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Research Article

MSME Sector Contributing on B2B Electronic Market Places Successes: A Systematic Literature Review & Future Research Agenda

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ABSTRACT

Purpose – The purpose of this study is to examine basic principles of technology adoption in the MSME sector, with a focus on how they contribute to the improvement of B2B electronic markets. To do this, we perform an extensive literature evaluation, which advances knowledge on the subject, of the material that has previously been published.

Design/methodology/approach – This study uses a systematic literature review methodology that goes through the following steps in order: choosing relevant databases, identifying keywords and search strings, establishing inclusion and exclusion criteria, and conducting searches across selected databases within a set amount of time. After a thorough procedure, 140 peer-reviewed publications were examined, and the results were then qualitatively analysed.

Findings – The study reveals the identification of eight influential categories of concepts related to technology adoption through an examination of recent works of literature. The present piece underscores the fragmentation in the existing literature, which primarily focuses on a limited number of concept categories. Additionally, the study underscores the scattered nature of theoretical and conceptual frameworks and the limited application of these theories, underscoring the necessity for the creation of a more dynamic framework to research the uptake of new technologies, taking into account how quickly current technologies are changing.

Research limitations/implications – Building upon the insights gained from the aforementioned discoveries, future research directions should centre on examining technology adoption through a process-oriented lens. This includes delving into relatively underexplored factors like Resources, strategy, infrastructure, and rules and how these affect SMEs' use of technology. In addition, a thorough framework for technology adoption must be created that takes these important factors into account.

Practical implications – Both professionals and decision-makers stand to gain valuable insights by obtaining a comprehensive overview of the obstacles and facilitators that shape their attempts to incorporate technology. The understanding acquired from this study will enable them to create the instruments required for technology adoption in their organizations and provide a more profound comprehension of the factors that may impact their path.

Originality/value – The understanding acquired from this study will enable them to create the instruments required for technology adoption in their organizations and provide a more profound comprehension of the factors that may impact their path. Moreover, it advances our understanding of how to adapt technology in the dynamic, quickly evolving digital world of today.

Keywords: Digitalization, small and medium-sized businesses, integrated framework, systematic literature review, technology adoption, and facilitators for technology adoption. Type of paper: Research report.

1. Introduction

The Micro, Small, and Medium Enterprises (MSME) sector stands as a key driver of global economic growth in various nations. Expanding these digital platforms is necessary as a result of recent developments in e-marketplaces,

which have brought in a new era of consumer interactions and commercial operations. These e-commerce platforms facilitate the exchange of goods, services, and money by acting as vital conduits between customers and sellers. The systematic literature's main focus is to investigate how the MSME sector contributes to the flourishing of e-marketplaces. Comprising small-scale businesses, startups, and entrepreneurial ventures, the MSME sector plays an essential role in fostering innovation, job creation, and overall economic expansion (Ayalu et al. 2022).

Nonetheless, challenges like limited access to resources, markets, and technology can hinder their growth and competitiveness. The emergence of e-marketplaces offers an unprecedented opportunity for MSMEs to address these challenges. By providing a digital stage, e-marketplaces empower MSMEs to showcase their offerings globally, transcending geographical constraints. This transition from traditional brick-and-mortar setups to online platforms has allowed MSMEs to boost their market presence, expand their customer base, and increase sales (Lahuerta-Otero et al., 2014).

Furthermore, e-marketplaces benefit MSMEs by reducing transaction costs, streamlining operations, expanding consumer outreach, and enhancing visibility. These platforms equip MSMEs with tools and technologies that facilitate efficient product selling, inventory management, order fulfilment, and secure online transactions. E-marketplaces often offer additional value through services like logistical support, customer feedback, and ratings, all of which enhance the success of MSMEs on these platforms.

This systematic literature review's (SLR) main goal is to critically assess existing research and studies in this field. It is crucial to comprehend how the MSME sector uses online markets to expand, overcome obstacles, and contribute to the overall success of these digital platforms (Rosemary et al., 2004). Researchers can gain insights into the strategies adopted by MSMEs, the impact of electronic marketplaces on MSME expansion, the obstacles encountered by MSMEs in the adoption and utilization of e-marketplaces, and the necessary regulations and support frameworks required to facilitate their effective integration into the digital realm (Hilmi et al., 2022).

Numerous research gaps exist concerning the Indian MSME sector, the achievements of e-marketplaces within this sector, and their interconnectedness. First and foremost, there is a strong need to have a thorough grasp of how e-marketplaces affect the development and prosperity of MSMEs, including measuring advantageous effects like expanded market reach and improved operational effectiveness. Secondly, a deeper exploration of the challenges faced by MSMEs when utilizing e-marketplaces is necessary, with a particular focus on technological readiness, trust-related issues, and capacity limitations. Thirdly, there is a need to assess policy-related achievements for MSMEs within e-marketplaces, including government policies, financial incentives, training programs, and infrastructure development initiatives (Chen et al., 2011). Lastly, the sustainability of MSMEs in e-marketplaces remains largely unexamined, requiring a focus on long-term impact, adaptability, innovation strategies, and their contribution to the success of e-markets with government support (Gengatharen et al., 2005).

In pursuit of these objectives, this research focuses on three primary research goals: Firstly, it delves into the perception and attitudes of Micro, Small, and Medium Enterprises (MSMEs) regarding electronic marketplace processes and adoption. Secondly, it investigates the factors that influence MSMEs' satisfaction with electronic marketplace platforms. Lastly, it endeavours to pinpoint the challenges that hinder the success of electronic marketplaces among MSMEs and proposes strategies to overcome them.

This study significantly advances the body of recent work in four key areas: First off, it provides a thorough summary of the state of the research on technology adoption in Small and Medium Enterprises (SMEs), which advances our understanding of this topic. Secondly, it introduces a novel framework comprising eight categories of influential concepts that should be considered when contemplating the SMEs' embrace of technology. Thirdly, this study leverages existing research findings to provide valuable support for SME managers, entrepreneurs, and policymakers, assisting them in making informed decisions, devising strategic plans, and formulating technology adoption strategies for their businesses. Finally, it clarifies the difficulties and problems that SMEs are now facing in implementing new technologies and offers potential directions for further study.

The parts that follow are the order in which this document is structured: Section 2 goes into great depth on how to find prior research on technology adoption in SMEs. Section 3 presents the study findings, while Section 4 presents the conclusion. Section 5 offers the paper's conclusion as well as some avenues for further research.

2. Methodology

2.1 Systematic Literature Review (SLR) Methodology

We use a Systematic Literature Review (SLR) strategy in this study, which is in line with the techniques used by Durst et al. (2015) and Tell et al. (2016). PRISMA standards were adhered to by the research approach in order to generate

a systematic review. By outlining the search strategy, the data extraction procedure, the data analysis procedure, and the article selection criteria, a systematic review was created (Haddaway et al. 2022).

The PRISMA approach is often broken down into the following steps:

Finding and Choosing Keywords: We selected a list of terms in order to do an exhaustive analysis and acquire understanding of the present condition of technology adoption in small and medium-sized businesses (SMEs). These keywords encompassed terms like "tech*", "technology", "adopt*", "adoption", "technology adoption", "SME*", and "SMEs" (small and medium enterprises/small and medium-size companies).

Definition of Keyword Combinations: To improve our literature search, we combined these terms to create search strings. Some examples of these combinations included "tech* þ adopt* þ SME", "technology adoption þ SMEs", and "technology þ adoption þ SMEs".

Database Selection: We determined the most suitable databases for conducting our comprehensive literature search.

Definition of Inclusion and Exclusion Criteria: We defined the inclusion and exclusion criteria in detail before we started the search. Peer-reviewed journal publications, English-language documents, articles published between 1990 and July 2023, full-text articles without restrictions on industry or research methodology, and studies that particularly addressed technology adoption in SMEs made up our inclusion criteria. Conversely, research written in languages other than English, articles covering other facets of gray literature and the use of technology were excluded.

Performing the Search: We conducted our literature search across selected databases, applying various combinations of search strings. This resulted in different numbers of search results.

Quality Assessment: Subsequently, we performed a rigorous quality assessment. This phase involved reviewing abstracts, selecting relevant papers, extracting data using a pre-designed SLR framework, examining trends to find gaps in the literature and completed studies, and ultimately, crafting a comprehensive literature review.

Through this systematic approach, our objective was to ensure a thorough and robust examination in the research on SMEs' use of technology, thereby contributing valuable insights to the field.

Table 1. Exploration and Curation of Research Articles on Management and Innovation within Micro, Small, and Medium Enterprises (MSMEs)

Advanced search (query)	Papers
The statement "small business*" OR "small enterprise*" OR "micro business*" OR "micro enterprise*" OR "SME" OR "SMEs" OR "small and medium-sized enterprise*") AND the statement "technology adoption*" OR "adopt*")) LANGUAGE AND SKILLS: English AND TYPES OF DOCUMENTS: (Review OR Article) **Timespan: 1990 to 2023, Indexes:** SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, SCI-EXPANDED.	1600
The statement "small business*" OR "small enterprise*" OR "micro business*" OR "micro enterprise*" OR "SME" OR "SMEs" OR "small and medium-sized enterprise*") AND the statement "technology adoption*" OR "adopt*")) LANGUAGE AND SKILLS: English AND TYPES OF DOCUMENTS: (Review of Article OR) Additionally, ESI Top Papers (Field Hot Papers OR Highly Cited in Field) Timespan: 1990 to 2023, Indexes: SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, SCI-EXPANDED.	350
➢ **Selected by theme alignment (title, abstract, and full-text reading)**	140

2.2 Matrix Design for Systematic Literature Review

To enhance the comprehensiveness of the literature review, I devised a matrix to systematically extract pertinent information from each paper. This matrix comprises several criteria, each with its unique significance and coding, as detailed below:

2.2.1 Theoretical Aim: This criterion involves discerning the theoretical purpose of each article, shedding light on its role in advancing theoretical understanding within the field. It aids in categorizing papers into exploratory, developmental, elaborative, testing, or other theoretical aims, facilitating a comprehensive analysis of the research landscape.

2.2.2 Main Concepts/Theories: Identifying the primary theoretical frameworks or conceptual underpinnings employed in the paper. This helps establish a knowledge base for theories and concepts related to innovation activities, gaining a more thorough comprehension of the findings context.
2.2.3 Methodological Approach: Categorizing research approaches into empirical, conceptual, or mixed-method, with empirical papers further classified as quantitative or qualitative. This classification informs whether scientific trials or conceptual analysis provide the foundation of the collection of knowledge, enabling a more nuanced evaluation of research methodologies.
2.2.4 Research Methods: Extracting and coding various research and data collection methods, including observations, experiments, secondary data analysis, focus groups, and others. This information aids in assessing the validity and rigor of research results, as different methods serve distinct purposes.
2.2.5 Number of Research Methods: Identifying papers that employ multiple research methods. Utilizing multiple methods enhances the depth of understanding and mitigates potential weaknesses associated with relying on a single approach. This promotes triangulation and a more accurate comprehension of the research topic.
2.2.6 Geography Setting: Listing the nations or areas that are the subject of each paper's study. This understanding indicates areas of interest for researchers and aids in assessing regional variances in study findings.
2.2.7 Degree of Analysis: arranging the many levels of analysis that academics perform into categories, including individual, group, corporate, regional, national, and global. Interpreting the significance of research findings requires an understanding of the selected level of analysis.
2.2.8 Publications Journals: obtaining details on the journals that published the articles and grouping them into four main categories: journals for information systems, journals for science and technology; journals for sustainability and the environment; journals for business, economics, and management. This categorization sheds light on the disciplinary backgrounds of the corpus of current knowledge.

Results
The next subsections illustrate the quantitative and qualitative literature studies, I carried out for this study.

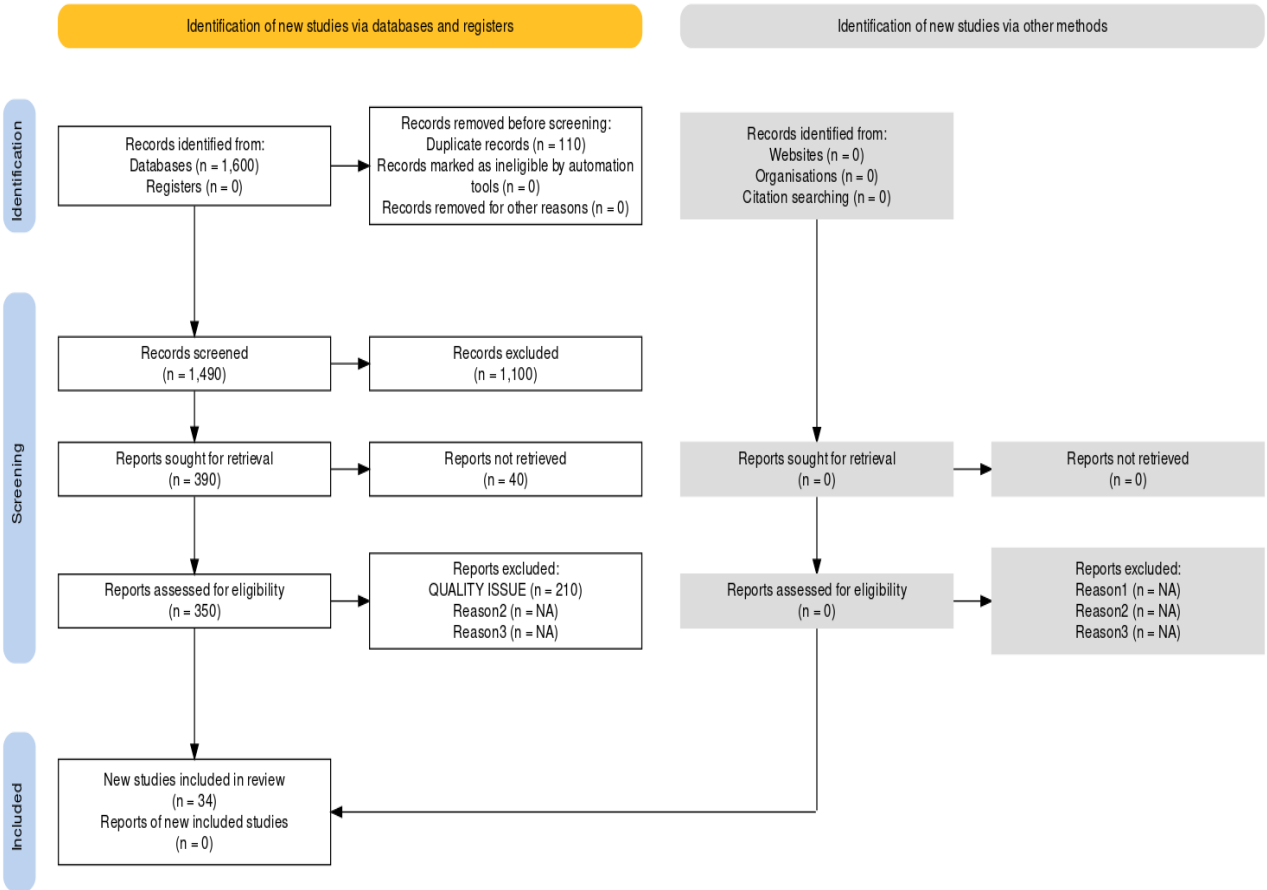


Figure. 1 Reporting Items for Systematic Reviews (Adoption of PRISMA) Source: Researcher Process (2024)

3. Review of Literature

3.1 MSME Sector Perspective: The MSME sector in Asian economies has gained widespread recognition due to its significant contributions to economic growth. Numerous scholarly studies highlight the crucial role of MSMEs in areas such as employment creation, income distribution, and export promotion (Liu et al., 2019). One recurring concern in this sector pertains to limited access to finance, often attributed to restricted credit availability and stringent collateral requirements (Rao et al., 2017).

In a recent study, Maheshkar and Soni (2022) identified substantial obstacles, including inadequate infrastructure, technological obsolescence, and skill gaps. Aguila et al. (2021) have noted that SMEs grapple with regulatory complexities, encompassing compliance obligations and administrative protocols. The advantages for retailers are clear: increased market penetration, reduced distribution and promotion expenses, and fewer inventory markdowns (Larson, Paul D. 1990). Establishing a reliable and efficient supply chain is invaluable, and neglecting its significance could prove detrimental to any thriving business. Almost every enterprise faces performance and cost-effectiveness challenges (Kai Li et al., 2020), and online markets provide indispensable solutions to help them achieve their goals. E-marketplaces have emerged as catalysts for collaboration and partnerships among businesses, resulting in mutually beneficial outcomes (Williams et al., 2002). These digital platforms emphasize the importance of strategic alliances and partnerships, involving suppliers, manufacturers, and distributors (Rohm et al., 2004). Standing et al. (2004) highlight how e-marketplaces empower small and medium enterprises (SMEs) to transcend geographical boundaries and access clients beyond their local domains. Moreover, e-marketplaces enhance operational efficiency, reduce costs, and eliminate intermediaries (Thuong, 2002). Murtaza , et al. (2004) emphasize that the adoption of e-marketplaces represents a recent milestone reshaping buyer-supplier relationships. Organizational activities, including business-to-business (B2B) and business-to-consumer (B2C) e-commerce, have unquestionably been changed by the Internet. E-commerce has shown to have a major influence, reviving links between suppliers and customers and significantly transforming relationships inside organizations. It not only transforms these relationships but also amplifies a company's core activities and facilitates outreach to new consumers or market segments via the internet. Despite initial reservations, the potential of e-marketplaces remains promising. Some have tempered their early growth forecasts while maintaining optimism about the sector's prospects (Jap, 2002). Buyers and suppliers may harbor concerns about integration, security, and antitrust issues. However, e-marketplaces that prioritize user-friendliness and seamless integration tend to attract both parties. Complex convergence, slower adoption rates than anticipated, and resistance to change are some temporary hurdles that novel business concepts typically overcome. The advantages of e-marketplaces, including cost savings and efficiency gains, ultimately outweigh the disadvantages. It is widely anticipated that e-marketplace convergence and adoption will redefine supply chain management once the primary obstacles are surmounted and economic conditions stabilize. Traditional supply chain systems simply cannot match the cost-efficiency and market penetration achieved by e-marketplaces (Bakos, 1998).

3.2 B2B E-Marketplaces: Analyzing Business Models: Advantages and Difficulties: The development of technology for communication and information has resulted in a rapid upsurge in the use of information systems that promote cooperation and communication between various organizations in recent decades. These companies use technology to communicate and exchange information with their suppliers, customers, and other business partners. Communications and information technologies solutions that allow cooperative interactions between two or more organizations are referred to as inter-organizational systems (IOS) or inter-organizational information systems (IOIS). Barrett and Konsynski first proposed the idea of a "inter-organizational system" in 1982. Currently in use are a multitude of inter-organizational systems, including electronic marketplaces for business-to-business transactions, supply chain management solutions, specialized industry-specific solutions, and electronic data interchange (EDI). Choudhury (1997) divided IOIS into three main classifications determined by the features of the exchanges between buyers and sellers: 1. Electronic Dyads: These are bilateral IOIS in which a vendor or a buyer connects logically with a chosen set of counterparties on an individual basis. These connections are formed for the exchange of specific products or services. A notable example of this category is Electronic Data Interchange (EDI). 2. Multilateral IOIS: By way of contrast, a single logical inter-organizational link, a corporation may communicate with an infinite number of trading partners using multilateral IOIS. B2B e-marketplaces exemplify the essence of multilateral IOIS. 3. Monopolies in the electronic domain: These are specialized IOIS that provide sole-source, exclusive contracts for a certain commodity or group of goods. Choudhury (1997) pointed out that this category is a special instance when it comes to electrical dyads.

3.3 The idea and features of the B2B electronic marketplace: In 1991, Bakos put forth a comprehensive definition of an electronic marketplace, often referred to as an e-marketplace. This term encompasses a sophisticated inter-organizational information system created to facilitate the exchange of critical data related to product offerings

and pricing between buyers and sellers. The company in charge of managing this system might be an intermediary, which could be a group of several businesses, a third-party that is autonomous, or a buyer or seller in the market (Bakos, 1991). For consumers and sellers, creating a two-way connection is the main goal of an online marketplace. It facilitates the interchange of financial transactions, products, services, and information in its role as an economic institution. Moreover, it establishes the required framework by defining the procedures and guidelines that control these exchanges (Madanmohan, 2005). The term "e-hubs" was first used by Kaplan and Sawhney (2000) to refer to impartial internet-based middlemen. Although the phrases exchanges, e-hubs, and e-marketplaces are occasionally used synonymously, some scholars have distinct definitions for each. A helpful difference is made by Gulledge (2002), who explains that an exchange is more expansive than a hub. While an exchange can be used to create contracts through auctions or to enable spot purchases from a catalog, the primary task of a hub is typically to execute release or delivery instructions in accordance with pre-existing contracts. The term "B2B e-marketplace" refers to exchanges and online portals that enable various transactions between numerous buyers and sellers within the framework of this study. According to Bakos (1991), electronic marketplaces have the following five essential features: 1. Customers may discover that using online marketplaces to evaluate the prices and selection of products offered by several suppliers leads to cheaper costs. In a similar vein, they save suppliers money by disseminating information about their rates and features to a wider audience. 2. An electronic marketplace tends to become more alluring as more businesses join in because each participant gains more advantages from it. 3. Participants in electronic marketplaces may be discouraged from leaving the system by the high switching costs associated with them. 4. These markets often need substantial capital outlays, but they also provide substantial economies of size and breadth, which may be advantageous for all players. 5. Prospective users of online marketplaces frequently have serious doubts about the true advantages of signing up for a platform like this. This uncertainty may persist even after an entity signs up to use the platform.

3.4 B2B e-marketplace classification and business models: Digital marketplaces, also known as e-marketplaces, comprise a wide range of business models. Their attributes are determined by the services they offer, the electronic trading procedures they facilitate, their ownership structure, the products they enable trading for (direct or indirect), and the particular sector in which they function. B2B e-marketplaces have included a variety of income streams, such as transaction fees, costs for software and technology licenses, fees for hosting and integration services, fees for advertising, and fees for consultancy. A multitude of revenue streams are usually employed by prosperous e-marketplaces. Depending on who owns them, e-marketplaces can be classified as neutral, industry-, consortium-, buyer-, or seller-hosted (Premkumar, 2003b). The difficulty for impartial e-marketplaces, especially those run by independent intermediaries, is drawing merchants and buyers without losing their objectivity. Their benefit comes from bringing together both parties to the transaction, thereby acting as "market makers". Concentration of major suppliers or buyers in a particular sector affects the success of buyer-owned and seller-owned e-marketplaces. Where collaboration has a long history, process-focused e-marketplaces are preferred over activity-focused ones (Dai at et al. 2002). Successful e-marketplaces are those that add value while maintaining market secrecy. Biased e-marketplaces (owned by buyers, sellers, or consortiums) have a higher chance of success because of the substantial transaction volume that its owners supply, which guarantees enough liquidity. Seller-oriented e-marketplaces that are successful enable numerous vendors to showcase their catalogs and engage in business with as many buyers as they can. When buyers and sellers are widely dispersed, process-oriented e-marketplaces and neutral marketplaces perform well (Madanmohan, 2005). Bilateral inter-organizational information systems (B2B e-marketplaces) are particularly useful for spot market deals where there is no ongoing communication between the buyer and seller and each transaction pairing is determined individually (Choudhury, 1997). E-marketplaces can also be categorized according to the kinds of goods and market niches they cater to. Vertical e-marketplaces handle industry-specific issues and enhance the value chain by concentrating on a particular industry, such as pharmaceuticals or textiles. Conversely, businesses from a range of industries may participate in horizontal e-marketplaces and conduct transactions online. According to Upadhyaya et al. (2009), vertical portals are more suited to offer customized solutions for demands unique to a certain sector. Kaplan and Sawhney (2000) further separated B2B e-marketplaces into four types based on the items that organizations acquire (manufacturing inputs or operations inputs) and how they receive them (systematic sourcing vs. spot sourcing):

1. Maintenance and repair centers (horizontal emphasis, organized sourcing, operational supplies). 2. Performance Managers (horizontal emphasis, spot sources, operational supply). 3. Cataloging centers (vertical emphasis, methodical sourcing, manufacturing inputs). 4. The exchanges (vertical emphasis, spot sourcing, manufacturing inputs). The pricing strategies used by different e-marketplaces also vary; some have set rates in digital brochures, whereas others use supplier or purchaser auction to dynamically set prices (Grieger, 2003). Digital multi-vendor

brochures, electronic bidding, online Request for Proposal (RFP), digital markets, and dynamic pricing methods are just a few of the electronic procedures that intermediaries use to find prices (Hadaya, 2004). Electronic catalogs, content management, hosting, transaction processing, credit verification, insurance, finance, logistics, system integration, and consulting are just a few of the many services that e-marketplaces provide to help supply chain operations. To promote confidence among business partners, they can also offer credit rating services through internal systems or through outside companies. For example, credit ratings are provided to participating firms by Indiamarkets.com in partnership with Dun & Bradstreet, India (Upadhyaya et al., 2006).

3.5 B2B e-marketplace Success and Technology Adoption in SMEs: The global business environment has clearly shifted in favor of digitization in recent years, with many businesses placing a high premium on it. According to Dethine et al. (2020), this trend is particularly evident in the Micro, Small, and Medium-sized Enterprises (MSME) sector, which has increasingly embraced e-commerce as a vital component of its distribution chains. This adoption is driven by two crucial factors: knowledge acquisition and application, which are fundamental aspects of effective knowledge management (Lin et al., 2014). Government officials have implemented a well-balanced "carrot and stick" plan because they understand how critical it is to prevent the MSME sector from falling behind in the digital economy. The "carrot" involves implementing programs to assist SMEs in adopting digital technologies while minimizing associated costs, such as software and hardware expenses, and ensuring the availability of high-quality, high-speed broadband networks. On the other hand, the "stick" approach involves e-government initiatives that enable small businesses to handle regulatory and enforcement activities online, such as taxation, licensing, and government procurement (Mazzaro, 2015). The impact of technological advancements on SMEs has been both positive and negative. Compared to large firms, SMEs have been slower to adopt information and communication technologies (ICTs), particularly in developing nations, according to Acılar and Karamaşa (2014). To remain competitive in the digital age, small businesses in developing nations need to enhance their e-commerce capabilities, which includes providing them with the necessary expertise and raising awareness about digital opportunities(Khayer et al. (2020). To address the affordability barrier, chambers of commerce and small business organizations can offer cost-effective training sessions (Lituchy and Rail, 2000). Electronic marketplaces (e-marketplaces) have revolutionized supply chain management practices, primarily streamlining transactional operations and procurement processes, as highlighted by Teck-Yong Eng (2004). Kumar et al. (2009) proposes a transition model that emphasizes readiness evaluation and business variables, indicating that e-marketplaces are meant to optimize supply chain value rather than replace existing integration methods. The importance of digitization in supply chain management for small and medium-sized enterprises (SMEs) is emphasized by Veronica et al. (2017), especially in terms of cutting expenses and strengthening buyer-supplier relationships. However, they also recognize that a challenge that needs more research is the high coordination costs related to ICT usage. Firms in developing markets face common challenges, such as efficiency, competition, and resource acquisition. Ecological models, as suggested by Todd et al. (2014), can provide insights into resource utilization and growth patterns specific to a country's development stage. White et al. (2014) underline how e-commerce technology helps small and medium-sized businesses including cost savings, increased flexibility, reduced errors, quicker response times, and lower labor costs, all of which are linked to increased IT usage (Gimenez et al., 2012; Ghobakhloo et al., 2011 ; Flynn et al., 2010). Susena and Susanto (2019) advocate for improving e-marketplace user experiences to make them more engaging and communicative. To harness the full potential of e-marketplaces, MSMEs use various strategies, such as enhancing their online presence through effective marketing and branding (Damodaran, 2019) and customization and personalization of products and services based on customer preferences (Rao et al., 2003), as well as active customer engagement (Rambe et al., 2017). MSMEs can also explore strategic partnerships and collaborations within the e-marketplace ecosystem to expand their market reach and improve supply chain efficiency (Sharon Buteau, 2021).

Despite the potential benefits, MSMEs often encounter obstacles like digital literacy and skills gaps among owners and staff, as stressed by Donato Masi and Enrico Cagno (2015). Mattos (2023) identifies challenges related to technological readiness, digital literacy, and IT infrastructure limitations that hinder MSMEs from fully leveraging e-marketplaces. Trust and data protection are critical issues that MSMEs must address when engaging in e-marketplace transactions (Jutla et al., 2002), along with increasing competition, pricing pressures, and the need for ongoing innovation (Shaikh et al., 2021). To differentiate themselves, MSMEs must provide exceptional customer experiences, quality products and services, and unique value propositions (Hussein et al., 2020). E-marketplace operators can help ensure the success of MSMEs by providing educational resources, training, technical assistance, and trust-building mechanisms like buyer protection programs and vendor verification procedures (Kathleen P. King & John J. Foley, 2010). In conclusion, the journey of the MSME sector in the world of e-

marketplaces is marked by a mix of opportunities and challenges. While e-marketplaces offer avenues for market access, operational efficiency, cost reduction, and learning from external environments, MSMEs face hurdles related to digital literacy, competition, and trust. The development of supportive policies and systems is crucial to facilitate their integration into the digital marketplace, ensuring the sector's growth and success (Munoz-Pascual et al., 2021). Maroufkhani et al. (2020) highlight the vital role played by MSMEs in driving technology adoption in manufacturing SMEs, further emphasizing their importance in the digital economy.

3.6 Barriers to MSMEs' usage of B2B e-marketplaces: The focus that firms have placed on digitization in recent years has resulted in a dramatic shift in the global business landscape. (Rahman et al., 2010). This shift, as highlighted by Dethine et al. (2020), is particularly conspicuous in the Micro, Small, and Medium-sized Enterprises (MSME) sector, where businesses have embraced e-commerce as a pivotal element in their distribution chains. This transition is primarily influenced by two pivotal factors: knowledge acquisition and application, integral components of effective knowledge management, as noted by Lin et al. (2014). Government officials are taking a balanced approach, also known as a "carrot and stick" policy, realizing how important it is to keep the MSME sector competitive in the digital era in order to create jobs and economic growth. The "carrot" facet of this approach involves implementing programs to assist SMEs in adopting digital technologies while mitigating associated costs, including software and hardware expenses (Anatan et al. 2014). It also entails ensuring the availability of high-quality, high-speed broadband networks. On the other hand, the "stick" aspect involves the introduction of e-government initiatives that enable small businesses to engage in regulatory and enforcement activities online, such as taxation, licensing, and government procurement, as outlined by Mazzaro (2015). The impact of technological advancements on SMEs is complex, as highlighted by Acılar and Karamaşa (2014). Compared to large corporations, SMEs have been slower to adopt information and communication technologies (ICTs), particularly in developing countries. To remain competitive in the digital age, small businesses in developing nations must enhance their e-commerce capabilities. This includes equipping them with the necessary expertise, raising awareness about digital opportunities, and addressing affordability barriers, which can be tackled through cost-effective training sessions provided by chambers of commerce and small business organizations, as suggested by Lituchy and Rail (2000). Electronic marketplaces (e-marketplaces) have revolutionized supply chain management practices, primarily streamlining transactional operations and procurement processes, as noted by Teck-Yong Eng (2004). However, comprehensive engagement with e-marketplaces entails integrating both internal and external elements into supply chain operations and sharing strategic insights, as proposed by Kumar et al. (2009). E-marketplaces are not intended to replace existing integration methods but rather to optimize supply chain value. Veronica et al. (2017) highlight the value of digitalization in SMEs' supply chain management while recognizing the impact of ICTs and electronic marketplaces on cost savings and enhanced buyer-supplier interactions. However, the high coordination costs associated with ICT usage remain a challenge that requires further exploration. Firms in developing markets face common challenges related to efficiency, competition, and resource acquisition, as suggested by Todd et al. (2014). Ecological models can provide insights into resource utilization and growth patterns specific to a country's development stage, as emphasized by White et al. (2014). E-commerce technology offers various benefits for SMEs, including cost savings, increased flexibility, reduced errors, quicker response times, and lower labor costs, as highlighted by White et al. (2014). Increased IT usage correlates with improved company efficiency, as observed by Gimenez et al. (2012) and Flynn et al. (2010). Susena and Susanto (2019) argue for the improvement of e-marketplace user experiences to make them more engaging and communicative. To unlock the full potential of e-marketplaces, MSMEs employ various strategies. According to Damodaran (2019), enhancing online presence through effective marketing and branding is crucial. Studies by Thomas Martin Key (2017) emphasize the significance of a robust online presence achieved through well-designed websites, social media marketing, and SEO strategies. Additionally, customization and personalization of products and services based on customer preferences (Rao et al., 2003) and active customer engagement with personalized contact and efficient service (Rambe et al., 2017) contribute to MSME success. MSMEs can explore strategic partnerships and collaborations within the e-marketplace ecosystem to expand market reach, improve supply chain efficiency, and access new customer groups, as proposed by Sharon Buteau (2021). These partnerships often involve logistics providers, similar service providers, or larger enterprises, offering services such as order processing, payment systems, and computerized inventory management, as described by Amornkitvikai et al. (2022). Despite the potential benefits, MSMEs often face obstacles such as digital literacy and skills gaps among owners and staff, as stressed by Donato Masi and Enrico Cagno (2015). Mattos (2023) identifies challenges that hinder MSMEs from fully leveraging e-marketplaces, including technological readiness, digital literacy, and IT infrastructure limitations. Building trust and ensuring data protection are critical issues that

MSMEs must address when engaging in e-marketplace transactions, as noted by Jutla et al. (2002). Additionally, they must contend with increasing competition, pricing pressures, and the need for ongoing innovation, including both domestic and international competitors, as highlighted by Shaikh et al. (2021) and Amornkitvikai et al. (2022). To differentiate themselves, MSMEs must provide exceptional customer experiences, quality products and services, and unique value propositions, as emphasized by Hussein et al. (2020). E-marketplace operators have the potential to enhance the prosperity of MSMEs by providing educational resources, training, technical assistance, and trust-building mechanisms like buyer protection programs and vendor verification procedures, as suggested by Kathleen P. King & John J. Foley (2010). In conclusion, the journey of the MSME sector in the world of e-marketplaces is marked by both Prospects and obstacles (H.G. Lee and T.H. Clark , 1997). While e-marketplaces offer avenues for market access, operational efficiency, cost reduction, and learning from external environments, MSMEs face hurdles related to digital literacy, competition, and trust. The development of supportive policies and systems is crucial to facilitate their integration into the digital marketplace, ensuring the sector's growth and success, as emphasized by Munoz-Pascual et al. (2021). Maroufkhani et al. (2020) emphasize the crucial part that was played by MSMEs in driving technology adoption in manufacturing SMEs, further emphasizing their importance in the digital economy.

3.7 The frameworks for theory to comprehend B2B e-marketplace adoption: This section takes us on a journey to investigate several theoretical frameworks with the goal of comprehending the elements that influence the uptake of electronic markets. These ideas are based on a richness of technology adoption literature and provide individual and organizational insights. This section discusses many technology adoption theories. Technology Acceptance Model (TAM) by Davis (1989), Theory of Planned Behavior (TPB) by Ajzen (1991), and Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) are used to study individual innovation adoption. Understand that an individual's technology adoption may be greatly affected by variables quite distinct from those impacting technology adoption in an organization. Many internal and external factors cause this difference. Next, we examine business-level theoretical frameworks for organizational adoption. The Technology, Organization, and Environment framework (Tornatzky and Fleischer, 1990), Rogers' Diffusion of Innovation Theory (1995), Scott and Christensen's Institutional Theory (1995; Scott, 2001), and Coase's Transaction Cost Theory (1937, 1992) have been mentioned. These conceptual models, utilized in several Information Systems research projects, provide significant insights into the adoption process. It's critical to keep in mind that integrating several theoretical models is frequently required when dealing with the adoption of more sophisticated and complicated technology. A more thorough comprehension of the complex phenomena of IT adoption is made possible by this all-encompassing approach. We use components from these firm-level adoption theoretical frameworks in the particular setting of organizational adoption of e-marketplaces. These theories provide an organized framework that allows us to evaluate adoption from four main perspectives: environmental variables, technology and B2B e-marketplace aspects, organization-specific factors, and product features. The next sections offer a succinct examination of these theories and how they relate to our current situation.

3.7.1 The Unified Theory of Acceptance and Use of Technology, or UTAUT, is a paradigm created to explain user behaviors related to technology adoption and use patterns that follow. Four basic factors—performance expectations, effort expectations, social influence, and enabling conditions—are influenced in order to accomplish this.

3.7.2 Diffusion of Innovation Theory: focuses on how new technological concepts, tools, techniques, or novel applications of existing technologies transition from conception to practical implementation. According to DOI, the journey of technological innovation unfolds through specific pathways within the context of a social system and over time. This journey involves distinct stages:

1. Knowledge: This initial stage involves becoming aware of the innovation's existence and gaining a comprehensive understanding of its capabilities.
2. Persuasion: At this point, individuals develop a positive attitude and a favourable disposition toward the innovation.
3. Decision: In this stage, individuals make a conscious commitment to adopt the innovation, deciding to incorporate it into their practices.
4. Implementation: Here, the innovation is actively put into use, integrating it into daily processes and routines.
5. Confirmation: The final stage involves reinforcing the adoption decision based on positive outcomes and experiences derived from using the innovation.

1. According to Rogers (1995), some assumptions about the invention have a substantial impact on the choice to adopt:

- Relative Advantage: Indicates how much people think an invention is better than the concept, item, or service it replaces. It is important to remember that the proportional benefit changes based on the particular invention.
- Complexity: This variable expresses how difficult it is to comprehend and use the invention.
- Compatibility measures how well an invention fits in with preexisting beliefs, historical experiences, and the requirements of possible users.
- Trialability: This component evaluates how feasible it is to conduct limited-scale experimental testing of the innovation.
- Observability: This measures how visible the innovation's advantages are to others, which further impacts adoption decisions.

In conclusion, the DOI theory offers a thorough framework for comprehending the diffusion of technological innovations within social systems and highlights critical elements that are critical to the adoption process, including relative advantage, complexity, compatibility, trialability, and observability.

3.7.3 Originally introduced by Fred Davis in 1989, the Technology Acceptance Model (TAM) incorporates two ideas that are similar to those in the Diffusion of Innovations (DOI) theory. A paradigm known as TAM describes how people perceive and utilize technology. These are the two essential TAM constructs:

1. Perceived Usefulness (PU): This gauges how much a person believes utilizing a certain piece of technology would improve their ability to do their work. The idea of Rogers' relative advantage is consistent with accepted utility in TAM with respect to DOI, demonstrating the innovation's acknowledged superiority above its predecessors.
2. Perceived Ease-of-Use (EOU): This assesses the degree to which an individual thinks using a specific system would involve little mental work. Perceived ease of use in TAM is similar to the concept of complexity in terms of DOI; it describes how simple or complicated the innovation is to understand and utilize. Understanding the adoption of electronic commerce and its influence on the acceptance of innovation has been possible due to the recognition of the significance of these structures, particularly their perceived utility and usability. The DOI theory also emphasizes that a variety of factors, such as individual characteristics, organizational structure within the organization, and organizational characteristics outside the organization, have a significant impact on an organization's propensity to accept and integrate innovations.

3.7.4 Institutional Theory emphasizes how important institutional contexts are in determining how companies behave and how they are structured (Scott and Christensen, 1995; Scott, 2001). It asserts that, in addition to logical efficiency goals, organizational decisions are significantly influenced by social, cultural, and legitimacy-related factors. The theory of institutions revolves around questions of organizational legality and the way the pursuit of legitimacy shapes norms and behaviors that are hard to alter (Scott, 2001). According to Suchman (1995), legitimacy in this sense is the general consensus that an entity's activities conform to socially formed norms, values, beliefs, and definitions within a certain system. Merely being present in an electronic market can assist a company in achieving its aim of improving its legitimacy when that is the main reason for entering that market (Grewal et al., 2001). According to the hypothesis, isomorphic forces and the need for legitimacy cause organizations to grow more alike (Dimaggio and Powell, 1983). This implies that businesses in the same market progressively take on similar traits over time, driven by consumer expectations and competitive pressures to imitate industry leaders. Rather than opting to implement e-commerce on their own, organizations are often compelled to do so by external isomorphic pressures from rivals and business companions, customers, and regulatory constraints (Oliveira and Martins, 2011). Thus, institutional theory sheds light on the ways in which outside variables like rivals and trading partners may affect an organization's decision to accept innovation. Dimaggio and Powell (1983) identified three primary forces—coercive, imitating, and normative—that influence organizations to imitate the actions of their peers.

3.7.5 Transaction Cost Theory , has piqued the interest of IT experts researching cross-organizational systems. Efficiency is the main goal of transaction cost theory, but institutional theory emphasizes organizational legitimacy heavily. The first writings of Coase (1992) and Williamson (1975, 1985) are where transaction cost analysis got its start. The idea that markets and companies reflect unique governance systems with different transaction costs was first put out by Coase (1937). According to his argument, there are instances where conducting business inside a company might be less expensive than doing so outside a market. Building on Coase's original thesis, Williamson (1975) proposed that transaction costs include potential costs incurred by choosing less-than-ideal governance options as well as the actual costs of maintaining relationships. Williamson's micro-analytical paradigm is predicated on the interaction of two major transaction aspects, asset specificity and uncertainty, as well as two basic assumptions about human behavior: limited rationality and opportunism (Rindfleisch and Heide, 1997).

According to Barney (1990), bounded rationality describes the innate restrictions on human information processing ability. Opportunism presupposes that decision-makers could unscrupulously prioritize their own interests when given the chance, making it difficult to predict in advance who can be trusted (Barney, 1990). The governance structure is the main component of TCA, and Environmental uncertainty, behavioral uncertainty, and asset specificity are some of its key drivers. Transaction cost theory says that factors like asset specificity and uncertainty have a big impact on the governance arrangements that an organization chooses (Rindfleisch and Heide, 1997).

3.7.6 A lot of research have employed transaction cost analysis pertaining to interactions across organizations, with the operationalization of the independent variables varying according on the particular setting. Demand uncertainty and market unpredictability are two transaction characteristics that Choudhury (1997) suggested might influence the selection of Inter-Organizational Information Systems (IOIS). Electronic hierarchies are the most appropriate for transactions requiring complicated descriptions and high asset specificity, according to Malone et al. (1987). On the other hand, electronic marketplaces are more appropriate for transactions involving other items. Even though the items had complicated descriptions and low asset specificity, Choudhury (1997) discovered in their analysis of the airplane parts sector that only a tiny percentage of transactions were made using electronic platforms. This suggests that product attributes and their effects on business-to-business trade in various settings need to be investigated.

3.7.7 The Technology Organization and Environment (TOE) Framework was created by Fleischer and Tornatzky in 1990 and it highlights three crucial elements that are crucial in determining how an organization adopts new technology.

1. The company's internal and external technological settings are included in the technical context. This includes the array of technologies that are currently in use within the company as well as those that are accessible in the wider market.
2. When we talk about organizational context, we're talking about the range of characteristics that define the organization, such as its size, scope, leadership structure, and the availability of internal resources like spare capacity.
3. The operational environment in which the business runs is a part of the environmental context. This covers the sector, the level of competition, and the connections with the government (Tornatzky and Fleischer, 1990).

The TOE framework smoothly improves on Rogers' Diffusion of Innovation concept. The integration of IOS (Iacovou et al., 1995; Kuan and Chau, 2001; Chong et al., 2009) and electronic commerce (Zhu et al., 2003; Oliveira and Martins, 2010; Chong et al., 2008) in the context of inter-organizational systems has been the subject of several research that have made use of the TOE framework.

Table 2: Adoption Theories

SL.NO	Theories	Main Findings	Authors
1.	Unified Theory Of Acceptance And Use Of Technology	The UTAUT model, encompasses four pivotal factors: expectations related to performance and effort, social influence, and facilitating conditions. In addition, UTAUT introduces four moderators—age, gender, experience, and volition—specifically within an organizational context. These factors are important in anticipating how users will behave, whether they will adopt technology or not, and how they will actually utilize it.	Venkatesh et al.(2003)
2.	Diffusion of Innovation Theory	Claims that a variety of significant factors, such as trialability, observability, complexity, compatibility, and relative benefit, affect how innovations are embraced. Relative advantage is a measure of how much an innovation is judged to be superior to the concepts, goods, or services it aims to replace.	Rogers (1995)
3.	Technology Acceptance Model	The TAM centers on two crucial dimensions. The first one is called Estimated Utility (PU), and it measures how much a person believes utilizing a certain technology would improve their performance on activities. The second is Ease of utilize (EOU), which gauges how easy the user expects to utilize the technology.	Davis (1989)

4.	Institutional Theory	Institutional Theory, which emphasizes the impact of outside variables on an organization's rate of innovation adoption, such as rivals and business partners. It highlights three main pressures: normative, coercive, and mimetic. It may persuade businesses to take their cues from other businesses and implement them themselves. (Dimaggio and Powell, 1983).	Teo et al. (2003)
5.	Transaction Cost Theory	Coase's original 1937 theory posits that corporations and markets serve as substitute governance frameworks with different transaction costs. Coase contends that, in certain situations, it may be more costly to organize economic interactions within a corporation rather than through market transactions. Williamson (1975) expands upon this paradigm by considering the potential opportunity costs of poor governance decisions.	Coase (1992)
6.	Technology–organization–environment framework	The framework proposed by Fleischer and Tornetzky (1990) identifies three core dimensions: the organizational context, the environmental context, and the technological context. These dimensions collectively shape how businesses embrace and adapt to technological advancements.	Fleischer and Tornetzky (1990).

4. Quantitative analysis

Numerous concepts influence SMEs' use of technology (Acilar et al., 2010). Within this article, eight of these concepts—each of which can be researched in a separate discipline—are identified and discussed in the sections that follow. As a result, in order to help academics and practitioners gain a better knowledge of this phenomena from several angles, a multidisciplinary study strategy is needed.

The empirical approach, which focuses primarily on quantitative studies, is the dominant approach in this SLR. **Figure 1's** The empirical basis of studies lacks an appropriate qualitative or mixed technique of approach, according to a quantitative examination of the study strategy, whereas the current body of knowledge is lacking a conceptual foundation. Figure 2 shows that surveys were the most popular research approach, followed by secondary data. Figure 3 shows that Asia has been studied the most, followed by Europe, Africa, and America, with few studies spanning several continents. Given current globalization trends. Most studies used a theoretical framework, as shown in Figure 4. TOE, DOI, TAM, UTAUT, institutional theory, and transaction cost theory were the most widely used theories in the research that did.

Figure 1. Analysis of methodological approach

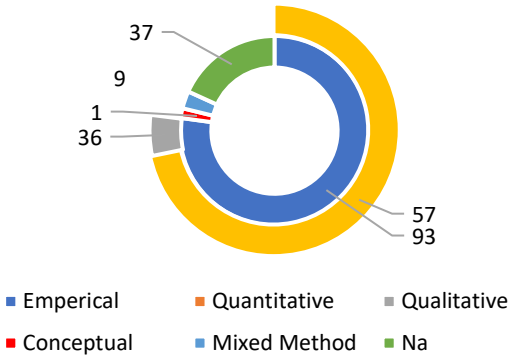
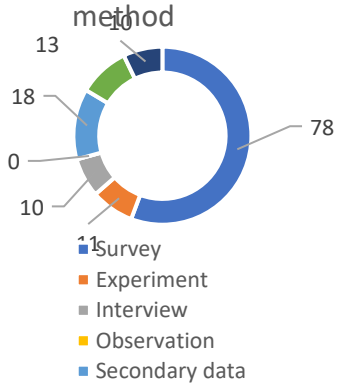
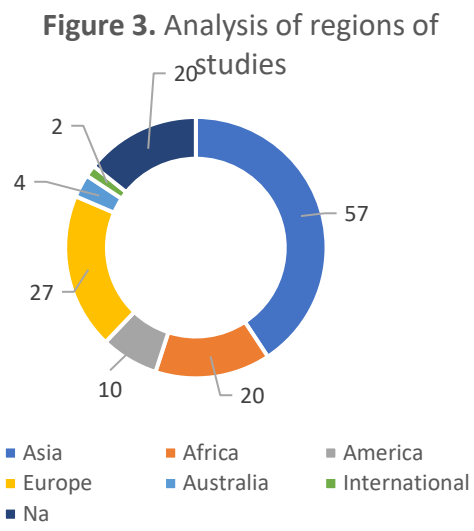
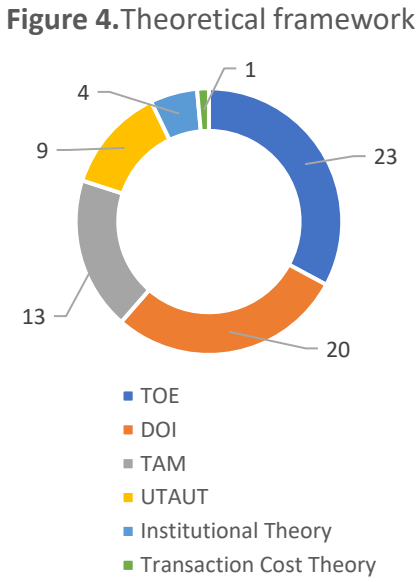


Figure 2. Analysis of research method







5. Qualitative analysis

5.1 Organizations' e-business adoption: Findings from linked studies: The corpus of work in the subject of electronic business includes a variety of research projects that have made use of several theoretical frameworks, such as the TOE framework and the Diffusion of Innovation framework. While many of these studies have adopted these frameworks, a handful, exemplified by Teo et al. (2003), have explored the utilization of institutional theory to uncover the determinants that impact the adoption of inter-organizational systems. The amalgamated results of these studies concerning the adoption of electronic business are now consolidated in Table 3.

Table 3: Timeline of Literature on Organizational Adoption of E-Business

Author	Context and Scope	Findings
Teo *et al.* (2003)	Exploring the Intentions of Non-Adopters in Singapore to Embrace Financial Electronic Data Interchange (FEDI)	The results suggest that enterprises' intentions to apply FEDI were significantly influenced by the three institutional pressures: normative, coercive, and mimic.
Moodley (2003)	The Uptake of E-commerce in the South African Manufacturing Sector: A Study of 120 Firms	B2B e-commerce in the industrial industry is still relatively new in South Africa. Gains in efficiency in the B2B electronic marketplace are mostly contingent upon an organization's ability to foster a culture of trust and confidence in its relationships with suppliers and customers.
Zhu et al. (2004)	Evaluating E-commerce Adoption in the Financial Services Industry: Insights from 612 Firms Across 10 Countries	This study, which bases its findings on the Technology Organization Environment (TOE) paradigm, finds that e-business value is affected by a number of variables, including financial resources, global reach, technological preparedness, and regulatory environment. Adoption is influenced by competition, but an organization's resource capacities are crucial to the realization of e-business value.
Teo and Ranganathan (2004)	Examining the Adoption of Business-to-Business (B2B) E-commerce in Singapore: A Study of 108 Firms	B2B e-commerce adoption was found to be at a modest level. The top three challenges in the deployment of B2B electronic commerce include difficulties in quantifying benefits, apprehension about opening corporate systems to suppliers and customers, and a lack of sufficient time to acquire new skills for B2B endeavors.

Moodley and Morris (2004)	An Empirical Study Conducted via 32 Interviews with South African Exporters of Garments	Limited adoption and utilization of e-commerce are evident. The trading relationships necessitate intricate information exchange and the development of highly personalized products. B2B e-commerce has proven ineffective in reducing transaction costs or creating new opportunities.
Molla and Licker (2005b)	Empirical Research Involving 150 South African Firms	This study introduces and empirically examines a model that centers around the perceived readiness of organizations and their external environment, encompassing factors related to innovation, management, organization, and the overall environment. These elements are investigated as determinants influencing the adoption and institutionalization of e-commerce.
Kramer et al. (2005)	An Empirical Study Involving 2,139 Firms across 10 Countries	According to their research, e-commerce is becoming more popular and performing better in terms of coordination, efficiency, and market effects as a result of globalization. Furthermore, the level of e-commerce use affects the likelihood of greater company performance in each of the three areas. Even if the effects of globalization on B2C and B2B e-commerce are distinct, globally integrated organizations are more likely to participate in B2B e-commerce than B2C e-commerce.
Hsu et al. (2006)	Empirical Research Focusing on 294 Large Firms in the United States	Government pressure is a major element in deciding the number of e-business operations, and trade partner pressure is one influential factor encouraging variety in e-business usage.
Zhu et al. (2006)	An Empirical Investigation Including 1,857 Companies in 10 Countries	They develop a model to determine the critical factors influencing the acceptance of e-commerce at three distinct assimilation stages: initiation, adoption, and routinization—using the TOE framework. Their key conclusions are that routinization is negatively impacted by competition, although adoption and initiation are positively impacted. Moreover, technical readiness ends up being the most potent factor driving the integration process—particularly in developing nations.
Chong et al. (2009)	Analyzing 109 Malaysian Electronics and Electrical Industry Firms' Adoption of Collaborative Commerce	The culture of information sharing was shown to have the greatest influence on c-commerce adoption, closely followed by organizational preparedness and the external environment. This study's results defied those of previous technology adoption studies by showing that characteristics associated with innovation had no discernible influence on e-commerce adoption.

Three kinds of elements have been identified in the literature that is currently under publication: external environmental factors, internal organizational factors, and technology aspects. It has been observed that these factors influence the adoption of electronic commerce. Molla and Licker (2005b) developed a model to study the adoption of e-commerce by developing-nation enterprises. Perceived environment e-readiness (PEER) and perceived organization e-readiness (POER) are two important variables that significantly influence the early adoption and subsequent institutionalization of electronic commerce inside organizations, according to the study's findings. There is a wealth of data in the literature that shows that small and large enterprises implement e-business in significantly different ways (Macgregor and Vrazalic, 2005). Small businesses have specific traits that influence how they make decisions. These companies usually have centralized management, meaning that owners have a big say in how decisions are made. Small businesses typically make decisions based more on intuition than on thorough preparation and research (Bunker and

MacGregor, 2000). In addition, compared to their bigger counterparts, small businesses have less influence over their external surroundings, which increases unpredictability (Hill and Stewart, 2000). Additionally, according to Bunker and MacGregor (2000), small enterprises often retain a smaller range of products or services and favor market presence above market dominance (MacGregor et al., 1998). In business-to-business (B2B) transactions, where long-term buyer-supplier relationships are crucial, small businesses frequently rely on building ties with a select group of significant clients to ensure their survival (Grey et al., 2005). In B2B transactions, these long-term contractual arrangements provide a number of benefits, Personalized pricing, price stability, enhanced information exchange for better production coordination, and decreased transaction and agency costs (Grey et al., 2005). One of the first models to examine this subject in the setting of small businesses was that of Iacovou et al. (1995). They created an analytical model for small businesses to utilize while studying Electronic Data Interchange (EDI). Adoption of Electronic Data Interchange (EDI) was found to be positively connected with perceived advantages by Iacovou et al. (1995). They did discover, however, that the most significant factor influencing small enterprises' adoption of EDI was external pressure, and that organizational preparedness did not significantly correlate with adoption. This is to be expected, as larger customers often drive EDI adoption in an effort to simplify their supplier relationships. Based on these variables, Iacovou et al. (1995) divided adopters into various groups, including unprepared adopters, ready adopters, compelled adopters, and uninspired adopters. Numerous studies have examined small businesses' use of e-business. Table 4 offers a succinct overview of these investigations. Three main topics of study have been identified in relation to small business adoption of e-business: (a) adoption characteristics; (b) electronic business drivers/enablers and barriers/inhibitors; and (c) e-commerce use levels and trends. Overall, these studies have revealed, in line with the findings of Iacovou et al. (1995), Mehrtens et al. (2001), Grandon and Pearson (2004a), and Looi (2005), that one important element influencing SMEs' use of the internet and electronic commerce is outside pressure. Furthermore, they have constantly emphasized that small businesses utilize electronic commerce very seldom, as shown by Beveren and Thompson (2002), and that there aren't many advantages to using it, as agreed upon by Al-Qirim (2007). In their research of UK SMEs, Levy and colleagues (2005) found that a key factor in the choice to engage in e-business is strategic purpose. They discovered that SMEs who stay in their current markets are less likely to invest, and that the key factor pushing SMEs to conduct e-business is product innovation as opposed to market penetration. Furthermore, Stockdale and Standing's (2004) qualitative investigation uncovered the benefits and drawbacks of Australia's adoption of B2B e-marketplaces.

Table 4: Timeline of Modern Research on E-business Adoption in Small Enterprises

Author	Context and Scope	Findings
Iacovou et al. (1995)	Examining the Adoption of EDI in British Columbia's Small and Medium-Sized Businesses: A Comprehensive Study Using Detailed Case Studies of Seven Companies	Developed a model to investigate the uptake of EDI in small enterprises, accounting for three aspects: organization readiness, outside influences, and perceived benefits.
Mehrtens et al. (2001)	SMEs' embrace of the internet	Determined that the perceived advantages, organizational preparedness, and outside pressure all play a role in SMEs' decisions to use the internet.
Korchak and Rodman (2001)	114 Small-Scale Manufacturers Across the United States Have Integrated E-Business	Compared to their smaller counterparts, SMEs with greater workforce numbers are more likely to have adopted e-business. Four groups of SMEs may be distinguished: disengaged SMEs, progressive SMEs, advanced SMEs, and slow adopters.
Daniel and Wilson (2002)	E-commerce Adoption within a Cohort of 678 UK Small and Medium-sized Enterprises	Competitive pressure was the main factor behind UK SMEs' embrace of e-commerce. The primary areas where SMEs gained the most benefits in this context were information exchange and communication.
Beveren and Thompson (2002)	E-commerce Adoption in 179 Australian Small and Medium Enterprises	Limited e-commerce adoption among SMEs, with business size being a key factor in e-commerce adoption.

Rao et al. (2003)	An In-depth Qualitative Examination of E-commerce Advancements within the United States Context	Recognized the progression through four key stages: establishment, portal development, transaction integration, and enterprise integration in the adoption of e-commerce by SMEs. Additionally, identified the impediments and enablers unique to each stage.
Grandon and Pearson (2004a)	The Incorporation of E-commerce in 83 Small and Medium-sized Enterprises in Chile	Chilean SMEs have the financial means and technological know-how to implement e-commerce, and they are eager to do so. They perceive e-commerce as appropriate and beneficial, and they sense external factors driving them toward its use.
Jon et al. (2001)	E-commerce adoption in Singaporean SMEs	The results show that the owner-manager's motivation and degree of control is the primary factor affecting SMEs' adoption of e-commerce. The perception of e-commerce's alignment with organizational values, past experiences, and particular requirements, the owner-manager's propensity for taking on risk, the perceived intricacy of e-commerce, market dynamics, perceived comparative advantages, and government policies and support all trail closely behind this.
Levy et al., (2005)	E-business Adoption in 354 UK Small Enterprises	Their findings demonstrated that, when it comes to e-business, investment decisions are heavily influenced by strategic goal. Additionally, they were able to pinpoint the main elements promoting and impeding small and medium-sized businesses' (SMEs) adoption of e-business.
Kaynak et al. (2005)	E-commerce integration within 237 small and medium-sized manufacturing enterprises in Turkey.	The adoption of electronic commerce (EC) was considerably influenced by perceived benefits, while the adoption of EC applications was not statistically significantly impacted by perceived disadvantages. Other than the distribution of resources for export development, the study also showed that factors unique to a firm or industry did not appear to have a substantial effect on the adoption of EC.
Looi(2005)	E-commerce integration in a cohort of 184 Small and Medium-sized Enterprises (SMEs) in Brunei Darussalam.	The adoption of electronic commerce was primarily driven by competitive pressure; government support, IT know-how, relative advantage, and security followed in decreasing order of importance.
Macgregor and Vrazalic (2005)	Challenges hindering e-commerce adoption within a group of 477 SMEs that have not yet adopted e-commerce in both Sweden and Australia.	It was discovered that the two main obstacles to the adoption of e-commerce are "too difficult to use" and "not suitable".
Jeon et al., (2006)	E-business adoption within a cohort of 204 small and medium-sized enterprises in Korea.	The CEO's IT expertise, perceived relative advantage and advantages, government assistance, globalization strategy, and concerns pertaining to the North Korean situation were shown to be important variables influencing adoption, based on data from 94 non-adopting SMEs and 110 adopting SMEs. However, it seems that industry competition, firm size, and cost had less of an impact on the uptake of e-business.

Stockdale and Standing (2006)	A government-funded research project in Australia that focuses on a qualitative investigation of e-commerce adoption.	Based on their reasons, small and medium-sized businesses (SMEs) show different attitudes regarding doing business online. The authors have divided SMEs into five types. The 'Paddlers' and 'Waders' categories are the ones adoption campaigns should target especially, according to the authors.
Al-Qirim (2007)	E-commerce adoption among small enterprises in New Zealand, as investigated through a focus group comprising 6 Micro, Small, and Medium Enterprises (MSMEs).	The study looked at how e-commerce adoption was impacted by organizational, technological, environmental, and personal factors. Based on the research, small and medium-sized firms (SMEs) in New Zealand adopted and used e-commerce at a relatively low level. It was also noted that SMEs only saw a little return on their investments in e-commerce.
Lohrke et al. (2006)	The utilization of the internet by 42 small and medium-sized enterprises (SMEs) in the United States, analyzed through the lens of transaction cost analysis.	Discovered a correlation between high information specificity and elevated internet usage among SMEs.
Servais et al. (2006)	Small Manufacturing Firms' Involvement in International E-business Activities	Born-global companies use the internet to build their brand, but they only utilize it to sell goods to customers directly. Their main purpose for using the internet is to strengthen current business connections.
Simmons et al. (2007)	The integration of the internet within the agri-food industry in Northern Ireland, as observed among a sample of 50 small and medium-sized enterprises (SMEs).	Acknowledges the importance of industry norms and marketing skills as critical determinants of internet adoption among small and medium-sized businesses (SMEs) operating in the agri-food sector.
Martins and Oliveira (2009)	The incorporation of e-commerce within a group of 3,125 small businesses in Portugal.	Determine the factors influencing small firms' adoption of e-commerce by applying the TOE framework. The findings show that depending on the adoption stage, TOE parameters have different effects.
Alam et al. (2011)	An empirical investigation into the adoption of e-commerce among 200 small and medium-sized enterprises (SMEs) in Malaysia.	The adoption of e-commerce was shown to be significantly influenced by relative benefit, compatibility, organizational readiness, management styles, and security.

5.2 Results from related research on the use of B2B e-marketplaces by organizations

Scholars have integrated institutional theory, transaction cost theory, and other theories with the DOI and TOE frameworks to comprehend the elements that impact adoption in the setting of B2B e-marketplaces. Several studies (e.g., Grewal et al., 2001; Son and Benbasat, 2007) have found that components focused toward efficiency and legitimacy serve as explanations for why businesses embrace e-marketplaces. An overview of empirical studies on B2B e-marketplace adoption is shown in Table 5. Large-scale empirical research on small businesses' usage of B2B e-marketplaces is conspicuously lacking. A selection of the research included in the SME B2B e-marketplace adoption literature include recent studies conducted by Chong et al. (2011) about SMEs in China, Lin et al. (2011) concerning Australian SMEs, and Saprikis and Vlachopoulou (2012) concerning the SME sector in Greece. Chong et al. (2014) developed a framework of crucial success determinants for Chinese SMEs participating in B2B e-marketplaces using data from an empirical research encompassing 114 Chinese SMEs. Studies have indicated that the success of Chinese SMEs in B2B e-commerce is significantly influenced by a range of internal and external factors, such as supply chain capabilities, security and trust, information transparency, IS/IT infrastructure, and top management support. Cultural issues, government backing, and global competitiveness are examples of external variables that have been recognized.

Wang et al. (2011) found that the first generation of SME B2B online vendors in China had produced a set of organizational capabilities that allowed them to succeed in the online environment and were driven to increase sales through content analysis of 155 cases involving high-performing Chinese online vendors. These skills included knowledge in e-commerce management, online marketing, and product creation, among other things. Suppliers' adoption of e-marketplaces is influenced by a range of variables, including external influences, internal organizational obstacles, and e-marketplace features (Sapikis & Vlachopoulou, 2012). They examined 87 supplier adopters of B2B e-marketplaces in Greece for their empirical study and discovered that characteristics such as ownership status, operational regulations, service offerings, and participating firms' profiles had a higher influence on a firm's degree of participation than did organizational and external factors. Lin et al. (2011) revealed that the realization of B2B benefits served as a mediator in the relationship between the assessment of IT investments and satisfaction with the adoption of B2B websites, based on a survey of 198 Australian SMEs engaged in business-to-business e-commerce.

Table 5: A timeline of the most recent research on the use of B2B e-marketplaces by academics.

Author	Context and Scope	Findings
Grewal et al. (2001)	An empirical investigation into the factors preceding the participation of B2B e-marketplaces among 306 adopters within the jewelry industry.	Through their work, a model based on institutional theory and transaction cost was developed and empirically validated. According to the concept, environmental dynamic, motivation (efficiency and legitimacy), and competence (IT capabilities, learning) are the main factors that determine an organization's participation in electronic markets.
Joo and Kim (2004)	Empirical research aimed at uncovering the factors that drive corporate adoption of e-marketplaces. This study was carried out among 39 manufacturing firms located in South Korea.	This study investigates the link between innovation, organizational environment, organizational features, and adoption of e-marketplaces based on innovation theory. The findings imply that relative advantage is not as important in explaining an organization's adoption of e-marketplaces as organizational size and external factors are.
Hadaya (2004)	The prospective utilization of e-marketplaces by 1,200 Canadian companies.	The degree to which a company has previously engaged in e-commerce and variables related to its commercial connections are critical in determining how e-marketplaces will be used in the future. Furthermore, there is a negative association between the expected future usage of e-marketplaces and the complexity of e-commerce implementation.
Son and Benbasat (2007)	An empirical analysis of 183 major buyer firms' e-marketplace adoption.	Factors focused on efficiency, including product characteristics, demand uncertainty, and market volatility, significantly affected adoption intent and/or participation levels. Legitimacy-related elements, on the other hand, such normative and mimetic pressures and their parts, affected adoption intent but had no effect on participation rates.
Loukis et al. (2011)	An analysis using a case study of the Greek aerospace industry.	We have identified nine obstacles and seven advantages to using e-marketplaces in the aerospace industry, particularly for large enterprises.

5.3 Factors impacting MSMEs' use of B2B e-marketplace

Electronic business, involves harnessing the power of the Internet and digital technologies to carry out all activities within an enterprise. E-business includes coordinating with suppliers and other company partners in addition to internal management tasks. A subcategory of e-business, electronic commerce is the computerized exchange of goods and services over networks, the Internet, and other digital technologies. It also include support functions including marketing, customer support, shipping, and payment processing, according to Laudon & Laudon (2004). Since e-marketplaces are a part of electronic business, this research looks at the literature on the adoption of electronic business in the context of both big and small firms. The goal is to comprehend the elements influencing the adoption of B2B e-

marketplaces. In this study, "adoption" refers to a variety of business actions, such as deciding to use B2B e-marketplaces or regularly and extensively use them. Conversely, non-adoption is the decision not to use B2B e-marketplaces. This theory is consistent with Driedonks et al. (2005) results. The literature study emphasizes how difficult it is to develop a theory of innovation uptake that is relevant to all situations. It could be necessary to modify theories and frameworks to take into account the particular innovation and the environment in which it is being used (Molla and Licker, 2005). An extensive evaluation of the literature was done in order to identify the crucial elements influencing MSMEs' adoption of e-marketplaces. Electronic marketplaces, electronic commerce, inter-organizational systems, and business-to-business electronic business have all undergone extensive studies of the literature. Classifying the results of the examination of 140 publications was part of the study's theme analysis. From the examined publications, these categories were then combined to form eight broad categories. A paper was assigned to all pertinent categories when it suggested more than one aim. Various essential themes were discovered within each area, as Table 6 illustrates. The results were ranked qualitatively based on strength, content validity, bias, and application.

Table 6: SMEs embrace technology differently based on 8 categories

Sl.No	**Constructs**		**Sub constructs**	**References**
1.	Organisation factors	Adoption choices must take into account a company's human, technological, and business resources.	Human ,Technological & Business Resources	Molla and Licker (2005)
2.	Mimetic Pressures	The mimetic phenomena in organizational terms refers to an organization's desire to imitate the structure of another organization because it feels the latter's structure is desirable.	Competitors' adoption, Competitor's Perceived Success	Teo et al. (2003)
3.	Coercive Pressure	There is a build-up of coercive pressure when stakeholders make considerable demands, such as through laws, rules, sanctions, and punishments.	Customer Adopters' Perceived Dominance, Supplier's Perceived Dominance	Teo et al. (2003)
4.	Normative Pressure	Normative pressure emerges from organizational culture expectations, beliefs, norms, and standards.	Adoption Rates Among Suppliers, Adoption Rates Among Customers	Teo et al. (2003)
5.	Demand Uncertainty		Uncertainty in Frequency and Volume	Son and Benbasat (2007)
6.	Perceived Relative Advantage	The degree to which a new idea is thought to be better than the one it replaces.		Rogers(1995)
7.	Performance expectancy	The idea that utilizing a particular technology or process will aid or enhance a person's performance in some way.		V.Venkatesh et al.(2003)
8.	Effort expectancy	Founded on the idea that the amount of effort put in at work, the outcomes of that effort, and the benefits that come from those outcomes are all correlated.		

1 Organizational resource: Literature demonstrates that a company's internal resources affect its innovation. Molla and Licker's (2005b) model of e-commerce adoption states that an organization's financial, human, and technical resources affect e-commerce adoption in developing nations. Electronic commerce adoption is affected by skilled labor,

computerization, network-based resource familiarity, and financial resources (Molla and Licker, 2005b). Size and resource availability affect how frequently SMEs utilize the internet, according to Moini and Tesar (2005).
Numerous additional research have also affirmed the importance of organizational preparation (Mehrtens et al., 2001; Grandon and Pearson, 2004a). We may find evidence in the literature of MSMEs that the primary deterrent to IT adoption is resource constraints (Mehrtens et al., 2001).

2 Mimetic Pressures is nothing more than a fad. It suggests that as an organization becomes older, it starts to resemble other companies more and takes on their best practices. (Dimaggio and Powell, 1983). Consequently, it was determined that the institutional pressure most likely to sustain inertia is the tendency of enterprises to imitate or reproduce the acts of those organizations that are seen as having high levels of legitimacy (Dimaggio and Powell, 1983). When an organization sees other structurally equivalent organizations, it will copy their actions because those organizations share similar goals, generate similar goods, have comparable suppliers and consumers, and face similar challenges due to their similar positions in the industry's economic network (Burt, 1987). When a business wants to minimize risk, mimetic behavior can be the best option. This is especially true when adopting another organization's strategy is a decision to choose a path that has previously been shown to be effective (Kondra and Hinings, 1998).

3 Coercive pressures allude to the pressures that dependent organizations face, as well as the cultural norms of the society in which they operate (Dimaggio and Powell, 1983). Teo et al. (2003) found that the parent company, dominating suppliers, and dominant consumers are the key sources of coercive pressure when it comes to EDI adoption. When businesses rely primarily on clients who generate a large portion of their sales and clients who have access to other suppliers, they become dependent on their clientele (Teo et al., 2003). When businesses are unable to move to new suppliers, they become dependent on their current suppliers, who are in charge of most of their purchasing (Teo et al., 2003).

4 Normative pressures imply the influence that social network users (trade associations, professional associations, accrediting bodies, and channel members) have on one another. Organizational strategic decisions are influenced by the norms and values that social network users share (Dimaggio and Powell, 1983). According to research on social contagion, a focus organization with connections to other companies that have embraced an innovation can learn about its benefits and drawbacks. Thus, there's a good chance that the invention will be accepted by the main organization (Burt, 1982). These normative effects also manifest through the dyadic inter-organizational channels of firm-supplier and firm-customer, in addition to trade, business, and professional organizations (Burt, 1982; Powell and Dimaggio, 1991). (Burt, 1982; Powell and Dimaggio, 1991). According to Teo et al. (2003), when it comes to the adoption of FEDI, an organization's exposure to normative pressures will escalate if a greater number of its suppliers and customers have adopted the program, as well as if it participates in trade, business, or professional associations that support the program's adoption. According to Triandis (1971), social norms and emotion have a greater effect than economic factors when it comes to relatively new behaviors.

5 Demand Uncertainty , Son and Benbasat (2007) found that there is a negative correlation between demand uncertainty and the utilization of B2B e-marketplace by organization purchasers. It was argued that demand uncertainty, which was defined as uncertainty over the volume and frequency of purchases, would have a detrimental effect on buyers' adoption of B2B e-marketplaces.

6 Perceived relative advantage Perceived relative advantage has been identified by study as a crucial component in the process of adopting innovations. Jeon et al. (2006) discovered that perceived relative advantage had a substantial impact on SMEs' adoption of e-business. Driedonks et al. (2005) find that the following factors are significant in determining the rate of adoption of B2B marketplaces: relative advantage, net benefits for important stakeholder groups, potential users' perceptions of innovations, potential users' characteristics, and initial knowledge/opinion. They base this conclusion on their case study of an e-marketplace in the Australian beef industry. Perceived benefits, usefulness, and relative advantages influence SMEs' adoption of e-commerce (Mehrtens et al., 2001; Grandon and Pearson, 2004a; Kaynak et al., 2005; Moini and Tesar, 2005; Chong and Pervan, 2007). If a business believes innovation will benefit them, it is more likely to accept it. According to this study, perceived relative advantage is the "amount to which the e-marketplace is perceived better than traditional business."

7 Performance expectancy is the degree to which an individual thinks using the system will assist him in completing his duties (Venkatesh et al. 2003). In the meanwhile, if an information system can help someone perform better, then that person is expected to use it.

8 Effort expectancy is how consumers feel about a certain information system in terms of comfort and simplicity of use (Venkatesh et al., 2003).

Conversely, academics like Venkatesh et al. (2011) asserted that an individual model for technology adoption has to be modified, revised, and expanded. As a result, scholars developed TOE extensions and adaptations including a variety of other well-known theories, including transaction cost theory, institutional theory, DOI, TAM, and UTAUT. Most of the research used a single framework, and only a small number (five studies total) used integrated frameworks. These studies also addressed the issues of not just considering one theory but also discussing how one theory cannot account for all influential categories.

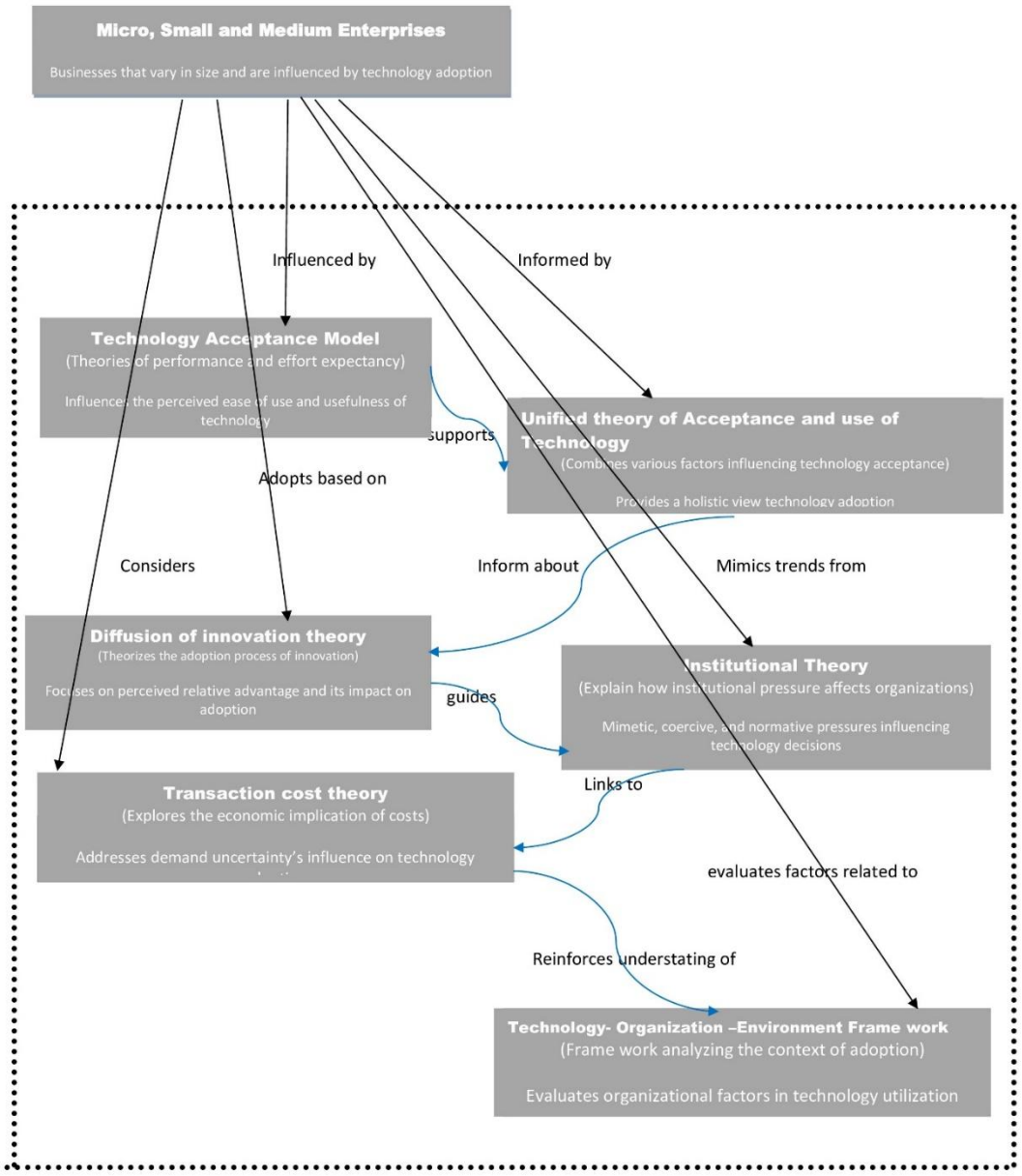


Figure 5. An integrated framework for technology adoption

In addition to the restricted number of research that employed integrated frameworks, only a tiny number of those studies examined the maximum integration of two frameworks. Additionally, each of these frameworks is restricted to a subset of influential notions that do not encompass the eight categories that have been established. In this study, the adoption of technology by MSME was taken as dependent variable and eight categories found through the literature research were taken as independent variable. Based on dependent variable and independent variable an adapted version of this integrated model to the eight identified influencing factors is displayed in **Figure 5.**

6. Conclusion and Implications

The purpose of this study was to examine and compile the body of information already available on the use of technology in small and medium-sized enterprises (SMEs). Employing a Systematic Literature Review (SLR) methodology, we reviewed a total of 140 articles, yielding the following conclusions:

1. E-marketplace Engagement in MSMEs: This systematic literature review sheds light on the strategies, impacts, and challenges associated with MSMEs' participation in e-marketplaces, as well as the policy implications of such involvement. Establishing an online presence, personalization, and collaboration emerge as effective techniques for enabling micro, small, and medium-sized businesses to engage productively in online marketplaces. E-marketplaces contribute positively to the growth of MSMEs by facilitating increased sales, market expansion, and operational efficiency. However, challenges related to technological readiness, trust, and competition must be addressed for further progress. Policy interventions and support mechanisms are essential to facilitate the transition of MSMEs into online marketplaces.
2. Indian MSME Sector: Literature evaluations highlight the dynamics, challenges, and potential of the Indian MSME sector, along with its achievements in e-marketplaces and their interactions. The Indian MSME sector is essential for promoting innovation, economic expansion, and the development of jobs. Nevertheless, Indian MSMEs face financial, technological, and infrastructure obstacles. Government policies and support mechanisms are identified as instrumental in fostering MSME growth, emphasizing the need for financial incentives, capacity-building programs, and supportive regulations.
3. Global Reach and Customer Engagement: E-marketplaces enable businesses to reach customers worldwide, leading to increased sales and market share. Personalized and engaging experiences enhance customer engagement and satisfaction. Ratings, reviews, and recommendations build trust and loyalty. Businesses also benefit from cost savings and improved efficiency through e-marketplaces. Digitizing supply chain processes and eliminating intermediaries allows companies to lower prices and provide better value.
4. E-marketplace Alliances: Collaborations within e-marketplaces enhance brand awareness, customer trust, and market competitiveness. The literature underscores the significance of MSME success in e-marketplaces, emphasizing customization, establishing a strong online presence, and partnering with platforms and aggregators. E-marketplaces provide MSMEs with global market reach and enhance their competitiveness.
5. Standalone Studies: Some influential concepts have not been thoroughly examined within a comprehensive framework, while others are treated as standalone concepts. Notably, there is still a study vacuum regarding the impact that laws and policies play in SMEs' widespread adoption of developing technology.
6. Technology Adoption as a Dynamic Process: The study underlines how important it is to see SMEs' adoption of technology as a dynamic, ongoing process as opposed to a static, one-time occurrence. This viewpoint need to take into account how quickly the digital ecosystem is evolving nowadays and how emerging technologies like Blockchain are dynamic. To handle the unique needs of SMEs and dynamic technologies, a more comprehensive framework is required, which will speed up and improve the effectiveness of technology adoption.

This study provides practitioners and scholars with insightful information. It emphasizes how crucial it is to look at SMEs' use of technology from a process-oriented standpoint. Future study should focus on the gaps that have been found about the kind of technology, laws, and the dynamic nature of technology adoption, given how quickly the digital environment is changing.

Researchers should focus on assessing the effectiveness of various policies and strategies to enhance MSME participation in online marketplaces and ensure their long-term sustainability. In a constantly changing landscape, understanding and addressing these issues become increasingly critical for the success of SMEs in the digital era."

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