance take-up"; hence, relevant stakeholders should expend more efforts in strategically deploying extant "social networks" in RDAIS communities to promote the demand for formal microinsurance.

Policy makers would do well to encourage supply-side as well as industry-wide efficiency and strive to reduce transaction costs emanating from regulatory activities. It should also matter to encourage efficiency in the internal operations of microinsurers, in industry-wide infrastructure, and support sterling product innovation. Regulators should encourage and launch industry research to foster context-centric innovation such as the DTMV which significantly made drought-microinsurance premium more affordable as captured in Awondo and Kostandini (2021). Literature also earmarks all forms of innovation as the most dominant determinant for "microinsurance sustainability" and other supply-side sub-constructs of FMID, hence regulators should note this and cautiously adopt innovation-friendly regime in their various jurisdictions.

As noted in Brouwer and Akter (2010) and Turner et al. (2014), socio-cultural/religious variables impact microinsurance take-up, policy makers must strive to fully understand the contextual sensitivities of these variables in their jurisdictions before envisioning and launching any microinsurance proposition, product or programme. If need be, the Takaful (Islamic insurance) could be customized for their teeming Muslim RDAIS communities. Also, on subsidization and other forms of government/donor intervention, due caution must be taken in order not to destabilize/alter the workings of existing free market models. However, subsidies could be cautiously encouraged in some developing countries where microinsurance is almost non-existent and should be gradually phased out in due course.

This SLR also re-emphasized the dearth of research (between 2000 and 2001) investigating the subsidy- and regulatory-side determinants of FMID. In other words, studies designating subsidy-related or regulation-related sub-constructs of FMID as dependent variables are non-existent (between 2000 and 2001) in this academic sub-domain. However, as outlined in Appendix, Jansen et al. (2011) merely explored the use of subsidy/donation as independent variable, with the recorded empirical outcome that such subsidy/donation improved the uptake of all forms of microinsurance products amongst the less-privileged. Yao et al. (2019) and Radermacher et al. (2016) also affirmed the positive effects of subsidy (merely designated as explanatory variable) on the demand-side of FMID. In another instance, by exploring government intervention or subsidy as independent variable, Yan and Faure (2021) empirically affirmed that it adversely affect access to microinsurance, via the channels of moral hazard and adverse selection. On the regulatory-side determinants of FMID and beyond the "2000 to 2021" focus of the SLR, Osifodunrin and Lopes (2022b) provided some theoretical explanations and preliminary empirical validation for some determinants of "regulatory effectiveness", an undisputable regulatory-side sub-construct of FMID. In corroboration and affirmation of the crucial effect of one of the determinants of regulatory effectiveness (i.e., regulatory autonomy) validated in Osifodunrin and Lopes (2022b), the submission of Noordhoek et al. (2022) asserted that its sub-optimal level severely affected Nigeria's regulatory effectiveness in the microinsurance sector. Scholars are hereby encouraged to focus more on this overlooked but crucial academic sub-domain.

As observed in the current SLR, there is a paucity of research investigating the influences of exogenous factors (such as inflation, population, population density, GDP, GDP per capita, regulation, etc.) on FMID; hence, policy makers should champion/commission such exploratory studies in the specific contexts of their jurisdiction and spanning all forms of microinsurance, to foster sterling evidence-based policy making. This is to give more strategic leverage and energy to microinsurers to focus more on their internal affairs (especially, on product envisioning/design, etc.) and worry less about these exogenous issues.

Issues relating to accurate/detailed industry-wide data gathering should also be prioritized to further enhance scientific research and data-driven policymaking. This study emphasizes that one of the reasons extant studies focused less on the impact of exogenous factors (such as inflation, population, population density, GDP, GDP per capita, regulation, etc.) on various sub-constructs of FMID is due to the dearth of robust secondary datasets in the microinsurance sub-domain. In a basic instance, as multi-year secondary data on inflation (and other exogenous variables) are readily available and the same cannot be expressed for the various sub-constructs or variables of FMID, running multi-year regression or econometric analyses is largely more challenging or even impossible.

Furthermore, policy makers should be quite interested in knowing why some determinants (whether exogenous or endogenous to insurance stakeholders, as observed by Eling et al., 2014) affect the microinsurance sub-sector more/less than they affect conventional insurance or vice versa. Overall, policy makers can also benefit from some of the empirical findings outlined in the Appendix documenting the impact of various demographic variables on the demand for microinsurance and FMID.

6. CONCLUSION

This academic review of factors promoting or inhibiting the various sub-constructs of formal microinsurance development (FMID) as guided and explained by systems theory is quite unique in literature. The most critical theoretical exposition here is that contrary to the myopic focus on only the demand side of FMID (as portrayed in the extant

literature reviews of Platteau et al., 2017, and Eling et al., 2014), the identification/management of the determinants of other sides/dimensions of FMID (i.e., the regulatory-, subsidy-, supply- and so on) is also mission-critical for the advancement of formal microinsurance. The review has also provided other qualitative/quantitative knowledge on the academic sub-domain in focus. Although, more evidence or verification might be required for these theoretical propositions, however, the SLR earmarked "insurance literacy" as the most dominant determinant on the demand side of FMID, but could it also be the most capable or effective in attracting the RDAIS to formal microinsurance? Innovation is also noted as the most dominant supply-side determinant; however, future studies would do well to affirm this determinant as the most effective in driving efficiency, profitability, and sustainability in the businesses of microinsurers. Also, as Asia alone was the focus of over 50 per cent of the 52 articles reviewed, this paper suggested that the level of microinsurance development in this region (especially, in India) may be responsible for this research attention, but there could be other inherent reasons. Overall, other qualitative and quantitative information were also evinced in the paper.

The current review is not without its fair share of limitations and omissions, even with its sole dependence on the WOSCC for its sample articles. 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 or intentionally omitted. A very good instance of these omissions is the various insurance-centric country diagnostics publications provided by the Access to Insurance Initiatives (A2ii), a global partnership funded by the IAIS and other global partners. These reports are usually conducted in developing countries to unveil barriers/opportunities to inclusive insurance, but these reports and many other publications were intentionally omitted in order to standardize the sources of articles reviewed. Consequently, this omission and even future releases of more theoretical and 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 would serve as seminal precursors to similar holistic studies and assist stakeholders to better understand what drives the various sub-constructs of FMID in order to improve policies, industry practices and inspire sustainable systemic advancement in the microinsurance sector. This paper also welcomes future empirical studies in the identification of the determinants of regulation- and subsidy-related sub-constructs of FMID.

REFERENCES

1. Agostinho, P. J. F., & Cherry, C. J. (2016). The significance of claims fraud in microinsurance and a statistical method to channel limited fraud identification resources. *South African Actuarial Journal, 16*(1), 143–181. https://doi.org/10.4314/saaj.v16i1.6
2. Akter, S., Brouwer, R., van Beukering, P. J. H., French, L., Silver, E., Choudhury, S., & Aziz, S. S. (2011). Exploring the feasibility of private micro flood insurance provision in Bangladesh. *Disasters, 35*(2), 287–307. https://doi.org/10.1111/j.1467-7717.2010.01218.x
3. Akter, S., Krupnik, T. J., Rossi, F., & Khanam, F. (2016). The influence of gender and product design on farmers' preferences for weather-indexed crop insurance. *Global Environmental Change, 38,* 217–229. https://doi.org/10.1016/j.gloenvcha.2016.03.010
4. Ampaw, E. M., Chai, J., & Frempong, J. (2019). Examining the overarching factors of clients' loyalty based on the mobile insurance typology. *South African Journal of Business Management, 50*(1), Article a1418. https://doi.org/10.4102/sajbm.v50i1.1418
5. Arun, T., Bendig, M., & Arun, S. (2012). Bequest motives and determinants of micro life insurance in Sri Lanka. *World Development, 40*(8), 1700–1711. https://doi.org/10.1016/j.worlddev.2012.04.010
6. Awondo, S., & Kostandini, G. (2021). Leveraging optimal portfolio of drought-tolerant maize varieties for weather index insurance and food security. *The Geneva Risk and Insurance Review, 47,* 45–65. https://doi.org/10.1057/s10713-021-00065-4
7. Bauchet, J., & Morduch, J. (2019). Paying in pieces: A natural experiment on demand for life insurance under different payment schemes. *Journal of Development Economics, 139,* 69–77. https://doi.org/10.1016/j.jdeveco.2019.02.002
8. Bauchet, J., Damon, A., & Larsen, V. (2017). Microfinance bundling and consumer protection: Experimental evidence from Colombia. *Journal of Development Effectiveness, 9*(4), 443–461. https://doi.org/10.1080/19439342.2017.1363802
9. Bendig, M., & Arun, T. (2016). Uptake of multiple microinsurance schemes: Evidence from Sri Lanka. *The Geneva Papers on Risk and Insurance — Issues and Practice, 41*(2), 205–224. https://doi.org/10.1057/gpp.2015.36
10. Biener, C., Eling, M., & Schmit, J. T. (2014). Regulation in microinsurance markets: Principles, practice, and directions for future development. *World Development, 58,* 21–40. https://doi.org/10.1016/j.worlddev.2013.12.012
11. Biener, C., & Eling, M. (2011). The performance of microinsurance programs: A data envelopment analysis. *The Journal of Risk and Insurance, 78*(1), 83–115. https://doi.org/10.1111/j.1539-6975.2010.01404.x
12. Biggeri, M., Nannini, M., & Putoto, G. (2018). Assessing the feasibility of community health insurance in Uganda: A mixed-methods exploratory analysis. *Social Science & Medicine, 200,* 145–155. https://doi.org/10.1016/j.socscimed.2018.01.027
13. Bogdanov, A. (1922). *Tektologiya: Vseobschaya organizatsionnaya nauka*. Berlin and Petrograd Moscow.
14. Bogdanov, A. (1980). *Essays in tektology* (G. Gorelik, Trans.). Intersystems Publications. https://monoskop.org/images/5/51/Bogdanov_Alexander_Essays_in_Tektology.pdf
15. Bonan, J., Dagnelie, O., LeMay-Boucher, P., & Tenikue, M. (2017). The impact of insurance literacy and marketing treatments on the demand for health microinsurance in Senegal: A randomised evaluation. *Journal of African Economies, 26*(2), 169–191. https://doi.org/10.1093/jae/ejw023

16. Bonan, J., LeMay-Boucher, P., & Tenikue, M. (2014). Households' willingness to pay for health microinsurance and its impact on actual take-up: Results from a field experiment in Senegal. *Journal of Development Studies, 50*(10), 1445–1462. https://doi.org/10.1080/00220388.2014.940909
17. Brouwer, R., & Akter, S. (2010). Informing micro insurance contract design to mitigate climate change catastrophe risks using choice experiments. *Environmental Hazards, 9*(1), 74–88. https://doi.org/10.3763/ehaz.2010.SI07
18. Brown, J. R., Kapteyn, A., Luttmer, E. F. P., & Mitchell, O. S. (2017). Cognitive constrains on valuing annuities. *Journal of the European Economic Association, 15*(2), 429–462. https://doi.org/10.1093/jeea/jvw009
19. Castellani, D., & Viganò, L. (2017). Does willingness-to-pay for weather index-based insurance follow covariant shocks? *International Journal of Bank Marketing, 35*(3), 516–539. https://doi.org/10.1108/IJBM-10-2016-0155
20. Chen, B., Feng, F. Y., Powers, M. R., & Qiu, J. (2019). Risk-revealing contracts for government-sponsored microinsurance. *Pacific-Basin Finance Journal, 57,* Article 101199. https://doi.org/10.1016/j.pacfin.2019.101199
21. Chummun, B. Z. (2017). An analysis of the development influences of the low-income cover market-end in South Africa. *African Journal of Science, Technology, Innovation and Development, 9*(6), 795–802. https://doi.org/10.1080/20421338.2017.1385576
22. Churchill, C. (2007). Insuring the low-income market: Challenges and solutions for commercial insurers. *The Geneva Papers on Risk and Insurance — Issues and Practice, 32*(3), 401–412. https://doi.org/10.1057/palgrave.gpp.2510132
23. Čihák, M., Demirgüç-Kunt, A., Feyen, E., & Levine, R. (2012). *Benchmarking financial systems around the world* (Policy Research Working Paper No. 6175). World Bank. https://doi.org/10.1596/1813-9450-6175
24. Cohen, M., & Sebstad, J. (2005). Reducing vulnerability: The demand for microinsurance. *Journal of International Development, 17*(3), 397–474. https://doi.org/10.1002/jid.1193
25. Cole, S., Giné, X., Tobacman, J., Topalova, P., Townsend, R., & Vickery, J. (2013). Barriers to household risk management: Evidence from India. *American Economic Journal: Applied Economics, 5*(1), 104–135. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3995033/pdf/nihms-402073.pdf
26. Collins, D., Morduch, J., Rutherford, S., & Ruthven, O. (2009). *Portfolios of the poor*. Princeton University Press.
27. Da Costa, D. (2013). The 'rule of experts' in making a dynamic micro-insurance industry in India. *The Journal of Peasant Studies, 40*(5), 845–865. https://doi.org/10.1080/03066150.2013.857659
28. Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2014). *Global Findex Database 2014: Measuring financial inclusion around the world*. World Bank Group (WBG). https://thedocs.worldbank.org/en/doc/681361466184854434-0050022016/original/2014GlobalFindexReportDKSV.pdf
29. Dias, D., Garand, D., & Swiderek, D. (2013). *Towards inclusive insurance in Nigeria: An analysis of the market and regulations*. Access to Insurance Initiatives (A2ii). https://a2ii.org/fr/media/640/download
30. Dietrich, S. (2017). Coping with shocks: Impact of insurance payouts on small-scale farmers. *The Geneva Papers on Risk and Insurance — Issues and Practice, 42*(2), 348–369. https://doi.org/10.1057/s41288-016-0035-y
31. Dror, D. M., & Firth, L. A. (2014). The demand for (micro) health insurance in the informal sector. *The Geneva Papers on Risk and Insurance — Issues and Practice, 39*(4), 693–711. https://doi.org/10.1057/gpp.2014.24
32. Dror, D. M., & Jacquier, C. (1999). Micro-insurance: Extending health insurance to the excluded. *International Social Security Review, 52*(1), 71–97. https://doi.org/10.1111/1468-246X.00034
33. Dror, D. M., Majumdar, A., Panda, P., John, D., & Koren, R. (2014). Implementing a participatory model of micro health insurance among rural poor with evidence from Nepal. *The Geneva Papers on Risk and Insurance — Issues and Practice, 39*(2), 280–303. https://doi.org/10.1057/gpp.2013.31
34. Dror, D. M. (2019). Microinsurance: A short history. *International Social Security Review, 72*(4), 107–126. https://doi.org/10.1111/issr.12223
35. Dror, D. M., Majumdar, A., & Chakraborty, A. (2018). The effect of consensus on demand for voluntary micro health insurance in rural India. *Risk Management and Healthcare Policy, 11,* 139–158. https://doi.org/10.2147/RMHP.S170299
36. Elabed, G., & Carter, M. R. (2015). Compound-risk aversion, ambiguity and the willingness to pay for microinsurance. *Journal of Economic Behavior & Organization, 118,* 150–166. https://doi.org/10.1016/j.jebo.2015.03.002
37. Elango, B., Chen, S., & Jones, J. (2019). Sticking to the social mission: Microinsurance in bottom of the pyramid markets. *Journal of General Management, 44*(4), 209–219. https://doi.org/10.1177/0306307018822592
38. Eling, M., Pradhan, S., & Schmit, J. T. (2014). The determinants of microinsurance demand. *The Geneva Papers on Risk and Insurance — Issues and Practice, 39*(2), 224–263. https://doi.org/10.1057/gpp.2014.5
39. Gaurav, S., & Chaudhary, V. (2020). Do farmers care about basis risk? Evidence from a field experiment in India. *Climate Risk Management, 27,* Article 100201. https://doi.org/10.1016/j.crm.2019.100201
40. Harrison, G. W., & Ng, J. M. (2018). Welfare effects of insurance contract non-performance. *The Geneva Risk and Insurance Review, 43*(1), 39–76. https://doi.org/10.1057/s10713-018-0024-0
41. Harrison, G., Morsink, K., & Schneider, M. (2022). Literacy and the quality of index insurance decisions. *The Geneva Risk and Insurance Review, 47*(1), 66–97. https://doi.org/10.1057/s10713-020-00060-1
42. Hassan, S. M., Rahman, Z., & Paul, J. (2022). Consumer ethics: A review and research agenda. *Psychology & Marketing, 39*(1), 111–130. https://doi.org/10.1002/mar.21580
43. Hill, R. V., Kumar, N., Magnan, N., Makhija, S., de Nicola, F., Spielman, D. J., & Ward, P. S. (2019). Ex ante and ex post effects of hybrid index insurance in Bangladesh. *Journal of Development Economics, 136,* 1–17. https://doi.org/10.1016/j.jdeveco.2018.09.003
44. Hochrainer, S., Mechler, R., & Kull, D. (2010). Micro-insurance against drought risk in a changing climate: Assessing demand and supply considerations. *International Journal of Climate Change Strategies and Management, 2*(2), 148–166. https://doi.org/10.1108/17568691011040407
45. Honohan, P. (2005). *Measuring microfinance access: Building on existing cross-country data* (World Bank Policy Research Working Paper No. 3606). World Bank. https://openknowledge.worldbank.org/handle/10986/8941
46. Hussain, S., & Ahmed, H. (2019). The role of bundling in promoting sustainability of health insurance: Evidence from Pakistan. *The Geneva Papers on Risk and Insurance — Issues and Practice, 44*(3), 503–526. https://doi.org/10.1057/s41288-019-00129-7

47. IAIS, & CGAP. (2007). *Issues in regulation and supervision of microinsurance*. International Association of Insurance Supervisors. https://www.iaisweb.org/uploads/2022/01/Issues_Paper_in_regulation_and_supervsion_of_microinsurance__June_2007.pdf.pdf
48. International Monetary Fund (IMF). (2015). *Rethinking financial deepening: Stability and growth in emerging markets* (IMF Staff Discussion Notes). https://www.imf.org/external/pubs/ft/sdn/2015/sdn1508.pdf
49. Ito, S., & Kono, H. (2010). Why is the take-up of microinsurance so low? Evidence from a health insurance scheme in India. *The Developing Economies, 48*(1), 74–101. https://doi.org/10.1111/j.1746-1049.2010.00099.x
50. Jansen, P., Gössling, T., & Bullens, T. (2011). Towards shared social responsibility: A study of consumers' willingness to donate micro-insurances when taking out their own insurance. *Journal of Business Ethics, 100*(1), 175–190. https://doi.org/10.1007/s10551-011-0773-5
51. Janzen, S. A., & Carter, M. R. (2019). After the drought: The impact of microinsurance on consumption smoothing and asset protection. *American Journal of Agricultural Economics, 101*(3), 651–671. https://doi.org/10.1093/ajae/aay061
52. Kazianga, H., & Wahhaj, Z. (2020). Will urban migrants formally insure their rural relatives? Family networks and rainfall index insurance in Burkina Faso. *World Development, 128,* Article 104764. https://doi.org/10.1016/j.worlddev.2019.104764
53. Koloma, Y. (2015). Crop microinsurance for maize farmers in Burkina Faso: Access and agriculture performance in the Dandé village. *Strategic Change, 24*(1), 115–129. https://doi.org/10.1002/jsc.2001
54. Kwon, W. J. (2010). An analysis of organisational, market and socio-cultural factors affecting the supply of insurance and other financial services by microfinance institutions in developing economies. *The Geneva Papers on Risk and Insurance — Issues and Practice, 35*(1), 130–160. https://doi.org/10.1057/gpp.2009.32
55. Lampe, I., & Würtenberger, D. (2020). Loss aversion and the demand for index insurance. *Journal of Economic Behavior and Organization, 180,* 678–693. https://doi.org/10.1016/j.jebo.2019.10.019
56. Lazlo, E. (1996). *The systems view of the world: A holistic vision for our time*. Hampton Press.
57. Ledgerwood, J. (2013). *The new microfinance handbook: A financial market system perspective*. World Bank. http://hdl.handle.net/10986/12272
58. List, G., Laszlo, S., & Coomes, O. T. (2020). Mitigating risk for floodplain agriculture in Amazonia: A role for index-based flood insurance. *Climate and Development, 12*(7), 649–663. https://doi.org/10.1080/17565529.2019.1674125
59. Liu, Y., & Myers, R. J. (2016). The dynamics of microinsurance demand in developing countries under liquidity constraints and insurer default risk. *The Journal of Risk and Insurance, 83*(1), 121–138. https://doi.org/10.1111/jori.12044
60. Luhmann, N. (2013). *Introduction to systems theory* (P. Gilgen, Trans.). Polity Press.
61. Malik, K., Meki, M., Morduch, J., Ogden, T., Quinn, S., & Said, F. (2020). COVID-19 and the future of microfinance: Evidence and insights from Pakistan. *Oxford Review of Economic Policy, 36*(Supplement_1), S138–S168. https://doi.org/10.1093/oxrep/graa014
62. Mansuri, G., & Rao, V. (2013). *Localizing development: Does participation work?* (A World Bank Policy Research Report). World Bank. https://www.local2030.org/library/323/Localizing-development-does-participation-work-.pdf
63. Maroof, S. A. U., & Sangmi, M.-u.-D. (2021). Assessing financial impact of a health intervention program and controlling spill over effects. *DECISION, 48*(1), 15–25. https://doi.org/10.1007/s40622-020-00257-3
64. Marshall, M. G., & Cole, B. R. (2014). *Global report 2014: Conflict, governance and state fragility*. Center for Systemic Peace. https://www.systemicpeace.org/vlibrary/GlobalReport2014.pdf
65. Martin, J., Myhre, D., & Singh, N. (2013). *Savings as a cornerstone: Laying the foundation for financial inclusion*. Small Enterprise Evaluation Project (SEEP) Network. https://seepnetwork.org/files/galleries/940_Savings_report_web_final.pdf
66. Massaro, M., Dumay, J., & Guthrie, J. (2016). On the shoulders of giants: Undertaking a structured literature review in accounting. *Accounting, Auditing & Accountability Journal, 29*(5), 767–801. https://doi.org/10.1108/AAAJ-01-2015-1939
67. Matul, M., Tatin-Jaleran, C., & Kelly, E. (2011). *Improving client value from microinsurance: Insights from India, Kenya, and the Philippines*. International Labour Organization (ILO). http://www.ilo.org/public/libdoc//ilo/2011/478683.pdf
68. Meadows, D. H. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.
69. Meze-Hausken, E., Patt, A., & Fritz, S. (2009). Reducing climate risk for micro-insurance providers in Africa: A case study of Ethiopia. *Global Environmental Change, 19*(1), 66–73. https://doi.org/10.1016/j.gloenvcha.2008.09.001
70. Minani, I., Ishengoma, E. K., & Mori, N. (2018). Effect of partner–agent model practice on microinsurance client value: Insight from microfinance institutions in Tanzania. *Cogent Business & Management, 5*(1), Article 1444328. https://doi.org/10.1080/23311975.2018.1444328
71. Mosley, P. (2003). 14. Microinsurance: *Scope, design and assessment of wider impacts. IDS Bulletin, 34*(4), 143–155. https://doi.org/10.1111/j.1759-5436.2003.tb00099.x
72. Mukherjee, A. (2004). *Hunger: Theory, perspectives, and reality: Assessment through participatory methods.* Routledge. https://doi.org/10.4324/9781351156202
73. Murthy, S. D., Patra, K. S., & Samantaraya, A. (2014). Trade openness, financial development index and economic growth: Evidence from India (1971–2012). *Journal of Financial Economic Policy, 6*(4), 362–375. https://doi.org/10.1108/JFEP-10-2013-0056
74. Murthy, S. D., Patra, K. S., & Samantaraya, A. (2014). Trade openness, financial development index and economic growth. *Journal of Financial Economic Policy, 6*(4), 362–375. https://doi.org/10.1108/JFEP-10-2013-0056
75. Noordhoek, D., Marcoux, B., & Schanz, K. (2022). *Insurance development in emerging markets: The role of public policy and regulation*. The Geneva Association. https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/emerging_markets_web.pdf
76. Nyarondia, S. M. (2017). Effect of microfinance on poverty reduction: A critical scrutiny of theoretical literature. *Global Journal of Commerce & Management Perspective, 6*(3), 16–33. https://doi.org/10.24105/gjcmp.6.3.1702
77. Olaosebikan, O. (2013). The determinants of the profitability of micro-life insurers in Nigeria. *The Geneva Papers on Risk and Insurance — Issues and Practice, 38*(1), 140–159. https://link.springer.com/article/10.1057/gpp.2012.18

78. Osifodunrin, E. A., & Lopes, J. M. D. (2021). Participatory financial inclusion hypothesis: A preliminary empirical validation using survey design. *International Journal of Economics and Management Engineering, 15*(8), 743–755. https://publications.waset.org/10012168/pdf
79. Osifodunrin, E. A., & Lopes, J. M. D. (2022a). Formal microsaving: A PRISMA-compliant systematic review of its exogenous determinants. *Enterprise Development and Microfinance, 33*(3), 192–210. https://doi.org/10.3362/1755-1986.21-00050
80. Osifodunrin, E. A., & Lopes, J. M. D. (2022b). Theory and determinants of regulatory effectiveness in a formal microinsurance context: The insurers' perspectives [Special issue]. *Journal of Governance & Regulation, 11*(4), 277–288. https://doi.org/10.22495/jgrv11i4siart8
81. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Journal of Clinical Epidemiology, 134,* 178–189. https://doi.org/10.1016/j.jclinepi.2021.03.001
82. Panda, P., Chakraborty, A., & Dror, D. M. (2015). Building awareness to health insurance among the target population of community-based health insurance schemes in rural India. *Tropical Medicine & International Health, 20*(8), 1093–107. https://doi.org/10.1111/tmi.12524
83. Panda, P., Chakraborty, A., Dror, D. M., & Bedi, A. S. (2014). Enrolment in community-based health insurance schemes in rural Bihar and Uttar Pradesh, India. *Health Policy and Planning, 29*(8), 960–974. https://doi.org/10.1093/heapol/czt077
84. Patt, A., Suarez, P., & Hess, U. (2010). How do small-holder farmers understand insurance, and how much do they want it? Evidence from Africa. *Global Environmental Change, 20*(1), 153–161. https://doi.org/10.1016/j.gloenvcha.2009.10.007
85. Platteau, J.-P., & Ontiveros, D. U. (2021). Cognitive bias in insurance: Evidence from a health scheme in India. *World Development, 144,* Article 105498. https://doi.org/10.1016/j.worlddev.2021.105498
86. Platteau, J.-P., De Bock, O., & Gelade, W. (2017). The demand for microinsurance: A literature review. *World Development, 94,* 139–156. https://doi.org/10.1016/j.worlddev.2017.01.010
87. Radermacher, R., Srivastava, S., Walsham, M., Sao, C., & Paolucci, F. (2016). Enhancing the inclusion of vulnerable and high-risk groups in demand-side health financing schemes in Cambodia: A concept for a risk-adjusted subsidy approach. *The Geneva Papers on Risk and Insurance — Issues and Practice, 41*(2), 244–258. https://doi.org/10.1057/gpp.2016.5
88. Rayamajhee, V., Guo, W., & Bohara, A. K. (2022). The perception of climate change and the demand for weather-index microinsurance: Evidence from a contingent valuation survey in Nepal. *Climate and Development, 14*(6), 557–570. https://doi.org/10.1080/17565529.2021.1949574
89. Roth, J., McCord, M. J., & Liber, D. (2007). *The landscape of microinsurance in the world's 100 poorest countries*. The Microinsurance Centre. https://www.shareweb.ch/site/EI/Documents/FSD/The%20Landscape%20of%20Microinsurance%20in%20the%20World's%20100%20Poorest%20Countries%20-%202007(en).pdf
90. Roznik, M., Brock Porth, C., Porth, L., Boyd, M., & Roznik, K. (2019). Improving agricultural microinsurance by applying universal kriging and generalised additive models for interpolation of mean daily temperature. *The Geneva Papers on Risk and Insurance — Issues and Practice, 44*(3), 446–480. https://doi.org/10.1057/s41288-019-00127-9
91. Sane, R., & Thomas, S. (2020). From participation to repurchase: Low income households and micro-insurance. *Journal of Risk and Insurance, 87*(3), 783–814. https://doi.org/10.1111/jori.12288
92. Savitha, B., Banerjee, S., & Shetty, A. (2019). Product diversification versus technical efficiency of conglomerate life microinsurance companies: Evidence from India. *The Geneva Papers on Risk and Insurance — Issues and Practice, 44*(3), 527–547. https://doi.org/10.1057/s41288-019-00128-8
93. Savitha, S., & Kiran, K. B. (2015). Effectiveness of micro health insurance on financial protection: Evidence from India. *International Journal of Health Economics and Management, 15*(1), 53–71. https://doi.org/10.1007/s10754-014-9158-5
94. Svirydzenka, K. (2016). *Introducing a new broad-based index of financial development* (IMF Working Paper No. WP/16/5). International Monetary Fund. https://doi.org/10.5089/9781513583709.001
95. Takahashi, K., Ikegami, M., Sheahan, M., & Barrett, C. B. (2016). Experimental evidence on the drivers of index-based livestock insurance demand in southern Ethiopia. *World Development, 78,* 324–340. https://doi.org/10.1016/j.worlddev.2015.10.039
96. Turner, G., Said, F., & Afzal, U. (2014). Microinsurance demand after a rare flood event: Evidence from a field experiment in Pakistan. *The Geneva Papers on Risk and Insurance — Issues and Practice, 39*(2), 201–223. https://doi.org/10.1057/gpp.2014.8
97. Uddin, M. A. (2017). Microinsurance in India: insurance literacy and demand. *BEH — Business and Economic Horizons, 13*(2), 182–191. https://www.researchgate.net/profile/Mohammad-Uddin-75/publication/320492194_Microinsurance_in_India_Insurance_literacy_and_demand/links/5a38d5b5458515919e7276fe/Microinsurance-in-India-Insurance-literacy-and-demand.pdf
98. van Asseldonk, M., Muwonge, D., Musuya, I., & Abuce, M. (2020). Adoption and preferences for coffee drought index-based insurance in Uganda. *Studies in Agricultural Economics, 122*(3), 162–166. https://doi.org/10.7896/j.2053
99. Vasilaky, K., Diro, R., Norton, M., McCarney, G., & Osgood, D. (2020). Can education unlock scale? The demand impact of educational games on a large-scale unsubsidised index insurance programme in Ethiopia. *The Journal of Development Studies, 56*(2), 361–383. https://doi.org/10.1080/00220388.2018.1554207
100. Von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. George Braziller.
101. Ward, P. S., Makhija, S., & Spielman, D. J. (2020). Drought-tolerant rice, weather index insurance, and comprehensive risk management for smallholders: Evidence from a multi-year field experiment in India. *The Australian Journal of Agricultural and Resource Economics, 64*(2), 421–454. https://doi.org/10.1111/1467-8489.12342
102. Werner, W. J. (2009). Micro-insurance in Bangladesh: Risk protection for the poor? *Journal of Health, Population and Nutrition, 27*(4), 563–573. https://doi.org/10.3329/jhpn.v27i4.3402

103. Will, M., Groeneveld, J., Frank, K., & Müller, B. (2021). Informal risk-sharing between smallholders may be threatened by formal insurance: Lessons from a stylized agent-based model. *PLoS ONE, 16*(3), Article e0248757. https://doi.org/10.1371/journal.pone.0248757
104. World Economic Forum (WEF). (2008). *The financial development report 2008*. https://web-docs.stern.nyu.edu/salomon/docs/crisis/WEF%20Financial%20Development%20Report.pdf
105. World Economic Forum (WEF). (2011). *The Financial Development Report 2011*. https://dupuch.com/tbi-media/WEF_FinancialDevelopmentReport_2011.pdf
106. Yan, Y., & Faure, M. G. (2021). Government interventions in microinsurance: Evidence from China. *The Geneva Papers on Risk and Insurance — Issues and Practice, 46*(3), 440–467. https://doi.org/10.1057/s41288-020-00202-6
107. Yao, Y., Schmit, J., & Shi, J. (2019). Promoting sustainability for micro health insurance: A risk-adjusted subsidy approach for maternal healthcare service. *The Geneva Papers on Risk and Insurance — Issues and Practice, 44*(3), 382–409. https://doi.org/10.1057/s41288-018-00115-5
108. Yao, Y. (2013). Development and sustainability of emerging health insurance markets: Evidence from microinsurance in Pakistan. *The Geneva Papers on Risk and Insurance. Issues and Practice, 38*(1), 160–180. https://doi.org/10.1057/gpp.2012.19
109. Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). SAGE Publications.
110. Zhang, X., Chen, Y., & Yao, Y. (2021). Dynamic information asymmetry in micro health insurance: Implications for sustainability. *The Geneva Papers on Risk and Insurance — Issues and Practice, 46*(3), 468–507. https://doi.org/10.1057/s41288-020-00200-8

APPENDIX

Table A.1. Systematic evidence (Part 1)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A1	Platteau and Ontiveros (2021) *(Cited 0 time(s) in* WOSCC and 0 time(s) in GS)	A community-based health insurance (CBHI) scheme launched in two districts of Maharashtra State (Solapur and Osmanabad) in India.	Primary data were sourced from subscribers and non-subscribers of the CBHI scheme and analysed using descriptive statistics and econometric analysis (linear probability model) for the period 2010 to 2011. (Control variables: Age and gender, Household size, Schooling and literacy, Income and assets).	- Micro insurance illiteracy (as proxied by poor understanding of micro insurance concept). - Failure of Formal Micro insurance Provider (FMIP) to give detailed and effective product information to consumers (proxied by supply-side information failure).	Low micro-insurance contract renewal	The two independent variables were found to significantly reduce micro-insurance contract renewal of poor households.
A2	Lampe and Wurtenberger (2020) *(Cited 0 time(s) in WOSCC and 3 time(s) in GS)*	Weather index micro insurance scheme launched for farmers in a rural region of India	The study used secondary data obtained from the field experiments (randomized controlled trial (RCT)) conducted by Cole et al. (2013).	- Micro insurance literacy (as measured by farmers' awareness of the loss-hedging benefits of micro insurance). - Farmers' loss aversion.	Adoption rates of rainfall index micro insurance	Index insurance demand of farmers who are unaware of the loss-hedging benefits that micro-insurance provides decreases with loss aversion. In contrast, the insurance demand of farmers who are aware of the loss-hedging benefits increases with loss aversion.
A3	Vasilaky et al. (2020) *(Cited 1 time(s) in WOSCC and 8 time(s) in GS)*	Focus was on the micro insurance scheme named the Horn of Africa Risk Transfer for Adaptation (HARITA), now called HARITA/R4 deployed in three villages in Northern Ethiopia: Geneti, Hadi Alga, and Awet Bikalsi.	Regression analysis was conducted on secondary and primary data. Secondary data (land holdings, family composition, and farm animals) came from official household surveys, while data on commercial insurance purchases and other data were sourced from HARITA/R4. Primary data was gathered in the course of the financial educational game.	Insurance education (delivered to randomly-selected rural farmers via a financial educational game).	The rural farmers' demand for unsubsidised or market-priced drought-indexed micro insurance product (that is not linked to any microloan)	The study empirically showed that insurance education increased the likelihood of purchasing market-priced (drought-indexed) micro insurance by an average of 10 per cent, while the actual purchase of micro insurance (amongst rural farmers) increased by 33 per cent.
A4	List et al. (2020) *(Cited 1 time(s) in WOSCC and 4 time(s) in GS)*	The study explores index-based flood insurance products for floodplain rice farmers (prone to excessive flooding along the Amazon river near Iquitos) in Peru.	Empirical data came from primary sources like household surveys (capturing demographic, economic, behavioural, and land-holding characteristics), focus group discussions, and key informant interviews.	Financial knowledge	Having savings adequate to cover 3 months of typical expenses.	The study empirically showed that households with more significant financial knowledge typically save more to cover (3 months) expenses.
A5	Bonan et al. (2017) *(Cited 4 time(s) in WOSCC and 12 time(s) in GS)*	360 randomly selected households across the city of Thiès in Senegal.	Primary data generated from the sample of 360 households were estimated/examined using randomized controlled trials, descriptive statistics and regression analysis.	- Insurance literacy module (implemented by communicating the benefits and functioning of health micro insurance to poor households). - Marketing treatment (implemented by offering subsidies on premium which reduced the financial barriers to micro health insurance (MHI)).	Demand for MHI	It was shown that marketing treatment evinced a positive and significant effect on MHI especially for poor households, increasing take-up by around 35 to 40 per cent. Meanwhile, the insurance literacy module seem not to have a positive impact on take-up decisions.

Table A.1. Systematic evidence (Part 2)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A6	Uddin (2017) *(Cited 2 time(s) in WOSCC and 10 time(s) in GS)*	Focus was on respondents from the National Capital Region (NCR), of India.	Primary data gathered via a questionnaire survey of 400 respondents were estimated using descriptive statistics and binary logistic regression analysis.	- Insurance literacy (measured by responses to an insurance literacy quiz). - Demographic variables (income, employment and education).	Micro insurance demand	The result indicated that insurance literacy, income, employment and education increased the likelihood of demanding/owning a micro insurance policy.
A7	Takahashi et al. (2016) *(Cited 38 time(s) in WOSCC and 92 time(s) in GS)*	The research focused on index-based livestock micro insurance (IBLM) amongst pastoralists in Southern Ethiopia.	Primary Panel Data gathered over some insurance sales period were estimated using multivariate regression analysis ("double-hurdle" (DH) model).	- Insurance literacy (explained as accurate product comprehension achieved via the distribution of learning kits). - Insurance affordability (operationalised by the random distribution of discount coupons).	DTILM — demand and take-up in index-based livestock micro insurance.	Research results indicated that reduced premium price of IBLM significantly increased DTILM, without any price-related future demand reduction. Meanwhile, the provided learning kits increased insurance literacy, but barely impacted DTILM sustainably.
A8	Panda et al. (2015) *(Cited 11 time(s) in WOSCC and 33 time(s) in GS)*	The study was on factors that can enhance the demand/uptake of community-based health insurance (CBHI) policies in rural India.	Primary data collected via baseline/subsequent surveys of 800 households were estimated using the difference-in-differences method and the ordinary least square regression analysis.	Insurance literacy (operationalised as awareness-raising).	Demand/Uptake of CBHI policies.	The study revealed that awareness-raising is an important prerequisite for voluntary demand/uptake of CBHI policies.
A9	Patt et al. (2010) *(Cited 56 time(s) in WOSCC and 129 time(s) in GS)*	The research was an experiment (in respect of agricultural index micro insurance) conducted amongst farmers in Ethiopia and Malawi.	Primary data gathered from the empirical games and surveys were evaluated using inferential statistics, correlational and multinomial logit regression analysis.	- Level of insurance literacy and understanding (LILU) - Demographic variables such as level of formal education, etc.	Willingness to purchase agricultural index micro insurance (WTPAIM).	Research revealed that farmers with higher LILU evinced higher WTPAIM. Expectedly, higher formal education evinced higher LILU.
A10	Gaurav and Chaudhary (2020) *(Cited 1 time(s) in WOSCC and 7 time(s) in GS)*	A hypothetical weather index micro insurance experimented in six villages of Vidarbha region in Maharashtra, India.	Relevant weather data were collected from installed automated weather stations (AWS) and other primary data (demographic and responses to core survey questions) were gathered from 361 farmers selected for the field experiment. These data were processed via descriptive statistics, correlation analysis, and regression analysis (including probit regression).	- Spatial basis risk (supplying information on basis risk to farmers). - Subsidies on micro insurance premium.	Willingness to buy the micro-insurance product in focus.	Educating farmers about basis risk significantly reduced farmers' willingness to buy micro insurance, while the provision of information about 'subsidized micro insurance premium' (when combined with information on basis risk) moderates the negative effect on willingness to buy micro insurance.
A11	Kazianga and Wahhaj (2020) *(Cited 0 time(s) in WOSCC and 5 time(s) in GS)*	Weather index micro insurance scheme experimented with small-holder farmers in rural Burkina Faso and migrants from their households presently living in Ouagadougou (an urban area and the capital of Burkina Faso).	Secondary data from the rural census and the urban/rural household surveys and primary data from specific surveys (of rural farmers) and focus group/interview (targeting urban-dwelling relatives of rural farmers) were analysed using descriptive statistics and regression analysis.	Social network (as empirically/ specifically depicted by getting urban-dwellers to help pay for the insurance premium of their relatives (farmers) in rural Burkina Faso).	Micro insurance uptake	The independent variable increased micro insurance uptake rates by 17–22 percentage points.

Table A.1. Systematic evidence (Part 3)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A12	Dror et al. (2018) *(Cited 2 times in WOSCC and 4 time(s) in GS)*	The study focused on Self-Help Groups (SHG) in rural India (in the states of Uttar Pradesh and Bihar) subscribing to community-based micro health insurance (CMHI) schemes.	Pre-scheme primary data collected via household survey and intra-scheme data were estimated using logistic and ordinary least square regression.	Group consensus on: - Price of the insurance. - Perceptions about exposure to adverse health events. - Perceptions of the quality of service of local health care providers.	Demand for micro-insurance	The result portrayed that the SHG-consensus (rather than individual decisions) on the 3 independent variables were all important determinants of the demand for micro- insurance.
A13	Dror et al. (2014) *(Cited 11 time(s) in WOSCC and 22 time(s) in GS)*	PMMHI — the participatory model of micro health insurance (experimented by involving rural dwellers (from the Dhading & Banke Districts in Nepal) in the design, localization, contextualization, and governance of the community-based micro health insurance scheme (CBMHIS).	Primary data gathered from the baseline study, simulations at the design phase and the actual results of the CBMHIS were estimated via descriptive/inferential statistics and comparative analyses between the simulated/actual data.	- Local participation in CBMHIS. - Trust. - Educating Rural Dwellers on CBMHIS.	Sustainability and scalability of CBMHIS without subsidies (SSCBMHISWS)	Local Participation in CBMHIS, trust and relevant education led to the success, sustainability, easy contract enforcement, scalability of the CBMHIS.
A14	Akter et al. (2016) *(Cited 36 time(s) in WOSCC and 75 time(s) in GS)*	The study respondents were 433 male/female farmers (residents of a 'climate change vulnerable coastal Island' in Bangladesh) offered a hypothetical weather-indexed maize crop micro insurance scheme (WIMCMS)	Primary data was collected via a semi-qualitative study and an Attribute-Based Choice Experiment Survey (ABCES) in which male/female respondents were queried on their preferences for a range of WIMCMS options. The data were then estimated with descriptive/inferential statistics amongst other methods.	- Gender; - Insurance literacy.	Preferences for WIMCMS.	Study revealed that "Gender and Trust" as well as "Gender and Insurance literacy" (better explained as "gendered differences in Trust and insurance literacy") determines the observed preferences for WIMCMS.
A15	Asseldonk et al. (2020) *(Cited 0 time(s) in WOSCC and 0 time(s) in GS)*	The study was based on a stand-alone coffee index-based micro insurance product in Uganda.	Stepwise multi-variate logistic regression was deployed to analyse the primary data collected from 614 coffee farmers via stratified household survey.	Various Innovation such as: 1) Using proceeds from coffee harvest/sales to pay for micro insurance premium. 2) Using mobile phones to pay micro insurance premium. 3) Group purchase of micro insurance policy. 4) Lack of micro insurance awareness/education. 5) Inadequate or lack of micro insurance sales channels.	Adoption of micro insurance	It was revealed that items (1), (2) and (3) promote the adoption of the micro insurance product in focus, while items (4) and (5) inhibits it.
A16	Ward et al. (2020) *(Cited 5 time(s) in WOSCC and 9 time(s) in GS)*	This micro insurance field experiment spans six administrative sub-districts in India where farmers predominantly grow rice and are extremely prone to drought.	Primary data on farmers' household as well as core research questions (from survey) and frequency/amount of rainfall (from weather stations) were gathered and interpreted via descriptive statistics and various regression analyses.	Very innovative non-financial strategies to reduce agricultural risks (proxied by the introduction of drought-tolerant rice cultivar or variety).	Demand for weather-indexed agricultural micro insurance (WIAM).	It was empirically determined that non-financial strategies to reduce agricultural risks (including basis risk) can increase the demand for WIAM.

Table A.1. Systematic evidence (Part 4)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A17	Chen et al. (2019) *(Cited 0 time(s) in WOSCC and 0 time(s) in GS)*	This study examines China's urban and rural residents' basic medical insurance (URRBMI) — a Chinese micro insurance scheme whose lack of underwriting procedures makes it vulnerable to much adverse selection.	Secondary data (capturing study's focal areas) were scooped from the URRBMI database and analysed using descriptive statistics and other estimation methods.	Innovative strategy to reduce adverse selection (via risk-revealing micro insurance contracts (that is policyholders are encouraged to self-underwrite by purchasing a micro insurance product that reveals the buyer's inherent risk level, and charges an actuarially fair price).	Micro insurance profitability/sustainability.	Empirical evidence of the impact of reduced adverse selection was significant on URRBMI's sustainability/profitability, even though, the URRBMI is a non-profit micro insurance scheme.
A18	Roznik et al. (2019) *(Cited 5 time(s) in WOSCC and 7 time(s) in GS)*	This research was conducted using the case study of Canadian agricultural (index-based) micro insurance policies and various weather stations (WS) located in Alberta, Canada.	Secondary data sourced from the government of Canada's Climate and Weather Database and some WS located in Alberta (Canada) were evaluated using regression analysis.	Technological innovation as exemplified by the use of advanced interpolation techniques (AIT) such as universal kriging (UK) and generalised additive models (GAM).	Micro insurance efficiency (as proxied by the reduction of basis risk).	It was determined that for areas with a lower density of WS, AIT reduces basis risk for agricultural micro insurance with the corresponding enhancement in efficiency.
A19	Bauchet and Morduch (2019) *(Cited 3 times in WOSCC and 4 time(s) in GS)*	Research subjects are the 200,000 poor female microcredit customers scheduled for a natural experiment on a micro life insurance policy promoted by Compartamos (a Mexican MFI).	Descriptive, inferential statistics and regression analysis were used on administrative secondary data (demographic and others) gathered from Compartamos.	Innovative payment modality/ scheme (proxied as allowing micro insurance customers to pay premium in more convenient weekly instalments rather than in a yearly lump sum).	Demand for micro life insurance policy	The findings revealed that demand for micro life insurance increased by 59 to 74 per cent when customers were allowed to pay in weekly instalments rather than in less convenient yearly lump sum.
A20	Bauchet et al. (2017) *(Cited 2 time(s) in WOSCC and 7 time(s) in GS)*	Smallholder farmers who are also customers of Crezcamos. Crezcamos is an MFI operating in Colombia. These farmers were also experimentally offered micro agricultural insurance together with microcredit or separately at a later date.	Demographic/loan/insurance (secondary) data came from Crezcamos, while clarity on the farmers' decision to purchase/reject micro insurance (primary data) came from a survey. The study used randomized control trials, descriptive statistics and regression analysis.	The innovative sales/marketing strategy of bundling micro insurance with microcredit(operationalised by offering some farmers microcredit and micro insurance simultaneously, while some farmers were initially offered microcredit and micro insurance later).	Micro insurance take-up or demand	Delayed offer of micro insurance did not influence overall micro insurance take-up or coverage amount but had heterogeneous impacts by crop (that is insurance take-up vary by different crops).
A21	Hussain and Ahmed (2019) *(Cited 1 time(s) in WOSCC and 4 time(s) in GS)*	The study focused on micro health insurance in Pakistan.	Secondary data from a large microfinance institution (MFI) was evaluated using a difference-in-differences approach.	The innovative strategy of bundling micro insurance with microfinance (SBMIMF).	Client retention in micro health insurance (CRMHI).	SBMIMF has a positive effect on CRMHI.
A22	Awondo and Kostandini (2021) *(Cited 0 time(s) in WOSCC and 1 time(s) in GS)*	The study captured the influence of introducing Drought Tolerant Maize Varieties (DTMV) on the development of sustainable micro-insurance markets in over 49 locations spanning eight countries in Africa.	Secondary climate data and primary on-farm trial data were evaluated using Markov chain and multivariate spatial Bayes models.	Innovation as proxied by the introduction of DTMV.	Micro insurance efficiency as proxied by low premium rates.	The optimal introduction of DTMV on farms reduced the impact of drought, which led to the reduction in weather micro insurance premium rates by 31 to 55 per cent.

Table A.1. Systematic evidence (Part 5)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A23	Savitha et al. (2019) *(Cited 2 time(s) in WOSCC and 7 time(s) in GS)*	The research focused on the Indian life micro insurance sub-sector.	Malmquist total factor productivity index (MTFP) and secondary data from the Insurance Regulatory and Development Authority of India (IRDA) were processed with Data Envelopment Approach (DEA), and Tobit regression analyses	Innovative product diversification	Technical efficiency of life micro insurance companies (LMIC).	Product diversification adversely affect the technical efficiency of LMIC.
A24	Akter et al. (2011) *(Cited 19 time(s) in WOSCC and 40 time(s) in GS)*	The research focused on micro flood insurance scheme providers (MFISP) and their partnership (via the principal-agent (PA) model with micro-credit providers (MCP) in the provision of micro flood insurance (MFI) to rural dwellers in Bangladesh.	Primary data gathered via interviews with relevant institutional stakeholders were estimated via descriptive statistics and interval regression.	Innovative institutional-organisational models presented below: 1) Principal-agent (PA) model (where MFISP partners with MCP to reduce administrative cost. 2) Full service (FS) model where the MFISP do not partner with MCP and single-handedly provides MFI services with huge administrative cost.	Viability of Micro Flood Insurance Services (VMFIS)	The study's quantitative analysis showed that the PA Model (with reduced administrative cost) enhances the VMFIS; however, major differences in corporate ideology, motivation, degree of power and market focus impede this collaboration preached by the PA model.
A25	Meze-Hausken et al. (2009) *(Cited 27 time(s) in WOSCC and 78 time(s) in GS)*	The research focused on a hypothetical index-based crop micro insurance (IBCM) in Ethiopia.	Secondary (historical) rainfall and crop yield data were gathered to build a Monte Carlo simulation model (MCSM) of the insurance market, and later used to predict possible outcomes sequel to the modelled spatial pooling (MSP).	Innovative spatial pooling (some form of business combination and risk-sharing amongst formal micro insurance schemes providers).	Increased supply and access to index-based crop micro insurance (IBCM) by reducing the capital requirements of providers.	It was evinced that significant savings in capital requirements of IBCM providers can be obtained by spatial pooling, which could increase the supply-side of IBCM.
A26	Brouwer and Akter (2010) *(Cited 24 time(s) in WOSCC and 44 time(s) in GS)*	The study focused on hypothetical micro flood insurance policies (HMFIP) amongst rural households (heads of households) in five different risk-prone districts in Bangladesh.	The study deployed the stated choice experiment (SCE) in which respondents generated primary data by choosing from 2 possible HMFIP (or decide not to) based on stated explanatory variables.	- Religious belief; - Level of insurance literacy (LoIL); - Level of income (LoI).	Willingness to pay for micro insurance (WTPM)	Low LoIL/LoI correlates positively with low WTPM and religious belief also drives low WTPM and complacency, with the common explanation that floods are just inevitable.
A27	Turner et al. (2014) *(Cited 14 time(s) in WOSCC and 29 time(s) in GS)*	The study was on disaster micro insurance *vis-a-vis* severe flood experiences in Pakistan.	Primary pre- and post-flood data collected from flood-affected and non-affected villages were further validated with behavioral experiments to determine the impact of RFEs.	- The non-Islamic nature of micro insurance (NINM); - Rare flood events (RFE).	- Demand for disaster micro insurance (DDM)	-Surprisingly, the household mind set of the NINM do not stop them from generating significant DDM. -Households who experienced RFE generate more DDM.
A28	Yao et al. (2019) *(Cited 6 time(s) in WOSCC and 14 time(s) in GS)*	This research paid attention to micro health insurance (MHI) subsidy in Pakistan.	Secondary datasets from a micro health insurer were evaluated with various econometric models.	RAS — risk-adjusted subsidy (a subsidy programme designed to pay micro insurers a grant commensurate to only the risks they cover beyond the collected premium).	Micro insurance sustainability as proxied by micro insurers' loss ratio (MILR)	RAS significantly improved MILR by almost 40 per cent, resulting in enhanced sustainability for micro health insurers.
A29	Radermacher et al. (2016) *(Cited 4 time(s) in WOSCC and 6 time(s) in GS)*	The study focused on the vulnerable citizens in the Kampong Thom District of Cambodia seeking micro health insurance (MHI) coverage.	Secondary data from a single MHI scheme in Kampong Thom District were analysed for cost efficiency/ effectiveness and to identify the gap/need for state-funded RAS.	RAS (providing only individualised subsidy to each vulnerable citizen just as the need arises).	Improved micro health insurance take-up (IMHIT) 20	The findings showed that RAS could lead to IMHIT.

Table A.1. Systematic evidence (Part 6)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A30	Yan and Faure (2021) *(Cited 3 time(s) in WOSCC and 10 time(s) in GS)*	The focus of the study was on government intervention *vis-à-vis* AMI in China.	Gathered data were evaluated with descriptive statistics and regression analysis.	Government interventions (GI) proxied as: - Subsidisation; - Simplification; - Use of group policy; - Established distribution channels.	Access to micro insurance (AMI)	GI adversely affect AMI by inducing moral hazard and adverse selection. However, these effects can be mitigated by efficiently designed subsidy programmes, improved stakeholders efficiency and insurance literacy and easily renewable group micro insurance policies.
A31	Jansen et al. (2011) *(Cited 9 time(s) in WOSCC and 20 time(s) in GS)*	The study was conducted amongst Dutch consumers of conventional insurance (DCCI).	Primary data gathered via online survey were processed using a one-way between-groups ANOVA, a paired sample t test and an ordinal regression analysis.	Charity/philanthropic actions of consumers of conventional insurance (proxied by willingness to donate/contribute (WTD) to buying micro insurance policies for the less-privileged).	Uptake of all forms of micro insurance (UAFM)	In conclusion, there is readiness amongst DCCI to increase UAFM via an insurance company that assists in setting up micro-insurance projects.
A32	Elango et al. (2019) *(Cited 0 time(s) in WOSCC and 2 time(s) in GS)*	The sample for the study consists of 192 licensed micro insurers (covering the years 2009 to 2011) and operating across 26 countries (Benin, Burkina Faso, Cameroon, Comoros, Cote d'Ivoire, Dem. Rep. Congo, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Mali, Mauritius, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Gambia, Togo, Uganda, and Zambia).	Primary and secondary data were gathered with correlation and multilevel regression analyses used for empirical estimation.	- Donor involvement in micro insurance (as measured by a survey question with binary response on whether donors are involved in the micro insurance scheme or not (primary data)). - State fragility (as measured by the multidimensional "State Fragility Index" published by the Centre for Systemic Peace (Marshall & Cole, 2014).	social mission orientation of micro insurers (aptly described as the provision of adequate coverage at low levels of premium that the poor can afford and operationally measured as: "value of total asset(s) insured" divided by "the premium charged").	The study found that donor involvement is positively related to social mission orientation, while state fragility is negatively related to social mission orientation. Also, at the initial stage, donor involvement seem to improve social mission orientation, irrespective of state fragility, however, increasing state fragility decreases the effect of donor involvement.
A33	Hochrainer et al. (2010) *(Cited 6 time(s) in WOSCC and 15 time(s) in GS)*	The study focused on weather index micro insurance (WIM) in Malawi and India.	Secondary data from household livelihood, the demand/supply side of WIM, regional climate projection and insurance pricing were analysed using a novel modelling approach.	Climate change as proxied by drought risk.	The viability of micro insurance (VoM)	Study affirmed that climate change affects VoM negatively.
A34	Castellani and Viganò (2017) *(Cited 4 time(s) in WOSCC and 10 time(s) in GS)*	The research was on livestock mortality micro insurance (LMM) amongst rural Ethiopian households.	Panel-structured primary data were estimated using OLS and quantile regression models.	Weather shocks or anomalies.	Willingness to pay for livestock mortality micro insurance (WTPLMM)	Results showed that negative changes in precipitation can lead to over 30 per cent reduction in WTPLMM.
A35	Rayamajhee et al. (2021) *(Cited 0 time(s) in WOSCC and 2 time(s) in GS)*	Two hypothetical weather index micro insurance schemes were demonstrated amongst farming households in Basbari VDC (now Melamchi municipality) in the Sindhupalchowk district of Nepal.	Primary data was collected from a field survey of farming households and analysed using bivariate probit models with order effects.	KACC — knowledge about climate change (as proxied by farmers' perceptions about climate change).	Micro insurance purchase decisions and willingness to pay premium (WTPP)	It was empirically revealed that farming households' ex ante perception of future climate change as well as their ex-post perceptions of the devastating impact of past climate change have significant effects on their micro insurance purchase decisions and WTPP.

Table A.1. Systematic evidence (Part 7)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A36	Bonan et al. (2014) *(Cited 2 time(s) in WOSCC and 14 time(s) in GS)*	WTP for community-based health micro insurance (CBHMI) was experimented amongst individuals and households in Senegal.	Primary data gathered from households and individuals (via questionnaires, interviews, randomized field experiments, etc.) were estimated using descriptive/inferential statistics and correlation analysis.	- Income; - Wealth; - Risk preference (being risk averse or not).	WTP — Willingness to pay for CBHMI	The study showed income and wealth as having positive/significant relationship with WTP. Similarly, strongly risk-averse persons evinced significantly higher WTP than those less risk-averse.
A37	Panda et al. (2014) *(Cited 29 time(s) in WOSCC and 64 time(s) in GS)*	The study examines some factors driving uptake/ demand for community-based health micro insurance (UDCBHM) in rural parts of two of India's most populated and poorest states (Uttar Pradesh and Bihar).	Primary data gathered from the experimental group (i.e. households with at least one woman registered) and control group were used in a Randomized Controlled Trial (RCT). Data from the RCT were estimated using descriptive/inferential statistics and logit regression analysis.	- Household's socio-economic status (HSES); - Household's financial liability (HFL); - Household's recent health experience/status (HRHES) & Enrolment in national hospital (ENH); - Selling CBHM via Women Group (SCWG).	- Uptake/demand for community-based health micro insurance (UDCBHM); - Inclusiveness and sustainability of community-based health micro insurance (ISCBHM).	The study concluded that: 1) Low HSES has no substantial impact on UDCBHM; 2) Greater HFL possibly correlates with increased UDCBHM; 3) HRHES & ENH do not influence UDCBHM; 4) SCWG appears to mitigate concerns about ISCBHM, etc.
A38	Sane and Thomas (2020) *(Cited 0 time(s) in WOSCC and 1 time(s) in GS)*	144,370 micro insurance customers of Kshetriya Gramin Financial Services, India (KGFSI) whose (first ever) policy expired between March 2011 and March 2014.	Correlation analysis and the Weibull model were deployed on: - The administrative data from KGFSI, a financial services scheme that provides micro insurance products (life and accident insurance) in three states of India. - Rainfall data from the Indian Meteorological Department.	- The liquidity status of policy holders (as portrayed by existing microloan). - Level of rainfall at the expiration of micro insurance policy. - Policy holders' level of asset.	Repurchase or renewal decisions of micro insurance policy.	The study showed that: - Micro insurance policy holders with existing microloan are more likely to repurchase or renew their policies. - Micro insurance policy holders whose policies expired in a month with "normal" or "excess" rainfall, are more likely to repurchase or renew their policies, while those whose policies expired in a month with "deficient" rainfall are less likely to repurchase/renew their policies, as the ensuing drought-related financial difficulties constraints them. - Policy holders with more assets are more likely to repurchase their micro insurance policies.
A39	Koloma (2015) *(Cited 5 time(s) in WOSCC and 14 time(s) in GS)*	The research was on weather index micro insurance for maize (WIMM) for farmers in Dandé village, Burkina Faso.	Secondary dataset from a pilot survey conducted in 2012 was estimated with: - Non-parametric statistical method (Mann–Whitney). - Regression analysis (simple Probit method with marginal probability effects).	- Possession of livestock capital (used for plowing); - Family workforce (working on the farm); - Literacy; - Possession of large land size (in hectares).	Access to WIMM	It was empirically showed that substantial livestock capital, higher family workforce, and literacy have significant positive impact on improved access to WIMM, while land size has a significantly negative impact on access to WIMM.
A40	Ito and Kono (2010) *(Cited 33 time(s) in WOSCC and 134 time(s) in GS)*	The research focused on micro health insurance (MHI) amongst households in Karnataka, India.	Primary data collected from survey were evaluated via descriptive/ inferential statistics and correlational analysis.	- Households Level of Savings (HLS); - Ratio of Sick Household Members (RSHM).	Uptake of Micro Health Insurance (UMHI)	Empirical results are: 1) Lower HLS is correlated with higher UMHI; 2) Higher RSHM is correlated to higher UMHI, in conformity to the theory of adverse selection.

Table A.1. Systematic evidence (Part 8)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A41	Harrison and Ng (2018) *(Cited 6 time(s) in WOSCC and 22 time(s) in GS)*	40 experimental control subjects and 37 research subjects (or treatment group) were analysed in the experimental economics laboratory in Georgia State University.	Primary data sourced from the experiment were estimated with descriptive/inferential statistics and regression analysis.	Non-performance of micro insurance providers.	Demand for micro insurance	The study highlighted that non-performance of micro insurance providers does not significantly decrease the demand for micro insurance.
A42	Biggeri et al. (2018) *(Cited 7 time(s) in WOSCC and 12 time(s) in GS)*	180 rural Ugandan households surveyed on the feasibility/viability/success of community health insurance (CHI).	Primary data gathered through household survey, structured focus group discussions, and key informant interviews were estimated using econometric analysis.	- Geographic distance to the hospital; - Awareness of catastrophic health expenditures.	Willingness to pay for CHI	Research findings affirmed that "awareness of catastrophic health expenditures" and the "geographic distance to the hospital" critically impact the willingness to pay for CHI.
A43	Biener et al. (2014) *(Cited 6 time(s) in WOSCC and 41 time(s) in GS)*	Analysis and comparison of the micro insurance market in the identified 3 groups of countries below: 1) Countries with micro insurance-specific regulation (i.e., Brazil, India, Mexico, Peru, the Philippines, and Taiwan); 2) Countries with micro insurance regulation under consideration (i.e. Nigeria, Pakistan, South Africa, and the CIMA countries); 3) Developed insurance market (i.e., Germany, Japan, the US, the UK).	The study majorly conduct a systematic comparative analyses on the regulatory activities of these 3 categories of countries; followed by an in-depth evaluation of category "A" countries mostly via content analyses of relevant regulatory guidelines, legislation, micro insurance reports, market analyses, studies, etc.	Regulation (operationalized as specific regulatory actions).	Micro insurance market development (MMD)	The study established that the MMD could be hindered by some regulatory actions such as enforcing capital adequacy, limits on prices of premium, clients' benefits, etc. However, regulation can also boost MMD if well designed and implemented.

Table A.1. Systematic evidence (Part 9)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A44	Chummun (2017) *(Cited 0 time(s) in WOSCC and 0 time(s) in GS)*	The study was conducted amongst employees of three insurance firms in South Africa.	Primary data from respondents were analysed using descriptive statistics, principal component analysis (PCA) and exploratory factor analysis.	- Micro insurance regulatory framework; - Channels of distribution; - Savings; - Trust; - Consumer financial education and awareness.	Micro insurance development and penetration.	It was revealed that none of these 5 factors drives micro insurance penetration.
A45	Bendig and Arun (2016) *(Cited 4 time(s) in WOSCC and 8 time(s) in GS)*	Study covered 330 households in 30 rural villages all over Sri Lanka with focus on households with MFI membership (i.e., being a client of a microfinance institution) and their micro insurance preferences.	Primary data from field survey were estimated using descriptive statistics and multivariate probit model.	- MFI membership; - Household size (HS); - Age of the Household Head (AOHH); - Formal education (FE); - Household wealth (HW).	Micro insurance demand/uptake	Research revealed that prior MFI membership is positively correlated with micro insurance uptake. Also, IF a household has MFI membership, THEN the HS, AOHH & HW are all positively correlated to micro insurance uptake, while FE is not.
A46	Liu and Myers (2016) *(Cited 12 time(s) in WOSCC and 38 time(s) in GS)*	Study focused on low-income individuals and households in developing countries aspiring to purchase life, credit life, health, property, livestock, and crop loss microinsurance coverage.	Dynamic economic modelling was deployed for: 1) Conventional micro insurance demand where premiums are required up front with 'Liquidity Constraints' and 'Perceived Insurer Default Risk' included as variables and their effects on the demand for micro insurance are investigated. 2) Similar model was investigated for delayed premium payment (DPP).	- PMID — possibility of micro-insurer default (or lack of trust in micro- insurers). - Reducing the liquidity constraints of low-income individuals via delayed premium payment (DPP) until the end of the insured period.	DTM — demand and take-up in micro insurance (including life, credit life, health, property, livestock, and crop loss micro insurance coverage).	PMID and liquidity constraint impedes DTM; while DPP improves it. Meanwhile, the incentive to renege on premium payment when DPP is deployed can be eliminated by excluding defaulters from future participation in the insurance market or program.
A47	Elabed and Carter (2015) *(Cited 42 time(s) in WOSCC and 111 time(s) in GS)*	Study was on weather index microinsurance for cotton (WIMC) amongst cotton farmers in Southern Mali.	Primary data of relevant details collected from selected cotton farmers and later used for the various field experiments (including games carefully framed/modelled as cotton production and insurance decisions).	PBR — prevalence of basis risk (which is the possibility that WIMC may fail to pay claims commensurate to the insured-losses of farmers because of the imperfect correlation between weather conditions (e.g., rainfall) recorded at the weather station and the actual production losses recorded on the farm).	Uptake/demand for weather-index micro insurance for cotton (UDWIMC).	The study's experimental results showed that almost 60 per cent of farmers perceive basis risk as real and debilitating enough to reduce UDWIMC by 50 per cent.

Table A.1. Systematic evidence (Part 10)

S/N	*Empirical studies (article impact)*	*Entities and countries covered*	*Methodology, dataset, and control variables (if any)*	*Explanatory/Independent variable(s) and measure*	*Dependent variable*	*Summary of findings*
A48	Olaosebikan (2013) *(Cited 11 time(s) in WOSCC and 33 time(s) in GS)*	Study examined the determinants of profitability for Micro Life Insurers (MLI) in Nigeria.	Secondary data obtained from MLIs and other industry sources were estimated using descriptive statistics, correlational/econometric analyses.	- Level of Interest Rate (LIR); - Leverage and size of micro life insurer (LSMLI); - Level of Reinsurance (LR); - Ownership Structure (OS).	MLI Profitability (MLIP)	It was empirically revealed that: LIR positively influences MLIP; LSMLI and OS do not influence MLI Profitability and LR is negatively related to MLIP.
A49	Yao (2013) *(Cited 8 time(s) in WOSCC and 14 time(s) in GS)*	Study focused on Micro Health Insurance (MHI) in Pakistan).	Secondary data sourced from the Aga Khan Agency for Microfinance (AKAM) were evaluated using descriptive/inferential statistics and correlation/regression analyses.	Value and frequency of insurance claims (VFIC) embedded in micro insurance claim history (MCH)	- Sustainability and viability of new micro health insurers (SVNMHI) - Renewal of micro health insurance.	Empirical results showed that households with recorded higher VFIC were more likely to renew their policies. Higher VFIC (often recorded in hitherto- insurance-deprived rural areas enjoying MHI for the very first few years) is quite empirically-related to low SVNMHI.
A50	Arun et al. (2012) *(Cited 18 time(s) in WOSCC and 67 time(s) in GS)*	The research focused on micro life insurance (MLI) uptake from districts across Sri Lanka.	Secondary data from Sri Lankan Household Survey and Primary data from selected household interviews together with semi-structured interview from relevant institutions were estimated using descriptive statistics and Probit/Tobit regression models.	- Bequest motives (supported by number of children/dependents and other considerations). - Demographic variables (such as religious and ethnic group dispositions).	Uptake of MLI	Empirical results showed that uptake of MLI is positively correlated with: - Measures of bequest motives such as the number of young children or dependents - Low/lack of formal education of household heads, some religious/ethnic groups, etc.
A51	Kwon (2010) *(Cited 6 time(s) in WOSCC and 52 time(s) in GS)*	Study focused on factors influencing 600 microfinance institutions (MFIs) in 83 countries (between 1998 and 2007) to expand operation into micro insurance.	Secondary data from Microfinance Information Exchange (MIX) were evaluated using descriptive/inferential statistics and probit analyses.	1) Financial expense ratio (FER); 2) Loan repayments in arrears (LRA); 3) Years of operation (YOO); 4) Number of borrowers (NOB); 5) Woman-borrower ratio (WBR); 6) Life insurance penetration ratio (LIPR); 7) Family size (FS); 8) Loan asset ratio (LAR); 9) Bad loan write-off ratio (BLWR).	Willingness of microfinance institution to expand into micro insurance (WMFIEM).	Research revealed that rising values in the explanatory variables (1) to (7) positively affect WMFIEM; while rising values in variables (8) and (9) could impede WMFIEM.
A52	Zhang et al. (2021) *(Cited 1 time(s) in WOSCC and 1 time(s) in GS)*	Study analysed information asymmetry in micro health insurance schemes (MHIS) in Pakistan.	Secondary individual-level dynamic data from MHIS were evaluated with a series of non-parametric tests, novel test statistics and multivariate recurrent event model framework.	Information asymmetry as manifested in adverse selection (AS) and moral hazard (MH).	- Supply of micro health insurance schemes (SMHIS); - Sustainability of MHIS.	AS negatively affects SMHIS for some medical conditions including pregnancy, further impeding their sustainability; and MH impedes SMHIS and their sustainability in respect of chronic diseases.

Note: WOSCC = Web of Science Core Collection, GS = Google Scholar. Also, the articles' impact were as obtained on 09.08.2021.