SemeAd 2024
XXVII Seminários em Administração

05, 06, 07 e 08 de novembro de 2024
ISSN 2177-3866

VALIDATION AND APPLICATION OF FRAMEWORK OF DIGITAL ENTREPRENEURSHIP ANALYSIS ELEMENTS IN ORGANIZATIONS FROM THE PERSPECTIVE OF DYNAMIC CAPABILITIES

ALEXANDRE RODRIGUES PINTO
UNIVERSIDADE NOVE DE JULHO (UNINOVE)

CRISTINA DAI PRÁ MARTENS
UNIVERSIDADE NOVE DE JULHO (UNINOVE)

VANESSA VASCONCELOS SCAZZIOTA
ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO (FGV-EAESP)

MAURO LUIZ MARTENS
UNIVERSIDADE PAULISTA (UNIP)

VÂNIA MARIA JORGE NASSIF
UNIVERSIDADE NOVE DE JULHO (UNINOVE)

Agradecimento à orgão de fomento:
Agradecemos ao FAP UNINOVE, à CAPES e ao CNPq pelo apoio à pesquisa.

VALIDATION AND APPLICATION OF FRAMEWORK OF DIGITAL ENTREPRENEURSHIP ANALYSIS ELEMENTS IN ORGANIZATIONS FROM THE PERSPECTIVE OF DYNAMIC CAPABILITIES

1 INTRODUCTION

Digital entrepreneurship has emerged as a global phenomenon that significantly transforms both the economy and society (Nambisan, 2016). With the increasing digitization of processes, new opportunities and challenges arise for entrepreneurs across various sectors (Hull et al., 2007). In this context, understanding and validating the elements of digital entrepreneurship analysis becomes important.

Digital entrepreneurship refers to the creation and development of businesses based on digital platforms, emerging technologies, and innovative business models (Steininger, 2019). This form of entrepreneurship displays unique characteristics, such as the speed of innovation, access to global markets, and interconnection among various sectors (Kraus et al., 2019). However, success in highly competitive environments requires more than just a good idea; it necessitates understanding and developing dynamic capabilities for rapid adaptation to market changes and the exploitation of emerging opportunities (Sahut, Iandoli, & Teulon, 2021).

Dynamic capabilities, a concept introduced by Teece, Pisano, and Shuen (1997), refer to an organization's ability to integrate, build, and reconfigure internal competencies to address external environmental changes (Wang & Ahmed, 2007). In digital entrepreneurship, these capabilities are crucial for identifying and exploiting new opportunities, responding agilely to customer demands, and continuously adapting to technological and market changes (Kraus et al., 2019).

To analyze digital entrepreneurship based on dynamic capabilities, it is necessary to identify and validate the key emerging elements from both theoretical and practical contexts. In this regard, a structured framework based on theory and practice can establish a robust basis for empirical investigation. Thus, the research question arises: How can the framework of digital entrepreneurship analysis elements from the perspective of dynamic capabilities be utilized in organizations?

To answer this question, this study proposes testing the applicability of a dynamic capabilities perspective analysis framework of digital entrepreneurship in the practical context. The method of interviews with experts was chosen as the research approach due to its ability to explore the diversity of digital entrepreneurship, enabling insights into the practices and experiences of digital entrepreneurs.

Ten interviews were conducted with entrepreneurs and collaborators from five digital ventures, using a semi-structured script. The interviews were transcribed, allowing for the refinement of the framework, which incorporates the perceptions of the interviewees and organizational practices. The results of the study provide a comprehensive view of the influences of technology on the organizational environment, aligning with previous studies (Bican & Brem, 2020; Sussan & Acs, 2017). The final framework presented in the study consists of 28 elements of digital entrepreneurship analysis that were validated from the practices of organizations, enabling the direction of digital ventures, which distinguishes it from previous studies. It contributes to the more assertive management of resources to advance in the context of digital entrepreneurship.

This article is structured as follows: the next section revisits the literature on digital entrepreneurship and dynamic capabilities, in addition to presenting the framework of digital entrepreneurship analysis elements from the perspective of dynamic capabilities. Subsequently, the research methodology, data collection, and analysis are described. In the results section, the findings of the research and practical implications are presented. Finally, the paper concludes

by highlighting the main theoretical and practical contributions and outlining future directions for research.

2 THEORETICAL FRAMEWORK

2.1 Digital entrepreneurship and dynamic capabilities

Digital entrepreneurship has emerged as a phenomenon of significance in the global economy (Ammirato, Sofo, Felicetti, Helander, & Aramo-Immonen, 2019), driven by advancements in information and communication technologies (ICTs) and the digitization of processes across various sectors (Zhao, 2021). It can be understood as the process of developing and managing businesses that utilize digital platforms, emerging technologies, and innovative business models (Sahut et al., 2021).

One of the main characteristics of digital entrepreneurship is the speed of adaptation to changes in the external environment, as market conditions can change rapidly due to technological advances, shifts in consumer preferences, and the entry of new competitors (Kraus et al., 2019). Therefore, digital entrepreneurs must be able to identify and seize opportunities in a timely manner, as well as adjust their strategies (Martins & Rodrigues, 2024).

Digital entrepreneurs seek new ways to add value to their products and services through the application of technologies such as artificial intelligence, blockchain, the Internet of Things, and virtual or augmented reality (Paul, Alhassan, Binsaif, & Singh, 2023). The ability to innovate continuously and rapidly is essential to remain competitive in an ever-evolving digital environment (Recker, Jan & Briel, 2019).

Dynamic capabilities, understood as the aptitude of organizations to integrate, develop, and reconfigure their internal and external competencies in environments characterized by rapid changes (Teece et al., 1997), are important for identifying and capitalizing on opportunities, responding quickly to customer demands, and continuously adapting to technological and market changes (Bourezig, Taleb Bouguerri, & Bouguerri, 2024). Organizations need to detect and interpret external signals that indicate changes or opportunities, which involves monitoring technological, behavioral, and market trends.

Digital ventures need to assimilate new knowledge and skills relevant to seizing opportunities or responding to emerging challenges, which involves active information seeking, experimenting with new technologies, and data analysis (Olan, Troise, Damij, & Newbery, 2024). They need to have the ability to respond to market feedback, scale operations as demand requires, and collaborate with strategic partners to seize opportunities (Addy, Ajayi-Nifise, Bello, & Tula, 2024).

Digital entrepreneurship from the perspective of dynamic capabilities represents an approach that recognizes the importance of adaptive skills and strategic agility in the context of creating and managing digital businesses (McKelvie & Davidsson, 2009). In this perspective, success is not just the result of an innovative idea or a different technology, but the ability of an organization to identify opportunities, learn from the external environment, and reconfigure its internal resources and processes to capitalize on these opportunities (Wang & Ahmed, 2007; Lungu, Georgescu, & Juravle, 2024).

2.2 Digital entrepreneurship analysis framework from the perspective of dynamic capabilities

The basic framework for this study was developed from an integrative literature review (Pinto, Martens, & Scazziota, 2023) and subsequently refined through interviews with experts working in the field of digital entrepreneurship. The consolidation of these two steps allowed

for the construction of the framework presented in Figure 1, consisting of macrocategories, categories, and analysis elements.

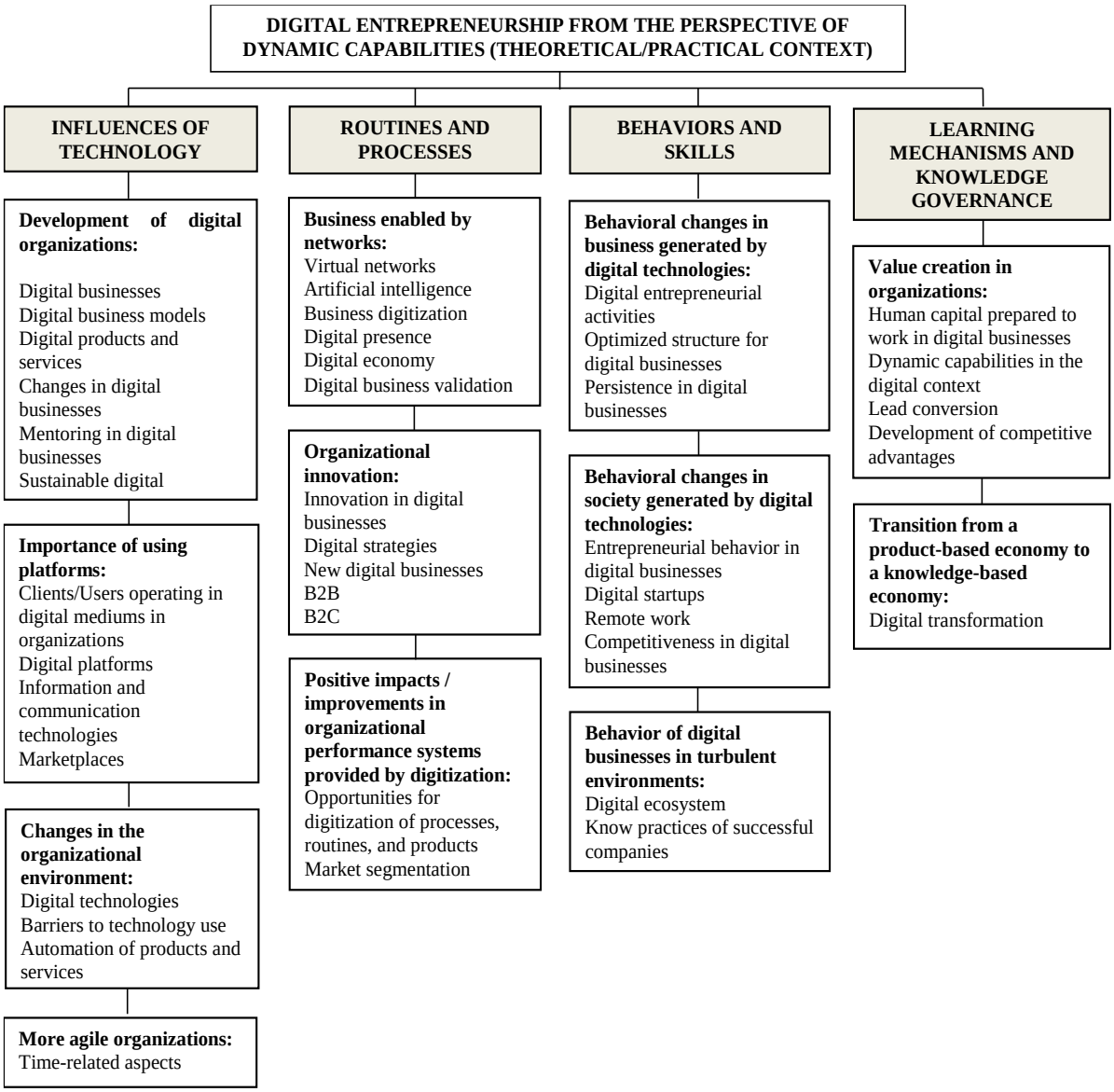

Figure 1 Theoretical/practical framework of analysis elements of digital entrepreneurship from the perspective of dynamic capabilities
Source: Prepared by the author based on data extracted from the Atlas.ti software.

The macrocategories were defined based on dynamic capabilities and present an analysis of the different dimensions of digital entrepreneurship. The first macrocategory addresses the influences of technology, grounded in Bican and Brem (2020) and Sussan and Acs (2017), and includes the following categories: development of digital organizations (Dong, 2019; Pigola, da Costa, van der Poel, & Yamaçake, 2022); importance of using platforms (Helfat & Raubitschek, 2018); changes in the organizational environment (Pavlou & Sawy, 2010); and more agile organizations (Sambamurthy, Bharadwaj, & Grover, 2003).

The second macrocategory, based on Eisenhardt and Martin (2000), focuses on routines and processes, which are in constant improvement through the adoption of digital technologies. It includes the following categories: business enabled by networks (Zahra & George, 2002b); organizational innovation (Wheeler, 2002); and positive impacts/improvements in the

performance systems of organizations facilitated by digitization (Liu, Li, & Wang, 2020; Yeow, Soh, & Hansen, 2018).

The third macrocategory, also based on Eisenhardt and Martin (2000), encompasses a combination of behaviors and skills that result in the formation of dynamic capabilities within organizations. Sahut et al. (2021) support this understanding in terms of adding value to organizations either through new businesses or transformation of existing businesses, generating value from resource integration. It includes the following categories: changes in business behavior generated by digital technologies (Vial, 2019); changes in societal behavior generated by digital technologies (Warner & Wäger, 2019; Malik, Sharma, Kingshott, & Laker, 2022); and behavior of digital businesses in turbulent environments (Pavlou & Sawy, 2010).

The fourth and final macrocategory, also grounded in Eisenhardt and Martin (2000), addresses learning mechanisms and knowledge governance. These mechanisms guide the development of dynamic capabilities and adaptation through paths such as repetition, rhythm, and documented mistakes in organizational practices. This macrocategory is divided into the following categories: value creation in organizations (Jafari-Sadeghi, Garcia-Perez, Candelo, & Couturier, 2021); and the transition from a product-based economy to a knowledge-based economy (Cuthbertson & Furseth, 2022).

For organizations to advance in the context of digital entrepreneurship, it is important that they observe the macrocategories, categories, and elements presented in Figure 1, which can be used as drivers for their development actions. Therefore, organizations need to prepare a long-term business plan to achieve the expected results (Muafi, Syafri, Prabowo, & Nur, 2021).

3 METHODOLOGY

This study adopts a qualitative and exploratory approach (Creswell, 2010), as it seeks to validate the elements of digital entrepreneurship analysis from the perspective of dynamic capabilities, an emerging context in the literature. In exploratory research, the goal is to gain a comprehensive understanding of relatively unknown facts, allowing for a more in-depth investigation of a phenomenon (Révillion, 2003).

For its development, in-depth interviews were adopted as the method, a qualitative research approach based on the participants' experiences in the studied context (Dantas, 2016), in addition to interpreting the results based on knowledge (Duarte & Barros, 2011). Following the studies of Marshall, Cardon, Poddar, and Fontenot (2013) and Nascimento et al. (2018), the interviews were conducted until saturation.

Aiming to test the base framework of the study (Figure 1), a semi-structured interview script was developed, consisting of the macrocategories, categories, and elements that underpinned the questions.

Initially, a search was conducted on LinkedIn for potential entrepreneurs who could be interviewed. In total, 22 invitations were sent between March and April 2024. The selection criteria included the condition that the organizations actively engage in digital entrepreneurship, as well as the availability, accessibility, and convenience of necessary information (Loiola, 2013).

For the execution of the study, entrepreneurs and collaborators from five digital ventures (two from each) were selected. The interviewees were asked to reserve approximately one hour and thirty minutes for the interviews. Where it was not possible to conduct the interviews in person (due to them working from home), the decision was made to conduct the interviews via Google Meet, with all sessions being fully recorded using the Apowersoft program.

The semi-structured interviews were conducted with the aim of understanding whether the elements of the framework can be observed and analyzed in a practical context (Alves &

Silva, 1992). Two interviewees were sought in each organization; in those with more than one partner, two entrepreneurs were interviewed, and in those with a single owner, a collaborator knowledgeable about the progress of all business activities, indicated by the entrepreneurs, was also interviewed, totaling ten interviews.

Table 2 presents a characterization of the interviewees, following the order in which the entrepreneurs from the organizations were interviewed, described as "Int1" to "Int10".

Table 2. Characterization of organizations and interviewees

Org	Segment	Function	Identi-fication	Gender	Instrution	Age	Time minutes
A	Electric projects	Co-founder and CEO of the organization	**Int1**	Masc.	Bachelor	28	122
		Co-founder and CEO of the organization	**Int2**	Masc.	Bachelor	29	61
B	Tourism	Co-founder and CEO of the organization	**Int3**	Femin.	Bachelor	44	72
		Co-founder and CFO of the organization	**Int4**	Masc.	Bachelor	47	93
C	Advertising	Founder and CEO of the organization	**Int5**	Masc.	Master's degree	48	83
		Employee	**Int6**	Femin.	Bachelor	21	65
D	Education	Co-founder and CEO of the organization	**Int7**	Masc.	Doctor	46	58
		Co-founder and CEO of the organization	**Int8**	Femin.	Doctor	40	74
E	Technology	Co-founder and CEO of the organization	**Int9**	Masc.	Bachelor	39	58
		Employee	**Int10**	Masc.	Bachelor	43	68

Source: Prepared by the author
Note. The gender description “masc.” refers to masculine and the description “femin.” refers to feminine.

The interviews totaled 754 minutes, with an average of approximately 75 minutes each. They were recorded with the interviewees' consent and transcribed, totaling 194 pages. For the data analysis, the content analysis technique was used, a research method that systematizes and interprets textual materials, such as interviews, articles, and documents, aiming to identify patterns, themes, and meanings (Elo & Kyngäs, 2008). According to Elo et al. (2014), the method involves pre-analysis, exploration of the material, and interpretation of the results. Based on the studies by Nicmanis (2024), content analysis was applied to understand and interpret the meaning of textual content.

The approach proposed by Brown et al. (2024) was adopted, where a theory or set of theories provides the fundamental framework that guides the process of research, intervention, or analysis. Maass, Parsons, Purao, Storey, and Woo (2018) emphasize that theory informs all aspects of the work, from study design to interpretation of results. Using this approach, the study by Pinto et al. (2023) offered assumptions to understand the phenomenon, identifying variables from the perspective of dynamic capabilities.

Additionally, a data-driven approach was employed, as proposed by Hadley (2002), where decisions and strategies are based on quantitative data and evidence. Sorescu (2017) highlights that this analysis guides the stages of the decision-making process, from hypothesis formulation to outcome evaluation. Wicks (2017) notes that it is applied in various areas to optimize processes, improve efficiency, and make decisions.

The data analysis was conducted from the texts generated by the transcription of the interviews (approximately 19.5 pages per interview), allowing the identification of elements related to digital entrepreneurship and enabling the exclusion of those that do not apply to all

organizations or that fit into the context of other elements. In a preliminary reading, the content of the interviews was understood, and then the interpretation of the texts began, highlighting the elements mentioned by the interviewees in each organization. Finally, the elements were analyzed in comparison with the literature and described in detail, specifying excerpts from the interviews.

After consolidating the results, it was possible to adjust the framework of analysis elements of digital entrepreneurship in organizations from the perspective of dynamic capabilities.

4 RESULTS ANALYSIS

The text in this section is organized based on the framework, starting with the macrocategories in the form of subsections, followed by the categories (which are underlined), and exploring each of the elements (presented in bold) highlighted in organizations. Throughout the text, excerpts from interviews are used as evidence of some of the ideas presented.

4.1 Technology influences

The macrocategory 'Influences of Technology' (Bican & Brem, 2020; Sussan & Acs, 2017) is divided into the following categories: development of digital organizations (Helfat & Raubitschek, 2018), importance of using platforms (Pigola et al., 2022), changes in the organizational environment (Pavlou & Sawy, 2010), and more agile organizations (Sambamurthy et al., 2003).

In the category development of digital organizations, starting with **digital businesses**, OrgA stands out for having only digital businesses, demanding agile solutions in a market resistant to change: "Although our product is digital, we operate in a segment where people do not have this culture" (OrgA – Int1). In OrgB, C, and D, although digital businesses are the main focus, physical businesses are also maintained. OrgE evolved from a traditional consultancy to a digital solutions organization but needs to visit clients to diagnose problems: "The business is based on our digital tool, but we visit clients to integrate the system" (OrgE – Int9).

In **digital business models**, OrgA, C, and E tailored their businesses to the needs of their clients, as highlighted: "The organization was modeled based on the needs of each client" (OrgC – Int5). OrgB and D followed existing models in the market: "Our model was chosen based on what already exists in the market, adding the need for innovation and differentiation" (OrgB – Int3).

Although all the studied organizations operate with **digital products and services**, OrgA and E work with exclusively digital products and/or services: "Our organization offers only digital products and services" (OrgE – Int10). OrgB, C, and D trade both digital and physical products and services, as described: "Our main services are focused on digital marketing and advertising, but also physical" (OrgC – Int6).

Changes in digital businesses are inherent and were observed in OrgA to E, whose interviewees shared the perception that changes are a reality, as noted: "The turning point was the pandemic; I thought sales would fall, but it accelerated people getting to know us" (OrgA – Int2).

Mentoring in digital businesses was used by OrgA, B, and D, who value it as a crucial source of guidance and support, providing insights and supporting decision-making, as observed: "The mentoring provided us with specialized guidance from experienced market professionals" (OrgD – Int7). In contrast, OrgC and E did not use mentoring in their businesses,

mainly due to the cost involved, as highlighted: “The costs of mentoring were too high for the company's reality” (OrgE – Int9).

To maintain **sustainable digital businesses**, OrgA is focusing on international expansion, while OrgB focuses on technological innovation and solid relationships. OrgC emphasizes understanding customer needs and the quality of services, and OrgD focuses on investments in research and a customer-centered approach. Finally, OrgE prioritizes training due to a shortage of skilled labor.

Regarding the importance of using platforms, **clients/users who operate in digital media** presented distinct profiles due to the organizations being from diverse sectors, making the final framework useful for all segments. Broadly, they can be described as follows: engineers and architects (OrgA); travelers and tourists (OrgB); medium and large business owners (OrgC); students, professionals in the field, and educational institutions (OrgD); manufacturing sector organizations (OrgE). Mostly, they are young clients/users with digital skills.

OrgA to E use **digital platforms**, reflecting the diversity of their needs and strategies. Although the interviewees recognize the importance of these platforms in their operations, the choices reflect the different needs and strategies of each, as highlighted by one of the interviewees: “Our organization uses a variety of digital platforms to offer products and services to clients [...] and to monitor the performance of our strategies” (OrgD – Int8).

The interviewees from OrgA to E recognize the importance of **ICTs** in their operations and discussed cloud storage and artificial intelligence, in addition to devices such as computers and cell phones, as evidenced by one respondent: “We use Microsoft Teams for team communication and to log working hours, [...] for project management we make use of Azure DevOps features” (OrgE – Int9).

Regarding the use of **marketplaces**, OrgA, C, and E do not use this type of platform for selling their products and have no intention of using them in the short term, as observed: “At the moment, we do not use marketplaces, although we are partners with a company that integrates marketplaces, but in the future it may happen” (OrgE – Int9). The interviewees from OrgB and D have used marketplaces but are reducing their dependence on these platforms, as noted: “Over time, we opted to reduce our dependence on these platforms and focus more on our own direct sales channels” (OrgB – Int3).

In discussing changes in the organizational environment regarding **digital technologies**, the interviewees from OrgA and OrgE reported focusing on more recent and innovative technologies, as per the excerpt: “The most used digital technologies by our organization are cloud computing and solutions to integrate our program into the industrial part with the use of IoT” (OrgE – Int10). In OrgB, OrgC, and OrgD, the use of digital technologies is primarily focused on serving their customers, as one interviewee said: “We are committed to exploring and implementing digital technologies to serve our customers” (OrgC – Int5).

The entrepreneurs from OrgA did not identify **barriers to technology use**. However, in OrgB, barriers were observed, as described: “One of the main barriers was the initial investment needed to implement new technological solutions and update our systems” (OrgB – Int3). The interviewees from OrgC, OrgD, and OrgE reported barriers related to the difficulty of finding skilled labor, as one of the interviewees stated: “One of the biggest barriers we face is the lack of skilled labor to keep up with the fast pace of technological evolution” (OrgC – Int5).

The interviewees understand that the **automation of products and services** is essential to improving operational efficiency and the customer experience. In OrgA, OrgB, and OrgE, the focus is on automating customer service, as one of the interviewees stated: “We seek to automate mainly customer service and support, which is still manual” (OrgE – Int10). OrgC and OrgD related automation to administrative services, as per the excerpt: “Currently, we are

looking to automate some administrative processes that are still performed manually in our organization" (OrgC – Int5).

Regarding making organizations more agile, particularly in **aspects related to time**, it was observed that this is a concern of the interviewees. In OrgA to OrgE, the importance of agility was highlighted, as one interviewee said: "We seek to become more agile for the benefit of the end customer, not necessarily for our own convenience, but for decision-making for our customers" (OrgE – Int9).

Having completed the analysis of the elements that make up the macrocategory of technology influences, it was identified that **changes in digital businesses** occur in all businesses and are inherent to the phenomenon; therefore, it was decided to exclude it from the framework.

It was evidenced that the element of **mentoring in digital businesses** is characterized as a process, being removed from this category and relocated to improvements in the performance systems of organizations facilitated by digitization (routines and processes).

Digital platforms are presented as an element and also in one of the categories (importance of using platforms). As the category presents a more comprehensive spectrum, the decision was made to broaden the scope of the category, changing its name to the importance of using digital platforms and removing the element from the final framework.

It was understood that **digital technologies** are encompassed in the context of **ICTs**, leading to the removal of this element from the final framework. All interviewees seek to make organizations more agile in **aspects related to time**. This element is intrinsic to the automation of products and services, as the greater the automation, the more agile they become; therefore, it was decided to exclude it from the framework.

4.2 Routines and processes

The macrocategory 'Routines and Processes' (Eisenhardt & Martin, 2000) is divided into the following categories: business enabled by networks (Zahra & George, 2002b); organizational innovation (Wheeler, 2002); and positive impacts/improvements of organizational performance systems facilitated by digitization (Yeow, Soh, & Hansen, 2018; Wang, 2020).

From the interviews, it was observed in the category of business enabled by networks, particularly in the element of **virtual networks**, that the interviewees from OrgA to OrgE agreed on marketing and communication strategies, using networks such as Facebook, Instagram, Twitter, and LinkedIn to share content. As one of the interviewees stated: "We use a variety of virtual networks to promote our businesses, share engaging content, and interact with our followers" (OrgB – Int4).

The interviewees highlighted the importance of **artificial intelligence (AI)** for their activities, noting a variety of applications and levels of AI adoption. OrgA uses it more frequently for system programming, while OrgB, OrgC, and OrgE use it for the development of commercial and marketing content, as observed: "We use AI for adjustments in photographs and production of marketing content and publications on social networks" (OrgC – Int5). OrgD uses AI for customer support.

The **digitization of businesses** was addressed in all organizations. In OrgA, OrgC, and OrgE, there were differences among the interviewees, as some believe that activities should be digitized, while others think that personalized service is still a differentiator, as one of the responses indicated: "We are unsure whether we should digitize our direct service, as many companies are already doing this through chat GPT" (OrgA – Int1). OrgB and OrgD described that almost all of their business now occurs digitally, as one of the interviewees said: "By

carrying out the digitization process gradually and with focus, we maximize the benefits of digitization" (OrgB – Int4).

The interviewees understand the need to maintain a **digital presence**. OrgA focuses on partnerships with digital influencers, while OrgB and OrgD emphasize the regular use of social networks, as one of the interviewees observes: "Our organization maintains a strong digital presence by combining digital marketing strategies and active engagement on online platforms" (OrgB – Int4). In OrgC and OrgE, a more personalized approach is used, with virtual meetings and the use of WhatsApp: "Our digital presence with customers is maintained mainly through virtual meetings and direct contact" (OrgC – Int5).

All organizations have part or all of their business in digital form, and thus all consider themselves participants in the **digital economy**. One of the interviewees highlighted this: "I have no doubt that we contribute to the digital economy, generating resources for companies, government, and our employees" (OrgC – Int5).

Regarding the **validation of digital businesses**, the interviewees from OrgA, OrgB, and OrgE detailed how it is carried out with customers, as per the excerpt: "We do this based on the feedback we get from users and customers. We always collect data; it is an eternal validation" (OrgA – Int2). OrgC and OrgD carry out validation based on the analysis of metrics generated by platforms and networks, as highlighted: "The validation of our business occurs through the metrics of the platforms we use" (OrgC – Int5).

In the category of organizational innovation, **digital business innovation**, OrgA, OrgB, OrgD, and OrgE demonstrated this innovation with a customer-centered approach, as one of the interviewees said: "We seek to understand the needs of our customers, as well as identify gaps and collect customer feedback continuously" (OrgB – Int4). In OrgC, innovation is directed towards monitoring digital networks: "We innovate through the use of Google Analytics, which allows us to monitor audience engagement in real-time, providing valuable insights for adjustments and optimizations" (OrgC – Int5).

In **digital strategies**, OrgA, OrgB, and OrgE focus on innovation and technological vision, as perceived in one of the descriptions: "Our organization establishes digital strategies by integrating technologies that favor efficiency and practicality" (OrgE – Int9). OrgC and OrgD focus on data analysis, as highlighted: "We establish digital strategies through a collaborative and data-driven process" (OrgD – Int8).

In **new digital businesses**, interviewees from OrgA understand that it is a mix of long-term vision with an incremental approach, while in OrgB, they advocate understanding the target audience and market trends. In OrgC, interviewees describe them as an opportunity for growth and expansion. In OrgD and OrgE, the need for investments and addressing market gaps was emphasized: "Our organization has identified gaps and invested in launching new digital businesses" (OrgD – Int7).

In the **B2B** and **B2C** model, organizations must adapt to customer needs and the competitive environment. OrgA operates only in B2C, while OrgE operates only with B2B. OrgB, OrgC, and OrgD serve both models: "In B2B, we provide customized educational solutions for companies and educational institutions, and in B2C, we offer a variety of online courses for individual consumers" (OrgD – Int8).

In the category of positive impacts/improvements of organizational performance systems facilitated by digitization, in the element of **digitization opportunities for processes, routines, and products**, OrgA to OrgE recognize these opportunities, as one interviewee reported: "The organization is committed to seizing industry opportunities; we recognize the transformative potential of digital technology to improve efficiency, optimize customer experience, and drive innovation" (OrgB – Int2). In OrgB, there is a focus on optimizing efficiency and providing a better customer experience, while in OrgC there is an aim to modernize the business, improve productivity, and competitiveness. In OrgD, the focus is on

digitizing systems and implementing platforms. Lastly, in OrgE, interviewees face challenges related to skilled labor, limiting their ability to fully seize these opportunities.

In **market segmentation**, it was demonstrated that it is a strategy to meet market and customer needs. In all five organizations, some type of segmentation is done, as one of the interviewees said: “We perform segmentation considering the diversity of customers and their distinct needs to better serve each customer group, adopting a clustering approach” (OrgC – Int5).

From the interviews, it was possible to understand that the category of business enabled by networks needs adjustment to business enabled by virtual networks. Thus, the context of this category now encompasses its first element, **virtual networks**, which, being merged with the title of the category, may be excluded from the framework. From the reports of the interviewees, it was possible to understand that **business digitization** integrates with the element of **digitization opportunities for processes, routines, and products**; therefore, it was decided to exclude it from the final framework. All interviewees understood how organizations participate in the **digital economy** and how this integrates into the **digital ecosystem**, which will be addressed later in this study. Thus, it was decided to exclude it from the framework.

The category of organizational innovation needs to have its name adjusted to digital business innovation, integrating its main element, innovation in digital businesses, which was excluded from the framework. The **B2B** and **B2C** elements, as they refer to the ways organizations operate in the market, will now be named **B2B/B2C**.

The category of positive impacts/improvements of organizational performance systems facilitated by digitization needed to be adjusted to improvements of organizational performance systems facilitated by digitization. In this category, the element of **digitization opportunities for processes and routines** was adjusted, as well as **market segmentation**, which will be readjusted to **digital market segmentation**.

4.3 Behaviors and skills

The macrocategory ‘Behaviors and Skills’ (Eisenhardt & Martin, 2000) is divided into the following categories: business behavior changes driven by digital technologies (Warner & Wäger, 2019); societal behavior changes driven by digital technologies (Vial, 2019); and digital business behavior in turbulent environments (Pavlou & Sawy, 2010).

In the category of business behavior changes driven by digital technologies within **digital entrepreneurial activities**, OrgA, OrgB, and OrgD focus on activities related to customer relationships, as one of the interviewees states: "These activities can be developed by seeking continuous improvement, listening to customer feedback, and trying to meet the needs of software users" (OrgA – Int2). OrgC and OrgE link these activities to strategic partnerships, as observed: "Our organization is developing digital entrepreneurial activities through a partnership with the Direct-to-Consumer (D2C) segment, industries selling to the end consumer" (OrgE – Int9).

In the **optimized structure for digital businesses**, interviewees from OrgA, OrgC, and OrgD highlighted the importance of a small yet qualified team with digital competencies and skills, as one response states: "We prefer to have a few people with a good salary, well-prepared individuals, as they will be better at solving problems" (OrgA – Int1). OrgB and OrgE focus on directing investments to optimize teams, as observed: "There is always room for optimization; perhaps we could be more assertive in some initiatives, which requires heavier investments" (OrgE – Int9).

Regarding **persistence in digital businesses**, interviewees emphasized the importance of seeking creative and innovative solutions to overcome challenges, demonstrating persistence in achieving goals, as evidenced in the excerpt: "Persistence is a characteristic of ours; we

overcame even the pandemic period. We understand that success requires time, effort, and resilience to overcome obstacles and achieve goals" (OrgB – Int4).

In the category of societal behavior changes driven by digital technologies, **entrepreneurial behavior in digital businesses** was evident in all organizations, as observed: "Our behavior is to stay alive, we have to be attentive to news, our competitors, which direction they are going, and check what the market demands" (OrgA – Int2).

The **digital startup** element was useful for directing interviewees' reflection on the possibility of scaling in the market. In this context, OrgA and OrgE were characterized as digital startups, as reflected by one of the interviewees: "It characterizes itself as a startup; I understand it has great potential, as it is scalable" (OrgE – Int10). OrgB, OrgC, and OrgD, however, do not fit into a startup model, as stated in one interview: "I consider that we are in a transition phase to a digital startup; I believe it is necessary to adjust technological issues and eliminate bureaucratic processes" (OrgC – Int5).

Regarding **remote work**, only OrgA transitioned to remote work even before the pandemic and remains in this format: "All our work is remote; there is no point in centralizing in an office, we are productive anywhere" (OrgA – Int1). OrgB, OrgC, OrgD, and OrgE maintain most of their business remotely but retain some in-person format due to specific needs of segments, as observed: "We still need physical presence for certain activities, especially when dealing with clients who require in-person support" (OrgE – Int10).

In the context of **competitiveness in digital businesses**, interviewees from OrgA, OrgB, OrgC, and OrgD understand that competition in the digital environment is different from businesses operating in physical formats: "In the digital environment, companies can test new ideas, launch products and services, and adjust their strategies based on customer feedback" (OrgB – Int3). However, interviewees from OrgE have a different view: "There is no significant difference between competitiveness in digital businesses and non-digital businesses" (OrgE – Int10).

In the category of digital business behavior in turbulent environments within the **digital ecosystem**, interviewees showed concern about understanding and comprehending this ecosystem, recognizing it as a facilitator of opportunities and innovation. They highlighted the interconnection between organizations, customers, and technologies in the digital environment: "The digital ecosystem our organization is part of is dynamic and highly interconnected. We are immersed in a digital environment where consumers have access to a wide range of information and options in real-time" (OrgB – Int3).

Regarding **learning from successful company practices**, OrgA, OrgB, and OrgE follow market movements and study what competitors are offering: "We recognize that there is much to learn from companies that are leading the way in terms of innovation, customer experience, and operational efficiency" (OrgB – Int4). OrgC and OrgD seek to achieve benchmarks as a way to reach higher levels of evolution and growth: "We aim to achieve benchmarking in our segment, as we are seeking to follow organizations that are benchmarks in our sector and related areas" (OrgD – Int8).

After the interviews, it was observed that the categories of business behavior changes driven by digital technologies and societal behavior changes driven by digital technologies can constitute a single category, termed changes driven by digital technologies, encompassing elements from the two aforementioned categories.

Digital entrepreneurial activities are embedded in the context of digital businesses and digital products and services (category development of digital organizations, macro-category of technology influences), so this element will be excluded from the framework. **Persistence in digital businesses** was observed in other elements that demonstrate this characteristic, such as sustainable digital businesses (category development of digital

organizations, macro-category of technology influences). Therefore, it was also decided to exclude this element from the final framework.

Entrepreneurial behavior in digital businesses is covered in the element **human capital prepared to operate in digital businesses**. For this reason, it was decided to exclude it from the framework, avoiding repetition of context in the elements.

The category of digital business behavior in turbulent environments is not applicable to all organizations, as they are not always in turbulent environments, so it was decided to exclude this category from the framework.

The digital **ecosystem element**, formerly belonging to the digital business behavior in turbulent environments category, will now be integrated into the category of value creation in organizations, as the more organizations understand the digital ecosystem they are part of, the greater the possibility of development.

Regarding **learning from successful company practices**, it was observed that this element was approached similarly when asked about validating digital businesses. For this reason, the decision was made to exclude this from the framework as well.

4.4 Learning mechanisms and knowledge governance

The macrocategory 'Mechanisms of Learning and Knowledge Governance' (Eisenhardt & Martin, 2000) is divided into the following categories: value creation in organizations (Jafari-Sadeghi et al., 2021); and the transition from a product-based economy to a knowledge-based economy (Cuthbertson & Furseth, 2022).

In the category of value creation in organizations, concerning **human capital preparedness for digital business**, OrgA and OrgE focus on hiring individuals capable of adapting to the organization's culture but face difficulties in finding qualified collaborators, as highlighted: "The pandemic has brought challenges in talent acquisition, making it difficult to form a team prepared for digital businesses" (OrgE – Int9). OrgB, OrgC, and OrgD focus on internal training to prepare employees: "We invest in training to ensure our team is always up-to-date and ready to tackle the challenges of the digital environment" (OrgD – Int7).

In generating **dynamic capabilities in the digital context**, OrgA emphasizes the importance of adapting to the external environment and understanding strengths and weaknesses, while OrgB focuses on the continuous evolution of skills and knowledge to meet market demands. OrgC faces limitations due to the company's size and economic condition but fosters openness to different perspectives to generate dynamic capabilities. OrgD focuses on rapid adaptation to changes in the digital environment, investing in training and continuous learning to improve products and services, and OrgE emphasizes internal and market adaptation capabilities.

In **lead conversion**, OrgA and OrgC consider it crucial for company growth and success, as observed: "If we had greater capacity, lead conversion would significantly improve our results" (OrgC – Int5). OrgB, OrgD, and OrgE highlight an increasing focus on leveraging digital business, as observed: "The use of digital business has been essential to facilitate and enhance lead conversion in our organization" (OrgD – Int7).

In **developing competitive advantages**, OrgA and OrgC highlight these as differentials achieved through a specialized workforce, as stated: "Our workforce is a major competitive advantage, as our work results from intellectual ability and commitment" (OrgC – Int5). Respondents from OrgB, OrgD, and OrgE emphasize their customer service: "To maintain competitive advantages, we invest in training in areas such as data analysis, artificial intelligence, and digital customer experience" (OrgB – Int3).

In the transition from a product-based economy to a knowledge-based economy, regarding **digital transformation**, respondents from OrgA, OrgC, and OrgE believe it is not

yet evident, as mentioned: "I understand this will happen; I see this movement as a trend, and I believe we will work on this in the future" (OrgA – Int2). Respondents from OrgB and OrgD observed digital transformation occurring, influenced by the availability of investments, as stated by one of the interviewees: "We are undergoing a digital transformation that is repositioning our focus from products to knowledge, but this depends on resources for investment" (OrgB – Int4).

After the interviews, it was evident that the **lead conversion** element is not a learning mechanism but rather a process (although it generates value in organizations), and therefore, it is necessary to transfer it to the category of **innovation in digital business** (macrocategory of routines and processes).

4.5 PROPOSITION AND DISCUSSION OF THE FINAL FRAMEWORK

From the interviews conducted, it was possible to enhance and refine the initially presented framework by excluding some elements and categories, reallocating elements to other categories, and adjusting denominations to better align the framework with the practice of digital entrepreneurship in light of dynamic capabilities. In the new framework, the presentation format was also changed to convey greater dynamism and interconnection between the macrocategories, as presented in Figure 2.

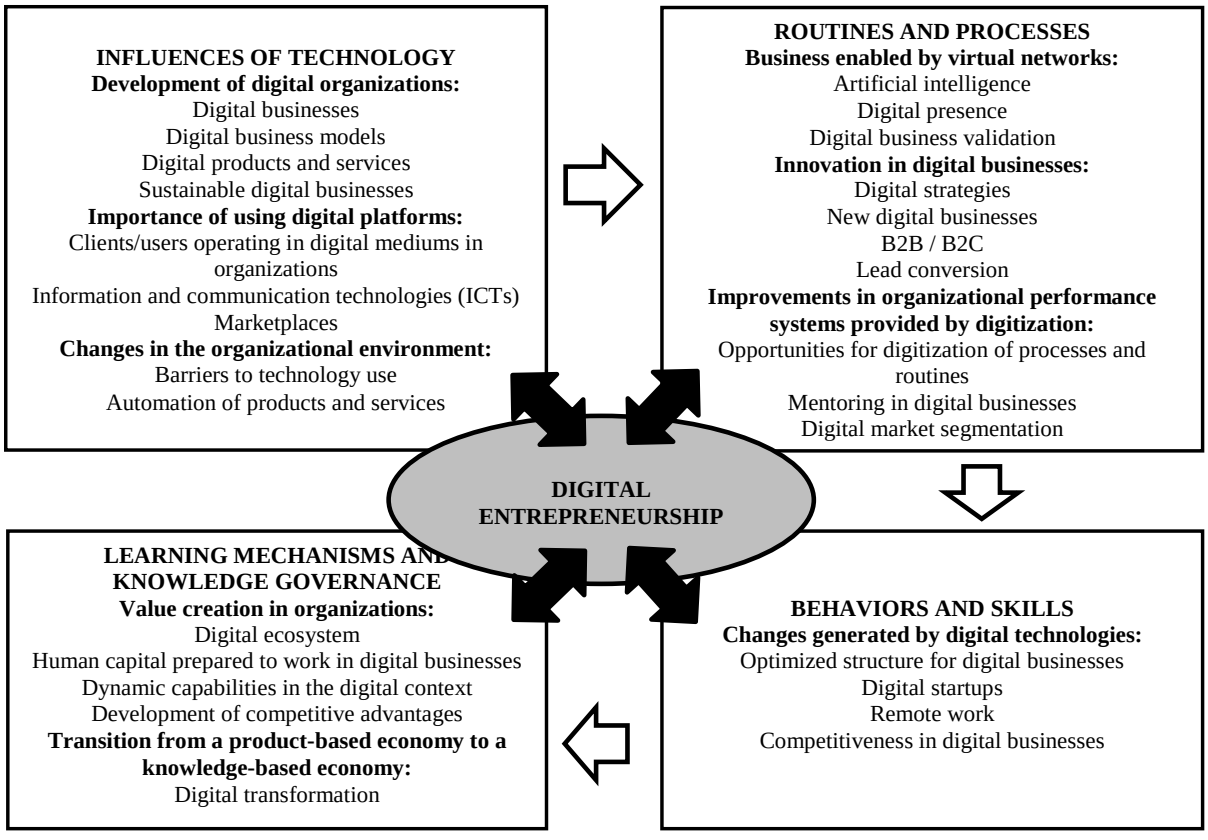

Figure 2 Framework of digital entrepreneurship analysis elements from the perspective of dynamic capabilities validated in organizations
Source: Prepared by the author

From the framework, a discussion of the findings was conducted in light of the literature, referencing the macrocategories, categories, and elements of analysis of digital entrepreneurship in organizations from the perspective of dynamic capabilities. The black-filled

arrows represent the relationship of the digital entrepreneurship phenomenon with the macrocategories, categories, and elements identified in the literature on dynamic capabilities. Meanwhile, the unfilled arrows indicate the order of prominence of the macrocategories identified in the literature (according to the number of occurrences identified in the literature).

The analysis of the interviews allowed for a comprehensive understanding of the influences of technology on the organizational environment, corroborating the studies by Bican and Brem (2020) and Sussan and Acs (2017). In an increasingly digitalized world, organizations face a wide range of challenges and opportunities. This study provides insights into how organizations are responding to these conditions through the analysis of dynamic capabilities, which are constantly evolving.

The development of digital organizations enables businesses to be reconfigured based on the understanding of the dynamic capabilities of organizations, in the same context addressed by Pigola et al. (2022). The diversity of approaches adopted by organizations in the development of digital businesses highlights the need for adaptation and innovation to thrive in this competitive environment, a perception also addressed by Ngoasong (2018). Due to this diversity, some organizations opt for exclusively digital models, reflecting what Sussan and Acs (2017) discussed, while others maintain a complementary physical presence, reflecting the complexity of market demands, customer preferences, and the need for continuous learning, which was also addressed by Balocco, Cavallo, Ghezzi, and Berbegal-Mirabent (2019).

The ability of organizations to manage digital products and services is linked to their capacity to innovate in the digital environment and manage data, enabling them to reach an increasingly larger audience and meet market needs, as advocated by Chanin, Pompermaier, Sales, and Prikladnicki (2018). Effective management of these digital products or services ensures sustainable digital businesses in the long term, as the respective managers have the ability to anticipate necessary changes, a perspective also presented by Bican and Brem (2020).

Through the interviews, it was identified that organizations consider the importance of using digital platforms as a form of support and facilitation in the decision-making process, but not directly for value generation, contrasting with the studies of Helfat and Raubitschek (2018). The clients/users who operate in digital media within the organizations seek to facilitate and expedite their businesses and routines digitally, an advantage also highlighted by Jailani, Ali, Kassim, Demong, and Yunus (2020).

In the studied context, the strategic importance of ICTs is recognized, with organizations adopting a wide variety of digital tools and platforms to boost their operations and promote innovation, corroborating the findings of Gupta and Bose (2019). Marketplaces, platforms for trading via digital means typically used by organizations today, did not show considerable relevance in the studied organizations.

The changes in the organizational environment observed in the organizations constantly adapt to market conditions, reducing costs and making processes more agile, as described by Pavlou and Sawy (2010). Some entrepreneurs and collaborators reported facing barriers to technology use, but emphasized that these barriers, while existing, did not impede the development of their businesses. In this context of changes, the automation of products and services emerges as a common priority, aiming to improve operational efficiency and customer experience, following the understanding of Hull et al. (2007).

Routines and processes, originating from Eisenhardt and Martin (2000), specifically in digital entrepreneurship, were shown to be facilitated by the use of networks, which enable a rapid pace of business operations, in agreement with the study by Wheeler (2002). Within routines and processes, businesses enabled by virtual networks allow organizations to become more agile and competitive, creating dynamic capabilities, following what was advocated in the study by Zahra and George (2002b).

The use of social networks and AI demonstrates the growing importance of automated technologies in interacting with customers and optimizing processes. AI enables value generation by identifying faults and errors, which are promptly corrected and communicated, restructuring interactions with customers, a perception advocated by Švarc (2021). Although there are various approaches and levels of technological integration among the studied organizations, it is evident that digital presence is recognized as an essential part of contemporary business operations, corroborating the study by Sahut et al. (2021). Furthermore, understanding participation in the digital economy and the pursuit of organizational innovation reflect the awareness of the need to keep up with trends, performing digital business validation, a perception also defended by Song and Wu (2021).

Based on the analysis of routines and processes in the digital organizations described in the article, innovation in digital businesses was addressed by organizations as essential for the continuity and maintenance of businesses, related to digital technologies and digital business models, but countering Bican and Brem (2020), who place it at the center of these processes. Organizations highlighted that the adoption and adaptation of digital strategies are fundamental for business outcomes, an understanding also presented by Standing and Mattsson (2018). One such strategy emphasizes the exploration of new digital businesses to optimize processes, meet customer demands, and maintain a competitive edge in the market, a perception presented in the studies by Srinivasan and Venkatraman (2018).

Another strategy observed in the organizations is the direction of businesses to operate in B2B, B2C, or in some cases, both. B2B businesses were mentioned as the main focus of the organizations, boosted by the increase in relationships facilitated by digital communication between organizations, the same understanding exposed by Agnihotri, Dingus, Hu, and Krush (2016). B2C businesses have also been considerably favored in recent years in the studied organizations, mainly due to the possibility of using the Internet to advertise their products and services, allowing a much closer and more effective relationship with their customers, corroborating the result of the study by Mangiaracina, Perego, Seghezzi, and Tumino (2019). Regardless of operating in B2B, B2C, or both, the use of networks combined with data analysis and artificial intelligence facilitates lead conversion much more effectively, as observed in the organizations, a perception similar to that of Ngoasong (2018).

The improvements in organizational performance systems facilitated by digitization reflect the continuous process of organizations improving their results using digital means. In the studied organizations, this process proved to be continuous, differing partially from the observations of Gilbert (2006), who points out that this process can be continuous or discontinuous. Within this category, the opportunity for digitization of processes and routines emerges as a central element, an understanding presented by Zhao (2021), but which was recognized by all the interviewed organizations, although they face distinct challenges in its full realization.

The search for mentoring and training emerged as a strategy to overcome the challenges of digitization in most of the studied organizations but did not reflect the reality of all. In the studied sample, only the organizations that use mentoring agree with Polo García-Ochoa, De-Pablos-Heredero, and Blanco Jiménez (2020), who argue that mentoring can aid in the growth of organizations. Digital market segmentation also emerged as a strategy to meet the specific needs of the market and customers. Although varying in each organization, all recognized the importance of this practice to offer a more personalized and effective service, the same analysis made by Mansur (2021).

The behaviors and skills addressed by Eisenhardt and Martin (2000) and confirmed by Sahut et al. (2021) presented themselves as a set of organizational capabilities that, combined, create dynamic capabilities in organizations. These capabilities were also observed in the context of the studied organizations, through changes generated by digital technologies. These

changes, which add value to organizations, were also addressed in the study by Vial (2019), and from them emerge valuable insights to guide business strategies in the current context.

The ability to adopt an optimized structure for digital businesses is a unanimous priority among organizations, although approaches to achieving it vary. The emphasis on forming small, highly qualified teams highlights the importance of investing in human capital and digital competencies. The model adopted by organizations to adapt structures according to the needs of customers and the market was previously addressed by Liu and Bell (2019).

Regarding digital startups, some of the interviewed organizations, although not yet fitting this model, seek to improve to fit these conditions in the near future, even though they are not sure about future conditions, as observed by Ghezzi and Cavallo (2020). The organizations that already fit this profile were motivated to organize their businesses based on the opportunities that arose, allied with market behavior and the skills of their entrepreneurs.

Remote work was observed in all organizations, following the same approach of Bartolomé, Garaizar, and Larrucea (2022), who highlighted the reduction of costs and optimization of processes, generating greater innovation and creativity with time optimization. Understanding competitiveness in the digital environment demonstrates the importance of flexibility and the ability to respond to constantly evolving demands. However, the perception of organizations was divided. While some organizations perceive digital competition as unique, following the perception of Beliaeva, Ferasso, Kraus, and Damke (2020), others do not recognize the difference in competitiveness between digital and non-digital businesses, following the perception of Cubukcu and Gulsecen (2019).

The interviews conducted in this study offered valuable insights into learning mechanisms and knowledge governance, corroborating Eisenhardt and Martin (2000). As the repetition of practices occurs in organizations, they become an important learning mechanism, helping people understand their mechanisms more completely and effectively. Among them, one can highlight the creation of value in organizations, observed in this study from the evolution of ventures in the context of digital entrepreneurship. The further they advance in this context, the greater the tendency to generate dynamic capabilities and, consequently, add value, following the understanding of Jafari-Sadeghi et al. (2021).

The integration of the digital ecosystem into value creation reflects an approach identified in organizations to understand themselves as participants in a tangle of digital entities that relate through their interactions, always with the aim of improving and enhancing the ecosystem in which they are situated, following the understanding of Sussan and Acs (2017). Within the digital ecosystem, the importance of human capital prepared to act in digital businesses is clearly understood in organizations, recognized by all as a key element in value creation. The need for adaptability and constant updating was emphasized, whether through hiring talent or through investments in internal training and capacity building, although this has become more of a challenge in the digital age, as observed by Hanna (2020).

The generation of dynamic capabilities, the central perspective of this study, highlighted by Eisenhardt and Martin (2000), is recognized by organizations as essential to face the challenges of the constantly evolving digital environment. However, it is important to observe how each organization achieves and addresses it, reflecting its own perspectives and internal challenges. Quick adaptation to changes and openness to different emerging perspectives emerge as key factors for the development of more robust dynamic capabilities, in agreement with the understanding of Helfat and Peteraf (2009).

Strategies for developing competitive advantages vary among organizations, but all recognize the need for differentiation, whether through the specialization of labor or the enhancement of customer relationships. Organizations seek to ensure a solid position in the digital market. The ability to understand and adapt to the dynamics of the digital environment

emerged as an essential competitive advantage in the studied organizations, corroborating the study by Proksch, Rosin, Stubner, and Pinkwart (2021).

Finally, the transition from a product-based economy to a knowledge-based economy, specifically regarding digital transformation in the studied organizations, proved to be much broader than the business digitization process addressed in the study by Cuthbertson and Furseth (2022). While some organizations see this transformation as a future trend, others are immersed in it, driven by the availability of resources and investments.

5 CONCLUSION

Digital entrepreneurship, intrinsically linked to dynamic capabilities, innovation, and technological evolution, represents an area of study and business practice that continues to evolve. By building an analytical framework based on the 28 emerging elements identified in the literature, validated in practice, and within organizations, the main research question is addressed: that the framework can be utilized in organizations through the analysis of the elements it presents. From the mentioned elements, it is possible to analyze how organizations can advance in the context of digital entrepreneurship.

This study highlights the importance of organizations understanding and adapting to the changes brought about by the digital age, emphasizing the need to develop skills and strategies to seize emerging opportunities. In this context, digital entrepreneurship plays a significant role in promoting innovation, economic growth, and the pursuit of competitive advantages in an environment of constant technological evolution and dynamism. It is hoped that this framework will not only guide future research but also assist digital entrepreneurs in making strategic decisions in a complex and constantly transforming organizational environment.

The suitability of the framework proposed in this study is based on the premise that digital entrepreneurship cannot be analyzed solely through conventional models. The rapid evolution of technologies and the increasing complexity of the organizational landscape require an approach that goes beyond traditional concepts, incorporating emerging elements characteristic of the digital era. As the technological and market environment continues to evolve, new challenges and opportunities arise, reinforcing the need for an analytical framework of elements.

Furthermore, this study achieved its primary goal of testing the practical applicability of the framework in organizations, analyzing them based on the elements that compose it. The insertion of the practical context refined the framework, enabling its use more assertively, not only for analysis but also for comparative studies between the conditions of the organizations, lending practical relevance to its context.

However, it is important to recognize the limitations of this study, as the analysis was conducted broadly, not focusing on a specific segment. If the framework is applied to specific segments, it may present differentiated results, since the research utilized organizations from different segments. As suggestions for future research, it is recommended to explore the practical applicability of the framework and develop levels of evolution of organizations in the context of digital entrepreneurship from the perspective of dynamic capabilities or apply the framework to other organizations with the aim of analyzing them in this context.

REFERENCES

Addy, W. A., Ajayi-nifise, A. O., Bello, B. G., & Tula, S. T. (2024). Entrepreneurial leadership in high-tech industries: A review of key traits and success strategies. *GSC Advanced Research and Reviews*, 18(02), 286–296. https://doi.org/10.30574/gscarr.2024.18.2.0071

Agnihotri, R., Dingus, R., Hu, M. Y., & Krush, M. T. (2016). Social media: Influencing customer satisfaction in B2B sales. *Industrial Marketing Management*, 53, 172–180. https://doi.org/10.1016/j.indmarman.2015.09.003

Alves, Z. M. M. B., & Silva, M. H. G. F. D. da. (1992). Qualitative data analysis of interviews: a proposal. *Paidéia* (Ribeirão Preto), (2), 61–69. https://doi.org/10.1590/s0103-863x1992000200007

Ammirato, S., Sofo, F., Felicetti, A. M., Helander, N., & Aramo-Immonen, H. (2019). A new typology to characterize Italian digital entrepreneurs. *International Journal of Entrepreneurial Behaviour and Research*, 26(2), 224–245. https://doi.org/10.1108/IJEBR-02-2019-0105

Balocco, R., Cavallo, A., Ghezzi, A., & Berbegal-Mirabent, J. (2019). Lean business models change process in digital entrepreneurship. *Business Process Management Journal*, 25(7), 1520–1542. https://doi.org/10.1108/BPMJ-07-2018-0194

Bartolomé, J., Garaizar, P., & Larrucea, X. (2022). A pragmatic approach for evaluating and accrediting digital competence of digital profiles: A case study of entrepreneurs and remote workers. *Technology, Knowledge and Learning*, 27. https://doi.org/10.1007/s10758-021-09516-3

Beliaeva, T., Ferasso, M., Kraus, S., & Damke, E. J. (2020). Dynamics of digital entrepreneurship and the innovation ecosystem: A multilevel perspective. *International Journal of Entrepreneurial Behaviour and Research*, 26(2), 266–284. https://doi.org/10.1108/IJEBR-06-2019-0397

Bican, P. M., & Brem, A. (2020). Digital business model, digital transformation, digital entrepreneurship: Is there a sustainable "digital"? *Sustainability* (Switzerland), 12(13), 1–15. https://doi.org/10.3390/su12135239

Bourezig, M. C. E., Taleb Bouguerri, S., & Bouguerri, C. T. (2024). The intersection of AI and digital entrepreneurship: Studying the varied ways that AI is changing digital enterprises. *Management and Economics Review*, 9(1), 78–90. https://doi.org/10.24818/mer/2024.01-05

Brown, O., Davison, R. M., Decker, S., Ellis, D. A., Faulconbridge, J., Gore, J., ... Hibbert, P. (2024). Theory-driven perspectives on generative artificial intelligence in business and management. *British Journal of Management*, 35(1), 3–23. https://doi.org/10.1111/1467-8551.12788

Chanin, R., Pompermaier, L., Sales, A., & Prikladnicki, R. (2018). Challenge-based startup learning: A framework to teach software startup. In: *Annual Conference on Innovation and Technology in Computer Science Education*, ITiCSE, 266–271. https://doi.org/10.1145/3197091.3197122

Creswell, J. W. (2010). *Research design*: Qualitative, quantitative, and mixed methods approaches. In Artmed (Ed.), Translation by Magda França Lopes (3rd ed.). Porto Alegre.

Cubukcu, C., & Gulsecen, S. (2019). Effectiveness of business accelerator services in Turkey: From the perspective of startups. *International Journal of Innovation and Learning*, 26(4), 426–443. https://doi.org/10.1504/IJIL.2019.102906

Cuthbertson, R. W., & Furseth, P. I. (2022). Digital services and competitive advantage: Strengthening the links between RBV, KBV, and innovation. *Journal of Business Research*, 152(July), 168–176. https://doi.org/10.1016/j.jbusres.2022.07.030

Dantas, A. (2016). *Content analysis*: A case study application to the study of values and social representations. In Manuel Lisboa (Ed.), pp. 261–286.

Dong, J. Q. (2019). Moving a mountain with a teaspoon: Toward a theory of digital entrepreneurship in the regulatory environment. *Technological Forecasting and Social Change*, 146(November 2017), 923–930. https://doi.org/10.1016/j.techfore.2018.07.050

Duarte, J., & Barros, A. (2011). *Research methods and techniques in communication*. In Atlas (Ed.), Research Methods and Techniques in Communication (2nd ed., p. 384). São Paulo.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10–11), 1105–1121. https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis. *SAGE Open*, 4(1), 215824401452263. https://doi.org/10.1177/2158244014522633

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Ghezzi, A., & Cavallo, A. (2020). Agile business model innovation in digital entrepreneurship: Lean startup approaches. *Journal of Business Research*, 110(February 2017), 519–537. https://doi.org/10.1016/j.jbusres.2018.06.013

Gilbert, C. G. (2006). Change in the presence of residual fit: Can competing frames coexist? *Organization Science*, 17(1), 150–167. https://doi.org/10.1287/orsc.1050.0160

Gupta, G., & Bose, I. (2019). Strategic learning for digital market pioneering: Examining the transformation of Wishberry's crowdfunding model. *Technological Forecasting and Social Change*, 146(December 2017), 865–876. https://doi.org/10.1016/j.techfore.2018.06.020

Hadley, G. (2002). An introduction to data-driven learning. *RELC Journal*, 33(2), 99–124. https://doi.org/10.1177/003368820203300205

Hanna, N. K. (2020). Assessing the digital economy: aims, frameworks, pilots, results, and lessons. *Journal of Innovation and Entrepreneurship*, *9*(16), 1–16. https://doi.org/10.1186/s13731-020-00129-1

Helfat, C. E., & Peteraf, M. A. (2009). Understanding dynamic capabilities: Progress along a developmental path. *Strategic Organization*, *7*(1), 91–102. https://doi.org/10.1177/1476127008100133

Helfat, C. E., & Raubitschek, R. S. (2018). Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems. *Research Policy*, *47*(8), 1391–1399. https://doi.org/10.1016/j.respol.2018.01.019

Hull, C. E. K., Hung, Y. T. C., Hair, N., & Perotti, V. (2007). Taking advantage of digital opportunities: A typology of digital entrepreneurship. *International Journal of Networking and Virtual Organisations*, *4*(3), 290–303. https://doi.org/10.1504/IJNVO.2007.015166

Jafari-Sadeghi, V., Garcia-Perez, A., Candelo, E., & Couturier, J. (2021). Exploring the impact of digital transformation on technology entrepreneurship and technological market expansion: The role of technology readiness, exploration and exploitation. *Journal of Business Research*, *124*(December 2020), 100–111. https://doi.org/10.1016/j.jbusres.2020.11.020

Jailani, S. F. A. K., Ali, S. A. M., Kassim, E. S., Demong, N. A. R., & Yunus, N. M. (2020). Digital copywriting and online business visibility. *Journal of Critical Reviews*, *7*(16), 557–562. https://doi.org/10.31838/jcr.07.16.66

Kraus, S., Roig-Tierno, N., & Bouncken, R. B. (2019). Digital innovation and venturing: An introduction into the digitalization of entrepreneurship. *Review of Managerial Science*, *13*(3), 519–528. https://doi.org/10.1007/s11846-019-00333-8

Liu, J., Li, X., & Wang, S. (2020). What have we learnt from 10 years of fintech research? A scientometric analysis. *Technological Forecasting and Social Change*, *155*(November 2019), 120022. https://doi.org/10.1016/j.techfore.2020.120022

Liu, P., & Bell, R. (2019). Exploration of the initiation and process of business model innovation of successful Chinese ICT enterprises. *Journal of Entrepreneurship in Emerging Economies*, *11*(4), 515–536. https://doi.org/10.1108/JEEE-09-2018-0094

Loiola, E. (2013). Informal Social Networks and Incubated Business Performance Resumo. *Revista de Ciencias Da Administracao*, *15*(37), 22–37. https://doi.org/10.5007/2175-8077.2013v15n37p22

Lungu, A. E., Georgescu, M. R., & Juravle, D. (2024). A Bibliometric Analysis of Digital Entrepreneurship. *Journal of the Knowledge Economy*. https://doi.org/https://doi.org/10.1007/s13132-024-01885-1

Maass, W., Parsons, J., Purao, S., Storey, V. C., & Woo, C. (2018). Data-driven meets theory-driven research in the era of big data: Opportunities and challenges for information systems research. *Journal of the Association for Information Systems*, *19*(12), 1253–1273. https://doi.org/10.17705/1jais.00526

Malik, A., Sharma, P., Kingshott, R., & Laker, B. (2022). Leveraging cultural and relational capabilities for business model innovation: The case of a digital media EMMNE. *Journal of Business Research*, *149*(February 2021), 270–282. https://doi.org/10.1016/j.jbusres.2022.05.004

Mangiaracina, R., Perego, A., Seghezzi, A., & Tumino, A. (2019). Innovative solutions to increase last-mile delivery efficiency in B2C e-commerce: A literature review. *International Journal of Physical Distribution and Logistics Management*, *49*(9), 901–920. https://doi.org/10.1108/IJPDLM-02-2019-0048

Mansur, D. M. (2021). Digital-based SME Innovation Development Strategy: Marketing, Entrepreneurship Insight and Knowledge Management. *Golden Ratio of Mapping Idea and Literature Format*, *2*(1), 65–84. https://doi.org/10.52970/grmilf.v2i1.179

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *Journal of Computer Information Systems*, *54*(1), 11–22. https://doi.org/10.1080/08874417.2013.11645667

Martins, J., & Rodrigues, R. (2024). Motivations in the adoption and conversion of freemium services: Insights for digital entrepreneurship. *Review of Managerial Science*. https://doi.org/10.1007/s11846-024-00754-0

McKelvie, A., & Davidsson, P. (2009). From resource base to dynamic capabilities: An investigation of new firms. *British Journal of Management*, *20*(SUPP. 1). https://doi.org/10.1111/j.1467-8551.2008.00613.x

Muafi, M., Syafri, W., Prabowo, H., & Nur, S. A. (2021). Digital Entrepreneurship in Indonesia: A Human Capital Perspective. *Journal of Asian Finance, Economics and Business*, *8*(3), 351–359. https://doi.org/10.13106/jafeb.2021.vol8.no3.0351

Nambisan, S. (2016). Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship. *Entrepreneurship: Theory and Practice*, *41*(6), 1029–1055. https://doi.org/10.1111/etap.12254

Nascimento, L. de C. N., Souza, T. V. de, Oliveira, I. C. dos S., Moraes, J. R. M. M. de, Aguiar, R. C. B. de, & Silva, L. F. da. (2018). Saturação teórica em pesquisa qualitativa: relato de experiência na entrevista com escolares. *Revista Brasileira de Enfermagem [Internet]*, *71*(1), 243–251. https://doi.org/10.1590/0034-7167-2016-0616

Ngoasong, M. Z. (2018). Digital entrepreneurship in a resource-scarce context: A focus on entrepreneurial digital competencies. *Journal of Small Business and Enterprise Development*, *25*(3), 483–500. https://doi.org/10.1108/JSBED-01-2017-0014

Nicmanis, M. (2024). Reflexive Content Analysis: An Approach to Qualitative Data Analysis, Reduction and Description. *International Journal of Qualitative Methods*, *23*, 1–12. https://doi.org/10.1177/16094069241236603

Olan, F., Troise, C., Damij, N., & Newbery, R. (2024). Guest editorial: Emerging issues in digital entrepreneurship – challenges and opportunities. *International Journal of*

Entrepreneurial Behavior & Research, *30*(2), 233–237. https://doi.org/10.1108/IJEBR-03-2024-062

Paul, J., Alhassan, I., Binsaif, N., & Singh, P. (2023). Digital entrepreneurship research: A systematic review. *Journal of Business Research*, *156*(November 2022), 113507. https://doi.org/10.1016/j.jbusres.2022.113507

Pavlou, P. A., & Sawy, O. A. E. (2010). The "third hand": IT-enabled competitive advantage in turbulence through improvisational capabilities. *Information Systems Research*, *21*(3), 443–471. https://doi.org/10.1287/isre.1100.0280

Pigola, A., da Costa, P. R., van der Poel, N., & Yamaçake, F. T. R. (2022). New perspectives for dynamic capabilities in meeting needs of startups' survival. *Journal of Entrepreneurship in Emerging Economies*. https://doi.org/10.1108/JEEE-06-2021-0258

Pinto, A. R., Martens, C. D. P., & Scazziota, V. V. (2023). Digital entrepreneurship in organizations: Integrative Literature Review and proposition of analysis elements from the perspective of dynamic capabilities. *REAd. Revista Eletrônica de Administração (Porto Alegre)*, *29*(3), 627–660. https://doi.org/10.1590/1413-2311.393.135273

Polo García-Ochoa, C., De-Pablos-Heredero, C., & Blanco Jiménez, F. J. (2020). How business accelerators impact startup's performance: Empirical insights from the dynamic capabilities approach. *Intangible Capital*, *16*(3), 107–125. https://doi.org/10.3926/IC.1669

Proksch, D., Rosin, A. F., Stubner, S., & Pinkwart, A. (2021). The influence of a digital strategy on the digitalization of new ventures: The mediating effect of digital capabilities and a digital culture. *Journal of Small Business Management*, *00*(00), 1–29. https://doi.org/10.1080/00472778.2021.1883036

Recker, Jan & Briel, F. von. (2019). The Future of Digital Entrepreneurship Research. *Fortieth International Conference on Information Systems*. https://core.ac.uk/download/pdf/267815713.pdf

Révillion, A. S. P. (2003). Revista Interdisciplinar de Marketing. The Use of Exploratory Research in the Marketing Area, 21–37. https://doi.org/http://dx.doi.org/10.4025/rimar.v2i2.26692

Sahut, J. M., Iandoli, L., & Teulon, F. (2021). The age of digital entrepreneurship. *Small Business Economics*, *56*(3), 1159–1169. https://doi.org/10.1007/s11187-019-00260-8

Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping Agility Through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms. *Foreign Affairs*, *91*(5), 1689–1699. https://doi.org/10.2307/30036530

Song, D., & Wu, A. (2021). Pursuing International Opportunities in a Digitally Enabled World. https://doi.org/10.1007/978-3-030-53914-6_13

Sorescu, A. (2017). Data-Driven Business Model Innovation. *Journal of Product Innovation Management*, *34*(5), 691–696. https://doi.org/10.1111/jpim.12398

Srinivasan, A., & Venkatraman, N. (2018). Entrepreneurship in digital platforms: A network-centric view. *Strategic Entrepreneurship Journal*, *12*(1), 54–71. https://doi.org/10.1002/acr.22212

Standing, C., & Mattsson, J. (2018). "Fake it until you make it": Business model conceptualization in digital entrepreneurship. *Journal of Strategic Marketing*, *26*(5), 385–399. https://doi.org/10.1080/0965254X.2016.1240218

Steininger, D. M. (2019). Linking information systems and entrepreneurship: A review and agenda for IT-associated and digital entrepreneurship research. *Information Systems Journal*, *29*(2), 363–407. https://doi.org/10.1111/isj.12206

Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, *49*(1), 55–73. https://doi.org/10.1007/s11187-017-9867-5

Švarc, J. (2021). Prolegomena to social studies of digital innovation. *AI and Society*, (0123456789). https://doi.org/10.1007/s00146-021-01220-1

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1093/0199248540.003.0013

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, *28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31–51. https://doi.org/10.1111/j.1468-2370.2007.00201.x

Wang, F. (2020). Digital marketing capabilities in international firms: A relational perspective. *International Marketing Review*, *37*(3), 559–577. https://doi.org/10.1108/IMR-04-2018-0128

Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, *52*(3), 326–349. https://doi.org/10.1016/j.lrp.2018.12.001

Wheeler, B. C. (2002). NEBIC: A dynamic capabilities theory for assessing net-enablement. *Information Systems Research*, *13*(2), 125–146. https://doi.org/10.1287/isre.13.2.125.89

Wicks, D. (2017). The Coding Manual for Qualitative Researchers (3rd edition). In *Qualitative Research in Organizations and Management: An International Journal (Vol. 12)*. https://doi.org/10.1108/qrom-08-2016-1408

Yeow, A., Soh, C., & Hansen, R. (2018). Aligning with new digital strategy: A dynamic capabilities approach. *Journal of Strategic Information Systems*, *27*(1), 43–58. https://doi.org/10.1016/j.jsis.2017.09.001

Zahra, S. A., & George, G. (2002a). Absorptive Capacity : A Review Reconceptualization and Extension. *Academy of Management Review*, *27*(2), 185–203. https://doi.org/10.5465/amr.2002.6587995

Zahra, S. A., & George, G. (2002b). The net-enabled business innovation cycle and the evolution of dynamic capabilities. *Information Systems Research*, *13*(2), 147–150. https://doi.org/10.1287/isre.13.2.147.90

Zhao, Y. (2021). Examining Digital Entrepreneurship: The Goal of Optimization of Transformation Path Normal Education in China. *Frontiers in Psychology*, *12*(October), 1–12. https://doi.org/10.3389/fpsyg.2021.766498