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# **The impact of financial inclusion on financial stability: review of theories and international evidence**

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## **ABSTRACT**

International policymakers prioritize financial stability and inclusion, but often view them as separate goals, overlooking potential overlap and trade-offs. If synergies and trade-offs between the two concepts are not recognized and understood, policy design may yield less-than-ideal results. This paper provides a systematic review of the theoretical literature on financial inclusion and financial stability as well as empirical research initiatives examining the relationship between the two concepts. We found that current studies do not always present a unified theoretical approach or conceptual framework to explain the channels of the relationship between financial inclusion and stability. Empirical studies to date offer divergent views on the financial inclusion and stability nexus, a dispensation that may be due to country specificities, the multi-faceted nature of financial inclusion and stability or the seldom uniform use of proxies to capture these concepts in the literature. Not only are some studies inconclusive, but some also suggest that financial inclusion has a positive and significant impact on financial stability, as explained by the institutional theory. While other studies, supported by the aggressive credit expansion theory, reveal that financial inclusion can have a negative influence on financial stability. Through this comprehensive review, we intend to improve awareness and cohesion among scholars and policy makers of financial inclusion and financial stability while also facilitating the development of solid foundations to address future research and policy making challenges.

### **KEY TERMS:**

Financial inclusion; Financial stability; Financial regulation, Literature review

**JEL classification:** G0, G20, G21, G28

## **1. Introduction**

International policy makers place a high priority on both financial stability and financial inclusion. For instance, a lot of attention is being paid to the global promotion of financial inclusion through programs like the Global Partnership for Financial Inclusion and the G-20's Maya Declaration, which aim to reduce poverty and inequality, create wealth, and support sustainable economic growth. Comparably, in the wake of the global financial crisis (GFC) of 2007–2009, regulators and policy makers around the globe have emphasized the need for financial sector reform to enhance financial stability on a national, regional, and global scale. This is demonstrated by calls made by international organizations like the Financial Stability Board and the International Monetary Fund (IMF) to improve global financial stability by enacting reforms like the Basel III accords and other complementary regulatory changes (Čihák, et al., 2021, 2016).

There is no one standard measure of financial inclusion. In general terms, financial inclusion refers to the provision of accessible, affordable, secure, effective, transparent, and high-quality financial products and services to businesses and households, while ensuring efficient financial system operation (Gadanecz & Tissot, 2017; Amidži et al., 2014; Sahay et al., 2015). Similarly, there is no universally recognized definition of financial stability. Generally, a stable financial system is viewed as one that can efficiently allocate resources, manage risks, maintain employment, and eliminate disruptive price movements, ensures stability and self-correction, preventing adverse events from disrupting the economy (Schinasi, 2004; World Bank, 2015; Gadanecz & Jayaram, 2008; Jeanneau, 2014).

There is evidence to suggest that policy makers typically seek financial stability and inclusion as distinct goals, ignoring the possibility of overlap and potential trade-offs between the two. For instance, one important takeaway from the Global Financial Crisis of 2007–2009 is that, on the one hand, a significant impairment of financial stability might result from a rapid growth of credit to economic actors who are not creditworthy (see, Amatus and Alireza, 2015; Morgan and Pontines, 2018). Conversely, increased use of financial services and products by economic actors that have previously been unbanked or financially excluded might promote financial stability by helping financial institutions diversify their risks (see, Čihák et al., 2016; Mendoza et al., 2009; Al-Smadi, 2018). On this basis financial stability may be positively or negatively impacted by financial inclusion. Considering this, it is vital to recognize and comprehend possible trade-offs as well as areas of convergence between financial inclusion and stability to

develop and execute well-informed policies that advance both goals simultaneously. Policy design runs the danger of producing less-than-ideal results if these links are not highlighted and understood.

Efforts should be made to improve awareness and cohesion among scholars and policy makers of financial inclusion and financial stability while also facilitating the development of solid foundations to address future research and policy making challenges. One way of doing this is to identify what studies on the relationship between financial inclusion and stability have recently been conducted and published in academic and scholarly journals as well as which theories contribute to the explanation of the relationship between the two concepts. In this regard, the objective of our study is to offer an organizing and integrative lens through which to view and understand the different contributions to knowledge creation from studies that investigate the relationship between financial inclusion and financial stability.

Our study contributes to existing literature in four ways. First, it provides a systematic review of common definitions and measures of financial inclusion and financial stability, respectively, while also identifying the overlaps in each case. In this way, it complements earlier studies such as Cull, *et al.* (2014), Demirgüç-Kunt *et al.* (2017) as well as Duvendack and Mader (2018) that have focused more on the positive socio-economic and macroeconomic spill overs of financial inclusion, as opposed to how it is defined and/or measured. Second, by presenting a detailed understanding of how financial inclusion and financial stability are respectively defined and measured, this paper provides a synthesised and holistic view that policy makers can use to balance the trade-offs between inclusion and stability while developing effective policies aimed at promoting inclusion and stability. This will ensure that previously underbanked and underserved economic agents have greater access to financial products and services in a sustainable and safe manner. Third, the study offers a comprehensive review of the theoretical background of the linkage between financial inclusion and banking sector stability. This allows for the identification of a unified theoretical approach or conceptual framework that policy makers can use to explain the channels of the relationship between financial inclusion and financial stability. Fourth, by conducting a comprehensive review of the empirical literature on the relationship between financial inclusion and financial stability, our study provides a detailed understanding of the extent of the country and regional coverage in various studies, as well as the methodological issues and nature of results. This allows for

recognizing overlaps and policy lessons while also identifying any gaps in the empirical literature to be closed in future studies.

The rest of this study is organised into the following sections. Section 2 provides a conceptualization of financial inclusion and financial stability, respectively. Section 3 explores the theoretical nexus between financial inclusion and financial stability, placing emphasis on the transmission channels that underpin the relationship. The empirical link between financial inclusion and financial stability is covered in Section 4, highlighting how theory and empirical evidence come together to facilitate an understanding of the nature of the relationship between the two concepts. A detailed discussion of the empirical literature is provided in Section 5, with an emphasis on the overlaps and gaps. Section 6 concludes the study.

## 2. Conceptualization of Financial Inclusion and Financial Stability

### 2.1 Financial Inclusion

Financial inclusion is a concept that varies across countries and can be viewed from various perspectives, including users, suppliers, regulators, and policymakers. Working definitions of financial inclusion can be categorized into two types: one-dimensional definitions that focus on access to formal financial services and products by economic agents (see Carbó et al., 2005; Leyshon & Thrift, 1995), and broader, multidimensional definitions that consider use, cost, and quality (see Allen et al., 2016; Demirgüç-Kunt & Klapper, 2013; Demirgüç-Kunt et al., 2017). Table 1 presents an overview of how access, use, cost, and quality are understood in the multidimensional view of financial inclusion. It also presents commonly used proxies for access, use, cost, and quality. Evaluating these proxies over time can provide policymakers with a sense of financial inclusion trajectory at a country, regional, or global level, guiding policy development.

*Table 1: Dimensions and proxies of financial Inclusion*

	<b>Dimension</b>	<b>Proxy</b>
<b>Access</b>	<ul style="list-style-type: none"> <li>• The ready availability or opportunity to use formal financial services and products.</li> <li>• The physical ability of economic agents to reach financial services easily.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of automatic teller machines (ATMs) per 100,000 adults or per 1,000km square.</li> <li>• Number of bank branches per 100,000 adults or per 1,000 km square.</li> </ul>
<b>Use</b>	<ul style="list-style-type: none"> <li>• Economic agents' actual use of formal financial services and products.</li> </ul>	<ul style="list-style-type: none"> <li>• Percentage of adults with at least one type of regulated deposit account</li> </ul>

		<ul style="list-style-type: none"> <li>• Percentage of adults with at least one type of regulated loan account.</li> <li>• Number of household depositors per 1,000 adults.</li> <li>• Number of household borrowers per 1,000 adults.</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>• Costs associated with accessing and using formal financial services and products, both monetary and non-monetary.</li> </ul>	<ul style="list-style-type: none"> <li>• Average cost of opening a basic bank account</li> <li>• Average cost of maintaining a basic bank account</li> <li>• Average cost of credit transfers.</li> </ul>
<b>Quality</b>	<ul style="list-style-type: none"> <li>• Whether the financial services and products meet the needs of the consumers and how well the consumers are informed and knowledgeable about them and use them in a safe, formal, and well-regulated space.</li> </ul>	<ul style="list-style-type: none"> <li>• Financial literacy / financial knowledge score.</li> <li>• Disclosure requirements.</li> <li>• Formal internal and external dispute resolution frameworks / mechanisms.</li> </ul>

**Source:** Authors' own compilation based on Espinosa-Vega, *et al.*, (2020); Pesqué-Cela *et al.*, 2021; Beck *et al.*, (2007); Amidži *et al.*, (2014); Queralt, (2016).

Table 1 reveals that proxies of access to financial inclusion measure the availability of physical financial services and products based on the distance to them. These proxies typically include geographic or demographic penetration indicators such as ATMs and bank branches per 1,000 km. Proxies of the use of formal financial services and products involve households having at least one deposit account with a formal financial institution, including transferable, sight, savings, and fixed-term deposits. Common use proxies also include household borrowers with at least one loan account with a formal financial institution, including mortgage loans, consumer loans, financial leases, and hire-purchase credit (Espinosa-Vega *et al.*, 2020; Pesqué-Cela *et al.*, 2021; Beck *et al.*, 2007; Amidži *et al.*, 2014; Queralt, 2016). The cost dimension of financial inclusion is determined by the average cost of opening, maintaining, and transferring basic bank accounts. A well-developed financial sector with high competition can offer lower costs. The quality dimension of formal financial services and products is measured by indicators such as financial literacy, disclosure requirements, and formal dispute resolution frameworks at the country level. Lower costs indicate better financial inclusion (Espinosa-Vega *et al.*, 2020; Pesqué-Cela *et al.*, 2021; Beck *et al.*, 2007; Amidži *et al.*, 2014; Queralt, 2016).

The multifaceted view of financial inclusion can be understood from definitions of financial inclusion from various international standard-setting bodies (SSBs), including the International Monetary Fund (IMF), the World Bank, the Alliance for Financial Inclusion (AFI), the Bank of International Settlements (BIS), and the Organization for Economic Co-operation and

Development (OECD), respectively<sup>2</sup>. The definitions of financial inclusion presented in Table 2 highlight the importance of access and effective use of formal financial products and services given constraints such as time and distance while being mindful of the importance of minimizing associated costs and ensuring the necessary quality. The IMF and AFI definitions view financial inclusion as a vehicle that enables households and firms to guard against macroeconomic shocks and better manage risks. In this way, it provides the means for households to smooth their income and grow wealth over time while also affording firms the resources to invest, create businesses and help grow the economy. It can contribute to economic sustainability and support monetary and financial stability by making savings and investments more efficient, safe, and transparent through the functioning of robust financial infrastructure. Complementarily, the World Bank, BIS and OECD definitions emphasize that financial inclusion should be extended to all segments of society in a safe, secure, and sustainable manner. The implication is that although financial services and products should be extended to all economic agents, necessary care must be taken to ensure that this is done in a responsible and sustainable manner, as uncontrolled expansion in financial access can lead to instability. From a policy maker's perspective, the pursuit of financial inclusion should therefore strive to achieve an optimal combination of its four key dimensions, namely access, use, cost, and quality, respectively.

*Table 2: Definition of financial inclusion by various international organizations*

<b>Standard Setting Body</b>	<b>Financial Inclusion Definition</b>
International Monetary Fund (IMF)	Widespread access to formal financial services, including income, safe money storage, borrowing, and insurance, thereby benefiting financially integrated economic agents who can access fundamental financial services and products.
World Bank	Equal access to basic financial products and services for individuals and businesses in a responsible and sustainable manner.
Alliance for Financial Inclusion (AFI)	Consistent use of high-quality financial products and services by households and businesses, provided by authorized providers, to manage cashflows and mitigate shocks.
Bank of International Settlements (BIS)	Provision of accessible, affordable, secure, effective, transparent, and high-quality financial products and services to businesses and households, ensuring efficient financial system operation through a sound financial infrastructure, meeting customer needs.
Organization for Economic Co-operation and Development (OECD)	Ensuring affordable, timely, and adequate access to financial products and services for all societal segments through tailored approaches, financial awareness, and education, promoting financial wellbeing and economic and social inclusion.

**Source:** Authors' own compilation based on OECD (2013), Amidži *et al.*, (2014), Sahay *et al.*, (2015), World Bank (2018), AFI (2017).

<sup>2</sup> The selection of the SSBs was made in light of their innovative and persistently influential work in the field of financial inclusion around the world.



## 2.2 Financial Stability

Financial stability does not have a universally accepted definition, but a functioning definition is crucial for analyzing policy challenges in the expanding financial stability landscape. An ideal financial system should possess qualities of efficiency and should work to maintain them at national, regional, and global levels while preventing financial instability (Schinasi, 2004; Allen & Wood, 2006; Rosengren, 2011; Morgan & Pontines, 2018). A stable financial system involves efficient resource allocation, risk assessment, and management, which maintains employment levels and reduces volatility in relative asset prices. Self-corrective processes make it resistant to shocks. Banks are less likely to fund successful business projects in an unstable financial system, as they are less willing to tap into household surplus savings. Highly volatile asset prices, which can be indicative of an unstable financial system, can lead to negative consequences, such as bank runs, stock market collapses, high non-performing loans, and hyperinflation (Schinasi, 2004; Allen & Wood, 2006; Rosengren, 2011; Morgan & Pontines, 2018; Gadanez & Jayaram, 2008).

Financial stability is assessed at both institutional and systemic levels. National central banks evaluate financial stability through financial stability reports (FSRs). They examine Financial Soundness Indicators (FSIs) at the institutional level and aggregate them to the systemic level. FSIs, launched by the IMF in the late 1990s, evaluate a nation's risks to financial stability and assess the financial stability of financial institutions, businesses, and households. They offer an overall assessment of the financial stability and health of a nation's financial institutions, as well as that of its businesses and households (Gadanez & Jayaram, 2008; San Jose & Georgiou, 2008). Table 3 presents the set of core FSIs recognized internationally.

*Table 3: Core Financial Soundness Indicators for Deposit Takers*

<ul style="list-style-type: none"> <li>• <b>Capital Adequacy</b></li> </ul>	<ul style="list-style-type: none"> <li>• Regulatory capital to risk-weighted assets</li> <li>• Tier 1 capital to risk-weighted assets</li> <li>• Nonperforming loans net of provisions to capital</li> <li>• Common Equity Tier 1 capital to risk-weighted assets</li> <li>• Tier 1 capital to assets</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Asset Quality</b></li> </ul>	<ul style="list-style-type: none"> <li>• Nonperforming loans to total gross loans.</li> <li>• Loan concentration by economic activity</li> <li>• Provisions to nonperforming loans</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Earnings and Profitability</b></li> </ul>	<ul style="list-style-type: none"> <li>• Return on assets.</li> <li>• Return on equity.</li> <li>• Interest margin to gross income</li> <li>• Noninterest expenses to gross income</li> </ul>

<ul style="list-style-type: none"> <li>• <b>Liquidity</b></li> </ul>	<ul style="list-style-type: none"> <li>• Liquid assets to total assets (liquid asset ratio) for all Deposit Takers (DTs)</li> <li>• Liquid assets to short term liabilities for all DTs</li> <li>• Liquidity Coverage Ratio for the DTs that have implemented Basel III liquidity standards.</li> <li>• Net Stable Funding Ratio for the DTs that have implemented Basel III liquidity standards</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Sensitivity to market Risk</b></li> </ul>	<ul style="list-style-type: none"> <li>• Net open position in foreign exchange to capital</li> </ul>

**Source:** Authors' compilation based on San Jose and Georgiou (2008) and IMF (2008).

According to Table 3, the primary collection of financial sector indicators (FSIs) is based on the CAMELS grading system, which stands for capital sufficiency, asset quality, earnings, liquidity, and market risk sensitivity. The IMF releases the Global Financial Stability Report (GFSR) every two years, evaluating global financial system risks using country-level FSI data. The report aims to identify policies to reduce systemic risks, prevent crises, and contribute to global financial stability and economic growth in its 190 member nations. The z-score is a widely used indicator for assessing financial stability, similar to FSIs. It compares a bank's buffers to its risk, assessing solvency risk. The z-score calculates the likelihood of a financial institution's insolvency based on assets and debt value, with a higher z-score indicating a decreased likelihood of insolvency (Demirgüç-Kunt *et al.*, 2008; Laeven & Levine, 2009; Čihák & Hesse, 2010). FSIs and z-score assess a financial institution's resilience to shocks and unexpected losses. Deposit takers' liquid assets to total assets ratio evaluates their ability to withstand global market disruptions and idiosyncratic funding shocks, while regulatory capital to risk-weighted assets measures a bank's capacity to absorb unexpected losses (San Jose & Georgiou, 2008; IMF, 2008).

Further discussion incorporates financial stability definitions from international standard setting bodies (SSBs), including the IMF, World Bank, BIS, and European Central Bank (ECB). These SSBs are chosen based on their ongoing work in the global financial stability landscape.

*Table 4: International Standard Setting Bodies and their definition of financial stability*

<b>Standard Setting Body</b>	<b>Financial Inclusion Definition</b>
International Monetary Fund (IMF)	A stable financial system is one that comprises risk management, shock absorption, and economic process enhancement, ensuring the potential to eliminate both internal and external financial imbalances from unforeseen events while not hindering an economy's performance.
World Bank	A stable financial system efficiently allocates resources, manages risks, maintains employment levels, and eliminates price movements that could disrupt monetary stability or employment. Its self-corrective capabilities prevent adverse events from disrupting the real economy or other financial systems.

Bank of International Settlements (BIS)	A stable financial system must withstand shocks and financial imbalances, preventing severe disruptions that could affect savings allocation to profit-generating investments.
European Central Bank (ECB)	A stable financial system is one that can withstand major disruptions to ensure the effective functioning of financial intermediation and investment despite shocks.

**Source:** Authors on compilation based on Schinasi (2004); World Bank (2015); Gadanez & Jayaram (2008); Jeanneau (2014); ECB (2012).

From Table 4, all the definitions have discernible overlaps. They each underscore that a stable financial system is one that ensures efficient financial intermediation without impeding economic growth. This involves the ability to withstand shocks and unravel financial imbalances using efficient risk management instruments. The IMF, World Bank and BIS definitions specifically touch on the all-important concept of self-correction, or the potential for the financial system to inherently possess the ability to prevent or eliminate both internal and external financial imbalances emanating from unforeseen shocks, without destabilizing efficient macroeconomic performance. Absent of these efficiency qualities, instability can lead to negative shocks spreading throughout the system, causing financial crises. Financial stability encompasses various aspects of money and the financial system, ensuring that finance plays a role in resource and risk allocation, savings mobilization, development, growth, and wealth accumulation, while maintaining the smooth operation of the economy.

### **3. Theoretical Nexus between Financial Inclusion and Financial Stability**

#### **3.1 Positive Impact of Financial Inclusion on Financial Stability**

A number of studies have been done that highlight the positive effects of financial inclusion on financial stability (see Khan, 2011; Cull et al., 2012; Ozili, 2018; Ahamed & Mallick, 2019; Berlin & Mester, 1999; Ozili, 2020; Pham & Doan 2020; Frączek, 2019; Danisman & Tarazi, 2020; Kamal, 2021; Ozili, 2021; Eton et al., 2021). In these studies, scholars advance several ways through which greater financial inclusion can lead to financial stability. The transmission channels are broadly in line with the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), wherein financial inclusion initiatives are posited to foster greater resource and financial intermediation efficiency, which in turn enhances financial stability provided that a nation establishes robust financial infrastructure and strengthened financial sector regulation and supervision. These efforts also facilitate better access and use of banking services by a large portion of the population, including the underprivileged (Okpara, 2011; Prasad 2010; Cull et al. 2012). Further, as financial systems, and the supervisory and regulatory frameworks are strengthened, financial stability in the previous period can have positive spillovers into the current period's level of financial stability (Morgan & Pontines, 2018; Hakimi et al., 2022).

The ways through which financial inclusion can positively affect financial stability include:

- i) A more resilient economy is produced by diversifying the funding sources of financial institutions and absorbing a wider range of economic agents (Khan, 2011; Cull et al., 2012; Ozili, 2018; Ahamed & Mallick, 2019; Berlin & Mester, 1999; Ozili, 2020; Pham & Doan 2020).
- ii) Expanding the scope and effectiveness of savings intermediation (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019; Saha & Dutta, 2022; Saha & Dutta, 2021).
- iii) Providing ways for households to become more resistant to the various vulnerabilities they face (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019; Saha & Dutta, 2022; Saha & Dutta, 2021).
- iv) Creating a more stable foundation of customer deposits and promoting greater confidence in the banking system. In this sense, low-income families tend to save and borrow responsibly even during financial crises when there is faith in the financial system, with deposits being held safely and loans being repaid (Khan, 2011; Cull et al., 2012; Ozili, 2018; Ahamed & Mallick, 2019; Berlin & Mester, 1999; Ozili, 2020; Pham & Doan 2020).
- v) Limiting the existence of a sizable informal sector in order to increase the effectiveness of monetary policy (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019).
- vi) Assisting in the efficient execution of anti-terrorism and anti-money-laundering laws (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019).
- vii) Lowering income disparity in order to increase social and political stability (Khan, 2011; Cull et al., 2012; Ozili, 2018; Ahamed & Mallick, 2019; Berlin & Mester, 1999; Ozili, 2020; Pham & Doan 2020).

Summarily, financial institutions can benefit from financial inclusion by obtaining affordable deposits from retail consumers, reducing their marginal costs, and providing banking services in a more inclusive financial sector. This approach helps banks tackle asymmetrical information problems by developing deeper customer connections, allowing them to work more efficiently in a stronger institution setting with expanded creditor rights (Aduda et al.,

2012; Kamal et al., 2021; Sethy & Goyari, 2022; Barik & Pradhan, 2021; Petersen & Rajan 1995; Ahamed & Mallick, 2019).

### **3.2 Negative Impact of Financial Inclusion on Financial Stability**

There is literature that contends that increased financial inclusion may result in banking sector instability (see Igan & Pinheiro, 2011; Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019; Danisman & Tarazi, 2020). The adverse impact of financial inclusion on financial stability can generally be explained through the extreme financial inclusion (EFI) theory (Morawetz, 1908). EFI exists when economic agents are given access to the formal financial sector and its range of products and services, regardless of their level of income or level of risk. It is based on several justifications for completely eliminating financial access restrictions (Cull, et al., 2012; Ahamed & Mallick, 2019; Frączek, 2019; Danisman & Tarazi, 2020; Feghali et al., 2021). Inadvertently, this might result in a violation of the integrity of the financial system, for example, if legal obstacles to financial inclusion, such as methods of identification and verification procedures, were fully abolished to meet rising demand. Avoiding EFI is preferable since it can lessen the likelihood of negative externalities like fraud that might otherwise undermine financial stability.

Literature argue that financial instability risks can manifest from:

- i) Low-income clients, outsourcing activities, the makeup of local financial institutions, and financial product developments (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019).
- ii) Increased involvement of low-income groups in the financial system, which could lead to high transaction and information costs (due to lack of collateral or credit history) and inefficiencies that are challenging to address technically and managerially (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019).
- iii) An important factor contributing to the inefficiency of financial systems is the rise of information asymmetries (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019; Saha & Dutta, 2022; Saha & Dutta, 2021).
- iv) Locally focused financial institutions, such as cooperatives or rural banks, may have inadequate governance, lax regulation, lack of supervision, engage in inter-institutional lending, and have a high geographic concentration, making them more susceptible to disasters and downturns (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull, et al., 2012; Ahamed & Mallick, 2019; Saha & Dutta, 2022; Saha & Dutta, 2021).

- v) Financial product developments and outsourcing operations that put financial stability at risk by creating new risks due to a lack of regulation or supervision (Mehrotra & Yetman 2015; Khan 2011; Ozili, 2021; Cull et al., 2012; Ahamed & Mallick, 2019; Saha & Dutta, 2022; Saha & Dutta, 2021).

From the discussion so far, the theoretical basis for the relationship between financial inclusion and financial stability covers arguments for both a positive and negative linkage. In this regard, Figure 1 provides a graphical summary of the advanced theoretical relationships between financial inclusion and financial stability.

*Figure 1: The Linkages between Financial Inclusion and Financial Stability*



**Source:** Authors' own compilation.

On one hand, Figure 1 shows that an increased level of financial inclusion translates into easy access and affordable cost of financial services as well as an enhanced level of efficiency and size of the financial system. This informs increased formalization of the financial sector through the improvement in the monetary policy transmission (see, Mbutor and Uba, 2013;

Mehrotra and Yetman, 2014, 2015; Mehrotra and Nadhanael, 2016; Lenka and Bairwa, 2016; Huong, 2018; Yoshino and Morgan, 2018; Čihák *et al.*, 2021;). Further, high levels of financial inclusion help to smoothen consumption and mobilize savings from the informal to formal sectors, thus increasing banks' deposit base and stability (see, Hawkins, 2006; Hannig & Jansen, 2010; Prasad, 2010; Cull *et al.*, 2012; Han & Melecky, 2013; Rahman, 2014; Neaime and Gaysset, 2018; Dienillah & Anggraeni, 2018; Čihák *et al.*, 2021). A higher level of savings translates into increased investment finance as well as diverse avenues for credit and risk sharing. For instance, increased lending to small and medium sized enterprises (SMEs) potentially diversifies bank assets, reduces loan book exposure to any single borrower and informs financial stability by reducing the likelihood of credit default and non-performing loans (NPLs) (see, Cull *et al.*, 2012; Rahman, 2014; Čihák *et al.*, 2016; Chen, *et al.*, 2018; Čihák *et al.*, 2021). With greater financial sector regulation and formalization, potential instability is averted, and a stable financial system is maintained.

On the other hand, Figure 1 reflects that increased financial inclusion may result in information asymmetry, elevated transaction and information costs, and increased risks of credit default as financial institutions move into new and remote locations to cater for a wider participation of low-income people as well as small and medium sized enterprises (SMEs) in the formal financial system. This can create inefficiencies in the financial system which may lead to financial instability (see, Beck & De Jonghe, 2013; Sahay *et al.*, 2015; Garcia & Jose, 2016). For instance, to increase the financial inclusion of low-income people as well as SMEs, banks can outsource various *know your client* (KYC) functions such as the assessment of credit worthiness. In this regard, they can face reputational risks, information asymmetry, moral hazard, and adverse selection, which may impede on the efficiency of their operations and of the financial system (see, Khan, 2011; Aduda *et al.*, 2012; Barik & Pradhan, 2021; Kamal *et al.*, 2021; Sethy & Goyari, 2022). Further, as non-bank financial institutions (NBFIs) such as microfinance institutions (MFIs) provide their services to the previously unbanked to increase financial inclusion, they will lead to an increase the credit base. The rapid growth in the credit base can create difficulties in efficient credit assessment and can increase the probability of credit default. Subsequently, because of the ever-increasing financial sector integration between banks and NBFIs, banks can face liquidity crises if credit defaults rise. This can adversely affect the overall regulation of financial system and lead to financial instability (Dell'Ariccia, & Marquez, 2006; Garcia & Jose, 2016; Ahmad, 2018).

#### **4. Empirical Evidence of Effects of Financial Inclusion on Financial Stability**

The objective of our systematic review of empirical literature is to offer a lens through which to view and understand the different contributions to knowledge creation from studies that empirically investigate the relationship between financial inclusion and financial stability. Guided by Hiebl (2023), Čihák, *et al* (2021), Frączek (2019), Pati and Lorusso (2018), as well as Rother (2007), we conducted a systematic search of the JSTOR and Google Scholar electronic databases to identify relevant articles under the specific search terms “*the relationship between financial inclusion and financial stability*” and “*the impact of financial inclusion and financial stability*”, respectively. We did not impose a strict time period for the review. Nonetheless, the systematic search resulted in 26 academic papers spanning the period from 2015 to 2022.

Empirical research work on the relationship between financial stability and financial inclusion can broadly be segmented into three strands. First, academic papers that are of the view that financial inclusion will enhance financial stability (20 out of 26). Second, studies that support the view that financial inclusion will lead to financial instability (5 out of 26). Third, studies that have produced conflicting and thus inconclusive findings on the relationship between financial inclusion and financial stability (1 out of 26). Table 5 summarizes the empirical findings on the impact of financial inclusion on financial stability. The literature shows that the concepts of financial inclusion and stability are multi-faceted and given aspects such as country specificities and data availability, various proxies have been used to capture these concepts.



*Table 5: Summary of Empirical Studies Reflecting Relationship between Financial Inclusion and Banking Sector Stability*

<b>Author</b>	<b>Region/Country</b>	<b>Study Period</b>	<b>Inclusion Proxy</b>	<b>Stability Proxy</b>	<b>Control variables</b>	<b>Method</b>	<b>Impact of Financial Inclusion on Financial Stability</b>
<b>Amatus and Alireza (2015)</b>	35 SSA countries	2004-2011	Outstanding deposits with commercial banks and outstanding loan from commercial banks	Banks' z-score	GDP per capita, inflation, domestic credit provided to private sector by banks, and financial crisis indicator	Dynamic GMM model	(-)
<b>Al-Smadi (2018)</b>	Jordan	2006 - 2017	Jordanian financial inclusion index	Jordanian financial stability index	Domestic credit to private sector, financial integration indicator, financial crisis indicator	FMOLS	(-)
<b>Abdulkarim and Ali (2019)</b>	47 OIC countries	2006 - 2016	ATMs, bank branches per 100,000 adults; deposit accounts with commercial banks	Bank Z-score	Inflation, GDP per capital and the population growth rate.	Static and dynamic panel estimation and quantile regression techniques	(+)
<b>Anthony-Orji et al., (2019)</b>	Nigeria	1986-2013	Rural deposits	Banks' Z-score	Measures of financial development, interest rate spread, and a measure of financial development.	ARDL-UECM model.	(+)
<b>Anarfo et al., (2022)</b>	50 African countries	2006 - 2017	Financial inclusion index	Banks' Z-score	Composite index of banking sector development and net interest margin	Panel VAR	(+)
<b>Brei et al., (2020)</b>	15 advanced and 17 emerging economies	2007 - 2015	Real growth rate of commercial banks' loans to SMEs	Banks' Z-scores	Real growth in rate of total credit to private non-financial sector, Real GDP growth, Average lending rate	Dynamic panel equation	(+)

Author	Region/Country	Study Period	Inclusion Proxy	Stability Proxy	Control variables	Method	Impact of Financial Inclusion on Financial Stability
<b>Banna and Alam (2021)</b>	213 banks of 4 ASEAN countries	2011-2019	Financial inclusion index	Banks' Z-score	Ratio of total loans over total assets, total assets, ratio of loan loss provision on total loans and non-interest income to total operating income	OLS, two-step dynamic system GMM, and panel corrected standard errors techniques	(+)
<b>Čihák et al., (2016)</b>	157 countries from low-, middle- and high-income areas	2007 - 2014	Indicators of provision of credit, Savings, account ownership, indicators of the use of credit, savings for business purposes, account ownership and payments	Proxies for solvency of financial institutions, financial institutions liquidity positions, financial institutions exposure to credit risk, standard deviation in credit growth, deposits growth at the country level, banking output loss, •costs of government intervention to mitigate and resolve crisis, peak of realized credit risk	GDP per capita growth (annual %), Population density (people per sq. km of land area), Domestic credit to private sector (% of GDP), Age dependency ratio (% of working-age population), Mobile cellular subscriptions (per 100 people), Quality of supervision, Fiscal freedom	Distribution of pairwise correlation coefficient	(-)
<b>Dienillah et al., (2018)</b>	19 high, lower, and upper middle-income countries	2004-2014	Financial inclusion index	Albulescu and Goyeau index	Ratio of private credit from bank deposits and other financial institutions of GDP, financial openness	Tobit model	(+)
<b>Danisman and Tarazi (2020)</b>	4,168 banks in 28 EU countries	2010 - 2017	Account ownership and digital payments	Leverage risk; portfolio risk; Bank Z-scores	Bank size, loan share and deposit share; real GDP growth; inflation	Two-step system GMM	(+)

Author	Region/Country	Study Period	Inclusion Proxy	Stability Proxy	Control variables	Method	Impact of Financial Inclusion on Financial Stability
<b>Feghali et al., (2021)</b>	100 low-, middle- and high-income countries	2011, 2014 and 2017	Credit access	Banks' Z-score	GDP growth (annual %), Domestic credit provided by financial sector (% of GDP), Financial openness index, Total population, log, Governance principal component index	Dynamic panel regression model	(-)
<b>Ghassibe et al., (2019)</b>	Countries from the Middle East and Central Asia (MECA) regions	1990 - 2017	SME financial inclusion index	Short-term nominal interest rates	Output gap; measure of inflation	Panel VAR	(+)
<b>Hakimi et al., (2022)</b>	112 banks from 10 MENA countries	2004 - 2017	Measures of access and usage of financial services	Bank Z-score, portfolio risk, and leverage	Inflation, GDP growth bank size; credit risk	System GMM	(+)
<b>Jungo et al., (2022)</b>	46 SSA and 31 LAC countries	2005 - 2018	Financial inclusion index	Bank Z-score	Measure of bank regulation; and bank competitiveness	FGLS model	(+)
<b>Khan et al., (2022)</b>	54 African countries	2001 - 2019	No. of ATM / 100,000 adults and deposits with commercial banks per 1,000 adults	ratio of credit-to-GDP	Inflation, GDP per capita, population growth, trade openness and financial integration	Multiple regression models	(+)
<b>Morgan and Pontines (2018)</b>	164 advanced, emerging market and developing countries	2007 - 2015	Outstanding commercial bank loans to SMEs as a proportion of banks' total loan book	Banks' Z-score, Non-performing loans	GDP per capita, Liquid assets to deposits and short-term funding, Ratio of non-FDI investment capital flow to GDP, Private sector credit by deposit money banks and other non-financial	System-GMM dynamic panel equation	(+)

Author	Region/Country	Study Period	Inclusion Proxy	Stability Proxy	Control variables	Method	Impact of Financial Inclusion on Financial Stability
					institutions to GDP, • Financial openness		
<b>Matsebula and Sheefeni (2022)</b>	South Africa	2004 - 2020	Commercial bank branches per 100,000 adults and number of ATMs per 100 000 adults	Banks' Z-score	GDP, private credit by deposit money banks and other financial institutions to GDP (%), and liquid assets to deposits and short-term funding (%).	Engle-Granger approach to Error Correction Model (ECM)	(+/-)
<b>Neaime and Gaysset (2018)</b>	MENA countries	2002 - 2015	ATMs per 100,000 adults and Banks per 100,000 adults	Volatility in total commercial bank deposits	Population size, measure of financial integration and the average growth in gross national income	GMM and GLS models	(+)
<b>Naceur et al. (2019)</b>	98 countries	1980–2016	Systemic financial market failures data	measures of financial depth, and efficiency.	GDP growth rate, interest rate spread, 3 – month monetary rate	Dynamic panel logit model	(-)
<b>Negm (2021)</b>	Egypt	2020-2021	Access and usage indicators of financial inclusion	Capital to total assets; credit to deposits; short term debt bank lending rate; deposit rate	N/A	Descriptive approach within deductive method and a sample of 96 respondents	(+)
<b>Operana (2016)</b>	Philippines	2002:4 - 2015:4	Number of physical banking institutions; loans to MSMEs	NPL as a proportion of gross loans; liquid assets to deposits	Log of GDP per capita	Reduced form VAR	(+)
<b>Pal and Bandyopadhyay (2022)</b>	104 developed and developing countries	1984 - 2018	Financial inclusion index	Banks' Z-score, bank credit to bank deposits (%), liquid assets to deposits, and short-term funding (%)	GDP per capita	FMOLS and DOLS model.	(+)

Author	Region/Country	Study Period	Inclusion Proxy	Stability Proxy	Control variables	Method	Impact of Financial Inclusion on Financial Stability
<b>Siddik et al., (2018)</b>	217 advanced, emerging and developing market economies	2001 - 2013	Number of SME borrowers to total borrowers, Ratio of outstanding SME loans to total loans	Banks' Z-scores	GDP per capita, Ratio of M2 to GDP, Liquid assets to deposits, Domestic credit to private sector	GMM dynamic panel estimator	(+)
<b>Saha and Dutta (2021)</b>	92 countries across various income and economic groupings	2004 - 2014	No. of bank branches and number of ATMs per 100,000 people, number of bank branches and number of ATMs per 1,000 km <sup>2</sup>	Banks' Z-score	Measure of financial depth, GDP per capita, banks' capital to total assets ratio and provision for NPLs	Two-step GMM model and a two-stage least square model	(+)
<b>Vo et al., (2021)</b>	3071 banks in the Asian region	2008 - 2017	Financial inclusion index	Banks' Z-score	GDP per capita, GDP growth and loan provision	GMM	(+)
<b>Wang and Luo (2022)</b>	36 emerging economies	2004-2018	financial inclusion index	Banks' Z-score	A measure of bank size, liquidity, market structure, noninterest income, and GDP growth	Annual data from 2004 to 2018 and a dynamic panel data model.	(+)

**Note:** (+); (-) and (+/-) represent positive, negative, and mixed impacts of financial inclusion on financial stability, respectively.

## 5. Discussion of the Empirical Literature

The studies reviewed fall under the three general strands of empirical literature (i.e., those that find positive, negative, and inconclusive relationships between financial inclusion and financial stability, respectively) and cover advanced, developing, and emerging market economies. In most cases, the distance to default, as measured by *bank Z-scores* is a widely used proxy for financial stability. On the same token, some studies use *banks' non-performing loans*, and the *percentage of bank credit to bank deposits* as other possible measures of stability in the financial sector. Financial inclusion proxies usually encompass use, access, and cost variables, with access (i.e., *number of automatic teller machines (ATMs) per 100,000 adults or per 1,000km square; number of bank branches per 100,000 adults or per 1,000 km square*) and use (i.e., *percentage of adults with at least one type of regulated deposit account*) proxies being the most popular. Control variables included in the models vary across studies but mostly include a measure of income, such as the real GDP or real GDP per capita and a measure of price stability such as the consumer price index. In the multi-country studies, the preferred econometric technique is broadly a dynamic panel equation relative to a static panel model.

Across the studies that point to a positive impact of financial inclusion on stability, the transmission channels are generally consistent with the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), which proposes that financial inclusion initiatives should increase the efficiency of financial resources and financial intermediation. This, in turn, should improve financial stability, given that a country builds a strong financial infrastructure and strengthens the regulation and supervision of the financial sector. The majority of the studies underscore that increasing financial services and products such as lending to the previously unbanked (i.e., low-income households or SMEs) can expand bank assets and reduce the relative exposure to any single borrower in the overall portfolio, thus, reducing the volatility of the loan book and the propensity of nonperforming loans as well as the risk of default, which will translate into greater financial stability. Similarly, higher levels of financial inclusion increase banks' deposit base and stability by facilitating the growth of many small deposits as part of the banks' stable funding. Additionally, improved financial inclusion supports a more formal financial system that improves the functioning of monetary policy and by extensions supports financial stability.

Regarding the negative impacts of financial inclusion on financial stability, the main argument advanced in the studies aligns with the extreme financial inclusion theory (Morawetz, 1908), such that, financial stability can be jeopardized when access and use of financial services is irresponsibly promoted to economic agents regardless of their level of income or level of risk (Morawetz, 1908; Hakimi et al. 2022; Le et al. 2019; Čihák et al, 2016; Koudalo and Toure, 2023). The empirical evidence generally identified that a rapid increase in financial inclusion could lead to an erosion of financial institutions' lending standards and an increase in their reputational risks if functions such as the assessment of the credit worthiness of smaller borrowers are outsourced. Again, as more financial service providers, such as the microfinance institutions (MFIs) enter the system, this will result in an expansion of the overall credit base and may lead to challenges in credit assessment. Inadequate credit assessment will increase the risks of credit default and bank liquidity problems. If the MFIs are not regulated and supervised properly, the integrity of the entire financial system will become compromised and result in financial instability.

There are currently not many empirical studies that provide evidence for the conclusion that financial inclusion has mixed or inconclusive effects on financial stability. The studies that point in this direction generally contend that programs aimed at expanding financial inclusion, which increase bank deposit bases, have been shown to increase financial stability, on one hand. On the other hand, they also conclude that lowering lending rules and significantly increasing the pool of potential borrowers might lead to greater dangers to the financial system and the economy. Furthermore, depending on the sort of financial inclusion initiative, the research suggests that increased financial inclusion outcomes may have favorable or unfavorable effects on financial stability.

Considering all the empirical studies reviewed, we identified four major gaps as well as recommendation for future research. First, current studies do not always present a unified theoretical approach or conceptual framework to explain the nature of the relationship between financial inclusion and financial stability (see; Khan et al., 2021; Siddik et al., 2018; Morgan & Pontines, 2018). The implication is that the link between financial stability and financial inclusion is often purported and suggested without this being grounded in concrete theory. Future studies can address this gap by clearly incorporating credible theory such as the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983) and the extreme

financial inclusion theory (Morawetz, 1908), to explain the channels through which financial inclusion could impact financial stability.

Second, of the limited (albeit growing) number of empirical studies conducted, there is evidence of divergent views on the impact of financial inclusion on financial stability. Studies that support a positive relationship between financial inclusion and financial stability include Amatus and Alireza, (2015) as well as Morgan and Pontines, (2018), while those that support a negative relationship include Čihák et al., (2016); Mendoza et al., (2009); Al-Smadi, 2018. Some studies, including Frączek (2019), Boachie et al. (2021) as well as Matsebula and Sheefeni (2022) provide inconclusive results on the inclusion-stability relationship. One possible reason for this may be the lack of non-uniformity in the use of inclusion and stability proxies across studies (See; Al-Smadi, 2018; Čihák et al., 2016; Morgan & Pontines, 2018). Another reason, especially in multi-country studies within and across regions, could be the failure to account for the possibility of panel cross-sectional dependence (see Brei et al., 2020; Al-Smadi, 2018; Čihák et al., 2016; Morgan & Pontines, 2018; Ahamed & Mallick, 2019; Jima & Makoni, 2023). This general lack of consensus implies that more work still needs to be done to provide a more comprehensive conclusion. Future studies could expand on existing work by using composite indicators of inclusion and stability and leveraging the latest data vintages and more robust empirical techniques.

Third, most studies review financial inclusion's impact on average financial stability across countries, neglecting its effects at low or high levels of financial stability, thereby providing a narrow perspective on the effects of financial inclusion. In this way, past studies estimating the influence of financial inclusion on financial stability have relied on classic regression techniques that focus on the mean impacts of financial inclusion on financial stability, ignoring the effect of inclusion on stability across the entire conditional distribution (see Matsebula & Sheefeni, 2022; Anthony-Orji et al., 2019; Al-Smadi, 2018; Neaime & Gaysset, 2018; Jungo et al., 2022; Jima & Makoni, 2023). Future studies can look to complement existing studies by examining the impact of financial inclusion on financial stability throughout the conditional distribution, while controlling for unobserved individual country heterogeneity. For policy makers, this is useful because it enables a nonlinear analysis of the relationship between financial inclusion and financial stability with a focus on how policy can be formulated across different levels of financial stability, and not just the mean.



Fourth, of the few studies that examine the relationship between financial inclusion and financial stability in SSA countries, they often fail to account for the economic development context or the impact of financial inclusion of SMEs on financial stability, highlighting the need for more comprehensive analysis (see Aduda & Kalunda, 2012; Amatus & Alireza, 2015; Leigh & Mansoor, 2016; Arora, 2019; Jungo, et al., 2022). Future studies can extend on this work by providing a holistic empirical understanding of how financial inclusion (including that of SMEs) affects financial stability at the regional level and across in low income, lower-middle income and upper middle-income SSA country groups, respectively. For policy makers, the granularity brought about by income classification is beneficial for analytical and operational reasons. Analytically, income classification helps in understanding and identifying differences in developmental achievements and processes within countries. Operationally, the classification of countries by income informs better tailoring of policies to country specific circumstances on the basis of evidence.

## **6. Conclusion**

The global financial crisis (GFC) of 2007/09 elevated the global interest among several scholars and policy makers on the importance of studying the relationship between financial inclusion and financial stability. Nonetheless, there has been a lack of comprehensive attention in the literature to the linkage between theoretical underpinnings and empirical evidence that inform the relationship between financial inclusion and financial stability. In this regard, the objective of our study is to offer an organizing and integrative lens through which to view and understand the different contributions to knowledge creation from studies that investigate the relationship between financial inclusion and financial stability. To achieve this objective, the following research questions are addressed in our study: (i) What is financial inclusion? (ii) What is financial stability? (iii) What theoretical foundations explain the relationship between financial inclusion and financial stability? (iv) What empirical evidence exists from studies conducted to evaluate the influence of financial inclusion on financial stability?

Our study discovered that the concept of financial inclusion lacks a single, accepted definition. According to various sources (Gadanecz & Tissot, 2017; Amidži et al., 2014; Sahay et al., 2015), financial inclusion can be generally explained as the process of offering businesses and households easily accessible, reasonably priced, safe, efficient, transparent, and high-quality financial products and services while ensuring efficient operation of the financial system. In a similar vein, financial stability lacks a consensus definition. Generally, a stable financial

system is one that can effectively manage risks, allocate resources, preserve employment, and get rid of price movements that cause instability. It also guarantees self-correction and stability, preventing adverse occurrences from disrupting the economy (Schinasi, 2004; World Bank, 2015; Gadanez & Jayaram, 2008; Jeanneau, 2014).

In our overview of the theoretical literature on financial inclusion and stability, we provide a synthesis of the potential transmission channels that explain the positive as well as negative impact of financial inclusion on stability, from a theoretical perspective. Our study discovers that the theoretical transmission channels that explain the positive effects of financial inclusion on financial stability are broadly enshrined in the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), wherein financial inclusion initiatives are posited to foster greater resource and financial intermediation efficiency, which in turn enhances financial stability provided that a nation establishes robust financial infrastructure and strengthened financial sector regulation and supervision. The theoretical transmission channels that explain the adverse impact of financial inclusion on financial stability can generally be captured through the Extreme financial inclusion (EFI) theory (Morawetz, 1908). EFI exists when economic agents are given access to the formal financial sector and its range of products and services, regardless of their level of income or level of risk (Cull, et al., 2012; Ahamed & Mallick, 2019; Frączek, 2019; Danisman & Tarazi, 2020; Feghali et al., 2021).

When exploring the range of empirical evidence from studies that evaluate the influence of financial inclusion on financial stability, our study finds important overlaps and gaps. Empirical studies to date offer divergent views on the financial inclusion and financial stability nexus, a dispensation that may be due to country specificities, the multi-faceted nature of financial inclusion and stability or the seldom uniform use of proxies to capture these concepts in the literature. The studies reviewed fall under the three general strands of empirical literature (i.e., positive, negative, and inconclusive relationships between financial inclusion and financial stability, respectively). Financial stability is often measured by bank Z-scores, non-performing loans, and credit to bank deposits. Financial inclusion proxies include use, access, and cost variables. Control variables include income and price stability. In multi-country studies, a dynamic panel equation is preferred over a static panel model. Across the studies that conclude on a positive impact of financial inclusion on financial stability, the transmission channels are generally consistent with the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). Regarding the negative impacts of financial inclusion on financial

stability, empirical studies that support this conclusion align with the extreme financial inclusion theory (Morawetz, 1908),

Four key gaps are observable in the empirical studies that investigate the impact of financial inclusion on financial stability. First, current studies do not always present a unified theoretical approach or conceptual framework to explain the nature of the relationship between financial inclusion and financial stability. Future studies can address this gap by clearly incorporating credible theory such as the institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983) and the extreme financial inclusion theory (Morawetz, 1908), to explain the channels through which financial inclusion could impact financial stability. Second, there is a lack of consensus on the relationship between financial inclusion and financial stability, with some studies suggesting a positive relationship and others arguing for a negative one. This may be due to differences in financial inclusion and stability proxies or inappropriate methodology to efficiently capture single or multi-country dynamics. Future research could use composite indicators and more robust empirical techniques. Third, most studies focus on financial inclusion's impact on average financial stability across countries, neglecting its effects at low or high levels of financial stability. Future research should examine the impact of financial inclusion on financial stability across conditional distributions, while controlling for unobserved individual country heterogeneity. Fourth, few studies on the relationship between financial inclusion and financial stability, especially those on SSA countries consider economic development contexts or the impact of financial inclusion of SMEs on financial stability, indicating the need for more comprehensive analysis.

A limitation of this review is that our search for studies was limited to those obtained through JSTOR and Google Scholar, which may have resulted in fewer papers that met the review's eligibility requirements. We also limited our examination to English-language publications. Furthermore, we used research published in academic journals as an indicator of quality rather than attempting to do a quality evaluation of the chosen studies.

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