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Fintech and Low-Income Communities: A Systematic Literature Review

Fahima Nasar *, Abdul Hadi Sirat, Amran Husen, and Hartaty Hadady
Khairun University, Ternate City, North Maluku Province, 97719, Indonesia
* Corresponding Author: fahima.nasar@unkhair.ac.id

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ABSTRACT

The current systematic literature review aimed to document the breadth of fintech research in low-income areas. Three papers that satisfied the inclusion requirements were found after a thorough search of the Scopus database published between January 2007 and October 2024 using PRISMA. The synthesis of these articles shows that fintech in low-income communities has been conducted in Africa, the United States, and the Netherlands. In addition, research on this theme also focuses on the water supply and sanitation industry, banking, and new holistic sanitation projects. Additionally, the transition and development theory is one of the theories employed to elucidate this relationship. This work presents theoretical and practical contributions and ideas for future research.

Keywords: *Fintech; Low-Income Communities; Sanitation Industry; Systematic Literature Review; Transition and Development Theory*

1. Introduction

Wealth inequality is a critical global economic issue, with rising income and asset disparities across developed and developing countries (Akinyemi, 2025). The richest 10% of the world's population controls almost 76% of global wealth, while the poorest 50% controls only 2% (Chancel et al., 2022). The United States and Europe show some of the highest levels of wealth concentration. However, inequality is also evident in developing countries, where limited financial education and access to financial technology (fintech) banking services perpetuate economic stagnation.

The rise of fintech has brought about a transformation in the financial sector. Fintech is a combination of finance and technology that includes various advances aimed at increasing the efficiency of financial services and expanding access to these services (Kee et al., 2024). The emergence of fintech has attracted attention. A discussion sparked the emergence of one of the most crucial issues faced today, namely, fintech among low-income people. Fintech for low-income folks offers technology to promote financial inclusion and expand access to financial services for low-income earners, the rural poor, and those financially excluded (Ediagbonya & Tioluwani, 2023).

The micro foundations of fintech entrepreneurship are related to empathy for low-income populations and using digital technologies to pursue ethical aims, as demonstrated by several real-world cases (Lagna & Ravishankar, 2022). These instances illustrate how effective fintech innovations based on deeply held human values, like empathy, can be duplicated globally (Sandeep & Ravishankar, 2015). Inclusion-focused peer-to-peer lenders see empathy as a primary motivator, and some cite microfinance work as an example of how they have been inspired to use digital technology to reduce the cost of borrowing for the underprivileged. Similarly, some examples of fintech companies stem from the founders' personal experiences of bearing the high costs of remittances to developing countries (Smale, 2014).

In the context of this research, several studies have been conducted on financial inclusion, which enables farmers to adopt new technologies and procedures that improve agricultural yields and reduce the risk of crop failure because they have access to finance, financial services, including insurance (CGAP, 2019; Danladi et al., 2023). Increased financial access, especially through commitment savings accounts in rural Malawi, has enhanced the well-being of low-income households (Brune et al., 2011). These financial inclusion initiatives enable these households to increase their agricultural output, which enhances economic stability and productivity. Similarly, a study conducted in Ghana demonstrated that farmers with access to insurance could greatly enhance their farming methods (Karlan et al., 2014).

This field continues to develop based on real-world examples of practice and existing research results. However, in-depth and comprehensive studies using various approaches for fintech research in low-income communities, specifically those published in internationally reputable journals, such as Scopus, are required. The lack of a comprehensive and methodical synthesis of the current state of research in the literature, which is required to direct future investigations and generate management implications, is another consequence of this development.

By carefully reviewing the literature on fintech in low-income communities, this review aims to close this research gap. Three empirical investigations were incorporated into the systematic literature review (SLR) based on a thorough multilevel framework. Five lines of inquiry were employed to examine the chosen articles and ascertain the present level of knowledge: (1) Which nations conduct the most fintech research in low-income areas? (2) In low-income communities, which industries are the subject of the most fintech research? (3) What research designs are used

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in studies related to fintech in low-income communities? (4) What are the theories used in studies related to fintech in low-income communities? (5) What are the final findings of fintech in low-income communities? Finally, this study also guides future researchers.

2. Literature Review

2.1. Transition and Development Theory

The theory of transition and development examines how people adjust to changes in their routines, relationships, or positions. It is considered "a promising model for sustainable development, allowing societies to explore alternative social trajectories in an adaptive and forward-looking way" (Kemp et al., 2007). It is frequently linked to addressing complex social and governance issues (Loorbach & Rotmans, 2010). Furthermore, this approach is applied to the development of basic and useful knowledge in order to guide and impact the shift to sustainability (Van den Bosch, 2010).

A growing amount of research reveals many of the specifics of low-income country environments that influence governance and the outcomes of transition processes. Participation, a fundamental component of transition management strategies, must be taken into account and given more particular consideration in low-income informal contexts than is possible from the majority of transition management framework implementations in Western nations. Community development and process approaches to development initiatives are two areas of literature that are very helpful in tackling this problem (Greig et al., 2007). In contrast to community development, process approaches to development initiatives, and transition management on participatory change emphasize a commitment to organizing inclusive processes that recognize deeply institutionalized inequalities, primarily on the challenges of attaining meaningful inclusion among stakeholders in informality and poverty environments.

The findings of a study conducted in the poor mountainous area of Nepal show that smallholder farmers struggle to make ends meet in a declining ecosystem without access to proper technology (Pant et al., 2015). This research emphasizes that transition should strive for lasting poverty reduction through ecosystem regeneration and better farming practices rather than relying on technology with a smaller environmental impact, as seen in high-income Europe. Poverty is closely linked to this condition, as those who lack education are often afraid of reprisals from powerful parties who have a stake in maintaining the status quo, lack the confidence to speak in public, and are unable to analyze problems logically because they lack awareness and insight (van Welie & Romijn, 2018).

2.2. Low-Income

Earning less than USD 5 per day is considered low income (World Bank, 2020). An estimated 61% of working people worldwide make their living in the informal economy, which includes many low-income people (International Labour Office, 2018). Informal incomes often fluctuate with the availability of work, for example, in agriculture and construction. Self-employed workers often sell food or counterfeit goods on the streets (International Labour Office, 2018). Housing in low-income neighborhoods is also informal, as formal rental or ownership is often unaffordable. The informal nature of employment and housing adds to the vulnerability of low-income communities (Halme et al., 2024). Low-income people also have trouble finding jobs that pay enough to cover their expenses, getting secure work (Mendenhall, 2010), getting a job (Stoll, 2006), and juggling additional demands on their time (such as childcare or health problems) (Israni et al., 2021). Decisions about how to earn a living, where to live, and family size are greatly influenced by the low-income neighborhood in which they live (Halme et al., 2024).

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Low-income groups are typically defined as those whose geographic circumstances can make movement challenging (Zhang et al., 2021). From another perspective, residents of low-income areas are those with little money and, as a result, require government assistance in order to obtain homes (Muthoifin et al., 2024). The majority of people in these areas are unemployed, lack access to sanitary facilities, and have little formal education (Jatobá et al., 2020). Physical deprivation, pain (such as hunger, poor health care, and abuse), exclusion from relationships and communities, marginalization, anxiety, and fear of the future, as well as issues with health, job quality, and the threat of violence, are just a few of the many factors that negatively impact the quality of life in low-income communities (Gómez-Corona et al., 2025). Communities with low incomes often have strong social bonding capital with others within a community but relatively weak bonding capital with people outside the community (Roque et al., 2021). Senior citizens residing in underprivileged areas also tend to face significant social isolation (Plesko et al., 2021).

2.3. Fintech

By providing creative solutions that put the conventional banking system to the test, fintech startups have become a disruptive force in the financial services industry (Iman, 2020). They change how businesses and consumers interact with the financial system by using technology to increase financial services' accessibility, effectiveness, and transparency. Fintech's rise has made it possible for disadvantaged groups, like those without access to traditional banking, to engage in the financial ecosystem by drastically reducing barriers to financial services. A larger audience can now access financial services due to the enhanced accessibility brought about by technological integration (Agustin, 2023). The efficiency of banking services has improved as a result of fintech companies automating and streamlining traditional banking procedures, which were previously laborious, costly, and delayed (McKinsey and Company, 2021).

By automating and streamlining transactions, lowering administrative costs, and quickening the flow of capital, fintech companies have completely transformed conventional banking procedures. Reducing costs and facilitating quicker access to services helps end customers as well as financial institutions. The advent of digital financial services has led to a notable rise in transaction speed and fund accessibility (McKinsey and Company, 2021). Fintech frequently connects investors, lenders, and borrowers directly, eschewing conventional financial middlemen. Financial transactions are now more transparent thanks to this disintermediation, which also removes many of the costs related to middlemen. Furthermore, by offering services to people and communities that were previously shut out of the traditional financial system, fintech companies contribute significantly to financial inclusion (Okechukwu et al., 2024). Technological innovations like digital wallets, mobile banking, and alternative lending platforms have made financial access available to previously underserved groups, significantly advancing the goal of financial inclusion (McKinsey and Company, 2021).

The history of fintech is closely tied to advances in information technology. Beginning in the early 2000s, fintech businesses transformed traditional financial services by utilizing technologies including crowdfunding platforms, robo-advisors, peer-to-peer lending, and digital currencies (Chemmanur et al., 2020). The emergence of smartphones and mobile technology in the 2010s hastened this technological transformation and produced a variety of cutting-edge financial services (Rahman et al., 2024). Mobile technology has also been crucial in helping fintech spread its reach and increase global consumer access to financial services (Chemmanur et al., 2020).

These developments have also compelled traditional financial institutions to change. Online banking and e-commerce emerged as a result of the late 20th-century internet boom, enabling users to handle their accounts and make purchases online. These banks now face direct

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competition from startups and fintech firms in the early 21st century, which provide more cutting-edge financial services and products. Because of the ensuing competition, entrepreneurs are compelled to keep innovating, adapt to changing customer demands, and offer more value than their more established rivals (Hornuf et al., 2021).

Globally, the fintech industry has expanded at a never-before-seen pace. In 2023, Europe's global market share was 9.7%, and the UK emerged as the leading fintech hub in the area. London has become a hub for some of the most innovative entrepreneurs, with UK-based companies expected to get £9.6 billion in venture capital funding in 2022, a 24% rise from the previous year (Innovate Finance, 2023). The global fintech sector is still expanding, and Industry 5.0 is becoming more and more important in supply chain innovation and globalization (Fatorachian, 2012). The Business-to-Consumer (B2C) segment of fintech is particularly significant since it provides financial services such as mobile banking, payments, insurance, and lending as direct services to consumers. Fintech revenues in the UK are split among various sectors, including payments, lending, wealth management, and personal financial management (Statista, 2023).

However, the growing risk of data breaches and cyberattacks is one of the difficulties the fintech sector faces. Millions of consumers worldwide were impacted by almost 1,800 cyberattacks that targeted financial services companies in 2022 alone (IBM, 2023). Fintech companies that want to thrive must have strong data security safeguards in place to abide by laws and keep the trust of their clients. Startups also need to address the gender imbalance in the industry. Just 28% of fintech workers in the UK are female, and even fewer hold leadership roles (Kimber, 2023). For fintech businesses to succeed in the long run, they must overcome these internal and external obstacles.

Building a lasting competitive edge is one of the biggest hurdles for fintech firms, particularly in light of the dangers associated with technology adoption in banking (Al-Shari & Lokhande, 2023). Companies that continuously outperform their rivals over an extended period of time do so by creating a combination of characteristics that make it difficult for rivals to copy (Coyne, 1986). Fintech businesses can profit similarly from Industry 4.0 advances that have transformed supply chain performance (Fatorachian & Kazemi, 2021). Long-term competitive advantage is crucial for fintech companies to succeed and hold onto their market position (Coyne, 1986). Fintech companies can accomplish this by developing distinctive technologies, software, or algorithms that offer substantial benefits and provide them with a competitive advantage (Hornuf et al., 2021). By using copyrights, trademarks, or patents to safeguard their intellectual property, these businesses can avoid legal repercussions and prevent rivals from copying their inventions. However, it is not easy to gain a sustained competitive edge in the fintech sector since it calls for a mix of strategic alliances, state-of-the-art technology, legal compliance, and ongoing innovation (Hornuf et al., 2021).

Ensuring diversity and inclusion in the workforce is another significant concern. It is critical to establish an inclusive workplace where people from all backgrounds are respected, acknowledged, and given the freedom to contribute fully to the organization's success (Bernstein et al., 2020). Like many other technology and financial industries, the fintech sector has historically been undiversified, with men predominating in technical and leadership positions. Women are disproportionately underrepresented in the fintech industry, both as business owners and in technical fields like data analytics and software development. Securing venture capital funding presents significant challenges for female fintech businesses. Venture capitalists are four times more likely to invest in startups with all-male leadership teams than those with female executives, which limits the growth potential of businesses run by women (Forbes, 2017; Popescu,

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2019). Implicit bias, social impediments, and gender stereotypes all contribute to the sector's lack of gender diversity (Saima et al., 2022).

Another significant issue for fintech firms is data protection and privacy, particularly in light of the sensitive nature of financial data. Privacy and data protection theories emphasize the importance of safeguarding personal data in an increasingly data-driven society. Fintech businesses are responsible for ensuring that the collection, storage, and use of personal data adhere to strict legal frameworks, such as the General Data Protection Regulation (GDPR) in Europe and the California Consumer Privacy Act (CCPA) in the United States. The necessity of transparency requirements, data privacy legislation, and strong mechanisms for resolving data-related concerns has been highlighted (Hutukka, 2024), even though numerous studies stress the significance of protecting consumer data. Fintech businesses may preserve a solid customer base by adhering to these standards, which will help them gain the trust of their users and safeguard their privacy.

3. Research Methodology

3.1. Inclusion and Exclusion Criteria

In order to find pertinent literature that aligns with the goals of this study, a number of inclusion and exclusion criteria were established. The literature must, first and foremost, originate from peer-reviewed journals that concentrate on fintech in low-income areas. The second is that it will be published between January 2007 and October 2024. Third, English-language publications are required. However, the final evaluation will not take into account any literature that does not fit the three requirements.

3.2. Data Sources and Search Strategy

A comprehensive literature search was conducted on the designated databases as part of the SLR process to answer the research question, making sure that as many high-quality and pertinent studies as possible were gathered. This study used the PRISMA technique to guarantee the precision and openness of the literature review procedure. In this investigation, literature relevant to the study's subject was found using the Scopus database. Using the keywords fintech and low-income neighbourhood, the search was conducted in October 2024 on the Scopus and Web of Science databases covering the period from January 2010 to October 2024. One hundred sixty-four libraries were found using these keywords through the search method. Since no duplication was found, none of them had to be eliminated after being approved for inclusion in the title and abstract screening phase. Eight libraries were eliminated following title and abstract screening, while fourteen more libraries were deemed to have satisfied the evaluation stage in accordance with the inclusion and exclusion criteria. Three studies that satisfied the inclusion criteria were found via a rigorous and meticulous evaluation process. **Figure 1** provides an overview of the literature selection procedure.

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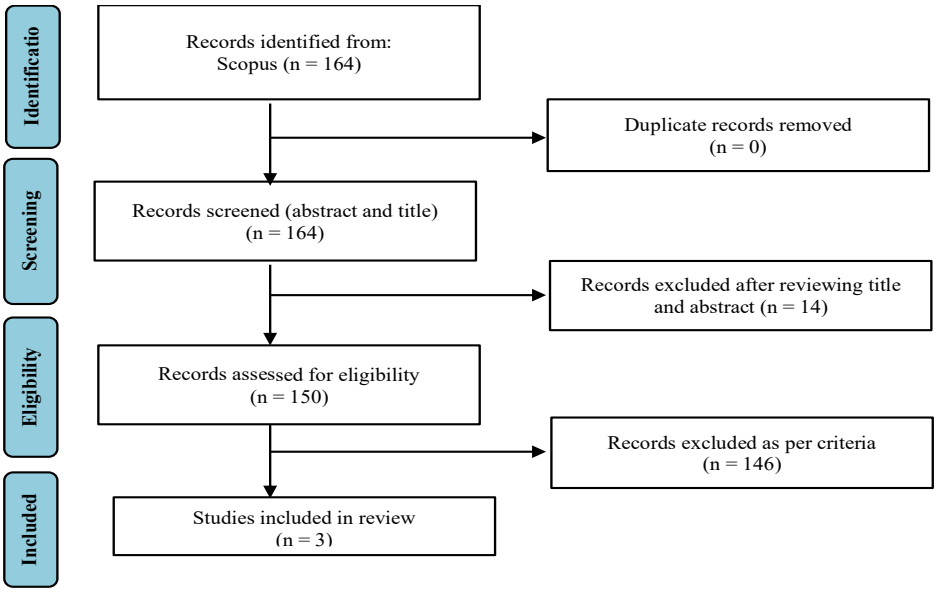

Figure 1. Article Selection Process

4. Results and Discussion

Six papers that satisfy the inclusion criteria are included in this SLR investigation (**Table 1**). After that, the literature is categorized according to the country, industry, technique, theory, conclusions, and year of publication.

Table 1. Summary of SLR

No	Author(s)	Country	Industry	Method/ Design	Theory	Findings
1	(Boakye-Ansah et al., 2019)	Africa	Water supply and sanitation	Qualitative	-	Pro-poor services include a variety of organizational, financial, and technological strategies employed by businesses to expand or enhance water availability and accessibility in low-income communities.
2	(Holmes et al., 2007)	US	Banking	Quantitative	-	Community development credit unions (CDCUs) will become increasingly important to low-income households as financial institutions move away from relationship-based lending and credit scoring due to consolidation, deregulation, and technology.

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No	Author(s)	Country	Industry	Method/ Design	Theory	Findings
3	(van Welie & Romijn, 2018)	Netherlands	New Holistic Sanitation Project	Qualitative	Transition and development theory	NGOs (Non-Governmental Organizations) have the potential to contribute to driving the transition process in low-income countries by building capacity to act as facilitators and coordinators of the process (including financial resources).

4.1. Theories Used

Table 1 lists the theories that served as the foundation for the fintech analysis of low-income neighbourhoods. The findings indicate that only one of the three investigations drew on theory to inform its findings. Transition and development theory was the theory that was applied.

4.2. Distribution of Literature by Country

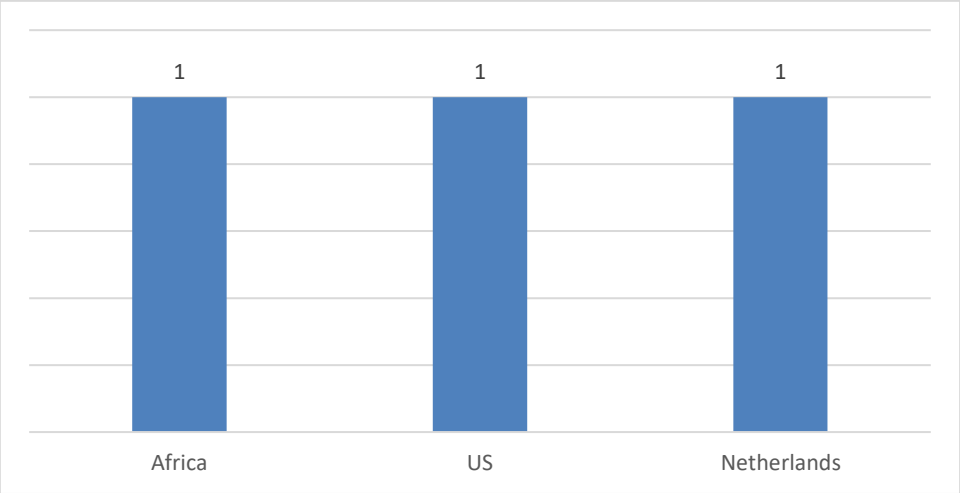

Figure 2. Distribution of Articles by Country

Figure 2 displays the literature distribution by nation. The findings indicate that there is still a dearth of studies on fintech in low-income areas. The findings of the three countries that carried out this study—Africa (N=1), the United States (N=1), and the Netherlands (N=1)—show this.

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4.3. Distribution of Literature by Industry

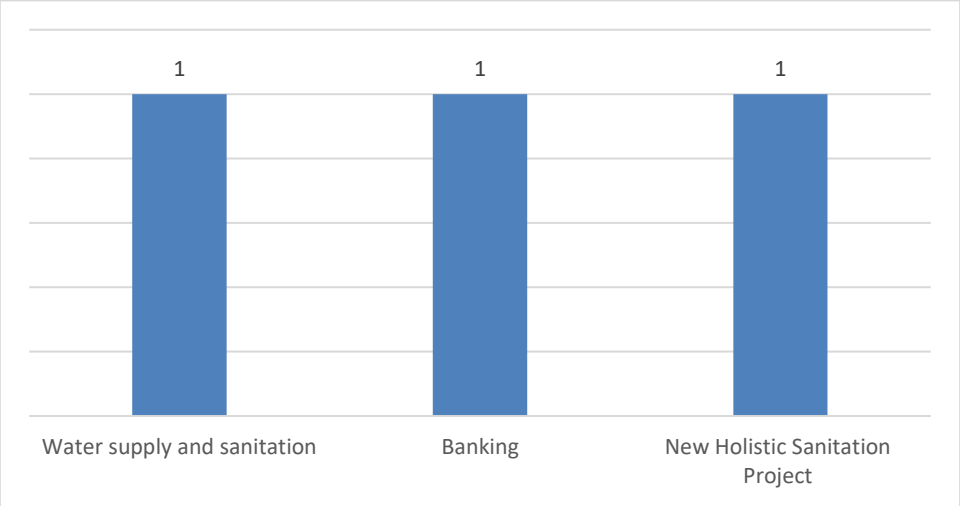

Figure 3. Distribution of Articles by Industry

The distribution of publications by industry is also displayed in **Figure 3**. According to the study's findings, only three industries—water supply and sanitation, banking, and new holistic sanitation projects—were particularly examined out of the three research. These findings suggest that only these four areas have seen fintech research in low-income populations.

4.4. Distribution of Literature by Year

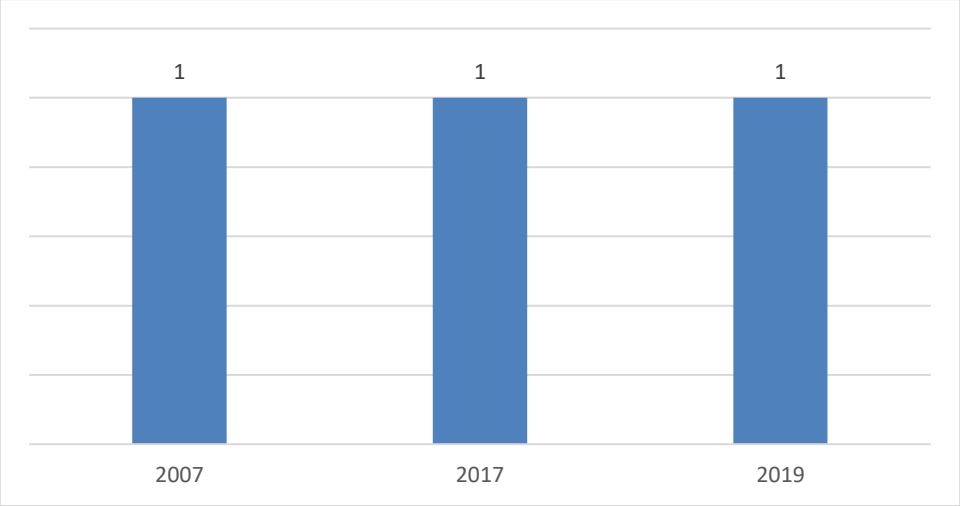

Figure 4. Distribution of Articles by Year

Figure 4 illustrates the distribution of literature from January 2007 to November 2024. It is well recognized that there is currently a dearth of fintech research in low-income areas. Thus, the effective research and publication of this theme occurred in 2007, 2017, and 2019.

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4.5. Methods Used

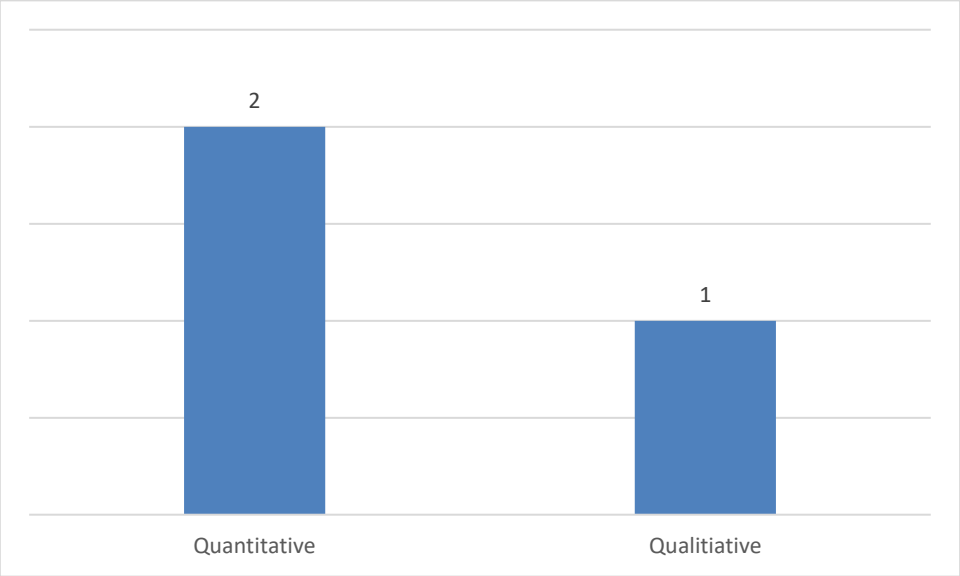

Figure 5. Distribution of Articles by Methods Used

The analysis findings in **Figure 5** reveal the methodologies employed in the study. It is noted that the study is focused on two methodologies based on three research findings. Both qualitative (N = 2) and quantitative (N = 1) approaches were employed in each investigation.

4.6. Discussion

The fundamental idea behind appropriate technology is that the technology used to deliver a service and the people who use it should be compatible. Schumacher (2011) was the first to introduce and popularize this idea when he used the phrase "middle technology" to describe technology that is 'far superior to the primitive technology of the past, but at the same time much simpler, cheaper and freer than the super technology of the rich'. Conventional centralized networks with internal connections can be viewed as the "super technology of the rich" when it comes to water supply; impoverished consumers find these networks too costly or challenging to use. What, then, qualifies as relevant or suitable technology for consumers in low-income areas?

According to the literature, the first—and perhaps most important—requirement for pro-poor technologies is that they be affordable; those with low incomes must be able to pay for the costs of investment, operation, and use (Mara, 2003). It's interesting to note that utilities appear to be more affected by the affordability argument in the water supply than consumers. For utilities, creating or expanding traditional centralized networks in or to low-income communities is frequently a costly endeavour due to the large capital expenditures involved, particularly in cases when the places are physically far apart. Utilities are hesitant to undertake such expenditures, particularly when they are in charge of recovering the costs themselves. This is mainly due to the fact that the likelihood of recovering these costs is significantly lower here than it is elsewhere. The use of low-cost technologies thus allows utilities to provide services to low-income areas with lower commercial risk (Kayaga & Franceys, 2007).

Compatibility with the socio-spatial features typical of low-income areas—such as high population density and unplanned growth—is the second crucial factor in determining whether a technology is suitable or appropriate for these areas. Once more, it seems that utilities are facing greater difficulties than low-income clients (Criqui, 2015; Kayaga & Franceys, 2007). Low-income regions are characterized by a disorganized layout and challenging environmental and

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geographical conditions, which require more adaptable water supply infrastructure (Gulyani et al., 2005).

The requirements for (responsibility for) the technology's operation and maintenance are the subject of the third often cited feature of appropriate technology. In contrast to traditional network infrastructure, which typically depends on highly skilled personnel to run and maintain the network, so-called suitable technologies frequently call for local people to handle operation and maintenance duties. This implies that the technology must be simpler to use and maintain because it is not possible to assume that people living in low-income areas have the same knowledge, abilities, resources, and support (Hunter et al., 2010). There are two aspects to user involvement in technology operation and maintenance (Solo et al., 1993). According to Mara (2003), user involvement necessitates that the technology be compatible with the resources available in low-income areas and that it be acceptable to users on a sociocultural level.

The fourth feature links technology to water use, which is thought to be lower in low-income regions. This is mostly because access to water is less convenient than with traditional residential connections, and a longer distance between users and the water supply (a standpipe or kiosk) frequently results in lower consumption levels (Gleick, 1996). Once more, utilities may find this comparatively low per capita consumption to be "just right." The first possibility is that water utilities could not have enough water to provide low-income communities with the same quantity of water as other ('normal') users. In fact, water rationing is being used as a solution to the restricted supply in several sub-Saharan nations. Water utilities are implementing rationing strategies to solve this in nations like Kenya (Hailu et al., 2011) and towns like Lilongwe (Alda-Vidal et al., 2018) and Accra (Stoler et al., 2013). Utilities will have less water to provide to all customers if consumption levels in low-income neighbourhoods are comparable to those of users in middle- and upper-middle-class cities who are linked to the traditional network. Thus, utilities can extend services to low-income areas by utilizing the right technology without sacrificing service delivery to areas that are already covered by the traditional network (Alda-Vidal et al., 2018; Boakye-Ansah et al., 2016; Rusca & Schwartz, 2018; Tiwale et al., 2018). Given that users in low-income areas have a more limited ability to pay for services, lower consumption tariffs might also be convenient (Berg & Mugisha, 2010; Mara, 2003).

The 2007 study by Holmes et al. offers preliminary indications that CDCUs will play a bigger role in providing credit to historically marginalized and low-income groups. They discovered that financial data, particularly credit ratings, is a crucial factor in determining loan approval at community banks by using real loan applications from CDCUs and more conventional community banks.

In particular, the relationship-based lending metric in community banks was not found to be statistically significant (Holmes et al., 2007). Given that having an account at the bank indicates that the client has previously interacted with the bank's members and has a proven track record, this suggests that the measure of having an account at the bank is a rather strong indicator of relationship-based lending. It is therefore revealing that this measure is not a statistically significant predictor of obtaining a car loan, since financial qualities are the most important factor in determining the odds of getting an auto loan for these community bank customers. The fact that loan applications only ask if the applicant has an existing account at the bank lends credence to the conclusion that community banks depend more on hard information than soft information. These traditional banks are much less likely to offer auto loans to low-income households with bad or no credit histories (for example, people without a documented credit score are over 30% less likely to be granted an auto loan than people with comparable credit ratings). Evidence also shows that community banks, which gather very little soft data about applicants, do not base

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their lending decisions on relationship lending; a previous bank account does not significantly affect a community bank's decision to approve a loan (Holmes et al., 2007).

According to the Opportunities Credit Union (OCU) viewpoint, the second conclusion is that both relationship-based lending metrics are statistically significant. This is because there is a 30% higher chance of getting an auto loan if you have been an OCU member for at least two months. Additionally, the chance of getting a car loan is increased by about 31% if you have already applied for one. At CDCUs, on the other hand, relationship lending plays a big role in vehicle loan selection. Loan officers demand that applicants open a share account and join the credit union. Our results imply that it is crucial to rely on this soft information. CDCUs offer auto loans to low-income households with strong ties to the institution but poor or unknown credit records. In particular, those who have no credit scores are not at all at a disadvantage when it comes to the financing procedure, and being a member of a CDCU for at least two months raises the chances of getting an auto loan by 30%. This is in stark contrast to community banks, where a lack of credit history reduces the likelihood of receiving a loan by almost 30 percent, and account holders receive no preferential treatment in lending decisions.

Organizations in this study were able to accept long-term systemic change through interviews with representatives from six other Dutch NGOs (van Welie & Romijn, 2018). Their study also characterized specific NGO competencies that are helpful in supporting transformation processes in low-income nations, particularly competencies related to local population empowerment and capacity building. Raising awareness is one way to increase capacity. Involving local people in the transition management process can be facilitated by increasing knowledge of urgent health and environmental issues and providing opportunities to address them. This makes it possible for them to work as equal partners with other players in the transition management process, such as international development organizations, businesses, and legislators.

Since coalitions are stronger stakeholders than local organizations working alone, empowerment can be achieved, for instance, by forming alliances of various local organizations and promoting efficient local coordination. Since they may provide disenfranchised individuals with a voice in the transition management process, these local groups can play a significant role in the transition arena. NGOs work well as middlemen and coalition builders, which is crucial when new kinds of partnerships need to be formed with local populations as well as "formal" and influential entities. This avoids exclusion (Lawhon, 2012a, 2012b) in the South African e-waste recycling industry and a biased focus on influential players in coalition building during the transition management process. Since creative solutions frequently require various arrangements of duties in order to seize opportunities, the roles of actors must be redefined. The last significant characteristic of NGOs is their extensive global networks and relationships with players in various industries. As a result, NGOs are able to start international coalition building and spread and exchange knowledge among a wide range of actors around the world. This can facilitate significant learning in low-income nations' situations where structural transformation efforts are occurring to address comparable issues. These features, which can enable equitable and socially inclusive transition management processes in low-income nation contexts, are not easily available to other sorts of players.

These ideas show how NGOs should ideally lead the change process. According to this study, a number of these NGO attributes were crucial to the development of the transition management procedure. In order to mobilize actors during the operational phase, NGOs' action was crucial. However, in practice, the NGOs in this study also faced many obstacles, including: finding the right actors to exert pressure on established institutions and structures in the community;

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facilitating a sufficiently broad visioning process; securing project funding; and failing to explain to other stakeholders their special role in facilitating networks. NGO goals for structural transformation are not aligned with present practices and actual implementation capacity. As a result, NGOs also require learning and capacity growth. Nonprofits must learn how to integrate the skills they already possess at the community level with the new skills required to support systemic change initiatives. NGOs must abandon the ideas and practices of the "old NGO regime." Given their common past, other NGOs working in the sanitation sector with comparable goals are probably going to find these lessons to be just as beneficial.

The more NGOs are aware of their broader function, the more successful they are at persuading others that they have a right to serve as coordinators of structural reform in low-income countries, a job that should be compensated. A classic public goods problem, the NGOs in this study were unable to fully capture the value they contributed to creating. Although others can claim the benefits, transition management necessitates a large time and financial commitment from those who start transformation procedures with unpredictable results. The dilemma of who can act as a pioneer or facilitator persists, particularly in situations where initiators lack the financial resources and social processes are intricate. The transition management literature hasn't given this problem much thought up to this point.

5. Conclusion

Based on the previous results and discussions, the conclusions that can be reported are, first, that there are only three studies that discuss fintech in low-income communities. Research related to fintech in low-income communities has also only been conducted in the water supply and sanitation, banking, and new holistic sanitation projects sectors, so there is still an opportunity to conduct research in other sectors. In addition, this study was only conducted in three countries, namely Africa, the United States, and the Netherlands, so it does not rule out the possibility of being applied in other countries. In addition, based on the reported research results, the methods used are only quantitative and qualitative, so that a mixed method can be used for further research.

Based on the results, discussions, and conclusions that have been discussed previously, this study also has several limitations. First, this study only addresses the theme of fintech on low public opinion. For this reason, further research can be conducted related to other variables in order to see both the antecedents and consequences. Second, although the results of the research discussed are sourced from the Scopus database, it turns out that the published research results are still minimal, so further research can add databases such as Web of Science to obtain findings from different and more varied sources.

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The authors have declared no potential conflicts of interest regarding this article's research, authorship, and/or publication.

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About the Authors

1. **Fahima Nasar** is a Lecturer at the Development Economics Study Program, Faculty of Economics and Business, Khairun University, Indonesia. He earned his Associate degree from Khairun University in 2002 and his Master's degree in Economics from Padjadjaran University, Indonesia, in 2012. Currently, he is on study leave to pursue further education, demonstrating his commitment to academic growth and contributions in the field of strategic management, particularly for small and medium-sized enterprises.
E-Mail: fahima.nasar@unkhair.ac.id

2. **Abdul Hadi Sirat** is a Professor at the Department of Development Economics, Faculty of Economics and Business, Khairun University, Indonesia. He earned his Bachelor's degree in Management from Universitas Muslim Indonesia in 1986, his Master's degree from Gadjah Mada University in 1992, and his Doctoral degree from Airlangga University in 2002.
E-Mail: hadisirat@unkhair.ac.id

3. **Amran Husen** obtained his Doctoral degree from Universitas Brawijaya, Indonesia, in 2014. The author is an Associate Professor at the Department of Economics, Postgraduate Program, Faculty of Economics and Business, Khairun University, Indonesia.
E-Mail: amran.husen@yahoo.co.id

4. **Hartaty Hadady** obtained her Doctoral degree from Universitas Diponegoro, Indonesia, in 2008. The author is an Assistant Professor at the Department of Economics, Postgraduate Program, Faculty of Economics and Business, Khairun University, Indonesia.
E-Mail: hartaty.hadady@unkhair.ac.id

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