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2024011-EEF

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 Innovative Microfinance Products: A
 Systematic Literature Review**

October 2024

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In recent years, there has been a notable shift towards embracing innovative microfinance products. Yet, what do we know about the impact of these innovations on clients, MFIs, and their associated challenges? This systematic literature review (SLR) analyzes 105 articles to analyze the effects of so-called disruptive and incremental innovation in microfinance products. The findings reveal that these innovations elicit diverse outcomes for clients and MFIs, albeit through different pathways. Although the results are mixed, this SLR emphasizes the potential of these innovations to deepen the effects of microfinance. The study highlights a symmetry between the two types of innovations. Disruptive innovations prioritize the financial empowerment of clients, whereas incremental innovations focus more on socioeconomic development. Moreover, implementing innovative products enhances the financial and social performance of MFIs. Intriguingly, incremental innovation may reintroduce information asymmetry problems. Disruptive innovation raises concerns about client protection and exclusion of the most unprivileged, among other aspects. The analysis emphasizes that MFIs may use these innovations to maximize benefits for their clients while maintaining sustainable financial returns.

Keywords: Microfinance, Innovation, Disruptive, Incremental, Effects, Challenges, Systematic Literature Review

1. Introduction

Microfinance aims to provide small-amount financial products to address market failures (Hermes & Hudon, 2019; Morduch, 1995). Its primary objective is to offer financial services to poor and vulnerable people who are confronted with credit, banking and insurance market imperfections (Armendáriz & Morduch, 2010; Beisland et al., 2021). Since the emergence of the concept in the 1970s, microfinance has undergone significant transformations (Hermes & Lensink, 2021; Mohan & Potnis, 2010). Current trends indicate a shift from the traditional approach with a focus on standardized credit contracts, to introducing innovative microfinance products aimed at supporting the financial inclusion of marginalized people, while at the same time ensuring profitability for MFIs. By offering new products, such as mobile money transferring or flexible credit contracts, the industry aims at evolving and adjusting to the needs of its clients (Laureti & Hamp, 2011; Venet, 2019). Innovation may therefore be of significant importance for the future of the microfinance industry (Declerck & Janssen, 2016; Feigenberg et al., 2013). As we delve into this dynamic evolution in microfinance, a pivotal question arises: How does innovation affect clients and MFIs?

Recently, innovation has gained significant momentum in the microfinance domain. Several recent studies (such as Asongu & Nwachukwu, 2018; Banna et al., 2022; Dorfleitner et al., 2022; Y. Liu et al., 2021; Moro Visconti & Quirici, 2014; Moro-Visconti, 2021; Mushtaq & Bruneau, 2019; Tay et al., 2022) have explored the relationship between technological innovation and microfinance. Other studies (e.g., Asongu & Nwachukwu, 2018; Ozili, 2021; Shaikh & Karjaluoto, 2015) have examined the relationship between information technology, including the adoption of technology-enabled microfinance offerings, and financial inclusion.

Research addressing the implications of innovative microfinance products is fragmented. The discourse on innovation in the microfinance literature pertains to specific practices or activities, such as flexible products, microfinance plus, mobile money, digital lending, or crowdfunding. Moreover, the holistic implications of innovative microfinance products for both clients and MFIs are often overlooked. Consolidating these studies is paramount, as it can yield nuanced insights and patterns previously obscured by isolated studies, providing a comprehensive perspective on microfinance innovation. Thus, a meticulous examination of the implication of innovative microfinance products for clients and MFIs becomes an imperative endeavor.

Prior systematic literature reviews (SLRs) of microfinance research (see, e.g., Duvendack et al., 2011; Rooyen et al., 2012; Stewart et al., 2010; Vaessen et al., 2014) have focused on specific outcome measures, contexts, and target populations; that is, they have largely focused on the demand side of microfinance. More recent review studies, including work by Hermes & Hudon (2019) and Nisa et al. (2022), have given attention to the supply side of microfinance, focusing on the determinants of the performance of MFIs and the impact of competition on their operations. Nevertheless, these prior SLRs often disregard innovative practices that may influence the effectiveness of microfinance products and services for both MFIs and their clients.

The main objective of this study is to systematically review the literature on innovation in microfinance products, analyzing the effects of innovative microfinance products on clients and MFIs. This primary objective has led us to examine additional vital aspects, including the challenges of implementing these products. Thus, this study also offers valuable insights into the complexities of adopting innovative products. Moreover, it systematically analyzes the research

gaps, limitations, and recommendations discussed in the reviewed articles. The purpose is to discern areas where current research falls short and gain a clear understanding of the scope and limitations of the reviewed articles. This will enable us to provide specific guidance for future investigations and potential interventions within the field to provide MFIs and policymakers with a comprehensive understanding of the opportunities and obstacles presented by innovation in microfinance offerings.

This review is organized as follows. First, it provides a comprehensive understanding of innovation in microfinance products and services and its classification. Second, it describes the methodology we have used to collect studies that have focused on analyzing innovations in microfinance, after which we comprehensively report our findings. Finally, we discuss the main conclusions we derive from our systematic review.

2. Conceptualizing Innovation in Microfinance Products

The absence of a clear conceptualization of innovation in microfinance products may pose a potential challenge to understanding the complexities of these innovations. The existence and evolution of technological innovation (Arthur, 2009) and the complex nature and socio-economic context of microfinance may further complicate this issue. Thus, we clarify the different aspects, including the definition and classification of innovative microfinance products, in the following subsections.

2.1. Defining innovation in microfinance products

To clarify innovation in microfinance products, we first shed light on the general concept of innovation and financial innovation.

Schumpeter in the 1930s defined innovation as the introduction of novel developments in existing products, processes, markets, input supplies, and organizations. This definition suggests that innovation involves a creative effort that emphasizes the aspect of ‘newness’ (Arthur, 2009; Boer & Daring, 2001; Khraisha & Arthur, 2018; Nohria & Gulati, 1996). However, novelty in financial innovation does not necessarily arise from inventing something entirely new; it may also refer to utilizing existing technologies, practices, and instruments in novel ways (Bhole & Mahakud, 2017). In addition to novel creations, making minor product improvements can lead to remarkable results. These improvements can accumulate gradually and bring about noteworthy transformations (Baumol, 2002; Fernández, 2023). Thus, innovation can occur by refining or modifying existing ideas as well as by focusing on new ideas. Within scholarly discourse, innovations characterized by the ‘newness’, which transform or replace existing systems are deemed radical innovations, whereas those embodying iterative enhancements or modifications are classified as incremental innovations (Anderloni et al., 2009; Grossman & Helpman, 1993).

Christensen (1997) suggested the concept of disruptive technology as a thriving technology, which may not necessarily be radical or revolutionary. The concept was later widened to disruptive innovation, which primarily relies on existing technologies, applied in new ways rather than introducing entirely new technologies or creating new markets from scratch (Christensen & Raynor, 2013). According to Si and Chen (2020) and Markides (2006), disruptive innovation also involves disruptions in products and business models, such as the transition from traditional retail to online shopping platforms or the use of mobile phones and internet for financial products.

The definitions of innovation have a significant impact on the definition and categorization of financial innovation. Several scholars (Frame et al., 2018; Khraisha & Arthur, 2018; Lerner &

Tufano, 2011; Llewellyn, 1992; Mishra, 2008; Tufano, 2003) follow the definition of financial innovation as a process that encompasses the development, promotion, and implementation of new products, platforms, and procedures, or technological facilitators that introduce novel approaches to how financial activities are implemented. As a specialized subset of the broader financial sector, microfinance has a dual role in producing financial returns and social impact (e.g., Dash, 2012), which sets it apart from the rest of the financial industry. While there is overlap between innovation in microfinance and the broader financial sector, their respective orientations and ambitions may diverge significantly due to the unique needs and challenges of the underserved communities, donors, and the financial market. The uniqueness and double mission of microfinance may shape the definition of innovative microfinance products. Therefore, considering the definitions of innovation and financial innovation, this study defines innovative microfinance products as non-conventional microfinance offerings that have been creatively developed or modified from traditional ones, aiming to improve the socioeconomic well-being of clients and/or enhance the operational efficiency and profitability of MFIs.

2.2. Classification of innovative microfinance products

Classifying innovative microfinance products poses challenges because of the unique characteristics of microfinance. First of all, microfinance itself is an innovation within the financial sector, particularly in catering to the financial needs of low-income populations and underprivileged areas (Khraisha & Arthur, 2018). Before the advent of microfinance, traditional financial institutions were often reluctant to lend to these groups due to perceived substantial risk and low profitability (e.g., (Ledgerwood et al., 2013). Microfinance started with features, such as

group lending, joint liability, small loan sizes, personal interaction, and collateral-free loans in the late 1970s. These are now viewed as traditional features.

The second challenge arises from the way financial innovation is defined. As mentioned earlier, innovation is a broader term. It may incorporate innovation in enablers, such as financial software and information technology in operations, which are not the final products sold in the market. Some authors, such as Llewellyn (1992) and Bolton (1993), taxonomize financial innovation based on their impact on supply, intended purposes, and functions. Other classifications focus on the types of financial innovations, where innovations are grouped primarily under products or processes (Anderloni et al., 2009; Iwamura & Jog, 1991; Oke, 2007). This study specifically focuses on innovation in microfinance products, the final offerings delivered to clients, and disregards microfinance innovation in other aspects.

Several researchers (e.g., Anderloni et al., 2009; Khraisha & Arthur, 2018; McKitterick et al., 2016) classify innovative financial products based on the nature of change from the conventional offerings. By this, innovation with minor changes is called incremental, which does not fundamentally change the market and usually serves existing clients. In contrast, disruptive innovation in products targets new or low-end markets by enhanced accessibility and cost efficiency, often decoupling them from existing business models. These innovations scale up to penetrate mainstream markets and provide new functionalities and discontinuous technical standards (e.g., Nagy et al., 2016; Reinhardt & Gurtner, 2015; Si & Chen, 2020).

This also applies to innovation in microfinance products, as the evolution of these offerings has been characterized by both incremental and disruptive changes. Table 1 provides an overview of innovative microfinance offerings. It shows two distinct types of innovation: modifications to conventional offerings, such as flexible loan structures, and technology-driven

innovation, such as peer-to-peer (P2P) lending platforms and mobile money services. The first type of innovations in microfinance offerings encompasses changes of a relatively lower magnitude to traditional microfinance products (Vermeulen, 2004). It has fewer discrete leaps in the level of services they provide compared to conventional microfinance products and services. Such innovations can be classified as incremental. For example, flexible credit often has one distinct jump from traditional credit: adaptability in repayment. This innovation, a minor modification of traditional credit, has been utilized in the sector to address challenges associated with conventional microlending products.

Technology-based offerings is the second type of innovation in microfinance. The current literature (e.g., Mushtaq & Bruneau, 2019; Tay et al., 2022) contends that these innovations characterize a disruptive innovation in the sector. These offerings significantly deviate from conventional microfinance, signifying game-changing breakthroughs.¹ These products often create new markets or extensively change existing ones with more accessible features to traditional microfinance (Sarfo et al., 2021; Suri et al., 2021; Suryono et al., 2019). Technology-based innovation in microfinance may also diversify the microfinance consumption choices. A good example is the introduction of mobile money transfer services to the microfinance markets.

Recently, technology-based products and services have gained prominence in the microfinance industry, with technological advancements and digital devices being viewed as essential elements that enable the provision of microfinance. They are increasingly becoming relevant in the microfinance industry. Several studies (such as Asongu & Nwachukwu, 2018; Banna et al., 2022; A. Liu et al., 2022; Y. Liu et al., 2021; Moro-Visconti, 2021; Ozili, 2018;

¹ To illustrate, P2P lending includes many changes to traditional microcredit, such as a decentralized framework, direct contact between borrowers and lenders, diverse borrower characteristics and loan purposes, complex risk appraisal mechanisms, diversified investor portfolio, competitive interest rates, higher transparency, online accessibility, heterogeneous participant involvement, and other features.

Shaikh & Karjaluo, 2015; Tay et al., 2022) have highlighted the significance of technology-driven innovation in microfinance offerings.

Insert Table 1 here

3. Methodology

This study employs a systematic literature review (SLR) methodology, a methodology that provides a comprehensive overview of the literature (Petticrew & Roberts, 2008; Shaikh & Karjaluo, 2015; Xiao & Watson, 2019). Unlike a narrative review, it employs a predetermined, strict, and methodological approach and necessitates specific, structured questions (Brereton et al., 2007; Munn et al., 2018; Xiao & Watson, 2019). SLR allows for identifying themes, gaps, and trends in existing literature, while tracking the volume of the literature on the topic. Furthermore, SLR also aids in detecting discrepancies or contradictions and assesses the overall evidence regarding the research questions under investigation (Brereton et al., 2007; Xiao & Watson, 2019).

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol (Belle & Zhao, 2023; Moher et al., 2009) was used as a roadmap for this SLR. The PRISMA method is frequently employed in conducting an SLR (Michel & Hudon, 2015). Our preference for this method stems from its distinct ability to establish the parameters for inclusion and exclusion and specify research questions that facilitate a systematic inquiry (Belle & Zhao, 2023; Moher et al., 2009; Shaffril et al., 2018).

3.1. Data collection

We collected academic articles on innovative microfinance products from three databases: SCOPUS, ScienceDirect, and EBSCOhost. Figure 1 outlines the methodology employed in the review process. The selection of appropriate keywords for the articles was accomplished by performing several search iterations using a combination of search terms and Boolean operators. Our objective was to search for publications covering the effects of innovative microfinance products. Considering the lack of a unified terminology to denote innovative microfinance products and compounded by the fragmented nature of the topic of research, we broadened our search by encompassing alternate expressions that denote the application of knowledge to describe innovation within microfinance products and services. We employed various search phrases, which yielded a substantial volume of articles, thereby facilitating the completion of our literature search. The primary search terms are outlined in step 1.1 in Figure 1. Initially, we identified 851 articles (434 from SCOPUS, 89 from ScienceDirect, and 328 from EBSCO).

Our initial selection criteria encompassed articles featuring peer-reviewed journals, research articles, and book chapters published in English (step 1.2 in Figure 1). After removing duplicates, we were left with 606 papers, of which 585 are articles and 21 are book chapters. Subsequently, we examined the title, abstract, and keywords to exclude papers with the subject areas delineated in step 1.3 of Figure 1. These subject areas (e.g., Islamic microfinance) did not align with our research objectives. We included only those publications that encompassed any reference to innovation in microfinance products. This process yielded 471 articles, constituting our initial list of articles focusing on innovative microfinance products as input for our analysis. This initial list of articles was used for quantitative analysis.

In step 2, first, we excluded review articles and theoretical papers, as they do not fit the objective of our research. Besides, we excluded articles not published in journals indexed in SSCI, SCIE, or ESCI to ensure the quality of the publications. We then meticulously examined the title, abstract, keywords, and complete text to further narrow the search of the effects of innovative microfinance products and the associated challenges (refer to Step 2 in Figure 1). After applying these criteria, we were left with 89 publications considered for the qualitative and thematic analysis of this SLR. Furthermore, we incorporated 16 articles by examining references and citations from the 89 publications in our dataset. The final list includes 105 articles considered for qualitative analysis. Figure 1 shows the article selection process.

Insert Figure 1 here

3.2. Data analysis

Data analysis includes two stages: descriptive and qualitative analysis. After selecting 471 articles, we conducted descriptive analysis in stage 1 to describe the research on innovative microfinance products over time and in terms of topics and content. Specifically, we analyzed the progression of research over time, using R-bibliometrics package.² We also conducted so-called topic modeling analysis to discover the topics covered in the literature. For topic modeling, we employed Latent Dirichlet Allocation (LDA), an unsupervised machine learning

² The initial list of articles analyzing innovation in microfinance products includes 471 articles. The analysis of the progression of research overtime was carried out on 471 articles to comprehensively understand the research trend.

technique. This statistical model assumes that the documents in the dataset³ are composed of a combination of different topics, each comprising a mixture of words (Jelodar et al., 2019). We use R package to facilitate the implementation of LDA. The LDA analysis facilitates the identification of key themes in the 471 articles, which provides a basis for the qualitative analysis, guiding the selection of 105 articles for more focused qualitative analysis that delves into the key themes identified through LDA analysis.

In stage 2, qualitative analysis was conducted utilizing the final set of 105 articles. Initially, we classified this list into two groups based on whether the articles analyze disruptive or incremental innovation in microfinance products. Following the research objectives, we created a data extraction form (see Appendix 1) including various characteristics of the articles in the database, such as the research objectives, applied methodologies, and open-ended questions to address the research questions.

Following the data extraction from 105 articles, the retrieved information was systematically coded and entered into an Excel spreadsheet for analysis. The coded data was then processed using AtlasTi 23 tools to identify themes and patterns in the selected articles. This process of data coding and analysis enabled us to review: (1) the effects of innovative microfinance products on clients and MFIs (2) the challenges to innovative microfinance products; (3) the research limitations; (4) future research suggestions; and (5) policy recommendations.

4. Descriptive analysis

³ In our LDA analysis, a document is the title, keywords, and abstract of an article – and the dataset includes the title, keywords, and abstracts of all 471 articles.

4.1. The progression of research over time

The upper panel in Figure 2 reveals the distribution of publications in both disruptive and incremental innovation in microfinance. The pursuit of innovation in microfinance products is not a recent phenomenon. The first publication, analyzed microfinance bundled with innovative business development services, was published in 1997 (Dawson, 1997). The annual volume of papers has varied since the first publication, with a noticeable surge starting from 2007. The surge in research interest in innovative microfinance products after 2007 coincides with the surge in academic publications on microfinance. Notably, research publications on disruptive innovations in microfinance surged in 2012, exceeding the annual count of publications on incremental innovations in microfinance. This is because of the rapid evolution of digital technology in microfinance (A. Liu et al., 2022; J. Liu et al., 2020) (Figure 2).

Insert Figure 2 here

4.2. Key themes identified through LDA analysis

The findings from the LDA analysis reveal that the initial list of 471 articles on innovation in microfinance products generally focuses on the demand—and supply-side implications of disruptive and incremental innovation in microfinance products, as well as on the associated challenges.

Figure 3 displays the top 10 topics of our LDA analysis with related keywords. Topics 3, 4, 7, and 9 include words on the demand-side effects of disruptive innovation. These topics include words such as crowdfunding, digital, lending, index insurance, technology, mobile, fintech,

inclusion, and others. Topics 1, 2, 5, and 8 generally include words related to the demand-side effects of incremental innovation. These topics include words related to incremental innovation in microfinance products. For instance, microfinance plus related words such as training, health, and education, and words related to other typical incremental innovations in microfinance, such as flexible credit and innovative savings products.

Topics 6 and 10 concern the supply-side of MFIs. These topics include words such as microfinance institutions, sustainability, commercial, outreach, performance, and efficiency. Topics 7, 5, 4, 8, and 6 also include words related to the challenges such as default, challenges, low access, and cost.

The topics identified in Figure 3 form the basis for our qualitative analysis. They provide a clear structure emphasizing key areas. This structure guides us to a systematic and focused qualitative analysis. For the qualitative analysis in the following sections, we selected 105 relevant articles focusing on the effects of disruptive and incremental innovations in microfinance products on clients and MFIs, and the associated challenges.

Insert Figure 3 here

5. Qualitative analysis

The qualitative analysis in this paper is based on a careful manual selection of 105 articles, as illustrated in Figure 1. Following the LDA topic modeling analysis, this sub-section delves into the effects of innovative microfinance products on clients and MFIs and the associated challenges.

5.1. Effects on the clients of MFIs

Figure 4 shows that a large number of papers analyze the effects of disruptive innovation in microfinance products on financial inclusion, consumption, and poverty reduction. For instance, twelve articles examine the effects of these innovations on financial inclusion. Nine find positive, while two papers find harmful, and one paper finds inconclusive effects. With respect to incremental innovation, the number of articles analyzing the effects on financial inclusion, savings, and other non-financial outcomes is higher compared to articles that study other outcomes. A more detailed summary of the specific innovative products and services, their directional effects on clients, and the frequency of studies analyzing them, is presented in Appendix 2. Figure 5 reveals the underlying mechanisms driving the outcomes of innovation in microfinance products on clients based on the studies that we have reviewed. In the remainder of this section, we discuss and analyze the specific mechanisms and pathways associated with each outcome depicted in Figure 5.

Insert Figure 4 here

Insert Figure 5 here

5.1.1. The effects of disruptive microfinance products on clients

Effects on take up and financial inclusion

Disruptive innovation plays a crucial role in the take-up of microfinance products, increasing the potential of expanding microfinance and financial inclusion as highlighted in the reviewed literature (e.g., Sarfo et al., 2021; Suri et al., 2021; Warsame & Ileri, 2018). These innovations significantly increase clients' willingness to use microfinance, contributing to successful market expansion. Disruptive microfinance products are convenient, accessible, cost-effective, and tailored financial solutions that cater to the needs of clients and that enhance their experience (Hill et al., 2016; Karlan et al., 2014; Lyons et al., 2022; Sarfo et al., 2021; Suri et al., 2021; Warsame & Ileri, 2018). Lyons et al. (2022) find a significant and consistent effect of disruptive microfinance offerings, such as mobile money services on take-up rates for savings, borrowing, and remittance services in sixteen emerging economies. Karlan et al. (2014) and Hill et al. (2016) demonstrate that disruptive microinsurance products enhance take-up due to their ability to cater to the needs of farmers for insurance services.

The easy accessibility of disruptive innovation in microfinance products contribute to the financial inclusion, as several studies suggest that these innovations may facilitate financial accessibility for marginalized populations, such as rural people, refugees, women, illiterate, and other (Ammar & Ahmed, 2016; Avom et al., 2023; Blakstad & Amars, 2020; Djahini-Afawoubo et al., 2023; Emanuel-Correia et al., 2022; Lyons et al., 2022; Mushtaq & Bruneau, 2019; Ndung'u, 2018; Ngono, 2021).

One prominent benefit of these innovations lies in offering a more comprehensive range of financial products (i.e., the introduction of mobile money services), positively affecting financial inclusion (Lyons et al., 2022). Furthermore, disruptive microfinance products address the longstanding barriers to financial inclusion, including cost and time inefficiency and low accessibility (Cull et al., 2018; K. Kim, 2022; Simatele & Maciko, 2022), opening avenues for

the unbanked and underbanked people to access financial services. Disruptive microfinance products reduce transaction costs and length due to efficiency enhancement and more streamlined operations for clients. These innovations extend financial services to remote areas, transcending geographical barriers (Sarfo et al., 2021; Suri et al., 2021). Products like mobile microloans and microinsurance (Altamirano & Beers, 2018), index insurance (Dougherty et al., 2021), and mobile money services (Jack & Suri, 2014; Suri et al., 2021) leverage digital platforms for remote accessibility, diminishing the reliance on physical branches. This reduces operating costs for MFIs and translates into lower fees and interest rates for clients, contributing to financial inclusion.

Riley (2018) and Chu et al. (2023) find that disruptive microfinance products can deepen financial inclusion by fostering greater control over resources, financial responsibility, and decision-making efficacy for vulnerable people. These innovations involve digital platforms and personalized financial tools that enhance financial autonomy and alter client behavior. Riley (2018) contends that these products also empower individuals with greater access to financial information, fostering informed decision-making and financial inclusion.

In contrast, some researchers find that disruptive innovation fall short of adequately facilitating the financial inclusion of women (Wang et al., 2023) and low-income people (Altamirano & Beers, 2018; Kandie & Islam, 2022; Lyons et al., 2022). Altamirano and Beers (2018) and Lyons et al. (2022) reveal that products such as mobile microinsurance fail to yield financial inclusion benefits due to low digital literacy and lack of infrastructure in marginalized contexts. Furthermore, Natile (2020) warns for potential gender inclusivity challenges of disruptive microfinance product in Kenya. The author emphasizes that it focuses on enhancing women's access to financial resources, without addressing the broader societal factors, such as

low literacy and cultural norms that limit their opportunities. Thus, it perpetuates gender-based marginalization, resulting in a shallower level of financial inclusion. Hence, the effects of disruptive microfinance products on financial inclusion raise uncertainties about the financial inclusion of vulnerable people, calling for further research on how these microfinance innovations can be adopted to effectively foster the financial inclusion of underserved populations.

Effects on productivity and income

Disruptive microfinance products can improve productivity of household investments by reducing credit constraints and improving resource allocation efficiency (Altamirano & Beers, 2018; Effiom & Edet, 2022; Li et al., 2022; Zhao et al., 2022). Li et al. (2022) find positive effects of inclusive digital lending on the productivity of household investment portfolios due to improved resource allocation using a large set of panel data. Through accessibility and efficiency in financial services, these products improve cash availability, leading to higher resource allocation efficiency and productivity.

Likewise, several studies focusing on disruptive microfinance products reveal the positive effects of these innovations on the income of clients, primarily through reshaping the financial management strategies of households. These innovations such as mobile money play a pivotal role in income diversification, encouraging self-employment, saving both time and money, and raising the income level of SMEs' financial investments (Kikulwe et al., 2014; Li et al., 2022; Liu et al., 2021; Sekabira & Qaim, 2017; Seng, 2021). Furthermore, the convenience in savings and the ability to transfer funds between business partners encourage self-employment and increase income (Sekabira & Qaim, 2017). The results are even more significant if clients are financially literate (Seng, 2021). However, these studies mainly concentrate on the effects of

money transfers rather than credit, the key microfinance product. A recent study by Kandie and Islam (2022) demonstrated that digital credit hurts clients' income due to overborrowing and high costs.

Effects on savings and investment

Recent studies on disruptive microfinance products, such as Lee et al. (2023), Riley (2018), and Li et al. (2022) reveal that these innovations help female microentrepreneurs save more due to clients' enhanced financial management and control. Similarly, Babajide (2016) and Wondirad (2020) reveal that mobile money and digital microfinance services positively affect savings, asset ownership, and investment behavior. These innovations often provide complementary products, such as mobile transfer and savings options, amplifying positive effects on savings and investment.

In contrast, disruptive lending products, such as P2P lending and digital credit, often provide small amounts of short-term loans (Kandie & Islam, 2022; Suri et al., 2021; Zhao et al., 2022). This may make it more difficult for borrowers requiring larger and/or longer-term loans for larger investments. While these loans do enhance asset holdings and help early-stage entrepreneurship, their small size and shorter repayment terms limit the potential of larger investment by clients (Suri et al., 2021).

Effects on consumption and resilience to shock

Disruptive microfinance products, such as mobile money services and P2P lending, increase cash availability and, therefore, household consumption. Several studies (Jack & Suri, 2014; Lee et al., 2023; Liu et al., 2021; Munyegera & Matsumoto, 2016; Riley, 2018; Suri & Jack, 2016; Yue et al., 2022) elucidate the efficiency of these products in improving remittance flows and

access to financial resources. For instance, Jack and Suri (2014) find consumption allocation efficiency among mobile money users in Kenya, allowing households to better manage daily expenses. Yet, the literature so far has concentrated mostly on short-term outcomes (i.e., enhancing the marginal propensity to consume). There is a need for a more comprehensive exploration of the impact of disruptive microfinance products on consumption beyond mere money transfers.

Furthermore, disruptive innovation in microfinance products offer adaptable and personalized solutions such as mobile money transfer, P2P lending, and index insurance, thus supporting resilience against shocks. Our review of the articles shows that these innovations optimize efficiency and accessibility of microfinance products, providing instant liquidity during shocks. This functionality substantially diminishes the probability of budget cuts and expenditure reductions (Dougherty et al., 2021; Jack & Suri, 2014; Karlan et al., 2014; Riley, 2018; Suri et al., 2021). A fast response to financial shocks reduces the probability of clients being confronted by liquidity problems, mitigating the adverse consequences of unforeseen events.

Effects on poverty

The effects of disruptive innovation in microfinance offerings on poverty reduction are debated in the reviewed literature. Empirical evidence from various studies highlights positive effects, due to money transfers at a reduced transaction cost, enhanced risk-sharing mechanisms, and amplified accessibility to both formal and informal credit facilitated by mobile money platforms (Alinaghi, 2019; Appiah-Otoo & Song, 2021; Djahini-Afawoubo et al., 2023; Lee et al., 2023; Mushtaq & Bruneau, 2019; Suri & Jack, 2016; Yue et al., 2022). A potential limitation of these studies is that they mainly focus on the effect of mobile money access for remittance transfers, neglecting established microfinance products and services such as loans and savings.

Recent studies by Kandie and Islam (2022) and Yue et al. (2022) reveal that digital microcredit increases poverty, pointing out concerns of limited size, short-term nature, and high cost, which lead to overborrowing.

The above analysis shows that disruptive microfinance products generally focus on enhancing financial empowerment, accessibility and providing immediate cash availability. However, their overall effects tend to be shallower due to complexities like higher costs, small loan amounts, and overborrowing.

5.1.2. The effects of incremental innovation in microfinance products on clients

Effects on take-up and financial inclusion

Incremental innovation in microfinance products increases the take-up due to the added client-centric features tailored to meet enduring needs. For instance, flexibility in microcredit and in microinsurance (Barboni, 2017; Bauchet & Morduch, 2019), and discipline and comfort in savings, such as in deposit collection saving products (Ashraf et al., 2010) increased take-up, due to their customization to clients' needs. Bauchet and Morduch (2019) find that flexibility in microinsurance payment increases take-up rates by 59-74 percent due to the relaxation in clients' financial and saving limitations. Other incremental innovations in microfinance products, such as combined products and microfinance plus, increase take-up due to the synergetic effects they generate. For instance, bundling credit with microinsurance enhances the take-up due to the mutually reinforcing effects of the two relevant products that amplify the value of the product for clients (Dougherty et al., 2021; Ndegwa et al., 2020). In contrast, if products are tailored less to the clients' needs, the take-up decreases. For instance, Groh and McKenzie (2016) find a lower

take-up rate of an innovative microinsurance product in Egypt that provided coverage for macroeconomic shocks, which clients find irrelevant to their immediate needs.

Beyond increasing take-up, incremental innovations in microfinance products facilitate financial inclusion by addressing the specific financial challenges of the clients. For instance, flexible products foster access to finance even when income is erratic and unpredictable (Meyer, 2002; Weber & Musshoff, 2013). Similarly, microfinance plus products, such as credit coupled with technical assistance, are effective in enhancing financial inclusion, as they address both financial and non-financial barriers to resource access for marginalized people (Hillesland et al., 2022; J. Kim et al., 2009; Molnar, 2017). These innovations enhance decision-making capacity and resource access, deepening financial inclusion (Ashraf et al., 2010; Hillesland et al., 2022). Innovative saving products within incremental innovation in microfinance also contribute positively. Ashraf et al. (2010) examine the effect of commitment-saving products and find positive and significant effects on women's financial inclusion and decision-making power.

Effects on productivity and income

Incremental innovation in microfinance products, such as flexible microcredit (e.g., Field et al., 2012; Weber & Musshoff, 2013) and microinsurance (Bauchet & Morduch, 2019), improve risk management and provide room for strategic resource allocation which, in turn, enhances productivity. Similarly, microfinance plus enhances human capital and information sharing, increasing productivity (Garcia et al., 2022; Gine & Mansuri, 2014). Combining financial capital with carefully crafted knowledge transfer can boost productivity, especially when human capital is the primary constraint in the production function. Thus, through emphasizing risk management, human capital development, and customized solutions, incremental innovation in microfinance products may have a broader and more profound effect on productivity.

Incremental innovation in microfinance products focus on more concrete aspects to improve income. They enhance income by addressing clients' deliberate needs, such as debt management and business knowledge improvement. These innovations help clients to manage their finances by providing customized repayment schedules and adjustable loan amounts with lower interest rates, enabling them to pursue profitable business opportunities (Aragón et al., 2020; Garcia et al., 2022; Sievers & Vandenberg, 2007). Aragon et al. (2020) show that a credit line product increases income compared to a standard microcredit term loan, underscoring the effectiveness of such innovative credit modality. Similarly, Sievers & Vandenberg (2007) and Garcia et al. (2022) reveal positive effects of a demand-driven microfinance plus product on income due to the enhanced business and technical skills of clients. In contrast, Karlan and Valdivia (2011) come up with inconclusive results while analyzing the effects of a less sophisticated microfinance plus product, which was limited to business training on the income of participants. The reviewed studies predominantly center on the short-term effect on clients' income, underscoring the necessity for extended research to grasp the trajectory of these products and services over time.

Effects on savings and investment

The literature has studied a wide array of incrementally innovative savings products that may positively affect clients' savings. These products include deposit collection (Ashraf et al., 2006; Rogaly et al., 2004), agent banking saving products (Greaney et al., 2016; Kochar, 2018; Prior & Mora, 2019), commitment-saving product (Ashraf et al., 2010; Gugerty, 2007), commitment saving with reminders (Atkinson et al., 2013; Babajide, 2016), saving with planning and reminders (Atkinson et al., 2013) mandatory savings (Bruno & Khachatryan, 2020), waivers of opening account, and no-fee savings (Babajide, 2016; Prina, 2015). These innovative savings

products mainly leverage incentives based on convenience, cost-effectiveness, flexibility, and behavioral strategies to influence savings behavior and building assets.

Besides, studies by Field et al. (2012) in India, and Rogaly et al. (2004) in Mexico revealed that incremental innovation in microfinance products, such as flexible credit, and deposit collection, can augment investments. These innovations encourage riskier and more profitable investments, ease financial strain, and facilitate asset accumulation, contributing to increasing investment.

Effects on consumption and resilience to shock

In contrast to disruptive microfinance products, incremental innovation in microfinance products, such as microfinance plus (Gine & Mansuri, 2014) and flexible products (Berhane & Gardebreek, 2011), indirectly improve consumption, mainly through enhancing profitability and income. Giné and Mansuri (2014) find positive effects of combining lending and business development training on household expenditures of small-scale entrepreneurs in Pakistan. This indicates that incremental innovations in microfinance products emphasizes addressing fundamental challenges and have the potential to impart an enduring effect on consumption patterns.

Incrementally innovative products such as flexible saving and credit (Laureti et al., 2017; Rogaly et al., 2004), innovative saving and combination of credit and saving (Laureti et al., 2017), and microfinance plus (Gine & Mansuri, 2014) prioritize dynamic cash management, asset creation, and business sustainability. These features of incremental innovations provide long-term protection against business failure. This way, incremental innovation may promote deeper shock resilience.

Effects on other non-financial outcomes

Several studies in our dataset investigate the impact of incrementally innovative products on socioeconomic dimensions that transcend conventional financial outcomes. These products can be tailored to cater to distinct outcomes for clients. For instance, Hsu et al. (2021) and Reichert and Trivella (2015) find favorable effects of these offerings on access to eco-friendly energy sources. Studies conducted by Karlan and Valdivia (2011) and Giné and Mansuri (2014) highlight enhancements in business knowledge facilitated by microcredit combined with entrepreneurship training, and Adjei et al. (2009) find positive effects on children's education. Credit and saving products, combined with non-formal education in health, shows a favorable effect on participants' health (Pronyk et al., 2008; Saha et al., 2015). These studies highlight the favorable outcomes of incremental innovations in microfinance on socioeconomic development, extending beyond traditional economic outcomes.

The above analysis shows that incremental innovations amplify the value of microfinance products to meet the enduring needs of clients, promote long-term efficiency in resource allocation, and address the specific financial challenges of clients with tailored solutions, fostering socioeconomic development.

5.2. Effects on MFIs

Figure 6 reveals that innovations in microfinance products have yielded various outcomes for MFIs, including enhanced competitiveness, operational efficiency and profitability, risk management, outreach, and social performance. Interestingly, in contrast to the extensive body of

research examining the effect of innovative microfinance products on clients, the number of studies investigating the effect on MFIs is relatively low.

Figure 6 shows that the number of articles analyzing the effects of innovative microfinance products on efficiency, profitability, and enhanced risk management is higher than those that examine the effects on competitiveness and social performance. Seven articles analyze the effects of incrementally innovative microfinance products on the efficiency and profitability of MFIs. Two articles find positive outcomes, while five find no or inconclusive results. Five articles analyze the effects of disruptive products on the MFIs' enhanced risk management, and six analyze the effects on efficiency and profitability, all of them finding positive effects.

Insert Figure 6 here

5.3. Effects of disruptive microfinance products on MFIs

Effects on profitability and efficiency

Profitability and efficiency are critical for MFIs. The reviewed articles indicate that the implementation of disruptive products holds the promise of enhancing the financial performance of MFIs (Greaney et al., 2016; Luo et al., 2022; Mia, 2022; Mora & Prior, 2018; Moro-Visconti, 2021; Prior & Mora, 2019; Wondirad, 2020). These innovations increase outreach, which in turn reduces transaction costs through economies of scale. Besides, disruptive innovation diversifies the existing microfinance offerings, which can add additional revenue to MFIs, increasing profitability. According to Wondirad (2020) and Luo et al. (2022), disruptive microfinance

products, such as mobile banking services, digital lending, and mobile microinsurance, contribute to cost reduction, expanding the client base, and optimizing resource allocation.

Effects on risk management

Disruptive products create many opportunities for enhancing risk management through technology. They can leverage advanced functionalities such as credit scoring algorithms to analyze client creditworthiness, manage loan portfolios, and effectively lower default and non-performing loan risks. Several studies find favorable effects of disruptive products on MFIs' risk management (Banna et al., 2022; Ledgerwood, 2013; Mora & Prior, 2018; Moro Visconti & Quirici, 2014; Wondirad, 2020). For instance, Mora and Prior (2018) find a reduction in delinquency rates for MFIs in Tunisia after they provided digital lending. Other products, such as P2P lending, reduces moral hazard problems (Babich et al., 2021). Besides, offering these products allows MFIs to diversify beyond lending, potentially reducing credit risk.

Effects on competitiveness

Anagnostopoulos (2018) demonstrates that due to increased clients experience, offering disruptive microfinance products increase MFIs reputation and competitiveness. It also improves market channel inefficiencies by streamlining processes and reducing the reliance on traditional banking infrastructure (Elliot et al., 2018). Disruptive products, such as P2P lending and mobile banking services, eliminate the need for costly intermediaries and speed up transactions. This reduction in administrative burdens allows MFIs to serve a larger client base with greater speed and lower costs. However, Siwale and Godfroid (2022) argue that disruptive microfinance products may harm the reputation of MFIs and competitive advantage in a less mature market due to a reduction in human touch.

Effects on outreach and social performance

Outreach and social performance are critical for MFIs next to their financial sustainability. Balancing these two goals may be difficult, as MFIs face the dilemma of prioritizing either social or financial performance (Suri & Jack, 2016).

The evidence on the social performance potential of disruptive microfinance products is mixed in the reviewed literature. Some studies confirm that these innovations can help MFIs improve their social performance and outreach in various ways. These include reaching out to the unbanked population through technology-enabled services, offering diverse products, customizing financial products, engaging in social impact investing, and disseminating financial information (Dorffleitner et al., 2022; Suri & Jack, 2016). The picture changes when evaluating products such as digital microcredit. Some studies reveal that digital microcredit prioritizes lenders' profits over their social performance, introducing a critical consideration regarding the broader social implications of certain disruptive products in microfinance (Kandie & Islam, 2022; Yue et al., 2022). Thus, although disruptive microfinance products demonstrate inclusivity and attractiveness in the short run, their sustained effectiveness in fostering enduring financial relationships with clients remains yet to be determined.

Moreover, Siwale and Godfroid (2022) find that disruptive products could hinder social performance by substituting loan officer-client interactions. The close relationship between MFIs and their customers provides a strong channel through which MFIs monitor repayment and develop customer satisfaction. This relationship may be eroded due to the digitalization of microfinance, which may negatively affect mutual trust and support, and which may ultimately lead to lower provision of financial services and higher levels of loan repayment problems. This raises doubts about the ability of disruptive products to maintain long-term social performance.

5.4. Effects of incremental innovation in microfinance products on MFIs

Effects on profitability and efficiency

According to Prior and Mora (2019) and Greaney et al. (2016), incrementally innovative microfinance products facilitated through intermediaries, such as agents, can enhance MFIs' profitability by improving efficiency. By utilizing agents, MFIs can increase accessibility for clients and can significantly cut down on the costs associated with running physical branches. Yet, the effects of other types of incrementally innovative products on efficiency and financial profitability seem inconclusive. According to some studies, flexible loans and microfinance plus do not improve profitability, but they at least allow MFIs to cover their costs (Cull et al., 2018; Sievers & Vandenberg, 2007; Towo et al. 2022). Towo et al (2022) show that relationship lending does not affect the MFIs' efficiency. Finally, Giné and Mansuri (2014) find that bundling microfinance Plus services with microfinance savings and loan products is costly, negatively affecting profitability.

Effects on competitiveness

The reviewed studies reveal that MFIs offering incrementally innovative products may gain a competitive advantage over traditional product and service providers. The enhanced product differentiation in these innovative products helps MFIs stand out in the market, attract more clients, and increase their market share.

Among the studies that analyze incremental innovation in microfinance products, Biosca et al. (2014) and Karlan and Valdivia (2011) examine the effects of credit tied to nonfinancial services on the competitive advantage and reputation of MFIs. They demonstrate that high-

quality credit-plus services boost competitive advantage even if they are not free to clients. When competitive intensity is a moderating variable, incremental innovation in microfinance products improves customer satisfaction (Biosca et al., 2014; Nwachukwu & Vu, 2022) and client retention rates (Karlan & Valdivia, 2011), helping MFIs improve their reputation and attract new clients and investors, ensuring long-term viability.

Effects on outreach and social performance

Incremental innovation in microfinance products, such as microfinance plus services and flexible products, engender a greater depth of outreach and social performance (e.g., Barboni, 2017; Barboni & Agarwal, 2023; Lensink et al., 2018; Roy & Pati, 2018). For instance, Lensink et al. (2018) investigate whether microfinance plus is more effective than credit alone in achieving MFIs' social objectives. They find evidence that MFIs providing plus services exhibit greater depth of outreach than their counterparts. Incremental innovation thus demonstrates responsible microfinance practices capable of enhancing clients' social needs, thereby extending the social outreach of MFIs.

Effects on risk management

The effects of incremental innovation on risk management are mixed. It improves clients' ability to repay loans, informed decision making, reduces financial stress, and increases client satisfaction, leading to a more meaningful and stable approach to risk management. Several studies verify that incrementally innovative products such as microfinance plus, combined products, and flexible credit positively affect MFIs risk management (Godquin, 2004; Hsu et al., 2021; Lensink et al., 2018; Pelka et al., 2015; Tedeschi, 2006). Lensink et al. (2018) discovered that bundling lending with nonfinancial services results in a lower level of portfolio at risk because of clients' enhanced knowledge and skills, which helped them make more informed

financial decisions, manage their businesses, and reduce their likelihood of defaulting on loans, thereby lowering the overall portfolio at risk for the lender. Similarly, bundling microinsurance with credit can safeguard clients from disasters, crop failures, and health emergencies, thereby protecting MFIs (Pelka et al., 2015). Likewise, Tedeschi (2006) explores the repayment dynamics of flexible loans through an RCT, comparing the repayment outcomes of borrowers who were given flexible loans and those who received traditional fixed-repayment loans. This study identifies positive and statistically significant effects of using flexible loan structures. At the same time, however, empirical evidence provided by Field et al. (2012), Brune et al. (2022), and Battaglia et al. (2018) suggest that the implementation of flexible microcredit is also associated with a higher probability of default, primarily due to its impact on borrowers' repayment discipline. Similarly, Weber and Musshoff (2017) find that predefined grace periods in flexible loans increased risk for MFIs. Brune et al. (2022) discovered that first-time borrowers tend to default more often on flexible microcredit.

The analysis shows that incremental innovation in microfinance products has the potential to improve efficiency, competitiveness, outreach, and risk management, though with mixed results. While these innovations improve the social performance of MFIs, they may also introduce financial pressures.

The analysis shows that overall implementing innovative products improves the financial and social performance of MFIs. However, compared to incremental innovations in microfinance products, disruptive innovations have a higher potential for efficiency and profitability. Incremental innovations often add an additional feature to conventional microfinance products, increasing the costs for MFIs.

6. Challenges of innovation in microfinance products

Innovation comes with challenges (Boz & Mendoza, 2014; Diaz-Rainey & Ibikunle, 2012; Hausman & Johnston, 2014). Misusing financial innovation is detrimental with potentially severe consequences. MFIs, characterized by high-risk clientele and minimal regulatory frameworks, are more likely to be confronted with detrimental practices (Ozili, 2018). This subsection explores and analyzes the challenges that relate to disruptive and incremental innovation in microfinance products discussed in the reviewed literature.

6.1. Challenges related to incremental innovation in microfinance products

The challenges associated with incremental innovation in microfinance products encompass a range of critical areas. An evaluation of the articles in our dataset shows that the main challenges associated with incremental innovation in microfinance products are the risk of increased asymmetric information, the trade-off between cost and inclusion, and narrow scope and outreach. Figure 7 illustrates these challenges.

First, incrementally innovative microfinance products, such as flexible credit, microinsurance products and microfinance plus, may increase the risk of default by increasing information asymmetries. The analysis of the articles in our dataset reveals that incremental innovation may reintroduce adverse selection and moral hazard. One reason for this finding is that most innovative microfinance products are geared toward clients who may find conventional products unattractive. The enhanced value of supplemental services and features may lure them. However, this attractiveness may eclipse clients' ability to make regular loan repayments, thus amplifying the likelihood of default (Weber & Musshoff, 2017). Barboni (2017) and Czura et al. (2020) demonstrate a simultaneous escalation in the rates of both adoption and default in incrementally innovative products due to the attractive characteristics of these offerings that

endanger the self-selection of risky borrowers, resulting in adverse selection bias. This phenomenon manifests itself most strongly when clients with higher risk levels are more inclined to opt for such products (Brune et al., 2022).

The reviewed articles show that riskier clients gravitate towards various incrementally innovative products, such as flexible credit (Barboni, 2017; Barboni & Agarwal, 2023; Battaglia et al., 2024), microfinance plus (Banerjee et al., 2022), and innovative micro-insurance (Ito & Kono, 2010). Studies focusing on flexible loan products (Battaglia et al., 2024; Brune et al., 2022; Czura et al., 2020; Field et al., 2012) suggest that flexible microcredit may undermine borrowers' repayment discipline, cooperative conduct, and peer punishment, leading to a rise in moral hazard and a higher risk of default for MFIs. Moreover, studies show that the provision of incrementally innovative microfinance products, such as microfinance plus services, can introduce a potential risk of borrowers shifting responsibility to lenders for unsuccessful business changes, because microfinance plus services may position lenders as advisors in the business ventures of the borrowers. As a result, borrowers may develop a perception that the lender shares in the responsibility for the success or failure. This can incentivize clients to act irresponsibly, knowing that they will not bear the full consequences of their actions. For instance, Karlan and Valdivia (2011) find that offering microfinance plus results in higher default rates, as borrowers perceive the lender partially accountable for failed business changes.

Thus, MFIs may encounter the challenges of providing incrementally innovative microfinance products while simultaneously evading the harmful effects of adverse selection and moral hazard problems. This risk is higher when the way these products are delivered disregards the unique characteristics of clients (Lopez & Winkler, 2018). Therefore, if not well managed,

the introduction of these offerings may disrupt the advantages of traditional microfinance of offering small loans to poor clients while reducing asymmetric information problems of lenders.

Second, incremental innovation in microfinance products can result in significant costs for MFIs and clients, posing a challenge for policymakers and practitioners. The reviewed articles suggest that flexible credit, microfinance plus, and deposit collection result in increased costs due to increased operational complexity and additional expenses (Brune et al., 2022; Gine & Mansuri, 2014; Lensink et al., 2018). These costs arise from the direct cost of training sessions and technical advice, marketing, risk assessment and management, increased operational costs, and additional monitoring and evaluation measures, potentially constraining profitability.

On the other hand, poorly planned cost-cutting strategies in incrementally innovative microfinance products may result in consequences, such as exclusionary practices. For instance, Molnar (2017) reveals a correlation between marginalization and the cost-saving of these products. Additionally, increased costs associated with these innovations may lead to increased costs for clients, potentially resulting in unaffordability of these offerings, particularly for the most marginalized, which can further gravitate financial exclusion. These consequences run counter to the goals of MFIs, that is, providing inclusive financial services to underserved populations.

Third, the findings from the reviewed articles indicate a narrow scope and breadth of incrementally innovative microfinance products offered by MFIs. For instance, Cull et al. (2018) argue that the geographic outreach for microfinance products and services delivered through agent banking in remote and sparsely populated areas is limited due to operational challenges. The research finds that agent banking tends to focus more on commercial and densely populated regions. Similarly, innovative micro-insurance, analyzed in our reviewed articles, offers limited

policy options, restricting clients' choices and potentially leaving gaps in coverage (Bauchet & Morduch, 2019; Groh & McKenzie, 2016). Access to flexible loans is also limited (Collier et al., 2009; Karlan et al., 2014). Moreover, flexible loans often have lower loan amounts than standard microfinance loans (Weber & Musshoff, 2013). Likewise, the narrow range of products offered by deposit collectors, who primarily specialize in savings services and in many cases cannot offer other financial services such as loans, may restrict the options available to clients, particularly those who need diverse financial services to support their businesses or manage risks.

These limitations with respect to the range, geographic reach, and scope of incrementally innovative microfinance products, may hinder the effectiveness of these offerings in comprehensively addressing the client's needs.

Insert Figure 7 here

6.2.Challenges to disruptive innovation in microfinance products

Figure 7 illustrates the challenges of disruptive microfinance products. The reviewed articles highlight client protection, exclusion, alluring risky clients, lack of agility and adaptability, and complexity as the challenges associated with disruptive microfinance products.

First, disruptive microfinance products can undermine client protection due to factors including comprehension, data protection, and fraud (Burtch et al., 2015; Diniz et al., 2012; Harris et al., 2012; Ozili, 2018). These products may pose challenges for clients, particularly those with limited financial literacy to understand how these offerings can be used (Allen, 2012;

Blakstad & Amars, 2020). Reduced personal interaction (i.e., reduced loan officer involvement) may hinder effective communication of the benefits and risks of disruptive microfinance products, negatively affecting the financial decision-making of low-income individuals (Siwale & Godfroid, 2022). Furthermore, disruptive microfinance products often include collecting and utilizing client data, raising concerns regarding privacy and data protection (Burtch et al., 2015; Ozili, 2018). Moreover, disruptive innovations can increase the risk of fraud and cybersecurity breaches (Kang, 2018; Wu et al., 2023). Clients may fear using mobile money services due to agent-driven fraud (Wu et al., 2023). Clients may be particularly vulnerable to these risks when they do not have the necessary knowledge or skills to protect themselves.

Second, although disruptive microfinance products can address exclusion, as discussed in the preceding subsections, the reviewed articles indicate that factors such as low take-up, lack of access to digital options, lack of infrastructure, and awareness may trigger exclusion. Adopting disruptive microfinance products, such as mobile money services, does not necessarily lead to higher use of financial services (Dupas et al., 2018; Lyons et al., 2022). Many mobile money accounts remain inactive. They are unused for savings and borrowing due to behavioral and cultural factors, such as a lack of trust in digital financial systems (Demirguc-Kunt et al., 2018; Ozili, 2018, 2021). Diniz et al. (2012) find that indigenous and impoverished communities resist disruptive microfinance products due to religious beliefs, financial illiteracy, and high fees. Similarly, the provision of disruptive microfinance may also introduce an awareness bias. Financial literacy is generally low in rural areas and among poor people. Ali et al. (2021) find that many respondents had limited awareness of disruptive microfinance products.

Third, socioeconomic, infrastructural, and geographical barriers may further restrict access to digital financial services, excluding specific target groups within society, such as the elderly

and low-income individuals who lack technological skills or funds (Y. Liu et al., 2021). Benami and Carter (2021) find that poor mobile networks limit the availability of microfinance insurance and digital lending products in remote areas, leading to geographic exclusion. Furthermore, disruptive microfinance products may not benefit all income groups equally, continuing demographic bias in financial inclusion (Lyons et al., 2022; Suryono et al., 2019) as these services might cater more to relatively affluent users who are more familiar with digital interfaces.

Fourth, disruptive microfinance products, such as P2P and digital lending products, can attract high-risk clients, who are subject to repayment risk and default, potentially destabilizing the microfinance system (Diniz et al., 2012; Ozili, 2018).

Finally, disruptive microfinance products may require higher operational and technical standards to ensure efficient delivery (Anifa et al., 2022; Bruton et al., 2015; Ozili, 2018). Products such as mobile microinsurance and digital lending can increase operational complexities. MFIs may require diversifying delivery channels to cater to a broader customer base. This may result in integrating multiple systems, processes, and stakeholders, leading to operational complexities. Furthermore, disruptive innovations in microfinance necessitate complex data processing, new systems, and technologies, adding to operational and transactional complexities.

The limitations mentioned above may hinder clients and MFIs from effectively availing of the benefits of these offerings.

7. Limitations of the research on innovative microfinance products

The articles in our data set discuss a number of important limitations regarding the research on the consequences of innovation in microfinance products. First, several studies investigate innovative products using data from specific contexts or sectors. This raises questions about the generalizability of the findings of these studies (e.g., Dougherty et al., 2021; Hillesland et al., 2022; Hsu et al., 2021; Kikulwe et al., 2014; Lensink et al., 2018; Meyer, 2002; Sekabira & Qaim, 2017).

Second, several studies focusing on incremental innovation in microfinance products (e.g., Laureti et al., 2017; Saha et al., 2015; Sievers & Vandenberg, 2007) acknowledge methodological shortcomings. For instance, studies employing self-reported behavioral data highlight the possibility of recall bias and its implications for data accuracy (e.g., Groh & McKenzie, 2016). Some studies also caution against the challenges in eliminating biases when relying on observational data for impact evaluation (e.g., Kikulwe et al., 2014; Lee et al., 2023; Sekabira & Qaim, 2017; Seng, 2021; Uddin & Barai, 2022). Moreover, a substantial share of the reviewed studies employs less rigorous methods, such as quasi-experimental techniques and correlation analysis. Several studies call for advanced and comprehensive methodologies, such as randomized control trials, to rigorously examine the effects of disruptive microfinance products (Altamirano & Beers, 2018; Dorfleitner et al., 2022; Emanuel-Correia et al., 2022).

Third, when scrutinizing incremental innovation in microfinance products and their broader relevance, researchers acknowledge that the findings may not comprehensively encompass the long-term effects due to the lack of longitudinal data (e.g., Aragón et al., 2020; Prior & Mora, 2019).

Addressing these limitations through more comprehensive data collection, robust methodologies, and broader contextual analysis can contribute to developing more reliable insights into the implication of innovation in microfinance products for clients and MFIs.

8. Research gaps and suggestions for future research

The reviewed studies indicate several critical areas of incremental innovation in microfinance products that future research could focus on to address existing gaps in knowledge. First, more research on the supply-side implications of incremental innovation in microfinance products is crucial, as this research is scant. Studies (e.g. Garcia et al., 2022; Labie et al., 2017; Lensink et al., 2018; Saha et al., 2015) propose examining the costs linked to incremental innovation to ascertain how it is linked to the profitability of MFIs. It is imperative not only to focus on the direct costs but also to delve into the potential secondary consequences of incremental innovation in microfinance products for MFIs. For instance, clients who derive advantages from these innovative products may exhibit more prolonged engagement with MFIs (Garcia et al., 2022).

Second, our analysis of the articles reveals that the research on the effects of disruptive microfinance products is still in its early stages, indicating the need for further investigation into how access and utilization of these products and services affect MFIs and clients (Emanuel-Correia et al., 2022; Luo et al., 2022; Mora & Prior, 2018).

Third, articles that analyze disruptive microfinance products suggest that future research should prioritize long-term effects, transparency, and regulatory and policy issues linked to these innovative products and services. Most reviewed studies analyze its short-term effects and focus

on only one dimension, such as take-up, financial inclusion, and consumption (e.g., Banna et al., 2022; Kikulwe et al., 2014). The longer-term, systematic, and broader effects of disruptive microfinance products are still unknown. The scarcity of comprehensive research on this area may be due to its relatively new nature. Thus, this is an essential area of future research.

Fourth, several researchers propose further research focusing on various settings (Adjei et al., 2009; Aragón et al., 2020; Ashraf et al., 2006; Banna et al., 2022; Emanuel-Correia et al., 2022; Kikulwe et al., 2014; Lensink et al., 2018; Riley, 2018; Uddin & Barai, 2022), specific productive purposes (Bharadwaj et al., 2019), and in various demographic segments, including younger entrepreneurs, migrants, and the elderly (Emanuel-Correia et al., 2022). Future research on such aspects may provide a thorough understanding of the accessibility and inclusivity aspects of disruptive microfinance products.

Finally, the analysis of the articles in our dataset reveals there is no research on the disruptive microfinance products and the dynamics of regulations and policies. This is a potentially important topic, however. Investigation into microfinance's regulatory and the policy landscape concerning disruptive microfinance products could for example aim to comprehend how regulatory frameworks can effectively balance client protection, innovation, and financial stability.

9. Recommendations for policy makers and MFIs

The articles in our dataset provide several recommendations to governments and MFIs focusing on promoting and supporting innovative microfinance products. These

recommendations aim to improve the effectiveness of innovative microfinance products, enhance financial inclusion, and address the needs of clients.

First, the articles on disruptive innovations (e.g., Anagnostopoulos, 2018; Dorfleitner et al., 2022; Kandie & Islam, 2022) in our dataset recommend governments to establish appropriate regulatory frameworks, foster infrastructure development, promote financial and digital literacy, and support financial service innovation. Furthermore, researchers acknowledge that MFIs, particularly those with limited resources, face significant challenges with the costs associated with financial technology infrastructure. Uddin & Barai (2022) advise governments to establish a comprehensive fintech infrastructure and offer it to MFIs at low cost to address this problem. This approach enables smaller MFIs to acquire technological assets.

Second, researchers provide recommendations to MFIs that may help them increase the positive returns to offering innovative microfinance products. Ayopo and Ibidunni (2015) suggest routine evaluations be conducted to assess the effects of incrementally innovative microfinance products and improve their effectiveness. Thus, MFIs can identify areas for improvement and refine their products to better serve their clients. Furthermore, MFIs should actively market incrementally innovative microfinance products through effectively communicating the benefits of these products to their clients (Ayopo & Ibidunni, 2015; Sievers & Vandenberg, 2007). Moreover, Babajide et al. (2016) recommend establishing partnerships with informal financial service providers for MFIs. Informal financial service providers, such as rotating savings and credit associations (ROSCAs), often have deep-rooted relationships with their clients and have a comprehensive understanding of their financial behaviors and needs. Such collaboration allows MFIs to gain valuable insights into the preferences and challenges of the target clients.

Third, MFIs may raise awareness and educate their clients about the benefits of incrementally innovative microfinance products. This awareness is important to bridge the information gap and increase the take-up of these innovations (Seng, 2021; Wondirad, 2020). Likewise, MFIs should adopt a bottom-up approach to innovations in products, gaining a deeper understanding of their clients' needs and preferences to come up with innovative products that fulfill their needs (Sievers & Vandenberg, 2007).

Fourth, a growing body of literature on disruptive and incremental innovations in microfinance products emphasizes the need for MFIs to integrate both innovative microfinance products strategically into their operations.

Finally, several studies, (e.g., Lee et al., 2023; Wang et al., 2023; Altamirano & Beers, 2018; Kandie & Islam, 2022; Lyons et al., 2022; Effiom & Edet, 2022; Li et al., 2022; Zhao et al., 2022), emphasize prioritizing the financial inclusion of marginalized people, such as women and rural residents through disruptive microfinance products.

10. Discussion and conclusion

This SLR highlights that disruptive and incremental innovations in microfinance products have led to several outcomes for microfinance clients. These outcomes include various financial as well as nonfinancial domains. While the results of empirical investigations into the impact of innovative microfinance products on these outcomes are mixed, in general, this SLR highlights the potential role of innovative microfinance products in enhancing the effects of microfinance.

A closer examination of disruptive and incremental innovation in microfinance products reveals unique pathways through which they affect clients. Disruptive products eliminate the

most detrimental barriers to financial inclusion, including cost and time inefficiency and low accessibility, increasing adoption. However, the pathways through which disruptive products affect client outcomes exhibit a shallower depth. They focus on short-term outcomes, such as take-up, and aspects like immediate effects on resilience to shocks and consumption. An illustration of this is the improvement in consumption facilitated by immediate cash availability via money transfer services—a trajectory that seems limited in its impact on the depth of financial inclusion of MFI clients, especially of the poor. The reviewed literature shows that high costs, small amounts for short terms, and overborrowing can negatively affect clients.

Incremental innovation in microfinance products, on the other hand, focuses on customized and tailored solutions that cater to the diverse needs and circumstances of clients. Although the articles we have reviewed do not provide evidence of their impact on poverty, their effects go beyond immediate financial outcomes, focusing on broader socioeconomic development. For instance, these products emphasize long-term resilience to shock, such as by facilitating asset accumulation, which may lead to sustainable positive effects.

These different mechanisms may indicate that the recent manifestation of disruptive innovation in microfinance does not suggest its superiority to incremental innovations.

Both types of innovations improve competitiveness, efficiency, profitability, risk management, social performance, and outreach of MFIs. Disruptive microfinance products leverage technology to reduce costs, increase client base, and optimize resource allocation, allowing MFIs to increase profitability and operational efficiency. However, the high potential of disruptive microfinance products for commercialization may blur their social commitment, raising concerns over social goals. Conversely, incremental innovation focuses more on deeper social performance than financial performance.

The findings of this SLR show that, overall, both disruptive and incremental innovations in microfinance products have positive effects on clients and MFIs. Thus, MFIs may think about strategies to use these innovations to maximize the contributions to their clients while at the same time showing sustainable financial returns. However, the reviewed literature does not provide evidence of the interaction between these two types of innovations. More research is needed to understand whether they work best in isolation, combination, or substitution.

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Supplementary Materials: Figures, Tables, and Appendices

Table 1. an overview of innovative microfinance offerings

Microfinance products and services	Incremental innovations: minor modifications to traditional offerings	Disruptive innovation: technology-based microfinance offerings
Microcredit	<ul style="list-style-type: none"> • Flexible microcredit • Credit lines • Payday loans • Microcredit + Business training/technical assistance/health training • Microcredit combined with health services/ social services • Relationship lending • Lending through privatized agents • Microcredit combined with microinsurance • Lending combined with microsaving through agents 	<ul style="list-style-type: none"> • P2P lending/borrowing • Crowdfunding • Digital microcredit (i.e., online microcredit, mobile money loans)
Microsaving	<ul style="list-style-type: none"> • Agent banking microsaving • Deposit collection microsaving • Commitment microsaving • Zero cost microsavings • Microsaving with planning and reminders 	<ul style="list-style-type: none"> • Digital microsaving
Microinsurance	<ul style="list-style-type: none"> • Innovative microinsurance for macroeconomic shocks 	<ul style="list-style-type: none"> • Mobile microinsurance • Index microinsurance • Weather derivatives
Microtransfers		<ul style="list-style-type: none"> • Mobile money transfer services • Transfer to business partners

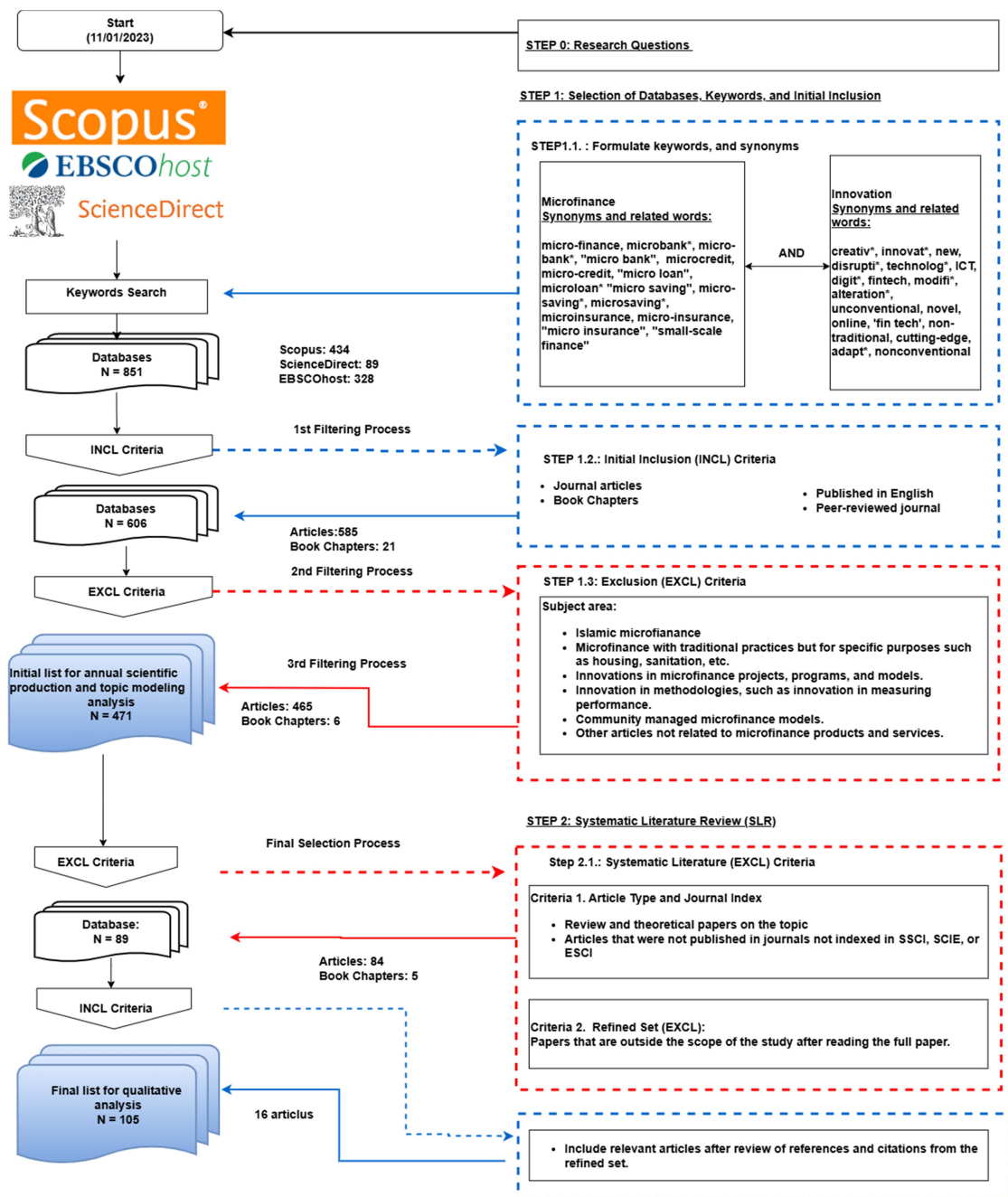


Figure 1. Article selection process

Source: Authors

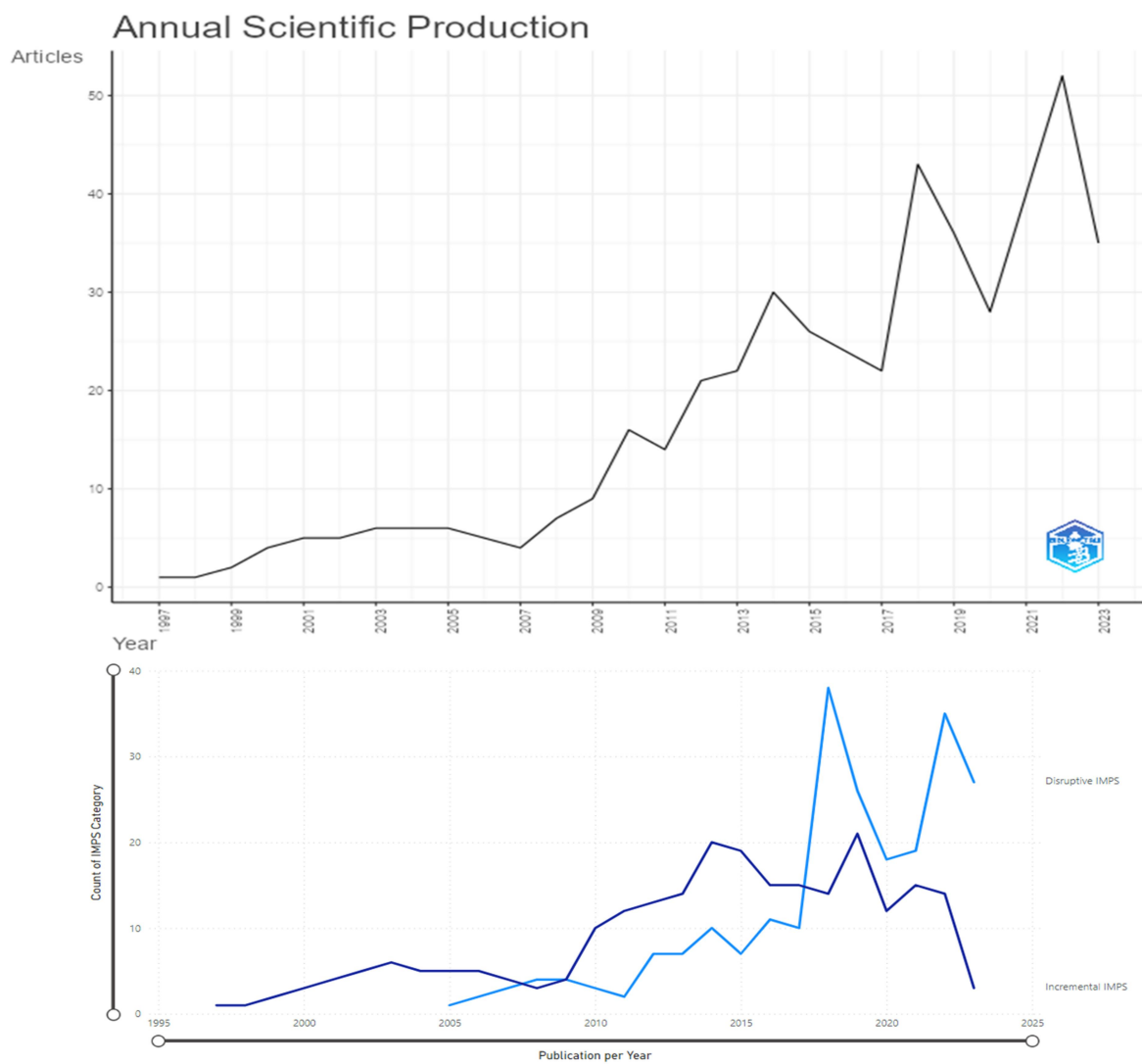


Figure 2. Distribution in number of publications on all categories, disruptive, and incremental innovation in microfinance products (1997–2023)

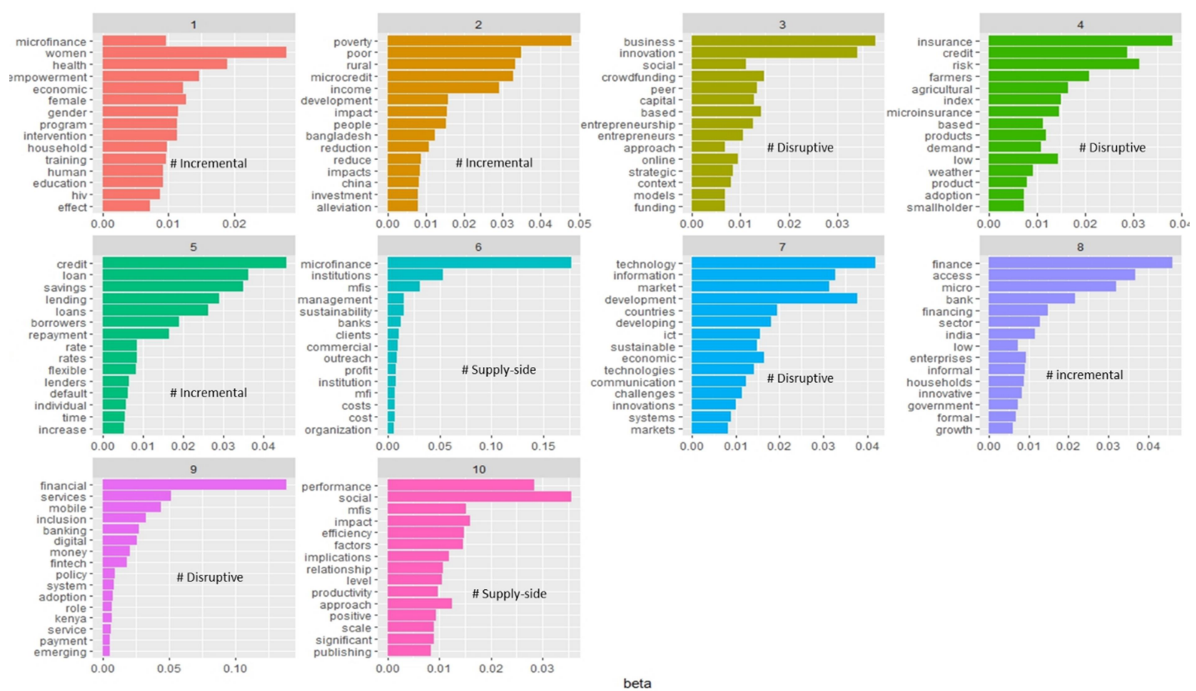
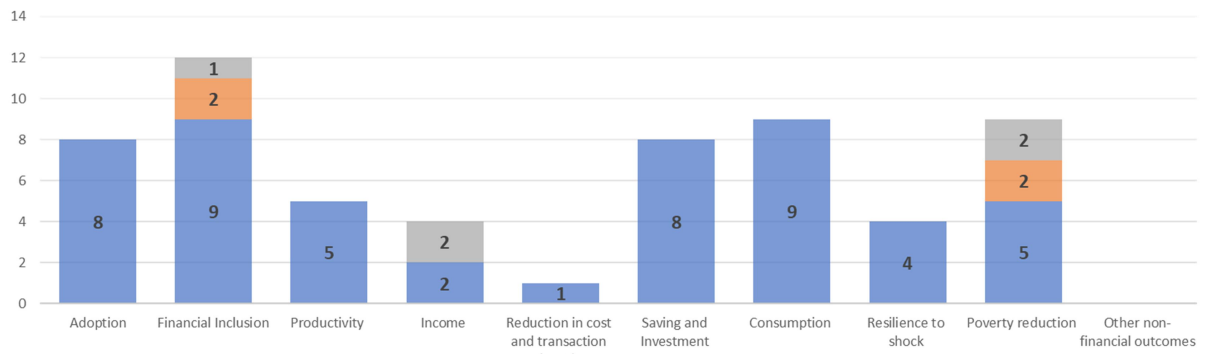
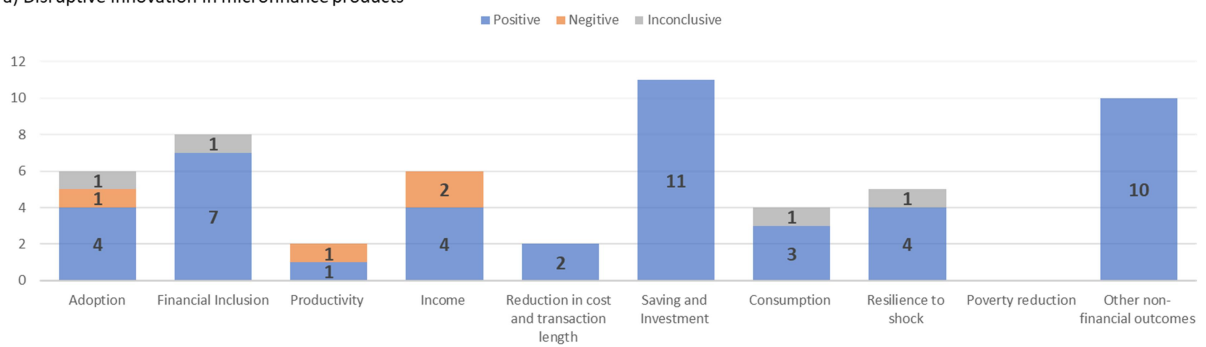


Figure 3. Top 10 topics identified based on the titles, abstracts, and keywords of 471 papers⁴

⁴ Beta represents the likelihood of each word in a specific topic. Higher beta value of a word indicate that word is highly associated with that specific topic. Methodology related word such as ‘study’, ‘paper’, ‘method*’ were not considered in the analysis.



a) Disruptive innovation in microfinance products



b) Incremental innovation in microfinance products

Figure 4. Client outcomes and the number of reviewed articles that analyze the effects of disruptive and incremental innovations in microfinance products

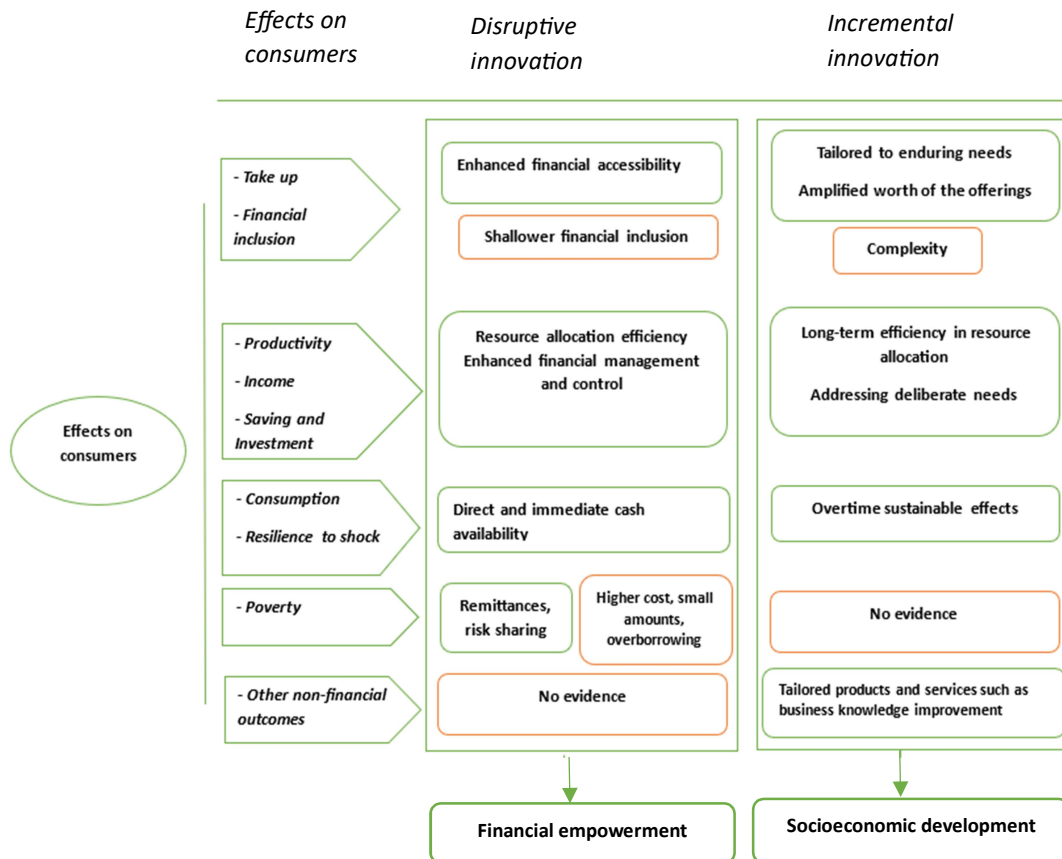


Figure 5. Effects of disruptive and incremental innovation in microfinance products on clients: insights into pathways discussed in the reviewed articles

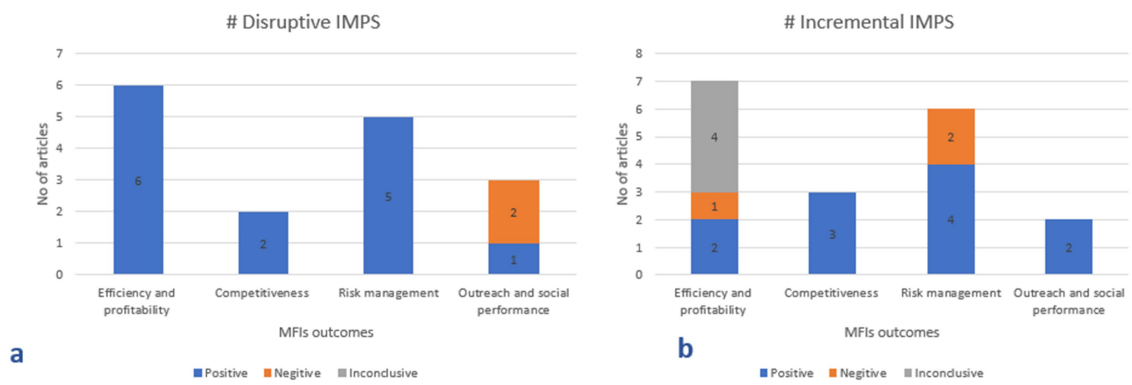


Figure 6. MFIs outcomes and the number of reviewed articles on disruptive (a) and incrementally innovative microfinance products(b)

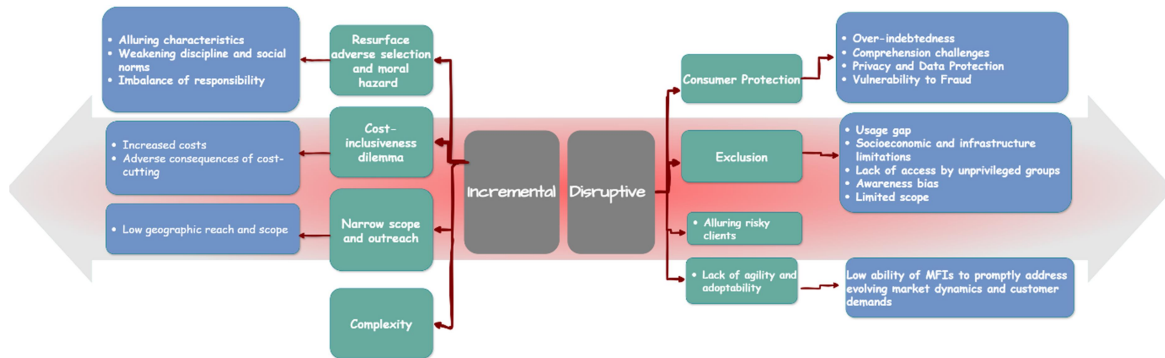


Figure 7. Challenges to incremental and disruptive innovation in microfinance products
 Source: Authors

Appendix 1. Data extraction form

Data Extraction Form

1. Article code
 2. Author (s)
 3. Year of publication
 4. Title
 5. Index
 6. Journal
 7. Abstract
-
8. What is the main focus of this study?
 9. What type of MF products/services does the paper consider? (Disruptive/Incremental)
 10. Analyze impact/Effects on:
 - a. Impact/effects on MFIs
 - b. Impact/effects on MF users
 - c. Both
 11. What is the method of analysis used in this paper?
 12. Any other relevant specification regarding the method used:
 13. Sample (total number of respondents)
 14. Specify sampling design?
 15. What was the setting (location) of the intervention:
 - a. Urban
 - b. Suburban
 - c. Rural
 - d. Can't tell
 16. Has the research observed any impact/effect between the treatment and control?
 - a. Yes
 - b. No
 - c. Can't tell?
 17. What is/are the main characteristics of MF products and services?
 18. Other relevant characteristics of the product/services or MFIs:
 19. What/are the outcome variable (s)?
 20. Outcome definition (if relevant):
 21. What is the main aim of the study?
 22. Hypothesis/research question, if relevant:
 23. What is/are the key conclusion (s) of the study authors? what were found?
 24. What are the other relevant results?
 25. What challenges associated with innovative microfinance products were discussed, and what was concluded?
 26. What are the limitations of this study?
 27. What future research is recommended?
 28. What are the recommendations for MFIs and policymakers?

Appendix 2. Disruptive and incremental innovation in microfinance products and their effects

Dimensions of Effects	Types of effects	Types of innovative microfinance products and their effects			
		Disruptive	Effects	Incremental	Effects
Effects on Clients	Take-up (13 studies)	Digital microlending (2 studies)	+	Flexible lending with varying prices (1 study)	+
		Digital microsaving (1 study)	+	Microinsurance with flexibility in installments (1 study)	+
		Mobile money services (2 study)	+	Microinsurance for macroeconomic shocks (1 study)	Inconclusive
		Rainfall index microinsurance (1 study)	+	Deposit collection saving (1 study)	+
		Weather derivative with fixed payout (2 studies)	+	Combined products (credit + insurance) (2 studies)	1(+ve)/1 (-ve)
	Financial Inclusion (20 studies)	Digital saving (1 study)	+	Microfinance plus training (4 studies)	3(+ve)/ 1 inconclusive
		Digital remittances (3 studies)	+	Lending through agents (1 study)	+
		Digital lending (3 studies)	+	Commitment saving (1 study)	+
		P2P lending (4 studies)	2 (+ve)/2(-ve)	Flexible credit (2 studies)	+
		Mobile insurance (1 study)	-		
	Productivity (7 studies)	Mobile money (3 study)	+	Lending + business training (2 studies)	+ / -
		Digital MF products (2 studies)	+		
	Income (11 studies)	Mobile Money (3 studies)	+	Creditline with a preapproved ceiling (1 study)	+
		Digital lending (3 studies)	1(+ve)/2(-ve)	Lending plus BDS (3 studies)	2(+ve) /1 inconclusive
				Saving + zero fee (1 study)	Inconclusive
	Reduction in cost and transaction length (3 studies)	M-insurance (2 studies)	+	Lending through privatized agents (1 study)	+
	Saving and Investment (19 studies)	Digital saving (1 study)	+	Agent saving product (2 studies)	+
		Disruptive microfinance products (2 study)	+	Deposit collection saving (2 studies)	+

		Mobile insurance (1 study) Mobile money services (2 studies)	+	Commitment saving (2 studies)	+
		Index insurance (2 studies)	+	Saving with zero fee (1 study)	+
				Saving with planning and reminder (2 study)	+
				Mandatory saving (1 study)	+
				Flexible credit (1 study)	+
	Consumption (13 studies)	Mobile money (9 studies)	+	Lending plus BDS (3 studies)	+
				Saving with zero fee (1 study)	Inconclusive
	Resilience to shock (8 studies)	Digital lending (M-shwari) (1 study)	+	Flexible credit (2 studies)	+
		Mobile money (2 study)	+	Flexible credit + saving (1 study)	+
				Lending plus BDS (1 study)	+
		Index insurance (1 study)	+	Saving with zero fees (1 study)	Inconclusive
	Poverty reduction (12 studies)	Mobile money and digital banking services (7 studies)	5(+ve) / 2 Inconclusive	Credit Plus BDS (1 study)	+
		Digital lending (2 studies)	-	Credit through asset transfer (1 study)	+
				Innovative saving (1 study)	+
	Other non-financial outcomes (10 studies)	-		Flexible loan for energy access (2 studies)	+
				Lending plus BDS (2 study)	+
				Lending plus health services (6 studies)	+
Effects on MFIs	Efficiency and profitability (14 studies)	M-insurance (1 study)	+	Lending and saving through branchless banking (2 study)	+
		Online crowdfunding (1 study)	+	MF plus BDS (2 studies)	Inconclusive
		Digital products and services (4 studies)	+	Lending plus BDS (1 study)	-
				Flexible lending plus saving (1 study)	+
	Flexible lending (1 study)			Inconclusive	
			Relationship lending (1 study)	Inconclusive	
	Outreach and social performance (5 studies)	Digital lending (2 studies)	-	Lending and saving plus social services (1 study)	+
Mobile money services (1 study)		+	Lending + social services + BDS (1 study)	+	

	Competitiveness (5 studies)	Digital products and services (2 studies)	+	Lending plus BDS (3 studies)	+
	Enhanced risk management (11 studies)	Mobile insurance (1 study)	+	Lending plus BDS (2 studies)	+
		Digital lending (M-dinar) (1 study)	+	Flexible lending (4 study)	2+ve/2-ve
		Digital products and services (3 studies)	+		



List of research reports

2019001-EEF: Lugalla, I.M., J. Jacobs, and W. Westerman, Drivers of Women Entrepreneurs in Tourism in Tanzania: Capital, Goal Setting and Business Growth

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