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Exploring Entrepreneurs' Interest in Adopting New Digital Technologies

Julia Anamaria ȘIȘU[1*], Marian NĂSTASE[2],
Andrei Constantin TÎRNOVANU[3],
Nyalukamo Jacqueline MUJAYA [4], Satoshi ITO[5]

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Abstract

The adoption of new digital technologies is essential for companies to maintain competitiveness and remain relevant in the current business environment. However, the cost of such technologies often serves as a significant impediment, particularly for small businesses or start-ups with limited resources. This study aims to investigate the degree of interest among entrepreneurs in adopting new digital technologies in the absence of financial barriers. To achieve this objective, the study involved direct interactions with a limited database of companies of varying sizes and industries.

The study presented a hypothesis to entrepreneurs, allowing them to obtain a digital solution without incurring financial costs. The hypothesis aimed to eliminate the financial barrier that is typically viewed as the primary obstacle to the adoption of digital technologies. However, additional factors, such as lack of awareness, perceived complexity, or resistance to change, may hinder technology adoption. Therefore, this study will explore the decision-making processes and underlying motivations of entrepreneurs in relation to the adoption of new digital technologies. The study aims to provide a unique perspective on the motivations of entrepreneurs in adopting new technologies in such a context, and offer valuable insights into the factors that influence such decisions, as well as the perceived benefits and drawbacks of digital solutions. The research seeks to analyse entrepreneurial intentions and draw conclusions related to industry, company size, and revenue. Specifically, the study aims to identify whether there are differences in perceptions of digital technology adoption based on these variables. The investigation aspires to reveal how industry, company size, and revenue impact entrepreneurial intentions toward digital technology adoption, providing a nuanced

[1] Bucharest University of Economic Studies, Bucharest, Romania, juliasisu@yahoo.com.
* Corresponding author.
[2] Bucharest University of Economic Studies, Bucharest, Romania, marian.nastase@man.ase.ro.
[3] Bucharest University of Economic Studies, Bucharest, Romania, tirnovanuandrei17@stud.ase.ro.
[4] Bucharest University of Economic Studies, Bucharest, Romania, mujaya4707@gmail.com.
[5] Bucharest University of Economic Studies, Bucharest, Romania, satoshi.ito@biz-cat.co.jp.

understanding of these variables' influence on decision-making. The research team seeks to gain insight into these factors to contribute to the development of tailored digitalisation strategies for businesses of varying sizes and industries.

Keywords: digital technology adoption, digital transformation, entrepreneurial mindset, financial costs, strategic digitalisation.

JEL Classification: L26, O33, M15, L21, L11.

1. Introduction

The growing importance of digital technology adoption in today's competitive business landscape has been widely acknowledged. The successful implementation of digital technologies can significantly enhance the efficiency, competitiveness, and innovation capabilities of organisations, including small and medium-sized enterprises (SMEs). However, despite the numerous benefits associated with digital technology adoption, many SMEs, particularly in emerging economies such as Romania, have been slow to embrace these technologies. In this context, it becomes essential to understand the factors that influence the adoption of digital technology among Romanian SMEs and the barriers they face during this process.

This article presents a qualitative study that investigates the experiences, opinions, and perspectives of entrepreneurs and decision-makers within Romanian SMEs concerning digital technology adoption. By focusing on the specific context of Romania, the study aims to provide valuable information on the factors shaping digital technology adoption among SMEs and the challenges and barriers that they encounter in their digital transformation journey.

One of the key findings of this study is that, contrary to the general perception that digitalisation and technological advancement are inevitable steps in organisational development, many entrepreneurs in Romania prioritise other aspects of their business operations over digital transformation. This highlights the need for a more nuanced understanding of the factors influencing digital technology adoption among SMEs and the role of contextual factors, such as industry, company size, and revenue, in shaping the adoption process.

2. Literature Review

2.1 The Concept of Digital Technologies

Today, digital technology significantly influences how new company initiatives are conceived of and developed. The increased investment in computer processing and data preparation equipment in the manufacturing and service sectors, as well as in the telecommunications infrastructure, is indicative of this new technological era.

Three separate but connected components, digital artefacts, digital infrastructures, and digital platforms, were said to make up the concept of Digital Technologies (Nambisan, 2017). According to Bharadwaj et al. (2013), such rapid

progress has significantly altered the corporate landscape and the competitive environment.

Digital technologies have rendered it possible to launch new businesses and digital start-ups whose business models and operations are heavily dependent on novel technology. Digital technologies, which take on numerous forms such as digital goods or services (Lyytinen et al., 2016), are, in this sense, enablers of entrepreneurial activity.

As a result, there are many different ways that IT and digital technologies have an impact on corporate innovation and entrepreneurship (Steininger, 2019). For example, they may serve as facilitators, mediators, or results of entrepreneurial operations.

A new breed of entrepreneurs is emerging as a result of the constant fusion of business and technology (Giones and Brem, 2017). These entrepreneurs primarily use digital technologies to carry out the majority of the steps necessary to start a new firm.

2.2 Factors Influencing the Process of Digital Technologies Adoption in SMEs

By interviewing 2222 micro and small businesses in Indonesia, Trinugroho et al. (2022) develop an empirical framework on the determinants of the use of technologically based innovation. We discover that certain business parameters, together with company and owner characteristics, significantly contribute to the explanation of the adoption barriers for digital innovation. According to their findings, businesses with less direct selling, marketplaces that are competitive, and customers who prefer cash payments are more likely to use digital technologies. Younger businesses and younger owners that have access to the internet are also linked to a greater likelihood of adopting digital technology. They also discover that businesses with higher sales and profitability during the COVID-19 epidemic are more likely to use digital technologies in their operations.

Regarding the adopters-accepters, access restrictions and privacy concerns may prevent DT from being fully adopted. All five of the examined hurdles were thought to be important by the adopters-resisters, but only the impersonalisation barrier appeared to have significance when the barriers were connected to their desire to fully embrace DT. Additionally, the findings imply that restrictions have a more adverse impact on people with substantial DT experience's intention to completely adopt (Dimitrova et al., 2022).

The distinctive qualities of these companies can be emphasised when investigating the causes of such variations in IT adoption in SMEs. According to Madrid-Guijarro et al. (2009), SMEs typically have restricted access to market information. As a result, especially in light of SMEs' weaknesses at various organisational and managerial, technological, personal, and environmental levels, the adoption and use of IT in SMEs is in a disadvantageous position in this regard (Al-Qirim, 2007).

The literature suggests that a number of variables, such as management's attitude and perception of IT, support and commitment, IT knowledge and experience, innovativeness, perceived behavioural control over IT, desire for growth, and familiarity with administration, have a direct impact on the process of IT adoption in SMEs (Qureshi, York, 2008).

Prior research on IT adoption in SMEs reveals that the majority of failures and unhappiness were caused by one or more of the causes listed below: lack of necessary resources (knowledge, skills, financial, managerial); improper education and preparing of end users; improper linkage of adopted IT to corporate strategies; insufficient realisation of organisational challenges; inadequate realisation of end users' needs; constraints on the ability of a business to hire IT personnel; unqualified management in CEO structures with significant levels of centralisation (Ghobakhloo et al., 2011).

The next stage after having the intention to use is actually acting in the desired way. The acceptance of new technology results if the intention and desire are favourably shaped by the effects of earlier variables. On the other hand, if a person's desire and intent toward technology are negative because of organisational, technological, and environmental problems, then it is apparent that they do not have a strong desire in this area. Accordingly, an individual's intention affects whether or not they actually use new technology systems (Esmaeilpour et al., 2016).

The majority of SMEs surveyed by Fanelli (2021) expressed their dissatisfaction with the lack of funding for technical advancements and the significant challenges in obtaining public and private funding (28%). The findings support North et al.'s (2001) claim that one of the main obstacles preventing SMEs from adopting innovation was finance.

SMEs need particular policy measures to make sure that necessary infrastructures can be provided and that technology services can be offered to enable them to fully develop and harness their potential. Additionally, it is important to support publicly funded research and development organisations in focusing on the technological requirements of SMEs. The availability of commercial space, the infrastructure for transportation, the size of local marketplaces, the characteristics of rural labour markets, and the availability of information and funding are some of the typical aspects of the rural environment that exist concurrently (Smallbone, Welter, 2006).

Some needs of the SME sector can be met by specialised AI solutions. A variety of SMEs' operations, including decision-making, human resources, customer interaction, inventory management, and cyber security, can be improved with the use of customised AI solutions. SMEs must comprehend the value of AI, get through the obstacles, and use it to their benefit (Bhalerao et al., 2022).Indeed, while AI serves as a powerful tool for SMEs, it is just one facet of a broader spectrum of digital technologies that can help drive business growth and efficiency. This suite of technologies extends beyond AI to include the Internet of Things (IoT), Robotic Process Automation (RPA), cloud computing, Metaverse technologies, and mobile applications, among others.

The Internet of Things, for example, enables seamless interconnectivity between devices, offering SMEs the opportunity to optimise operational processes, enhance customer service, and improve decision-making. Similarly, Robotic Process Automation allows for the automation of repetitive tasks, leading to increased efficiency and accuracy. Cloud computing provides SMEs with scalable and cost-effective computing resources, enabling them to compete in the digital marketplace. Metaverse technologies offer innovative ways for SMEs to interact with customers and stakeholders in virtual environments, while mobile applications provide opportunities for customer engagement and business process management on the go.

As entrepreneurs navigate the rapidly changing digital landscape, the metaverse emerges as a unique area of potential interest. The concept of the metaverse, while met with scepticism by some, has gained significant attention, particularly following Facebook's transition to "Meta" (Chinie, Oancea, 2022). This immersive platform, underpinned by technologies such as Augmented Reality (AR) and Virtual Reality (VR), presents a new frontier in digital opportunities. As these technologies evolve, they could potentially pave the way for SMEs to explore innovative digital solutions. Hence, it is critical for SMEs to stay abreast of these emerging trends that could redefine digital commerce and interactions in the virtual realm.

Furthermore, demographic trends appear to play a crucial role in the adoption of digital technologies, including the metaverse. Notably, Generation Z, a demographic group heavily engaged with the digital world, appears to show a propensity for adopting metaverse applications (Chinie, Oancea, 2022). This indicates that the younger generation, already adept at digital innovations, could potentially act as early adopters of such technologies in the entrepreneurial context. Additionally, there seems to be a correlation between involvement in immersive gaming environments and willingness to engage with metaverse applications. These insights underscore the importance of understanding user behaviours and preferences in the adoption of digital technology, an aspect of critical importance for SMEs aiming to maximise the benefits of digital technologies.

Therefore, it is crucial for SMEs to comprehend the broader value of digital technologies, navigate through the obstacles, and use these varied tools to their advantage. Just as with AI, successful implementation of these technologies requires understanding their capabilities, aligning them with business needs, and investing in the necessary skills and infrastructure.

3. Research Methodology

3.1 Research Design

This qualitative study employed a phenomenological approach to explore the factors influencing the adoption of digital technologies among small and medium-sized enterprises (SMEs) in Romania. The phenomenological approach allows for an in-depth understanding of the experiences, opinions, and perspectives of the entrepreneurs and decision-makers within these companies. By using this approach, we aimed to capture the essence of the phenomenon, identify the

underlying motivations, and reveal the factors influencing their decisions to adopt digital technology.

3.2 Sample and Sampling Procedure

The study involved a purposeful sampling of 10 companies from various industries and sizes within Romania. This sampling method was chosen to ensure the inclusion of companies with diverse characteristics, which could provide rich and varied insights into the phenomenon under investigation. The companies were selected based on the following criteria:

- Industry: The sample included companies in various industries, such as manufacturing, construction, retail, and services.
- Company size: The number of employees in the companies ranged from 1 to 30.
- Annual revenue: The companies' annual revenues ranged from approximately 1 million RON to 13 million RON.

3.3 Data Collection

We conducted semi-structured interviews with entrepreneurs and decision-makers within the selected companies. These interviews allowed us to gather in-depth information on the companies' experiences and perspectives on digital technology adoption. The interviews were guided by a set of open-ended questions, which explored the participants' interest in adopting digital technologies, their previous experiences with digital technology, the perceived benefits and drawbacks, and the barriers they faced in the adoption process.

In extending our semi-structured interviews, we intentionally centered our inquiry within the broader thematic framework of digital transformation, specifically the adoption and utilisation of digital tools that facilitate business management. We defined 'digital tools' expansively to encompass any online platform that aids in the operation and oversight of business activities.

Three digital tool types were particularly highlighted in our discussions: Customer Relationship Management (CRM) systems, Enterprise Resource Planning (ERP) software, and Project Management tools. CRM systems are strategic assets for businesses, providing capabilities for managing and scrutinising customer interactions and data, thus bolstering customer relationships and stimulating sales growth. ERP software amalgamates multiple business processes into a single integrated system, enabling SMEs to streamline operations, augment productivity, and enhance decision-making capabilities. Project management tools are instrumental in the planning, execution, and monitoring of projects, ensuring projects remain on schedule and within budget constraints.

Such digital tools provide an expansive infrastructure that empowers businesses to operate with heightened efficiency and competitiveness in the digital age. They confer numerous advantages, including improved data analysis, enhanced internal and external communication, increased operational efficiency, and superior customer service.

The overarching aim of these interviews was not solely to gain insight into SMEs' experiences and perspectives concerning AI, but to traverse the broader landscape of digital tools. We sought to understand the impact these tools, beyond just AI, have had on their operations. This comprehensive approach gave us the opportunity to examine more thoroughly the multifaceted ways in which digital technologies are being adopted and integrated within SMEs and to discern the principal benefits and challenges these entities encounter throughout this transformative process.

3.4 Data Analysis

We analysed the collected data using a thematic analysis approach, which involved identifying, analysing, and reporting patterns within the data. During the interactions with the participating companies, detailed notes were taken to accurately capture their experiences, opinions, and perspectives on digital technology adoption. These notes were later transcribed, allowing us to thoroughly examine the data.

We began by reading the transcripts of the interactions to familiarise ourselves with the data, and then generated initial codes that described various aspects of the companies' experiences and perspectives on digital technology adoption. Next, the data was coded using a series of codes that corresponded to these categories. For example, interest in digital technology was coded as I1 (Accepted), I2 (Refused), or I3 (No response), while barriers to adoption were coded as B1 (Lack of time), B2 (Lack of resources), B3 (Lack of dedicated personnel), or B4 (Different priorities). Previous experience with digital technology was coded as E1 (Positive experience).

Table 1: Coding scheme used for categorising companies' experiences and perspectives on digital technology adoption.

Category	Code	Description
Interest in Digital Technology	I1	Accepted
	I2	Refused
	I3	No response
Barriers to Adoption	B1	Lack of time
	B2	Lack of resources
	B3	Lack of dedicated personnel
	B4	Different priorities
Previous Experience with Technology	E1	Positive experience

Source: Constructs and items developed by co-authors.

Once the initial codes were generated, we grouped these codes into broader themes that captured the main patterns and trends observed in the data. The themes were then refined and organised to form a coherent picture of the factors influencing the adoption of digital technologies among the companies in our sample.

Based on the data, responses from the companies can be classified into the following categories:

1. Accepted (4 companies): These organisations demonstrated a clear interest in adopting digital technology.
2. Refused (1 company): This organisation exhibited resistance towards digitalisation and declined further discussion on the topic.
3. No response (3 companies): These organisations did not provide a definite response regarding their interest in digital technology adoption.
4. Time-limited – Negative (2 companies): These organisations recognised the potential advantages of digital technology, but cited time constraints or other challenges as barriers to adoption.

3.5 Barriers to Adoption

The study identified several impediments that hindered the adoption of digital technology among the companies:

1. Lack of time (2 companies): Organisations that reported being too busy to allocate time and resources to implement digital solutions.
2. Lack of resources (1 company): The organisation cited a shortage of personnel to facilitate the digital transformation process.
3. Lack of dedicated personnel (1 company): The organisation was not prepared for digital technology adoption due to the absence of staff responsible for the digital transformation process.
4. Different priorities (1 company): The organisation stated that they were against digitalisation and did not want to address the topic in the future.

3.6 Previous Experience with Digital Technology

Out of the 10 companies, only one reported a positive previous experience with digital technology (E1). The employee of this company acknowledged the benefits of digital solutions, but faced time and resource constraints, which made it difficult to implement the technology in the current context.

3.7 Differences in Perception by Industry, Company Size, and Revenue

The results of the study indicate that companies from various industries, sizes, and revenue levels show different levels of interest in digital technology adoption. The four companies that accepted the proposal of digital technology adoption belonged to different industries, suggesting that the sector does not necessarily determine the willingness to adopt digital solutions. However, the study sample is limited, and more research with a larger sample size may provide a more comprehensive understanding of the relationship between industry and technology adoption.

Concerning company size and revenue, it is worth noting that the companies that accepted the proposal came from a range of sizes and revenues. However, the data also suggests that smaller companies with fewer resources may face more substantial barriers to adoption, such as a lack of time, resources, or dedicated personnel. Larger companies may have more capacity to allocate time and resources

to digital transformation, although this was not universally true among the companies in the study.

In conclusion, the findings of this study reveal varying levels of interest in digital technology adoption among the companies, with several barriers influencing their decisions. The results also underscore the importance of understanding the specific context of each company to develop tailored digitalisation strategies that address their unique needs and challenges. Further research with a larger and more diverse sample may provide additional insights into the factors that influence digital technology adoption across industries, company sizes, and revenue levels.

4. Discussion and Implications

This chapter discusses the findings of the qualitative analysis and outlines their implications in the context of digital technology adoption among Romanian entrepreneurs. The findings contribute to a better understanding of the factors that influence entrepreneurs' decisions to adopt digital technologies and the possible barriers they face in this process.

4.1 Influence of Company Size, Industry, and Revenue

The analysis revealed that company size, industry, and revenue play a role in shaping the entrepreneurial intentions towards digital technology adoption. Smaller companies with limited resources and a higher workload per employee appeared to be more hesitant to adopt digital solutions. On the other hand, larger companies were more likely to recognise the benefits of digital technologies and express interest in implementing them. This could be attributed to their greater financial capacity and ability to allocate resources for digital transformation. In addition, businesses operating in the manufacturing and construction industries appeared to be more inclined to adopt digital solutions compared to those in other sectors. It is essential that future research explores these patterns further and identifies the underlying reasons for such differences.

4.2 Barriers to Digital Technology Adoption

The study identified several barriers to digital technology adoption among the participating companies, including lack of time, lack of resources, lack of dedicated personnel, and different priorities. These barriers highlight the need for tailored strategies to support companies in overcoming these challenges. For instance, providing targeted training and resources to smaller companies or those with limited resources can help them overcome the initial barriers and facilitate the digital transformation process.

A significant hurdle is the lack of resources. According to an analysis by Mithas et al. (2013), companies with limited financial resources struggle to invest in new technologies, as these may require substantial initial and maintenance costs. Possible solutions to overcome this obstacle may involve securing funds or grants dedicated to digitisation.

The absence of dedicated staff is another barrier to the adoption of digital technology. Research conducted by Parviainen et al. (2017) demonstrated that many organisations face a shortage of personnel with digital competencies. This hurdle can be surpassed by investing in the training of existing employees or by hiring new talents with digital skills.

Regarding differences in priorities, a study by Bharadwaj et al. (2013) indicated that some managers may view the adoption of digital technology as less important than other issues, such as increasing sales or maintaining profitability. To overcome this obstacle, it is crucial to better understand how digital technology can contribute to achieving business goals.

4.3 Limitations and Future Research Directions

This study has some limitations, mainly related to the limited sample size and the focus on Romanian companies. Future research could expand the scope by including a larger and more diverse sample of companies from different countries and industries. Furthermore, further studies could explore the role of other factors, such as organisational culture, management styles, and external pressures, in shaping entrepreneurs' intentions to adopt digital technologies.

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