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Technology Adoption by Microentrepreneurs: A 2018-2023 Literature Review

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Abstract

The purpose of this review is to identify and analyze the processes of technological adoption by microentrepreneurs through a comprehensive literature review. Employing a mixed, non-experimental, and exploratory descriptive methodology, a literature review matrix was used to systematize selected high-impact scientific articles from the Scopus database, with 50 articles chosen for content analysis. The main findings reveal nine theoretical trends that define the primary themes in this field of study, highlighting key characteristics, advantages, and weaknesses of technological adoption by microentrepreneurs across various sectors. Additionally, a significant number of research tools were identified and categorized into three paradigms: quantitative, qualitative, and mixed. Current perspectives and emerging patterns related to technology adoption were examined, emphasizing factors such as individual attitudes, resource availability, and training effectiveness. This literature review contributes to discussions on the dynamics, challenges, and opportunities in technology adoption by microentrepreneurs, providing a comprehensive overview of existing research, highlighting areas of interest, and fostering an understanding of the complexities surrounding technology adoption. The findings offer valuable insights for policymakers, educators, and practitioners aiming to support microentrepreneurs in their technological endeavors, emphasizing the need for continued research to address evolving challenges and leverage opportunities presented by technological advancements.

Keywords: *Technology Adoption, Small and Medium Enterprise, Technology Innovation, Digital Transformation.*

Introduction

In the last decade, technological developments have enabled considerable advances in all sectors of society, transforming the way companies operate and compete in the marketplace. Microentrepreneurs, in particular, have witnessed a significant revolution in terms of the adoption of technology as a means to improve operational efficiency. For example, Internet access has enabled them to remain competitive in different markets. The adoption of technology has made it possible for companies to instantly access a set of shared IT resources, such as storage, applications, networks, servers, and services, thus having the ability to make use of them and manage all these resources efficiently (Alqahtani et al., 2023). The importance of microentrepreneurs in adopting technology is also highlighted, as this not only boosts the development of small businesses but also allows them to adapt quickly to changing customer expectations and improve their interaction with them. Technology adoption offers microentrepreneurs a variety of significant benefits that play a crucial role in the growth and efficiency of their ventures. In this context, the incorporation of digital technologies has become essential, especially for microentrepreneurs, as it provides them with effective tools to remain agile in the face of fluctuating market demands. (Su et al, 2023).

The importance of small and medium-sized enterprises in economies not only stands out for their contribution to the production and distribution of goods and services, but also for their ability to adapt flexibly to change. Some SMEs believe that adopting digital technologies has the potential to generate both incremental and radical innovations, although the decision to adopt technology is also largely driven by internal operational decisions. (Omrani et al, 2022).

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In addition, market globalization has a significant impact on microentrepreneurs, as it transforms the business environment and presents both opportunities and challenges. This can be addressed strategically with the adoption of technology, which provides the opportunity to expand their reach globally, capture customers beyond local borders, and open up new possibilities for growth. Reaching customers beyond local borders is a real possibility, suggesting the opening of new markets and the attraction of a wider audience. This study aims to conduct a systematic review of the literature related to technology adoption by microentrepreneurs during the period 2018-2023. The aim was to identify the main research trends, as well as the most commonly used tools.

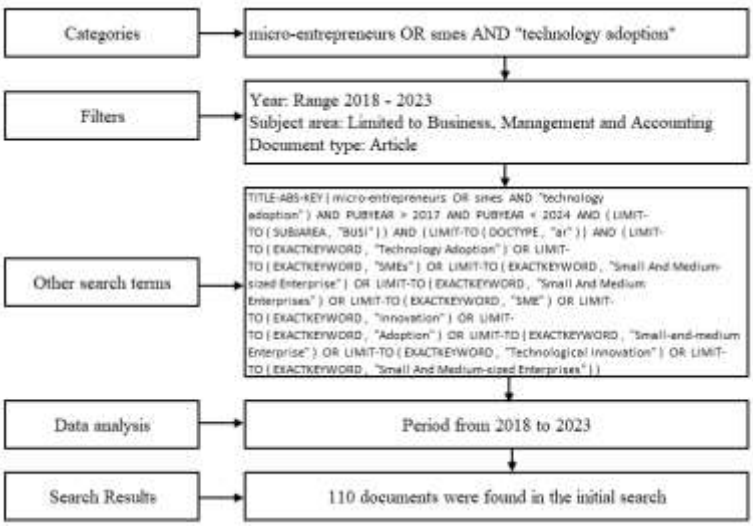
Finally, this literature review not only addresses the key dynamics, challenges, and opportunities identified in the existing literature but is also intended to be a valuable resource for those seeking to understand and adapt to the ongoing evolution of technology adoption in the microenterprise context.

Methodology

The literature review was based on a mixed, non-experimental and descriptive exploratory approach, this was carried out by inspecting the Scopus database using the categories "microbusinesses" and "technology adoption" as search criteria, and a thematic filter was also applied with the categories "Business, Management and Accounting"; a second filter was applied for the time interval between 2018 and 2023; and a third filter of document type, which exclusively included research articles, excluding documents such as: conferences, book chapters, reviews, books, notes, summary reports and data synthesis.

After obtaining this information, a filtering process was performed to obtain a sample of 50 articles, thus consolidating a documentary analysis matrix in which the following data were included for each article: name of the article, year of publication, abstract, methodology carried out, type of methodology applied, tools applied, subject of the article, research trend, objective, main findings, and name of the journal (citation). The matrix allowed the identification of the theoretical trends in research on the adoption of technology by microentrepreneurs, as shown in Figure 5, as well as the research paradigms (Figure 6) and methodological tools of research (Figure 7). Figure 1 illustrates the information-search process.

Figure 1. Criteria for Information Search



Source: Authors, 2023.

Analysis of Data

For elaboration of the content analysis, an interval was specified from 2018 to 2023 on the adoption of technology, microentrepreneurs, and microbusinesses, selecting the 50 articles that were most strongly

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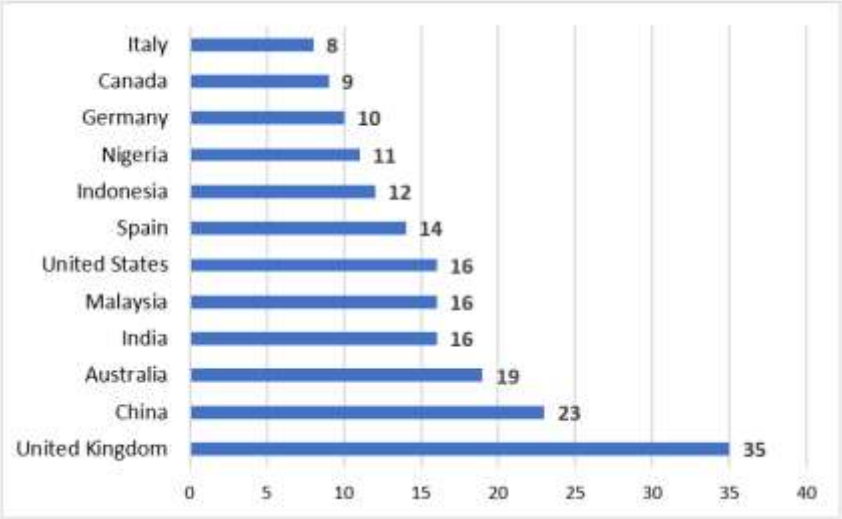
related to the searched topic. As a next step, nine research trends were classified: e-commerce, cloud computing, Industry 4.0, innovation, digital marketing, social networks, sustainability, blockchain technology, and digital transformation. These trends reflect the dynamic and multidimensional nature of the interaction between technology and business, opening important areas for research and understanding changes in the contemporary business landscape; therefore, their main characteristics are presented and the most relevant results are discussed. In the same context, the formulation of methodological research trends was explored. First, an analysis of the methodology used in the 50 previously selected articles was conducted. These methodologies are then classified according to three research paradigms: quantitative, qualitative, and mixed. Finally, the key tools used in each paradigm were identified.

Results

Analyzing the results obtained after doing the search filter, the main country conducting research related to technology adoption by microentrepreneurs is the United Kingdom, with a total of 35 articles published in the Scopus database during the six years, taking a ratio of more than 2:1 with respect to the United States with 16 articles, which is the first nation in the Americas to appear on the list. The next nation in the region to appear is Canada with nine articles, and far behind them, the first Latin American country is Brazil with two articles, a quantity that is too small for the time period studied. This shows that Latin America has not been interested in the subject, which makes it uncompetitive with the rest of the world. Figure 2 shows the number of papers from the main countries researching technology adoption in microbusinesses, according to Scopus data, those countries with at least 8 papers published in the database were selected. After the United Kingdom, the results reveal that the other leading countries are: China, Australia, India, Malaysia, United States, Spain, Indonesia, Nigeria, Germany, Canada and Italy, in that order.

Figure 2. Number of Papers from Major Countries Researching Technology Adoption.



Source: Scopus, 2023

Figure 3 illustrates the behavior of research on the adoption of technology by microentrepreneurs, which has a small decline during the year 2020, but remains constant during the years 2018, 2019, and 2020, with an average of 22 published articles; however, from the year 2021, there has been an upward trend in the publication of the subject. The year 2022, with 52 documents, will tend to be surpassed by the year 2023.

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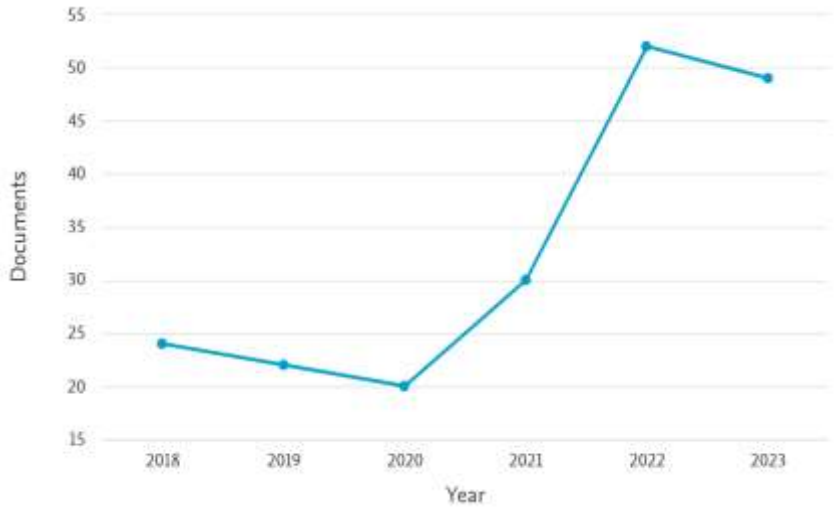
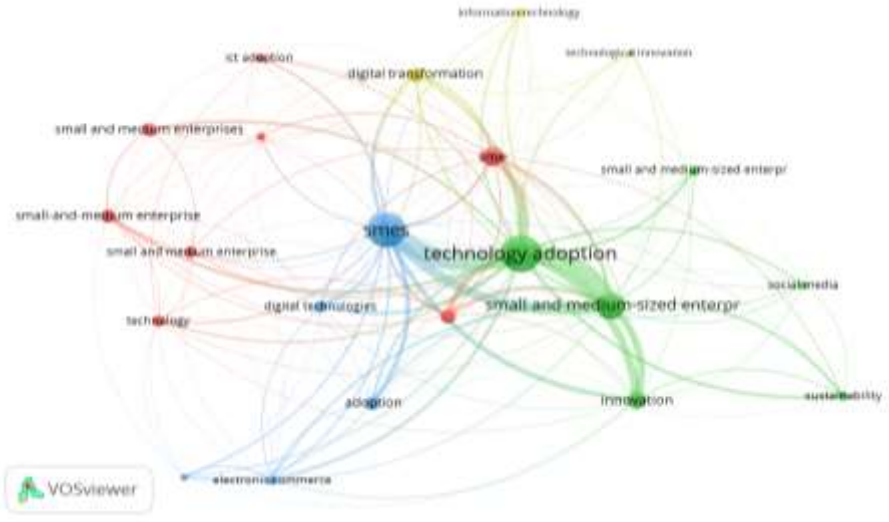
Figure 3. Documents Published By Year



Source: Scopus, 2023

With regard to the criteria most used in scientific research on the adoption of technology by microentrepreneurs, the following stand out: technology adoption, microbusiness, and medium-sized enterprises. Figure 4 shows the most frequently cited words in the fields of microbusiness and technology adoption. These words represent the most relevant and studied concepts in the academic literature on this topic. By analyzing the citations in the papers, it is possible to observe which terms are most recurrent and have the greatest impact on research in this field. This information is useful for identifying dominant trends and approaches in the study of technology adoption by businesses.

Figure 4. Most Cited Words in Research



Theorical Trends in Research

The following is an examination of the theoretical trends in research on microentrepreneurs' adoption of technology. As noted above, from the review of scientific articles around the search categories, nine theoretical trends that stood out were found: 1. Disruptive Innovation with 12 articles consulted, 2. Cloud Computing, with seven articles consulted, 3. Operations with blockchain technology (seven articles), 4. Digital Marketing Strategies, with six articles consulted; 5. E-Commerce Platforms, with six articles

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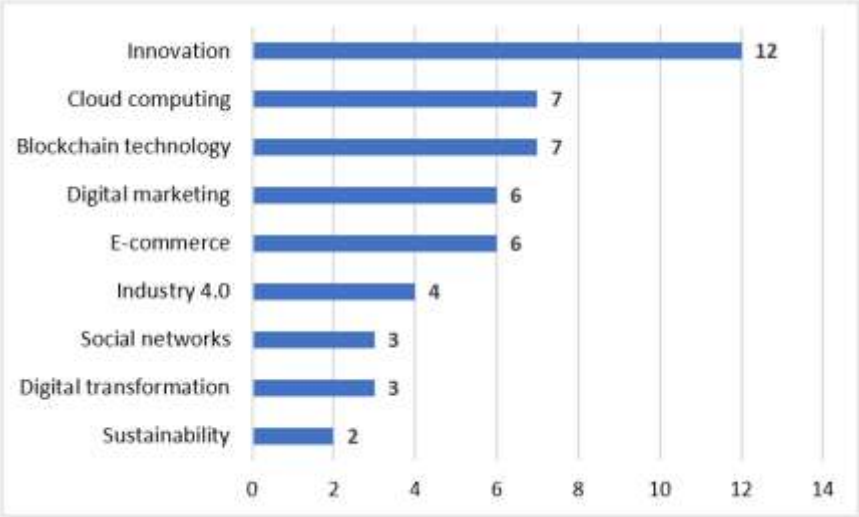
consulted, 6. Fourth Industrial Revolution, with four articles consulted: 7. Social Networking Platforms with three articles consulted, 8. Digital Business Transformation, with three articles consulted; 9. Sustainable Development, and two articles were consulted. Figure 5 shows the distribution of the theoretical trends.

Figure 5. Theoretical Trends in Research on Technology Adoption By Microentrepreneurs.



Fuente: Scopus, 2023

The analysis of theoretical trends was carried out in a logical sequence, according to the totality of the articles consulted.

Disruptive Innovation

Twelve of the 50 selected articles dealt with the theoretical trend of disruptive innovation (Lin et al., 2023; Skare et al, 2023; Shwedeh et al., 2022; Nguyen et al., 2023; Ojha et al., 2023; Jalil et al., 2021; Alam et al., 2022; Doe et al., 2022; Somohano-Rodríguez and Madrid-Guijarro, 2022; Duran & Castillo, 2023; Mishrif & Khan, 2022; Ngo et al., 2020).

Disruptive innovation refers to the introduction of products, services, or technologies that transform the existing market. (Lin et al., 2023). Adaptation of innovative business models provides small and medium-sized enterprises (SMEs) with the ability to effectively address business challenges. (Skare et al, 2023). An example of this type of innovation is improvements facilitated by digital technologies such as cellphones and mobile money, which are called digital innovations and are often disruptive innovations. (Doe et al., 2022). The use of technology to connect various parts of a business, including employees, suppliers, customers, and partners, aligns with the concept of disruptive innovation by providing an advanced way to improve collaboration and efficiency in business processes. (Ojha et al., 2023). In the era of globalization and intense market competition, small- and medium-sized enterprises (SMEs) require innovation to improve their performance. (Jalil et al., 2021). In times of intensified competition and economic crises, it is necessary to study how the adoption of technology contributes to innovation. (Duran & Castillo, 2023). Innovation involves the generation, acceptance, and application of any concept, material object, product, technology, or process that is novel to those that incorporate it. Small and medium-sized enterprises (SMEs) rely heavily on innovation from external sources. (Ngo et al., 2020). Competitive heterogeneity is a factor that influences how a company decides to approach innovation. (Somohano-Rodríguez and Madrid-Guijarro, 2022). SMEs facing challenges or vulnerabilities are expected to seek innovative solutions and develop creative ideas to overcome these adversities. (Alam et al., 2022). In the field of innovation, it is essential that governments and stakeholders support the digital transformation of small and medium-sized enterprises (SMEs) (Mishrif & Khan, 2022). Finally, innovation involves improving procedures and

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processes to improve the performance of products and services with the objective of increasing the value perceived by customers or users. (Shwedeh et al., 2022). Small and medium-sized enterprises (SMEs) must innovate and adapt to the changing demands of the business environment. (Nguyen et al., 2023).

Cloud Computing

Seven of the 50 selected articles addressed cloud computing (Alqahtani et al., 2023; Hasani et al., 2023; Ansong & Boateng, 2023; Sastararuji et al., 2022; Soni et al., 2022; Santhana Lakshmi & Jayalakshmi, 2021; Sathye et al., 2018).

Cloud computing refers to the delivery of computing services such as storage, data processing, networking, software, and analysis through the Internet. It has become the new form of data storage, used by companies in all sectors, including Small and Medium Enterprises (SMEs). (Ansong & Boateng, 2023). Instead of relying on local servers or physical devices to handle operations, companies can access these services through the cloud, which is a network of remote servers hosted on the internet. With the growth and expansion of the Internet in recent decades, cloud computing has enabled companies to access a shared set of computing resources, such as storage, applications, networks, servers, and services. (Alqahtani et al., 2023). Additionally, factors such as perceived benefits, technological compatibility, perceived costs, and complexity play a role in determining the adoption of cloud computing. (Hasani et al., 2023).

In recent years, technologies such as cloud computing and big data analytics have had a significant impact on how small and medium-sized enterprises (SMEs) have dramatically transformed their entire business environment and processes. (Sastararuji et al., 2022). These technologies have introduced important changes that can benefit SMEs by improving efficiency, facilitating access to key information, and providing new opportunities for decision making because the adoption of these technologies could help SMEs stay competitive in an ever-changing business environment. Although there are other technologies, such as big data or Industry 4.0, cloud computing is widely applied in the management of information in a secure and transparent manner, ensuring secure, authentic, and reliable access to data. (Soni et al., 2022). Consequently, cloud computing allows small to medium-sized companies to address the inherent problems of information technology programs, such as high costs and risks. (Santhana Lakshmi & Jayalakshmi, 2021). Cloud computing technology has proven to be an important technological solution, especially for small- and medium-sized enterprises (SMEs). (Yaseen et al., 2023)

Operations With Blockchain Technology

Seven of the 50 selected articles dealt with blockchain technology transactions (Bag et al., 2022; Gartner et al., 2022; Abu Afifa et al., 2023; Zamani, 2022; Bhardwaj et al., 2021; Omrani et al., 2022; Shahadat et al., 2023).

Blockchain technology is a digital, decentralized, and distributed registry, in which transactions are recorded and added in chronological order to create permanent and unalterable records (Bag et al., 2022), Decentralization, security, and transparency are the fundamental principles that have made blockchain technology increasingly popular. Decision-makers in companies are increasingly faced with the difficulty of deciding whether to adopt or reject these new technologies because they sometimes have little knowledge about them. (Gartner et al., 2022). Blockchain is one of the most important technologies driving the Fourth Industrial Revolution (Almasarweh et al., 2023) and can be applied to improve efficiency, transparency, and security in business operations.

Although research on operations using blockchain technology during the adoption process of new technologies is scarce (Bhardwaj et al., 2021), there is knowledge or understanding of how these specific technologies influence the adoption of innovations. Blockchain technology improves overall performance and reliability by enabling a variety of value-enhancing tasks, such as recording, tracking, and sharing information quickly and accurately (El-Latif et al., 2021).

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Hence, the decision to adopt blockchain technology is determined by the functional and symbolic benefits, which are influenced by the existing correspondence between the technology and the environment, as well as between the technology and the processes of small and medium-sized enterprises (SMEs). (Omrani et al., 2022). The perceived benefits of blockchain technologies positively impact businesses (Shahadat et al., 2023). SMEs must recognize and take advantage of the benefits offered by blockchain technology to move toward a more efficient and secure business future.

Digital Marketing Strategies

Six of the 50 selected articles deal with digital marketing strategies (Su et al., 2023; Eze et al., 2019; Buvar & Gati, 2023; Özşahin et al., 2022; Abbasi et al., 2022; Suciu et al., 2021).

Digital marketing is defined as a process that involves the continuous adaptation of technology whereby companies collaborate with customers and partners to create, support, and deliver value to all stakeholders (Suciu et al., 2021), Through digital marketing, it is possible to increase customer loyalty and provide immediate responses to customer demands. Digital marketing uses online channels and platforms to promote products, services, and brands through specific strategies and tactics. Small and medium-sized enterprises (SMEs) are increasingly adopting public platform technologies for digital marketing such as e-commerce platforms. (Su et al., 2023). The use of digital marketing helps small- and medium-sized enterprises (SMEs) boost their sales promotion strategy and increase sales of their products and services. (Eze et al., 2019). Microentrepreneurs may not be informed of or understand the benefits offered by digital marketing, which becomes a barrier to adoption. (Buvar & Gati, 2023).

SMEs are crucial players in fostering more equitable and sustainable growth, as they represent the majority of businesses, and how it is impossible to achieve sustainability without the digital transformation of a business. This shift to digital marketing is a strategy that should be employed to improve the sustainability of SMEs (Özşahin et al., 2022). Digital marketing is a fundamental basis for SMEs because it allows them to locate customers, create an interactive environment, and encourage the promotion of various brands. This highlights the growing relevance and effectiveness of social media marketing globally, which enables businesses to measure the impact of their campaigns more accurately and adjust strategies in real time. (Abbasi et al., 2022).

In conclusion, digital marketing has emerged as an essential component of business strategy, transforming the way companies connect with their audiences and promoting their products or services. In addition, it offers companies, especially small- and medium-sized ones, the possibility of competing in a global market, reaching specific audiences more efficiently and at a lower cost compared to traditional methods.

E-Commerce Platforms

Six of the 50 selected articles dealt with E-Commerce Platforms (Qatanani & Qusef, 2023; Alenezi & Isa, 2022; Kurniasari et al., 2022; Chau et al., 2021; Naushad & Sulphey, 2020; Sombultawee, 2020).

The emergence of e-commerce in the 1990s brought about a significant transformation in the business world, leading to a fundamental change in the economy and in the way companies operate (Qatanani & Qusef, 2023). E-commerce platforms are online systems that enable the buying and selling of goods and services. With e-commerce, companies have been forced to search for innovative ways to expand their market reach and keep their customers satisfied by tailoring their offerings to meet their needs. (Alenezi & Isa, 2022). Therefore, microentrepreneurs must use information and communication technologies (ICT) tactically within their businesses to take advantage of e-commerce platforms. SMEs face challenges related to the management of their products. Handling, storage, delivery, and logistics costs are critical and problematic aspects facing great challenges in the effective operations of their businesses. Technological advances have created wider markets for e-commerce, allowing SMEs, which face difficulties in managing their products, to handle, store, deliver, and logistical costs (Kurniasari et al., 2022). Many SMEs tend to innovate when faced with customer pressures because when customers appropriate technology, this in part forces businesses to adopt it, and even more so when adopting a technology such as e-commerce (Chau et

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al., 2021). By adopting these technologies, companies not only meet customer expectations but can also improve operational efficiency, expand their market reach, and strengthen their customer relationships.

Small and Medium Enterprises (SMEs) now play a dominant role in almost all developed and developing economies. They have contributed substantially towards national income, employment generation, sustainable economic growth, etc. (Naushad & Sulphey, 2020). However, SMEs currently face multiple socioeconomic, business, and technological challenges. One of the serious challenges faced by SMEs stems from their digitization and technology adoption. The versatility and expansion of e-commerce provide SMEs with diverse opportunities to interact with their customers and conduct business transactions in today's digital environment. Various e-commerce platforms and potential activities offer SMEs a wide range of ways to reach their customer base, facilitating service and sales, offering cost, and customer contact flexibility not available through other marketing tools. (Sombultawee, 2020).

Fourth Industrial Revolution

Four of the 50 selected articles dealt with the Fourth Industrial Revolution (Mohiuddin et al., 2023; Mishrif & Khan, 2023; Rojas-Berrio et al., 2022; Prause, 2019).

The Fourth Industrial Revolution refers to the current phase of technological transformation that is occurring worldwide, characterized by the integration and convergence of advanced technologies, such as artificial intelligence, robotics, the Internet of Things, and cloud computing, among others, which have changed the way society lives and works. The underlying digital transformation through the evolution of Industry 4.0 offers numerous advantages for small and medium-sized enterprises (SMEs), such as higher productivity, lower operating costs, improved product quality and customization, and crucial aspects for the competitiveness and survival of SMEs (Mohiuddin et al., 2023). Government regulatory backing and financial support for small and medium-sized enterprises (SMEs) to adopt and use the latest technologies in their operations is essential. Organizations generally complain about the high cost of technology adoption, and it is necessary to promote financing schemes, training, retraining, and development programs in parallel with simplified financing and support centers at the governorate and regional levels for legal and financial advice, human resources, digitalization, and innovation in business models (Mishrif & Khan, 2023). Industry 4.0, and the technologies derived from this notion, have proven to be easy to adopt for large enterprises and provide services to small and medium-sized enterprises (SMEs), but few SMEs have managed to properly transition to this technological evolution, even when it improves innovation and competitiveness. (Rojas-Berrio et al., 2022). Industry 4.0, which is characterized by facilitating the balance between internal and external complexity by transitioning traditional production systems from structured centralized control to decentralized control. This transformation represents an advanced manufacturing strategy with fundamental principles such as modularization, self-regulation, and digital integration across business functions and beyond organizational boundaries (Prause, 2019). Consequently, Industry 4.0 offers significant opportunities to improve the efficiency, quality, and competitiveness.

Social Networking Platforms

Three of the 50 selected articles dealt with the fourth industrial revolution (Amoah et al., 2023; Vrontis et al., 2022; Chatterjee et al., 2021).

Adopting such platforms allows microentrepreneurs to share information, increase sales, manage customer relationships, and foster collaboration, which ultimately leads to sustainability. (Amoah et al., 2023). Another advantage is that it becomes a tool for microentrepreneurs to establish close relationships with their customers because it generates ease of communication. (Chatterjee et al., 2021). These platforms allow SMEs to connect with their audiences, promote their products or services, and participate in conversations within their industries. Social networks have become a strategic and innovative tool for sharing information and building profitable and lasting relationships with customers and because of their effectiveness they enable strategic partnerships between companies through the collaborative exchange of information and knowledge. (Amoah et al., 2023). The accelerated growth of digital technologies and their adoption by companies have drastically changed the overall business landscape and impacted regional development

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(Vrontis et al., 2022). The use of social networking applications as well as other digital technologies is considered a part of the resource portfolio that companies can have. Social media have emerged as a critical tool for SMEs to establish close relationships with customers. However, those involved in the growth and development of SMEs are motivated to use them only if they feel that the tools are useful in their applicability. (Chatterjee et al., 2021)

Business Digital Transformation

Three of the 50 selected articles dealt with digital business transformation (Okine et al., 2023; De Vera et al., 2018; Gupta et al., 2022).

Digital Business Transformation refers to the process by which an organization incorporates digital technologies in all areas of its business to improve its operations and services, adapt to changes in the environment, and provide added value to customers. This process involves the adoption and integration of technologies, such as artificial intelligence, data analytics, cloud, automation, the Internet of Things (IoT), and other digital solutions. Adopting technology helps small and medium-sized companies and entrepreneurs obtain the funds necessary for the growth and expansion of their businesses. (Okine et al., 2023). It is therefore important for SME policymakers, advocates, and researchers to study how SMEs around the world manage to overcome operational problems due to their size by using technologies that have become industry standards (De Vera et al., 2018). Despite the increase in IT spending, many SMEs are unaware of the need to evaluate IT investments, which has a negative impact on their technological and decision-making capabilities (Gupta et al., 2022). In short, digital business transformation applied to SMEs involves a comprehensive reconfiguration of their processes, business models, and organizational culture through the strategic adoption of digital technologies. This change seeks to improve operational efficiency, boost innovation, and strengthen competitiveness in a digital environment. In addition, digital transformation fosters greater agility and adaptability to change, promotes a customer-centric approach, and facilitates informed decision-making.

Sustainable Development

Two of the 50 selected articles dealt with digital business transformation (Okine et al., 2023; De Vera et al., 2018; Gupta et al., 2022).

Sustainable development is an approach that seeks to meet present needs without compromising the ability of future generations to meet their needs. In other words, it involves searching for a balance between economic growth, social equity, and environmental preservation. The environment in which a company operates, including its industry, competitors, and relationship with the government, is known as the environmental context (Triandini et al., 2023).

Sustainable development for small and medium-sized enterprises involves adopting business practices that balance economic growth with social and environmental responsibilities. In the context of SMEs, sustainable development means operating in a way that meets the needs of the present without compromising the abilities of future generations. Therefore, microentrepreneurs can take actions focused on the adoption of responsible business practices, environmental efficiency, and consideration of social aspects in the business growth process (Triandini et al., 2023). Sustainability is an important consideration for SMEs, as it offers both rewards and obstacles. An increased understanding of the use of non-renewable resources, such as fossil fuels, has affirmed the need for communities to move toward more sustainable goods and processes (Lingyan et al., 2021). Finally, sustainable development in SMEs presents both challenges and opportunities. Efficient resource management, adoption of sustainable technologies, and innovation are key to overcoming obstacles and making the most of the opportunities offered by sustainability.

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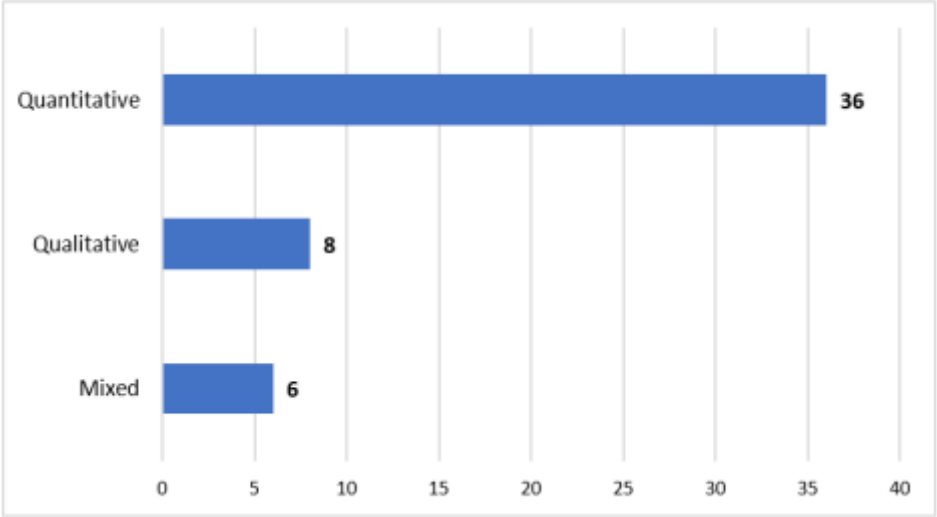
The review of the 50 documents analyzed was distributed as follows: 36 articles corresponded to the quantitative research paradigm, eight articles corresponded to the qualitative research paradigm, and the remaining five corresponded to the mixed paradigm.

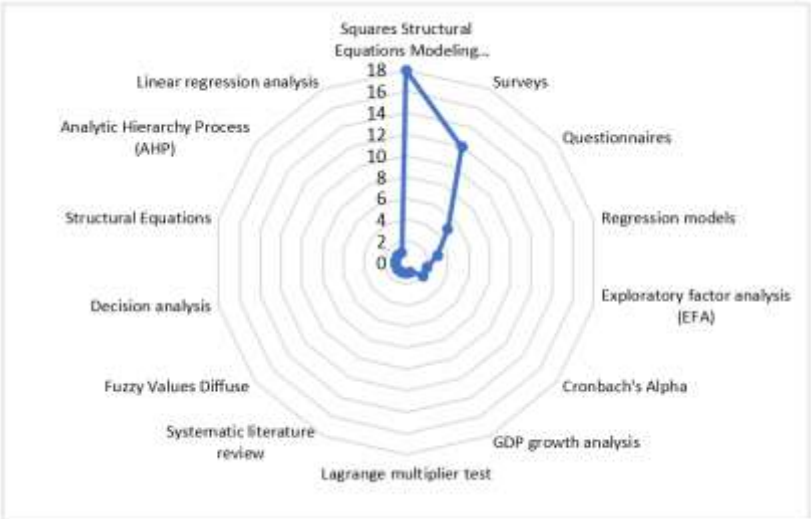
Figure 6. Distribution of Research Paradigms



Source: Authors, 2023.

Based on the qualitative, quantitative, and mixed research paradigms, 16 methodological research tools were used in the 50 articles analyzed. In the qualitative research, interviews were mainly used in six studies; the other tools applied were Cronbach's alpha coefficient and the analysis of online databases in one case each. For quantitative research, we find the application of partial least squares structural equation modeling (PLS-SEM) in 17 cases, six surveys, three questionnaires, three regression models, two exploratory factor analyses (EFA), and one case in each of the following tools: Cronbach's Alpha, GDP growth analysis, Lagrange multiplier test, systematic literature review, and Fuzzy Values Diffuse. Finally, the mixed research employed two questionnaires, one decision analysis, one structural equation, one Analytic Hierarchy Process (AHP) and one linear regression analysis.

Figure 7. Research Methodological Tools.



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Source: Authors, 2023.

As can be seen, in scientific research related to the study of the adoption of technologies by microentrepreneurs, quantitative research continues to be dominant in contrast to qualitative research, which is rarely used; however, it is possible to think that quantitative research will continue to increase in the coming years, because mixed research combines qualitative research with quantitative research.

Conclusions

Theoretical and methodological trends in research on microentrepreneurs' adoption of technology have shown significant progress in recent years. As a result of the analyses carried out, it is possible to recognize what several authors and consultants constantly state: adopting technology is a necessity because it allows growth and recognition as a competitor. Innovation plays a key role in microentrepreneurs' adoption of technology. The ability to adapt to changing customer expectations and to improve customer interaction through technology can drive growth and efficiency. In addition, digital technologies, especially e-commerce, have proven to be effective tools for attracting potential customers, expanding geographic reach, and diversifying business opportunities for microentrepreneurs.

As a result of the research trends identified, it is possible to point out some lines of research that enrich the subject, such as analyzing how technologies can dialogue with sustainable organizations, which leads to consideration of how this adoption can strengthen and support sustainability efforts while ensuring responsibility and ethics in its implementation, an integration that will allow for more sustainable and responsible business practices. In addition, a line of research is generated on how the adoption of technology by microentrepreneurs can become a powerful tool if we move towards sustainable development, and it is important to take into account social, economic, and environmental aspects in technology adoption because this will achieve long-term sustainable benefits.

The research reveals that technology adoption by microentrepreneurs is essential for improving operational efficiency, increasing market competitiveness, and accessing new opportunities. However, the need to address challenges is highlighted because technology adoption by microentrepreneurs can face economic challenges, as technologies often require significant upfront investments in hardware, software, and training, which can lead microentrepreneurs to face costs that are often difficult for them as they work with tight profit margins. Another challenge is cultural, because there is often a resistance to change, especially in family businesses that can become very traditional, which generates a series of training that presents concerns in microentrepreneurs, and a final challenge is technological, in many places Internet connectivity, for example, is still very limited.

Overcoming these challenges requires strategies such as training programs, access to technology-specific financing, and policies that foster an enabling environment for technology adoption, which can help mitigate these challenges. This study underscores that the successful integration of technological tools not only drives operational efficiency and competitiveness but also proves to be a strategic imperative for long-term survival. The digital divide and resistance to change stand out as significant obstacles, indicating the urgency of policies and programs that facilitate more inclusive and effective technology adoption.

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