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Entrepreneurial learning for innovation: A multiple case study

Aprendizagem empreendedora para a inovação: Um estudo de múltiplos casos

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Abstract

Purpose: The contributions of individuals in the innovative process and the way they learn are crucial. However, the various entrepreneurial learning modes are neglected in discussions about innovation. That said, innovation is considered to emerge from continuous learning processes and the accumulation and development of knowledge from relationships, experiences, skills, and information. Thus, this work aims to identify how small business entrepreneurs adopt the different learning modes in their innovation actions.

Originality/value: The academic contribution of this research is to present initial steps regarding entrepreneurial learning modes in conjunction with innovation. On the other hand, the practical contribution refers to understanding the different forms of learning that can be considered for innovation, which the study will provide to small business entrepreneurs.

Design/methodology/approach: The research strategy adopted was multiple case studies and content and cross-case analysis techniques were used for data analysis.

Findings: Research results show that experiential, through networks, formal, and vicarious learning are important modes to help entrepreneurs achieve market distinction through innovative solutions. Thus, the knowledge accumulation provided by the different learning modes studied resulted in implementing various innovation actions, mainly in services, in the companies participating in the study.

Keywords: entrepreneurship, learning, entrepreneurial learning, learning modes, innovation

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Resumo

Objetivo: As contribuições dos indivíduos no processo inovativo, bem como a forma como eles aprendem são cruciais. Todavia, os diversos modos de aprendizagem dos empreendedores são negligenciados nas discussões acerca da inovação. Dito isso, considera-se que a inovação emerge de processos contínuos de aprendizagem, bem como do acúmulo e desenvolvimento de conhecimentos provenientes de relacionamentos, experiências, habilidades e informações. Destarte, identificar como os diferentes modos de aprendizagem são adotados pelos empreendedores de pequenos negócios em suas ações de inovação é o objetivo do presente trabalho.

Originalidade/valor: A contribuição acadêmica desta pesquisa é apresentar passos iniciais a respeito dos modos de aprendizagem empreendedora em conjunto com a inovação. Já a contribuição prática refere-se ao entendimento das diferentes formas de aprendizagem que podem ser consideradas para a inovação, que o estudo proporcionará aos empreendedores de pequenos negócios.

Design/metodologia/abordagem: A estratégia de pesquisa adotada foi o estudo de casos múltiplos e, para a análise dos dados, utilizaram-se a análise de conteúdo e a técnica de *cross-case analysis*.

Resultados: Os resultados da pesquisa mostram que as aprendizagens experiencial, por *networks*, formal e vicária são importantes modos de auxílio aos empreendedores no alcance de distinção mercadológica, mediante soluções inovadoras. Assim, o acúmulo de conhecimento proporcionado pelos diferentes modos de aprendizagem estudados resultou na implementação de variadas ações de inovação, principalmente em serviços, nas empresas participantes do estudo.

Palavras-chave: empreendedorismo, aprendizagem, aprendizagem empreendedora, modos de aprendizagem, inovação

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INTRODUCTION

There is a growing consensus that the entrepreneurial learning practice can lead to developing and disseminating co-created knowledge (Macpherson et al., 2022). Therefore, learning encompasses entrepreneurs' experience, cognition, and social interactions (Man, 2012). In this sense, it is considered that experiential learning (Politis, 2005), through networks (Man, 2006), formal (Jiao & Cui, 2010), and vicarious learning (Holcomb et al., 2009; Abecassis-Moedas et al., 2016) are different entrepreneurial learning modes (Cowdean et al., 2018) capable of generating collaborative innovations (Rae, 2017).

Entrepreneurial learning has already been investigated from aspects such as failure (Minniti & Bygrave, 2001; Cope, 2011; Dias et al., 2021) and experience (Rae & Carswell, 2000; Politis, 2005; Corbett, 2005), but few studies consider the different modes of entrepreneurial learning (Man, 2006; Holcomb et al., 2009; Mansoori, 2017); and even scarcer, those who consider entrepreneurial learning modes as a process for innovative actions (Abecassis-Moedas et al., 2016). It is also noteworthy that there are limited studies involving the theme due to the difficulty of establishing measures that instrumentalize empirical results, although theoretically, the concept is sufficiently operationalized (Xia & Liu, 2021). This context calls for more efforts to grasp the empirical link between entrepreneurial learning ability and innovation.

That said, the primary objective of this study is to analyze how learning modes are adopted by entrepreneurs in innovation actions in micro and small enterprises (MSEs) in the service sector, and secondarily, it seeks to identify how experiential, through networks, formal and vicarious learning is adopted by these entrepreneurs in their business innovative actions. Furthermore, establishing a link between entrepreneurial learning modes and innovation in services MSEs is relevant for this research field, given the economic relevance and job creation of these companies in Brazil and worldwide (Néto & Teixeira, 2011; Conselho Federal de Economia – Cofecon, 2020; Lima, 2020).

Finally, as it is a fundamental part of the country's economy, in Brazil, "it is extremely important to dedicate oneself to the study of how innovation is generated in the context of MSE" (Campos & Campos, 2013, p. 37). Equally important is the focus on the owners of these companies, as they guide innovation activities (Silva & Di Serio, 2021), especially in service enterprises, due to the job creation boost and significant economic recovery in recent years (Sebrae, 2021).

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Thus, in order to meet the proposed objective, the next sections outline the theoretical framework based on entrepreneurial learning and learning and innovation; then, the methodological proposal and the results and discussions are presented; the work ends with the final considerations.

LITERATURE REVIEW

Entrepreneurial learning modes

Entrepreneurial learning can be understood as a continuous social process that involves learning both through individual experiences and other's experiences (Rae & Carswell, 2000). This process, permeated by accumulated and multifaceted experiences, also involves changing entrepreneurs' perceptions and behavior (Lingen et al., 2020).

Mostly, entrepreneurial learning is perceived as an experiential process (Politis, 2005). That is, the entrepreneur's experience and prior knowledge are perceived as preponderant factors for the prosperity of their business (Fust et al., 2017). It also appears that its process can be explained from the cognitive, experiential, and networking foundations, the latter comprising the idea of the entrepreneur immersed in social networks (Man, 2006), which are prominent both in their learning process and business success (Hughes & Yang, 2020). According to Gois and Machado (2012), before entering broad relationship networks (for example, with suppliers, customers, employees, and consultants), the entrepreneur creates his first information exchange links with the people who are part of his day-to-day (family and friends). At the moment of network insertion, the entrepreneur acquires the necessary knowledge to explore opportunities perceived before other entrepreneurs through learning processes, which are fundamental to delimiting how opportunities appear (Soetanto, 2017).

Another learning mode, relatively unexplored in the entrepreneurial context, refers to vicarious learning (Abecassis-Moedas et al., 2016). Vicarious learning concerns direct or indirect learning modes through behavior observation and other actions (Holcomb et al., 2009; Mansoori, 2017; Valenzuela et al., 2020). It is the observation of behavior models, specifically, the observation of positive and negative effects of these models, so that only the observed successful behavior could be reproduced and the unsuccessful one be avoided (Holcomb et al., 2009; Abecassis-Moedas et al., 2016).

In turn, formal learning consists of learning through formal education and training, with which entrepreneurs can develop knowledge management

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tools and use them systematically in managing their businesses (Jiao & Cui, 2010). This type of learning implies vertical/propositional knowledge, individual learning and educational settings within organizations (Malcolm et al., 2003). However, according to Stephens (2020), informal learning has emerged and impacted the graduates' entrepreneurial activity the most.

That said, it is observed that studies in entrepreneurship have made efforts to understand the entrepreneurial process as a learning process that can come in different modes (experiential, vicarious, formal, and social networks) (Shen et al., 2021). These modes can help entrepreneurs implement new knowledge in their businesses (Macpherson et al., 2022), resulting in better organizational performance and market success (Fust et al., 2017; Hughes & Yang, 2020). Thus, in the next section, it is highlighted that learning can lead to innovative results for organizations, given that it is linked to knowledge, and, according to Castaneda and Cuellar (2020), knowledge can be transformed into innovation.

Learning and innovation

Business innovative processes are composed of different forms of learning, which implies that in any investigation of innovation, the exploration of learning factors is the rule (Bittencourt, 2012) because "learning is intrinsic to any type of innovation" (Ravasi & Turati, 2005, p. 138). However, despite the interweaving between learning and innovation being treated as healthy and the understanding that learning is essential for the development of innovations, "few studies explore the relationship between the two themes" (Sacramento & Teixeira, 2019, p. 121). In addition, entrepreneurial learning and innovation are emerging as an exciting topic in the field (Castaneda & Cuellar, 2020). In this way, we seek to outline the congruences between both themes and their implications for studies in the entrepreneurship field.

Learning is a process that involves generation, codification, and knowledge transfer (Mitra, 2000), and it is essential for continuous innovation to occur, as well as the creation of performance advantages (Westerlund & Rajala, 2010). In this context, individual learning begins with external stimuli, which provoke in the individual the necessary reactions to respond to the environment. The information and data obtained, as well as their interpretations, will be influenced by individuals' previous information and experiences when storing the content in memory. Finally, the new knowledge acquired will allow each individual to respond to the new environment's demands through innovative performances (Mello et al., 2010; Wang et al., 2010). It

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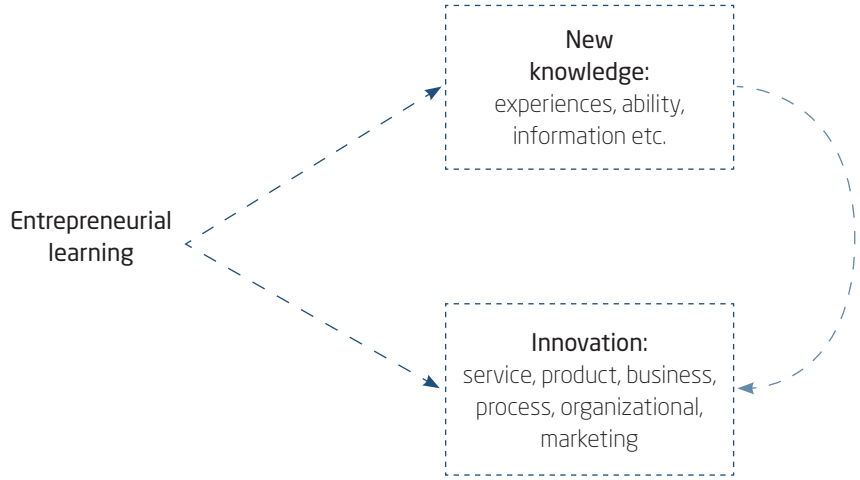
is also noteworthy that the different types of external sources increase the chances of innovation for companies, not only because a valuable flow of external knowledge is established but mainly because of the productive complementarity between external and internal knowledge (Love et al., 2014).

The continuous learning process (Sacramento & Teixeira, 2019) and the knowledge sharing, through the transmutation of experiences, skills, and information into practices, enable the development of innovation in the areas of services, products, processes, business models, and organizational schemes (Castaneda & Cuellar, 2020). With this, it is understood that the development of business activities relies on the skills application, knowledge, and entrepreneurs' attributes, which can both derive from others and can result from their direct learning results (Man, 2012); thus, entrepreneurial learning effectively improves innovation processes (Deakins & Bensemann, 2018).

Therefore, it is argued that entrepreneurial learning is an important domain for innovative actions implementation (Abecassis-Moedas et al., 2016), as it is a powerful link between the constitution of new knowledge and the formation of innovative business performance, given that "learning is a continuous process necessary for innovation, requiring up-to-date support of the knowledge produced through learning" (Hermawati, 2020, p. 199). That said, Figure 1 presents the relationship between learning, knowledge, and innovation advocated in this study.

Figure 1

Relationship between entrepreneurial learning, knowledge, and innovation



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METHODOLOGICAL PROCEDURES

The present study is qualitative (Creswell, 2009), exploratory, and descriptive because few theoretical-empirical studies investigate the relationship between entrepreneurial learning and innovative actions. It also outlines how entrepreneurs learn to innovate from the perspective of four different learning modes. As a unit of analysis, the individual was determined, that is, the entrepreneurs of the cases studied, as they are responsible for adopting innovative actions in their businesses.

The research strategy adopted was a multiple case study (Yin, 2015) through empirical investigation in eight micro and small services enterprises. According to Eisenhardt (1989), choosing the cases randomly is not preferable; therefore, the cases were selected according to three criteria: 1. that the companies were micro or small companies due to the importance they have for the economic development of Brazil; 2. that they were from the service sector, due to the economic representativeness and jobs creation; and 3. that the entrepreneurs of these companies had implemented or were implementing innovation actions. Considering the selection criteria, Table 1 presents companies' characteristics and entrepreneurs' profiles.

Table 1

Companies' characteristics and entrepreneurs' profile

Companies	Case A	Case B	Case C	Case D	Case E	Case F	Case G	Case H
Foundation year	2012	2000	2012	2009	2008	2015	2015	1998
Location	Aracaju-SE	Aracaju-SE	Aracaju-SE	Maceió-AL	Aracaju-SE	Aracaju-SE	Aracaju-SE	Aracaju-SE
Size	Micro	Micro	Small	Small	Small	Micro	Micro	Small
Sector	Travel agency	Tourism office	Hostel	Hostel e posada	Pastry shop	Restaurant	Barbershop and bar	Studio
Profile	**Case A**	**Case B**	**Case C**	**Case D**	**Case E**	**Case F**	**Case G**	**Case H**
Gender	Female	Female	Male	Male	Female	Female/ female	Male	Male/ female
Age	41	43	44	44	55	42/41	27	47/38
Birthplace	SP	SE	SP	AL	SE	BA/PE	BA	RJ/CE
Education	Graduation	Incomplete graduation	Post-graduation	Post-graduation	Incomplete graduation	Post-graduation	Incomplete higher	Post-graduation

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To meet the validity and reliability criteria recommended by Yin (2015), Table 2 presents the procedures adopted in this research.

Table 2

Validity and reliability

Criteria	Procedures
Construct validity	• Use of multiple sources of evidence: semi-structured interviews, documentary research, and direct observation. • Sending interview transcripts to key informants to review information. • Explanation of the data analysis procedure.
External validity	• Justify the case selection criteria. • Discriminate companies' characteristics and entrepreneur profiles. • Use of replication logic in the cases studied.
Reliability	• Use of case study protocol. • Elaboration of a database of cases, with transcripts of interviews and storage of data in files.

Source: Gibbert et al. (2008) and Yin (2015).

As for data collection, semi-structured interviews, documentary research, and direct observation were used, indicating the triangulation of evidence sources (Yin, 2015). In this sense, interviews with ten entrepreneurs of the eight selected enterprises searches in folders, websites, and social networks, and observation of the implemented innovations were the sources used to highlight the innovative actions of the entrepreneurs in the investigated cases. Table 3 presents a summary of the sources used in each case.

Table 3

Evidence sources

Evidence sources	Case A	Case B	Case C	Case D	Case E	Case F	Case G	Case H
Interviews	X	X	X	X	X	X	X	X
Direct observation	X	X	X	X	X	X	X	X
Folder					X	X		
Site			X	X				
Social networks	X	X				X	X	X

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In order to group and systematize the data to facilitate data analysis, analytical categories, and analysis elements were instituted based on the literature, presented in Table 4.

Table 4

Analytical categories and analysis elements

Analytical categories	Analysis elements
Experiential learning (Politis, 2005)	Personal experience in management positions, in a previous venture, and/or in the industry.
Learning by *network* (Man, 2006)	Interactions with employees, suppliers, customers, competitors, partners, family, friends, small business support agencies, other entrepreneurs, and consultants.
Formal learning (Jiao & Cui, 2010)	Academic training, self-learning and participation in courses, training, fairs, workshops, and forums.
Vicarious learning (Holcomb et al., 2009; Abecassis-Moedas et al., 2016).	Observation of parental/mentor model, observation of competitors' activities, mobility of competitors' employees, observation of activities of companies in other sectors.

Source: Politis (2005), Man (2006), Holcomb et al. (2009), Jiao and Cui (2010), and Abecassis-Moedas et al. (2016).

Finally, content analysis was the established data analysis technique, in which the three chronological poles arranged by Bardin (1977) were obeyed: pre-analysis, material exploration, data treatment, inference, and results interpretation. After the description of each case individually, considering the available poles, the cross-case analysis technique was used, which, according to Eisenhardt (1989), is a technique that seeks to establish patterns between the analyzed cases and allows results comparison obtained with the theory. Table 5 presents the summary of the steps taken for data analysis.

Table 5

Data analysis

Steps	Description
1. Pre-analysis	Objectives formulation, document organization, and code elaboration.
2. Material exploration	Preparation of full transcripts of recorded interviews.

(continues)

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Table 5 (conclusion)

Data analysis

Steps	Description
3. Data treatment and results interpretation	Final categorization according to the analysis elements previously established, depending on the learning modes and the explicit and implicit contents in the messages.
4. Cross-case analysis	Identification of similarities and differences, as well as comparisons between the analyzed cases.

Source: Bardin (1977) and Eisenhardt (1989).

Thus, initially, the transcribed interviews were codified regarding the learning categories: experiential, by network, formal, and vicarious, based on the identification of the mentioned analysis elements. Soon after, associations were made between these categories and elements and the innovation actions identified in the messages of the interviewed entrepreneurs. Finally, the similarities and differences between the cases were observed by crossing the findings and disclosing them with the literature.

RESULTS AND DISCUSSIONS

Experiential entrepreneurial learning and innovation

Experiential learning is highlighted as the most recurrent mode of entrepreneurial learning (Fust et al., 2017). In this sense, the evidence from the present study points to personal experience as the most consolidated and fundamental means (Lattacher & Wdowiak, 2020) for the accumulation of knowledge and subsequent adoption of important innovative actions in all cases analyzed (Politis, 2005; Lingen et al., 2020).

> This is the first hostel in Sergipe and my experience was important for that, because I've always stayed mostly in hostels. When I came to Aracaju for the first time [...] I opened the map of hostels in Brazil and realized that Sergipe was the only state in the northeast that didn't have a hostel [...] (Entrepreneur C).

Agreeing with the perception that entrepreneurs' experience is transformed into knowledge (Nogueira, 2019), which is later transformed into

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active experimentation (Fust et al., 2017), it was identified that previous professional experience (cases: A, B, C, D, G, and H), previous experience in another enterprise (cases: A and E), and technical/operational knowledge of the sector (case: H) also enabled the adoption of potential innovations (Yang & Zhang, 2021).

> When I worked at Senac it was with qualification [...] so I brought into the hostel a standard that is not common for you to see [...]. I am preparing for, once the renovation is complete [...] a themed weekend for couples, another where I will only receive the LGBT public, and also a weekend with programs just for the best age [...]. There will be 12 themed weekends, which will involve gastronomy, dance and others (Entrepreneur D).

Mello et al. (2010, p. 54) state that "new knowledge can be the result of existing knowledge and experiences lived by innovative agents". Thus, the experiences lived by the entrepreneurs were responsible for the continuous production of new knowledge (Politis, 2005), which was converted into innovations, mainly of services, as evidenced below.

> When we thought about opening the business, mainly because of his experience in fighting, many fighters were already doing functional training, but that had not yet arrived here in the city [...]. Today, there are already many studios that follow what we initiated, but at first, we had the pioneering spirit of envisioning functional training as a strong trend in the fitness market [...] (Entrepreneur H2).

> I've always been interested in gastronomy and since I was seven years old I already made some cake recipes, cooked and seasoned some things with my mother and that brought me a lot of baggage so that I could improve myself even more in what I do [...] (Entrepreneur E).

Table 6 presents a comparison of the findings in the cases studied based on the allocation of generic innovation actions. Among the different types of innovations implemented, innovations in services were predominant, either by introducing new services for the local market or by improving existing services (Lingen et al., 2020). Such innovations occurred from entrepreneurs' changes in behavior and perceptions (Man, 2012).

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Table 6

Experiential entrepreneurial learning and innovation actions

Experiential entrepreneurial learning	Cases	Innovation actions (generic)
Personal experience	A, B, C, D, E, F, G, and H	• New marketing actions (A, B, D, and G). • Introduction of new services to the business (C, D, E, G, and H). • Pioneer business to local market (C, F, and G). • Improvement on the business structure (D and E). • New processes implementation (B e C).
Professional experience	A, B, C, D, G, and H	
Previous business experience	A and E	
Technical/operational experience	H	

Entrepreneurial learning through networks and innovation

Social interactions in relationship networks established by entrepreneurs proved to be essential for innovation actions implementation in all service companies surveyed (Rubalcaba et al., 2012; Smania & Mendes, 2021) because companies that engage in knowledge networks tend to improve their innovation capacity (Belso-Martinez & Diez-Vial, 2018).

> I started to carry out religious tourism, that is, to work with events within Father Manzotti's congregation, which is located in Curitiba [...]. There is a friend of mine who is in this group, and I started talking to her, asking how the fairs were organized, if there was someone who provided support for hosting the priest (Entrepreneur A).

Particularly, internal and external integrations are substantial factors for service companies to innovate (Smania & Mendes, 2021) due to the influence of actors in the co-production process of innovations (Rubalcaba et al., 2012), as well as helping in the learning process and problem-solving for entrepreneurs (Soetanto, 2017). Thus, it is observed that the sharing of information between owner-managers and their collaborators (cases: A, B, C, D, E, F, and H) (Zhang et al., 2006) with entrepreneurs from other sectors (cases: A, C, and G), suppliers (cases: A, E, G and H), friends (cases: A, C, D and H), family members (cases: F, G and H) and partners (cases: F and H) of the same sector (Nieuwenhuis, 2002; Mello et al., 2010) resulted in various innovation actions in the researched businesses.

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> Before, we scheduled meetings in rented auditoriums once a month, and it was an employee suggestion to create a mobile space within the company [...]. When there is collective service, the auditorium is set up, when not, it will be a space for meetings or a photography space for teenagers who love to dress up and take pictures when they travel (Entrepreneur B).

As explained, innovation competencies transcended the internal environment and involved external innovation standards (Silva & Dacorso, 2013). This innovative behavior, resulting from external standards, was also identified concerning clients (cases: B, C, D, E, F, G, and H) and participation in programs/consultancies carried out by Sebrae (cases: D and E). These interactions served to establish practical innovations, given that, for this innovation type to happen, small and medium enterprises must use external sources of knowledge (Nieuwenhuis, 2002; Zhang et al., 2006; Love et al., 2014).

> Something that resulted from an exchange of information with clients was the organization of ballads here [...]. We did some ballads that were super different for the people who came because, until then, they had never seen a club inside a barbershop that is also a bar. And it's really a nightclub, with a DJ, lighting, sound system, with everything you need (Entrepreneur G).

Thus, "entrepreneurial learning comprises self-learning and social network learning", with social network learning being a process that involves suppliers, customers, competitors, research centers, and industry associations, among others (Jiao & Cui, 2010, p. 198). Therefore, in the context of small and medium-sized companies, the learning process for innovation results in different types of innovations derived from the interaction between subjects, technologies, people, and organizations (Mitra, 2000) that enable the implementation of several services innovations and the consequent competitive prominence for the companies studied (Junarsin, 2010).

> We have a supplier from Aracaju that we always have feedback [...] He gives several ideas that are relevant to us, so there is always a lot of information that we capture, for example, the events we must do. We perform studio commemorative events. We have already held several very cool events, such as the studio ride and now we want to do the super stand-up paddle. [...] They've had several rides, cycle rides and internal jiu-jitsu championships (Entrepreneur H1).

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Innovation involves an informal learning process, with social networks being fundamental both for the learning process (Nieuwenhuis, 2002; Mello et al., 2010) and for the constitution of continuous innovations (Love et al., 2014). In this sense, in Table 7, it is possible to verify that the different actors, established in social networks, co-produced several innovations, mainly innovations in services (Smania & Mendes, 2021) from the knowledge exchange (Soetanto, 2017), in all the analyzed cases.

Table 7

Entrepreneurial learning by networks and innovation actions

Entrepreneurial learning by networks	Cases	Innovation actions (generics)
Employees	A, B, C, D, E, F, and H	• New marketing actions (A, C, D, E, F, and G). • Providing new services (A, B, C, D, E, F, G, and H). • Improvement in the business structure (B and D). • New processes implementation (A, C, D, E, and H). • Organizational improvements (C and D).
Clients	B, C, D, E, F, G, and H	
Friends	A, C, D, and H	
Suppliers	A, E, G, and H	
Other entrepreneurs	A, C, and G	
Family	F, G, and H	
Support agencies	D and E	
Partners	F and H	

Formal entrepreneurial learning and innovation

Formal entrepreneurial learning occurs through formal education, with which entrepreneurs can develop structured management knowledge and use it systematically in managing their business (Jiao & Cui, 2010). Therefore, it is understood that formal education was a valuable way for entrepreneurs to learn how to implement innovations since all research participants resorted to various formal learning means to implement innovative solutions in their businesses.

> In tourism, this is called experience tourism, and it is driven by innovations [...] (Entrepreneur D). (Emphasis on the academic training on tourism of the entrepreneur interviewed)

In this sense, new knowledge that led to innovation actions came from participating in courses (cases: A, B, E, G, and H), workshops (case: C),

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international forums (case: H), and training (cases: A, C, E, and F). It is noteworthy that, although some ideas did not work out, the entrepreneurs considered maintaining the business's innovative character, promoted by participation in events, more important. This finding corroborates the study by Sung and Choi (2013), in which it was shown that expenses with internal training resulted in interpersonal and organizational learning, which, in turn, reflected in the increased innovative performance of the organizations studied.

> I did a training called HI-Q which is a quality training from the International Hostel network [...]. We did job descriptions and task assignments. There is a checklist that is made up of the structural part and with that, we can see where we must improve and correct, which helps us to maintain a quality standard (Entrepreneur C).

Participation in fairs, in turn, was essential for entrepreneurs in cases E, F, G, and H to adopt innovations in their ventures, in line with the idea that fairs are events that, in addition to promoting an excellent marketing channel, allow entrepreneurs capture helpful information for the better functioning of their businesses (Sebrae, 2018).

> When I said that I went to São Paulo and Minas Gerais, it was precisely for these events aimed at the barbershop segment [...]. With that, there is a standardization of our service [...] where all barbers perform the same processes. Before, we didn't have that, each one had a style of doing things and it was an incremental innovation, which improved our service [...] (Entrepreneur G).

The academic backgrounds of the studied entrepreneurs could be highlighted only in cases C, G, and H. In contrast, case D was implicitly part of adopting an innovative service action. Thus, it corroborates the study by Brink and Madsen (2015), which indicates that the university education of entrepreneurs of small and medium-sized companies does not impact the innovative activities of these businesses.

Entrepreneurs in cases B and H highlighted the adoption of several innovations through self-learning, through reading books, articles, and research on the internet (Jiao & Cui, 2010), a fact that becomes relevant for the innovations adopted, since the use of new knowledge in detriment of obsolete knowledge is preponderant for innovative behavior to develop in organizations (Rebernik & Širec, 2007).

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> I study daily [...]. Everything we do is digital, from our passengers control to the our guides control [...]. Today I broadcast the trips in real time, because today we have "facelive", youtubelive, snapchat, all these are video applications. So today, to remedy that anguish of the father who wants to see his son all the time, we use these tools and I have "millions of cell phones", recording and posting that moment on the network [...] (Entrepreneur B).

According to Mello et al. (2010, p. 54), a common point of agreement among several researched authors is that "information is a fundamental element for the creation and development of new ideas". Thus, it is observed that distinctive sources and training processes culminated in the knowledge absorption that could be used to increase the impacts of learning for innovation and growth of small and medium-sized companies (Brink & Madsen, 2015), studied, through the adoption of different types of innovation, primarily innovations in services, as evidenced.

> [...] In this course (conducted by Makro), I also learned how to use vegetable fat to fry the pastries. It is much more expensive, but the result is much more effective, as the dough does not get soggy and is an innovation, because the pastry comes out dry and the flavor is different, in addition to not leaving that absurd smell of saturated fat in the environment (Entrepreneur E).

Finally, Table 8 presents a comparison of the findings regarding the mode of formal entrepreneurial learning and the innovative actions identified, emphasizing the adoption of innovations in services in most cases studied. This fact can be justified by the value creation for the various agents involved that innovation in services allows through new or improved offers and processes (Ostrom et al., 2010).

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Table 8

Formal entrepreneurial learning and innovation actions

Formal entrepreneurial learning	Cases	Innovation actions (generics)
Courses	A, B, E, G, and H	• New marketing actions (B, E, and G). • Providing new services (A, B, D, E, F, G, and H). • Implementing new processes (B, C, E, and F). • Organizational improvements (C).
Training	A, C, E, and F	
Academic background	C, D, G, and H	
Fairs	E, F, G, and H	
Self-learning	B and H	
Workshops	C	
International forums	H	

Vicarious learning and innovation

Regarding this analytical category, the findings indicate that vicarious learning – which concerns the internalization of perspectives and contents – resulted in innovative actions through indirect observations of the activities of competing companies (cases: A and H), indirect observations from partner companies (cases: C, D, and F) and observations of enterprises in other sectors (cases: B, C, D, E, F, and G) (Holcomb et al., 2009; Mansoori, 2017).

> We wanted the organic fair to reach the Atalaia neighborhood and the idea came because of that. The fair is a success, everything is over in an instant [...] We also implemented yoga classes for three months and now the teacher is going to travel to India and we are going to take some time to improve the structure of the space to continue with classes (F1/F2 Entrepreneurs).

> There is a system that I created in 2008, through observation of a toll system. It's an RFID wristband system, a numerical control chip. I had a problem with controlling teenagers on trips, as we had to make verbal calls and it was a time-consuming process that was not 100% reliable [...]. So I created a system that is a palmtop where there is a list of passengers, with a combination of numbers. There you are both 100% sure that person is there, and you also know the time they were there (Entrepreneur B).

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It was identified that employee mobility from competing companies resulted in incremental service innovation (case: A), reflecting on the learning-by-hiring process, which concerns learning through hiring employees (experts) from other companies. This way of learning is relevant, as the knowledge is inherent to the individual, and he can apply it in different contexts (Bittencourt, 2012). Thus, it was found that innovation requires individuals to absorb existing knowledge and share such knowledge in organizational systems (Jiménez-Jiménez & Sanz-Valle, 2011)

> She (employee) came from Nozestur [...] there she worked a lot with local tourism. Then she went to Zezé Tour, that's when she started working in the national and international tourism area. After that, she came here and what she brought from "Nozes" and "Zezé" was the receptive part, I never really understood how to work in this area (Entrepreneur A).

Another important fact leads to observing parental models as a bridge to innovation adoption. However, unlike what is highlighted in the literature, only in case B innovative behavior was found as a reflection of this element of analysis (Abecassis-Moedas et al., 2016)

> [...] My parents had a very special way of dealing with people, and that is a learning process, until you understand that it is the most important thing [...]. So, you have to maintain an informal relationship with all of them (customers and potential customers) and then, together with technology, you create ways for this customer to enter your funnel [...] (Entrepreneur B).

Finally, Table 9 compares the results regarding the vicarious learning mode and the innovative actions identified in the reports of interviewed entrepreneurs. As with other learning modes, it was identified that service innovation was the most adopted type. However, the companies studied did not present systematized methods for generating new services (Dörner et al., 2011).

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Table 9

Vicarious learning and innovation actions

Vicarious learning	Cases	Innovations actions (generic)
Observation of other enterprise's activities	B, C, D, E, F, and G	• New marketing actions (A, B, D, and E). • Providing new services (A, B, C, D, F, and H). • New processes implementation (B, E, F, and G). • Organizational improvements (D).
Observation of competitor's activities	A, E, and H	
Competitor employee mobility	A	
Observation of parental models	B	

Entrepreneurial learning modes and innovation

Findings indicate that entrepreneurial practice is intertwined with several learning processes, which in their various ways indicate that "as exceptional learners, effective entrepreneurs learn from everything, including previous experience, customers, suppliers, employees, other entrepreneurs and especially competitors" (Xia & Liu, 2021, p. 3). It is noteworthy that these processes involve accurate cognition, collective learning (Politis et al., 2019), and personal and business development, concomitantly resulting in the need to understand the contextual and social aspects of learning (Macpherson et al., 2022). Therefore, the experimentation of new observations, experiences, and relationships allows innovations to be implemented and commercialized (Xia & Liu, 2021) during a dynamic learning process (Khurana & Dutta, 2021).

It should be noted that the development of new knowledge through interaction with various stakeholders, elaboration of experiences, and capture of information from multiple sources was essential for innovative performance (Mello et al., 2010; Wang et al., 2010; Castaneda & Cuellar, 2020), primarily incremental, was established in all cases studied. However, it is evident that, despite being continuous, the learning processes were configured as unstructured, and the processes of obtaining new knowledge and the consequent adoption of innovative practices are subjective, indicating that each entrepreneur applied the acquired knowledge uniquely, according to the business's needs. In this sense, understanding how to structure the learning process, considering its different modes for capturing and disseminating knowledge to meet business specificities, can be promising for studies in entrepreneurship and practical application in the field.

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FINAL REMARKS

The present study sought to analyze the ways of learning service entrepreneurs practice in adopting different innovative actions. As much as learning and innovation are processes that are constantly identified as essential for a successful entrepreneurial practice, both have not been studied in a complementary or interconnected way (Sacramento & Teixeira, 2019), and this study contributes to the current emergence in the field (Castaneda & Cuellar, 2020). Thus, identifying the different ways entrepreneurs learn to innovate is to establish a fruitful path for understanding the entrepreneurial process and its dynamic and contextual elements.

Understanding the different ways of learning that permeate the entrepreneur's daily life is to enable the understanding of how innovations can be developed. However, it is noteworthy that this process can result primarily, in incremental innovations, indicating the need to investigate how more disruptive innovations can be generated and which learning elements influence achieving these results.

Finally, it is pointed out that the practical contributions refer to identifying different modes of entrepreneurial learning for innovation, reverberating in the accuracy of studies that outline the process of entrepreneurial learning, through the various forms of learning presented, highlighting the challenges for establishing innovative behavior. Theoretical contributions, conversely, imply an effort to interconnect the themes of entrepreneurship, learning, and innovation, which are relevant and rarely addressed together.

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