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# How bricoleurs go international: a European cross-country study considering the moderating role of governmental entrepreneurship support programs

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## Abstract

Research increasingly suggests that innovativeness and internationalization are two intertwined pathways to growth for entrepreneurial ventures. However, both ways can be resource intensive and thus challenging. Therefore, theory points to the emerging concept of entrepreneurial bricolage to explain how resourceful behavior helps entrepreneurial ventures thrive despite facing the challenges associated with growth. At the same time, recent studies increasingly emphasize the importance of institutional support for successful venture growth. Combining both streams, this study explores product/service innovativeness as a mediator in the relationship between bricolage and the degree of internationalization and further investigates the moderating role of governmental entrepreneurship support programs in this relationship. By drawing on a unique dataset of 681 European entrepreneurial ventures, we find that bricolage is an important means for entrepreneurial ventures that target foreign markets, as it fosters product/service innovativeness and thereby enhances a venture's degree of internationalization. Interestingly, governmental entrepreneurship support programs do not affect the link between bricolage and innovativeness, but they influence how innovativeness translates into greater degrees of internationalization. We discuss the theoretical and practical implications of our findings.

**Keywords** Bricolage · Innovativeness · Internationalization · Governmental programs · Entrepreneurship · Context

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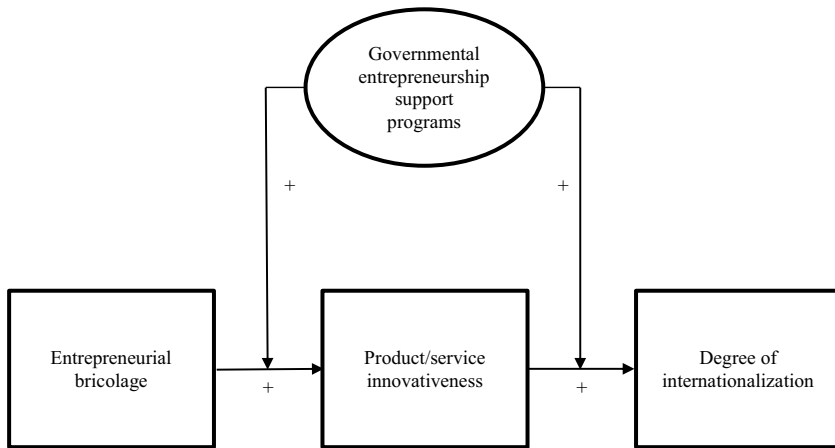
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## 1 Introduction

Being innovative and growth-oriented lies at the heart of the definition of entrepreneurial ventures (Carland et al., 1984; DeSantola & Gulati, 2017). At the same time, creating innovative products and services and distributing them across different markets in order to grow poses major challenges for many ventures (Kollmann et al., 2016; Oviatt & McDougall, 1997; Senyard et al., 2014). The reason for this is inherently determined by the nature of entrepreneurial ventures. These firms are typically young and small but growing, so they often come with liabilities of newness and smallness (Stinchcombe, 1965; Wiklund & Shepherd, 2005). When it comes to foreign market entry, they additionally face the liability of foreignness (Johanson & Vahlne, 2009; Laursen et al., 2012b; Zaheer, 2017). Therefore, it is particularly difficult for entrepreneurial ventures to pursue the resource-intensive endeavor of becoming innovative (Kollmann & Stöckmann, 2014; Marion & Fixson, 2014) and to implement an internationalization strategy (Pellegrino & McNaughton, 2015; Yan & Williams, 2020). Nonetheless, some studies have revealed that entrepreneurial ventures can enjoy “learning advantages of newness,” which are attributed to the “relative flexibility” of these ventures, as they are not to be trapped in core rigidities compared with older firms. They can “rapidly learn the competencies necessary to pursue continued growth in foreign markets” (Autio et al., 2000, p. 919; Carboni & Medda, 2021).

Against this backdrop, scholars emphasized that many entrepreneurial ventures take a rather flexible approach on both the entrepreneurial innovation and internationalization process. In more detail, studies found initial evidence that ventures use resourceful improvisation or bricolage behavior in order to innovate (e.g., Garud & Karnøe, 2003; Kastelli et al., 2018; Senyard et al., 2014; Zhu et al., 2019) or to venture into foreign markets (e.g., Evers & O’Gorman, 2011; e.g., Nowinski & Rialp, 2013; Su, 2013; Yang, 2018). Entrepreneurial bricolage behavior concerns how entrepreneurs deal with problems and opportunities as they emerge by making do with the resources at hand (Baker & Nelson, 2005; Fisher, 2012). This way, it enables entrepreneurial ventures to take on broad challenges despite their typical resource-constraints (Senyard et al., 2014). Entrepreneurial ventures that apply resourceful bricolage can mobilize resources, for instance, through their personal and local networks (Baker et al., 2003; Casati & Genet, 2014), and also draw on other freely or cheaply available resources in their institutional environment (e.g., Busch & Barkema, 2020; Stayton & Mangematin, 2019) to enhance innovation (Senyard et al., 2014) and internationalization (Carayannis et al., 2016). However, previous studies came short in connecting the positive outcomes of entrepreneurial bricolage (Coudounaris & Arvidsson, 2021).

Addressing this shortcoming, we draw on recent research indicating that innovativeness and internationalization should be investigated simultaneously (e.g., Kiss et al., 2017; Schwens et al., 2018) and that these concepts are “instantaneous, fast and inter-related” instead of two “alternative growth options” for entrepreneurial ventures (Onetti et al., 2012, p. 339). Similarly, Knight and Cavusgil (2004) and Cavusgil and Knight (2015) highlighted that new firms should leverage their innovativeness and knowledge capabilities to achieve foreign market success—a notion that has been echoed by subsequent studies, which found that innovations help overcome barriers to internationalization (e.g., Cassiman & Golovko, 2011; Saridakis et al., 2019; Urbano et al., 2019). In this vein, we argue that the reason why some ventures can successfully innovate and internationalize might lie in their idiosyncratic entrepreneurial behaviors, such as entrepreneurial bricolage.



**Fig. 1** The proposed research model: The moderating role of governmental entrepreneurship support programs on the relationships between bricolage and innovativeness as well as innovativeness and degree of internationalization

As entrepreneurial bricolage not only considers the resources internal to the venture but also other resources that are freely or cheaply available from external sources (Davidsson et al., 2017; Senyard et al., 2014), the institutional context in which a venture is embedded may also play a decisive role on the effectiveness of bricolage behavior (Janssen et al., 2018; Phillips & Tracey, 2016; Sehring, 2009). For entrepreneurial ventures, literature suggests that governmental entrepreneurship support programs (GESPs) are among the most important contextual factors facilitating the development of entrepreneurial ventures (Lerner, 2010; Singer et al., 2015). These programs offer entrepreneurial ventures important access to knowledge and resources cheaply or for free (Colombo & Grilli, 2010; Kollmann et al., 2018; Singer et al., 2015). However, while some studies confirm the positive relationship between bricolage and innovativeness (e.g., Garud & Karnøe, 2003; Senyard et al., 2014), empirical research that examines the relationship between bricolage and internationalization and the impact of governmental programs on this relationship has been very limited thus far. This is surprising and marks a “fruitful setting” to explore the interplay of entrepreneurial activities and the impact of the institutional context (Busch & Barkema, 2020, p. 6; Urbano et al., 2020).

Drawing on a unique dataset of 681 European entrepreneurial ventures, we address this research gap. We posit that performing resourceful bricolage behavior helps ventures innovate and subsequently internationalize by mobilizing and making the best use of available resources and capabilities (Baker, 2007; Baker et al., 2003). We also argue that the additional resources provided by the institutional environment (i.e., the availability and effectiveness of GESPs) may enhance entrepreneurial activities in the form of innovation and internationalization in entrepreneurial ventures. In so doing, we theorize a processual moderated mediation model to examine the moderating effects of GESPs on the relationship between bricolage behavior, product/service innovativeness, and the degree of internationalization of entrepreneurial ventures. Figure 1 outlines our theoretical research model.

Overall, this study contributes important insights into the effects of resourceful behavior on ventures’ innovation capability development and internationalization, as well as the contextual role of institutional support programs. First, we identify the mediating role

of product/service innovativeness in the relationship between bricolage behavior and the degree of internationalization in entrepreneurial ventures. By investigating the relationship between bricolage and internationalization in greater detail and showing that the indirect effect of bricolage on the degree of internationalization is enabled through innovativeness, we complement the hitherto limited state of research on bricolage and internationalization. While previous research mainly used explorative qualitative case studies (e.g., Nowinski & Rialp, 2013; Su, 2013) or found bricolage patterns as a by-product of their actual study focus (e.g., Y. Chandra et al., 2012; Evers & O’Gorman, 2011), we are, to the best of our knowledge, the first to provide empirical evidence using a broad sample of ventures regarding the exact relationship between bricolage and internationalization. Alongside, we confirm the positive link between bricolage behavior and the innovativeness of entrepreneurial ventures (Garud & Karnøe, 2003; Senyard et al., 2014) across different European countries and thus add to the generalizability of this link. We also shed light on the impact of innovativeness on venture internationalization performance, a topic that has previously yielded controversial findings (Saridakis et al., 2019). Second, by considering the contextual role of governmental programs in the focal relationship, we provide a “sensible approach to contextualization” that has been called for by Welter et al., (2019, p. 327). Interestingly, our findings reveal that GESPs do not affect the link between bricolage and innovativeness but the link between innovativeness and internationalization. These findings suggest that GESPs and their support through dedicated programs, single agencies, science parks, and business incubators do not enhance how effective resourceful bricolage behavior can be applied. Rather, GESPs play a supportive role at a later stage in the innovation and growth process. These findings suggest that the initial innovation is created by entrepreneurial ventures alone, but by surviving and growing in the international shark tank in the long run, ventures profit from external support programs, such as GESPs.

## 2 Theory and hypotheses

### 2.1 Bricolage and the institutional context

The bricolage phenomenon was first introduced by Lévi-Strauss (1966) and has since developed to one of the emerging entrepreneurship-specific theories that “explain the actions and logic that underlie entrepreneurial behavior” (Fisher, 2012, p. 1019). It describes how entrepreneurs work efficiently and behave resourcefully by “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson, 2005, p. 333). In 2005, Baker and Nelson gave contour to the concept of bricolage by identifying the three principles at the heart of entrepreneurial bricolage behavior: “making do”, “using resources at hand”, and “combining resources for new purposes”. The first principle, „making do”, indicates that bricoleurs actively engage with available resources from their immediate environments and existing networks instead of extensive resource seeking (Baker & Nelson, 2005; Rod et al., 2016; Senyard, 2015). Bricoleurs tend to have a bias towards action, meaning that they are very persistent, always trying to figure out the limitations of their available resources, and do not give up easily in finding workable solutions (Baker & Nelson, 2005; Senyard, 2015; Senyard et al., 2014). The second principle is “using resources at hand”, which means that bricoleurs closely rely on their own idiosyncratic “resource trove” consisting of a pool of resources that is available to them (Baker & Nelson, 2005, p. 344). This pool of resources can, for example, contain personal resources

of a tangible or intangible nature, such as the financial, human, and social capital owned or scavenged by the bricoleur (Baker, 2007; Baker & Nelson, 2005). However, bricoleurs can also make use of additional cheaply or freely available resources from their broader resource environment (Baker & Nelson, 2005), such as the institutional environment that may also “enhance [the] creativity and efficiency” of the ventures (Adomako et al., 2018, p. 12). The resources at hand build the basis for reuse and recombination for new purposes, which define the third principle—“the combination of resources for new purposes.” Bricoleurs tend to experiment and combine the resources at hand for creative tinkering and through trial and error (Duymedjian & Rüling, 2010; Visscher et al., 2018), thereby following rather improvisational patterns. When it comes to the reuse and recombination of resources, the respective environments of the bricoleurs play an important role. For example, the literature on social bricolage shows that bricoleurs are often inspired by problems in their immediate surroundings and initially try to find solutions to these problems by reusing/recombining their resources at hand for their local environment or the social community (Bacq et al., 2015; Cleaver, 2001; Di Domenico et al., 2010).

While Lévi-Strauss (1966) and Baker and Nelson (2005) already included theoretical notions that link bricolage and context, entrepreneurship research on the interplay between entrepreneurship and context has recently gained momentum (Urbano & Aparicio, 2019; Welter & Baker, 2020). In this regard, Welter and Smallbone (2011, p. 107) argued early on that “entrepreneurial behavior needs to be interpreted in the context in which it occurs”. Certain contexts provide individuals with entrepreneurial opportunities but at the same time set limits for their activities; some individuals see it as an asset and others as a liability (Welter & Smallbone, 2011). Subsequent findings confirmed that entrepreneurial responses to external conditions can be heterogeneous and that entrepreneurial processes can be influenced differently by contextual factors (e.g., Korsgaard et al., 2015; Stayton & Mangematin, 2019). In particular the institutional environment has been pointed out to impact entrepreneurial processes (McMullen et al., 2020; Welter & Smallbone, 2011). Institutional environments may provide both tangible and intangible resources, such as funding, knowledge, co-working/office space, and training programs (e.g., Brüderl & Preisdörfer, 1998; Bruneel et al., 2012; Busch & Barkema, 2020). Besides the provision of resources, institutions can serve as a source of legitimacy (Baum & Oliver, 1992) and set the larger-scale boundary conditions for the general development of ventures, for example through legislation and public policy (e.g., Carlsson, 2002; Davidsson et al., 2010; Davidsson & Henrekson, 2002; Georgallis & Durand, 2017). The institutional context can vary from country to country and can shape entrepreneurial activities differently (Lang et al., 2014). Therefore, how entrepreneurial ventures can grow and flourish may differ across countries based on the institutional support conditions for them (Davidsson & Henrekson, 2002). Conversely, entrepreneurs may deliberately decide to establish (or move) their ventures in a specific country because of the respective support environment.

## 2.2 Bricolage and product/service innovativeness in entrepreneurial ventures

The patterns of bricolage behavior have been found to be apparent in the activities of many entrepreneurial ventures (Baker & Nelson, 2005). Research has used bricolage behavior to explain a wide range of phenomena in the context of entrepreneurial ventures (Janssen et al., 2018), such as firm growth (Baker et al., 2003), firm progress speed (Wu et al., 2017), and opportunity exploitation (Vanevenhoven et al., 2011). Among others, these studies have shown that the principles of (re)use and (re)combination of resources—which

are inherent to bricolage—enable entrepreneurs to exploit opportunities and react dynamically to challenging environments (Baker & Nelson, 2005; Garud & Karnøe, 2003; Senyard et al., 2014; Yu et al., 2019). In particular, scholars argue that such “processes of recombination” of resources at hand support the creation of innovation (Kogut & Zander, 1992; Senyard et al., 2014, p. 213), that is, innovativeness, which can be defined as a “firm’s capacity to engage in innovation; that is, the introduction of new processes, products or ideas” (Hult et al., 2004, p. 430). These studies adopt the early notions of Lévi-Strauss (1966, p. 17) that certain behavioral patterns may lead to “brilliant unforeseen results” and that, creative and combinatorial tinkering in the form of bricolage behavior can therefore lead to new, innovative solutions. Building on this reasoning, some studies have examined the effect of bricolage behavior on the innovativeness of entrepreneurial ventures (e.g., Garud & Karnøe, 2003; Senyard et al., 2014; Wu et al., 2017). In greater detail, the studies by Senyard et al. (2014) and Wu et al. (2017) found that bricolage behavior is linked to innovativeness in resource-scarce environments. Another example is offered by Baker et al. (2003), who showed that entrepreneurs make extensive use of their primary means at hand, namely, their existing contact networks, instead of seeking resources from other external sources, and in so doing foster their ventures’ innovativeness. They argue that entrepreneurial ventures that encounter resource constraints learn to use their very limited resources at hand efficiently. At the same time, these limitations enable ventures to be flexible in handling available resources and encourage innovative interaction rather than hampering innovativeness.

Nevertheless, recent studies have also investigated bricolage in more munificent environments, indicating its usefulness as a broader entrepreneurial behavior that helps deal with challenging situations in the venture process. A study by An et al. (2018) showed that bricolage can lead to valuable new knowledge within a company, regardless of its volume of resources (and, therefore, whether they are scarce or abundant). Specifically, knowledge is generated by applying bricolage behavior, which can be implemented not only to promote creativity and innovation but also to break the inertia of resources (An et al., 2018; Andersen, 2008; Burgers et al., 2014; Gilbert, 2005). Lashitew et al. (2020, p. 424) recently confirmed this view by finding that bricolage provides “a distinct approach for innovation and entrepreneurship that starts from the pool of resources and expertise within the firm’s network”.

Overall, prior findings suggest that resourceful bricolage behavior might be useful for firms in resource-scarce and resource-abundant environments. Against this background, we seek to extend and confirm the generalizability of the positive link between bricolage and innovativeness (Powell & Baker, 2011; Senyard et al., 2014) in entrepreneurial ventures across different European countries. Therefore, we propose the following hypothesis:

**Hypothesis 1** Bricolage positively relates to product/service innovativeness in entrepreneurial ventures.

### 2.3 Product/service innovativeness and the degree of internationalization of entrepreneurial ventures

While innovativeness was inherently connected with early definitions of entrepreneurial ventures (Carland et al., 1984; Schumpeter, 1934), subsequent entrepreneurship research emphasized the importance of internationalization for venture growth and success (Dzikowski, 2018; Jones et al., 2011; Rialp et al., 2005). Thus far, however, the majority of studies have considered innovativeness and internationalization as two different growth



options for entrepreneurial ventures (Onetti et al., 2012). Hence, recent studies have taken a more differentiated view, arguing that the two strands are interrelated, especially in entrepreneurial ventures and in small and medium enterprises (Kiss et al., 2017; Schwens et al., 2018). In our study and in line with recent empirical findings (Saridakis et al., 2019; Weerawardena et al., 2019), we argue that, for entrepreneurial ventures, innovativeness is an important antecedent of internationalization activity, constituting a key driver for entrepreneurial success in international markets. When a venture targets unknown markets that differ from the home market, it must often modify its products/services to successfully meet the demands of the new market (Dai et al., 2014) or beat incumbents with new offerings. Product/service innovativeness helps entrepreneurial ventures overcome such a “liability of foreignness” (Weerawardena et al., 2019, p. 122) by being better able to adapt to new market peculiarities and assess foreign customer preferences (Li & Atuahene-Gima, 2001; Sapienza et al., 2005), which, in turn, helps address these preferences and increase market shares abroad. Such adaptability is of particular importance when entrepreneurial ventures actively search for new sales opportunities different from those in their home market (Cassiman & Golovko, 2011).

Furthermore, innovativeness leads young firms to move away from existing practices and develop new ideas in different environments (Lumpkin & Dess, 1996; McDougall & Oviatt, 2000). These new ideas often not only attract the home market but also meet foreign market demands (Cassiman & Golovko, 2011). Thus, in particular product/service innovativeness enables entrepreneurial ventures to target foreign markets with new and differentiated products/services, which may lead to a competitive advantage (Hsieh et al., 2019). While high product/service innovativeness is conducive for entrepreneurial ventures to enter international, dynamic markets (Dai et al., 2014; Tan et al., 2007), it also accounts for substantial investments and putting knowledge into practice (Hult et al., 2004). Therefore, especially for entrepreneurial ventures, exploiting competitive advantages via first-mover positioning from innovative products/services (Porter, 1990) is important in order to recover their research and development (R&D) investments (Kiss et al., 2017), for example, by spreading the costs of R&D among larger sales volumes (Cassiman & Golovko, 2011). Empirical evidence generally underlines that product/service innovativeness can enhance competitive advantages, cash flows, and visibility and increase the chances of surviving in unknown environments (Bortoluzzi et al., 2018; Schoonhoven et al., 1990). Especially with regard to internationalization, previous findings have highlighted the role of innovativeness for returns on innovation and economic advantages (e.g., Calantone et al., 2004; Pla-Barber & Alegre, 2007). In this vein, we propose our second hypothesis:

**Hypothesis 2** Product/service innovativeness positively relates to the degree of internationalization in entrepreneurial ventures.

## 2.4 Indirect effect of bricolage on the degree of internationalization

As previously shown in relation to Hypothesis 1, we argue that bricolage behavior fosters product/service innovativeness and thereby leads to unique new solutions created from bundles (combinations) of resources and capabilities (Senyard, 2015). Therefore, bricoleurs respond “to challenges by using permissive and flexible approaches to design” their products/services (Senyard, 2015, p. 156). Accordingly, engaging in bricolage fosters the innovativeness necessary to flexibly react to relatively unknown and changing foreign markets, perhaps by facing new problems associated with specific country-driven customer needs or processes with confidence or by seeing the opportunities that the environment



provides (Nowinski & Rialp, 2013; Zhu et al., 2019). Clearly, just acting in a resourceful way will not necessarily be sufficient to increase the market share in foreign countries (Kalinic et al., 2014; Sarasvathy et al., 2014). The benefits associated with a bricolage approach must instead be utilized selectively to ensure that the venture becomes innovative, so that such innovativeness delivers sustainable advantages at the firm level in terms of conquering international markets. Therefore, new problems or opportunities are tackled by the venture through bricolage behavior by focusing on what resources could deliver rather than what they should deliver (Baker & Nelson, 2005).

While previous studies delivered first indications that bricolage patterns play a decisive role in the internationalization process of entrepreneurial ventures (e.g., Nowinski & Rialp, 2013; Su, 2013), research on the exact link between bricolage behavior and internationalization has remained limited. Existing studies either had a different focus from bricolage and found behavioral patterns of bricolage rather as a by-product of their analysis (e.g., Y. Chandra et al., 2012; Evers & O’Gorman, 2011) or were qualitative in nature, thereby limiting the generalizability to a few case studies (e.g., Nowinski & Rialp, 2013; Su, 2013). Combining prior findings in the literature on the role of bricolage in both innovativeness and internationalization with the above-mentioned arguments, we argue that bricolage may indirectly affect the degree of internationalization through product/service innovativeness in entrepreneurial ventures. In so doing, we adopt a processual view of the internationalization in entrepreneurial ventures, arguing that ventures first innovate and then translate such innovativeness into greater degrees of internationalization. This is in line with Weerawardena et al. (2019), who took a processual perspective, arguing that ventures pass through certain phases and thereby follow subsequent steps in their internationalization process. To empirically reflect this processual perspective, we propose product/service innovativeness as a mediator in the relationship between bricolage and internationalization. We therefore propose the following hypothesis:

**Hypothesis 3** Product/service innovativeness positively mediates the relationship between entrepreneurial bricolage and the degree of internationalization in entrepreneurial ventures.

## 2.5 Moderating role of governmental programs

According to the Global Entrepreneurship Monitor (GEM), GESPs are an integral entrepreneurial framework condition and refer to the presence and quality of government support programs directly assisting new and growing ventures (Levie & Autio, 2008; Singer et al., 2015; Sternberg & Wennekers, 2005). In more detail, GESPs comprise financial and non-financial programs, agencies, science parks, business incubators, and competent experts working for such programs (Brieger & Gielnik, 2021; Singer et al., 2015). This way, GESPs offer a wide variety of support through an adequate number of programs that grant financial (e.g., seed or growth capital) and non-financial support (e.g., legal consulting or networking support) to nascent entrepreneurs and new or growing ventures (Levie & Autio, 2008).<sup>1</sup> However, well-developed GESPs not only concern the availability but

<sup>1</sup> An example for such a governmental program that combines financial and non-financial support is the Austrian *aws Seedfinancing* program, which offers funding amounts up to 800,000€ for innovative ventures developing high-tech products combined with coaching and advisory services to help them secure additional financing sources (Austria Wirtschaftsservice, 2022).

effectiveness of entrepreneurship support. Therefore, it is also crucial that the people working for government agencies are competent and can thus effectively support entrepreneurs and their ventures (Goswami et al., 2018).

Prior research has shown that external support mechanisms, such as GESPs, can play a decisive role for entrepreneurial ventures, as they can help unleash their potential (Autio et al., 2014; Caliendo & Kritikos, 2010; Cohen et al., 2019; Urbano et al., 2020). More comprehensive GESPs represent “a safe haven” or “a value-adding support system” for entrepreneurial ventures in their early stages of growth by offering a mix of tangible and intangible services to help them establish themselves (A. Chandra & Fealy, 2009, p. 69). Levie and Autio (2008, p. 242) argued that “through dedicated support programs, government can facilitate the operation of entrepreneurial firms by addressing gaps in their resource and competence needs—either on a subsidized basis or by correcting the failure of the market to cater to such needs”. Through assistance in the form of funding, science parks, business incubators, or single agencies, GESPs typically aim to provide new and growing firms with the resources they need to complete and market their first products/services in order to grow (Abetti, 2004; Singer et al., 2015). These programs might be sponsored at all levels of government—national, regional, or municipal—and provide access to both resources, services, and to a network of contacts and knowledge (A. Chandra & Fealy, 2009; Singer et al., 2015).

GESPs can vary from country to country (Davidsson & Henrekson, 2002), as they are characterized by the different economic, social, political, and cultural support patterns of each country (Daniel et al., 2012). Therefore, in countries where GESPs are both available and effective, the environment for entrepreneurial ventures is rather supportive, and the demands of entrepreneurial ventures are considered to a greater extent than in countries with lower GESPs. Considering the theorized relationship between bricolage, product/service innovativeness, and internationalization, GESPs represent an important factor in the institutional environment (Lerner, 2010; Singer et al., 2015), and their availability and effectiveness can influence every stage of the entrepreneurial process (Urbano & Aparicio, 2019).

Against this background, GESPs might enhance the generally positive relationship between bricolage and innovativeness for at least two reasons. First, GESPs provide entrepreneurial ventures with easy access to a large pool of tangible resources (A. Chandra & Fealy, 2009) that complement or even enlarge the existing resource trove. Such tangible resources can include direct financial support as well as subsidized rental space, shared office infrastructure, or equipment (A. Chandra & Fealy, 2009), which in turn relieves internal resources that can be used for other purposes. According to Senyard et al. (2014), attempting to utilize such additionally available resources while engaging in bricolage practices may lead a venture to produce more innovative solutions.

Second, as GESPs support ventures with access to valuable intangible resources including legal and business consulting, coaching, network access, and several other services (A. Chandra & Fealy, 2009; Gompers & Lerner, 2001), young firms gain greater social capital for ingenious new resource combinations through resourceful bricolage behavior. For example, the entrepreneurial skills and capabilities to create such new resource combinations can be fostered by entrepreneurial training and learning activities as part of entrepreneurship support programs offered by business incubators (Heinonen & Poikkijoki, 2006; Politis et al., 2019). Additionally, science parks provide access to useful networks that enhance knowledge exchange and spillovers between ventures and other businesses or research institutions (Marshall, 1890; Porter, 1990). Such positive externalities lead to a higher propensity to innovate (Grønhaug & Fredriksen, 1984; Laursen et al., 2012a). In

sum, well-developed GESPs enlarge entrepreneurial ventures' resource trove and grant them creative freedom to concentrate on the development and refinement of innovative products and services. This, in turn, may lead to even higher levels of innovativeness. Therefore, we hypothesize the following:

**Hypothesis 4** GESPs positively moderate the positive relationship between bricolage and product/service innovativeness in entrepreneurial ventures. When GESPs are high, the effect of bricolage on product/service innovativeness is stronger than when GESPs are low.

When entrepreneurial ventures seek to leverage their product/service innovativeness in international markets, they often face complex challenges, for example, because of country-specific regulations or more complex supply chains. Hence, receiving comprehensive support from their institutional environment can help ventures to cope with these complex challenges (Dabić et al., 2020; Welter & Smallbone, 2011). Indeed, scholars have found that the liability of foreignness or unfamiliarity costs in international markets can be “alleviated by the characteristics of the home region” (Laursen et al., 2012b, p. 786). By providing a wide range of support possibilities, GESPs represent such contextual factors of the institutional environment that aim to foster the long-term and sustainable growth of entrepreneurial ventures. Accordingly, we argue that GESPs can enhance the positive relationship between ventures' product/service innovativeness and the degree of internationalization due to the following reasons.

First, GESPs can simplify the access to and acquisition of expertise and knowledge on topics such as markets, competition, financing, intellectual property, and distribution (Bartlett & Mroczkowski, 2019), which are crucial when addressing foreign markets (Audretsch & Feldman, 1996; Oviatt & McDougall, 1997). When effective GESPs are available, ventures can thus benefit from easy access to valuable knowledge about foreign markets and lower potential barriers to foreign market entry (Niammuad et al., 2014). These programs may assist ventures financially, with their actual market entry, and with meeting regulatory requirements related to the introduction of innovative products/services in foreign markets, as positioning innovative products/services in new markets can be particularly challenging (Cavusgil & Kirpalani, 1993). In this regard, scholars pointed out the value of single agencies as the central point of contact for founders to inform themselves and retrieve assistance (Brieger & Gielnik, 2021; Dana, 1987). Indeed, we can observe that an increasing amount of GESPs are coordinated by dedicated agencies.<sup>2</sup> In doing so, they reduce regulatory and bureaucratic burdens, offer network access, and even direct financial support for ventures' internationalization.

Second, GESPs are designed not only to support entrepreneurial ventures with their fresh, new, and innovative ideas but also to help them develop international networks that will support their global expansion and assist them in securing venture capital funding and increasing their global sales (Bartlett & Mroczkowski, 2019). Such international networks may also increase the recognition of new and innovative opportunities and thereby facilitate the degree of internationalization. Prior research suggests that leveraging resources and knowledge of other organizations can enhance firms' success in foreign markets (Laursen

<sup>2</sup> Examples for such agencies are the Austrian Federal Economic Chamber (e.g., offering the Born Global Academy, Scaleup Globally, GoSiliconValley, and Scale & Succeed Tech Startup B2B Accelerator programs) or the Italian Trade and Investment Agency (e.g., offering the Global Startup Program, Accelerate in Israel, and Export Training Academy programs).

et al., 2012b; Oviatt & McDougall, 2017). In this regard, well-established science parks and business incubators, as part of strong GESPs, can help ventures to “obtain knowledge about opportunities in the form of trade information, knowledge of artifacts, and other resources, from other local organizations participating in local and international markets” (Laursen et al., 2012b, p. 800).<sup>3</sup> The proximity to other ventures, established firms, and expert networks creates important knowledge spillovers, enables cooperation, and thereby eases the difficulties of foreign market entry (Audretsch & Feldman, 1996; Goswami et al., 2018; Laursen et al., 2012b). Therefore, we propose our fifth hypothesis:

*Hypothesis 5* GESPs positively moderate the positive relationship between product/service innovativeness and the degree of internationalization in entrepreneurial ventures. When GESPs are high, the effect of product/service innovativeness on the degree of internationalization is stronger than when GESPs are low.

### 3 Method

#### 3.1 Sample and data collection

This study is based on survey data from two large-scale datasets. In more detail, we used primary firm data from the European Startup Monitor (ESM) 2016 (see Kollmann et al., 2016) and complemented them with data about the respective home countries of the ventures drawn from the GEM 2014 (see Singer et al., 2015). The ESM examines entrepreneurial ventures from 23 different European countries, such as Italy, Austria, Switzerland, and Portugal (Kollmann et al., 2016), and is an oft-quoted report (e.g., Hora et al., 2018; Kraus et al., 2017) that provides comprehensive insights into the European startup culture and entrepreneurial ecosystems (e.g., Mielke et al., 2019).

To capture the availability and effectiveness of GESPs in the respective countries, we complemented the ESM data with data from the GEM 2014. The GEM is an annual global report covering 73 economies in 2014. It accounts for “72.4% of the world’s population and 90% of the world’s GDP” and is therefore “highly valuable for governments’ work in evidence-based interventions addressed to improve the entrepreneurship ecosystem” (Singer et al., 2015, p. 10). It provides a unique primary database showing different economic patterns in various geographic regions, as well as different economic development stages, while also allowing “for in-depth academic research” (Bosma, 2013, p. 143). This value for research has become evident in the numerous GEM-based studies in leading academic research (e.g., Bosma, 2013; Reynolds et al., 2005; Sternberg & Wennekers, 2005; Urbano & Alvarez, 2014). We deliberately chose time-lagged data with country-level data from 2014 (GEM) and firm-level data from 2016 (ESM). We chose a time lag of two years because the effects of GESPs become apparent only after a certain period. The approach adopted has a precedent in previous studies (e.g., Acs & Mueller, 2008).

In line with the definition of entrepreneurial ventures by Carland et al. (1984) and the ESM criteria, this study considers firms to be entrepreneurial ventures if they are (1) younger than 10 years, (2) growth oriented (in terms of revenue growth and/or employee growth), and/or (3) innovative in terms of their technologies and/or business models. After

<sup>3</sup> Good examples for government-backed incubators are the public–private BIND 4.0 open innovation platform in Spain, the INiTS incubator in Austria, or the STATION F startup campus in France.

missing values or invalid cases were excluded, our final sample consisted of 681 entrepreneurial ventures (completion rate of 16.5%). The mean age of the firms was 2.42 years ( $SD=23.37$ ), and the ventures had 6.37 employees ( $SD=12.99$ ), on average. The ventures were well distributed across different countries with the highest shares coming from Portugal (11.6%), Austria (10.0%), and Italy (9.7%). Table 5 in the appendix provides an overview of the sample distribution and mean values of the focal variables for each country.

### 3.2 Measures

#### 3.2.1 Entrepreneurial bricolage

Entrepreneurial bricolage was measured on a 5-point Likert scale anchored from *never* (1) to *always* (5) and utilized four validated survey items from the Baker–Davidsson bricolage scale (Davidsson et al., 2017; Senyard et al., 2014). In this study, we adapted the first item of the scale by adding the phrase “and other resources inexpensively available to us.” The scale thus contributes to a holistic approach to assessing bricolage in accordance with the work of Baker and Nelson (2005) and Davidsson et al. (2017). The Cronbach’s alpha was 0.72, confirming good scale reliability (Nunnally, 1978). We also conducted an exploratory factor analysis (EFA), which showed that all items loaded on one factor, confirming the recommended unidimensional assessment of bricolage (Davidsson et al., 2017).

#### 3.2.2 Product/service innovativeness

Product/service innovativeness was measured on a 6-point Likert scale by questioning the participants about how innovative their venture is in terms of its products/services (Kollmann et al., 2021). The use of a 6-point Likert scale to capture innovativeness aligns with the technique used in prior research, forcing respondents to decide on one side of the continuum (Bradley et al., 2011; Brettel et al., 2012). The scale was anchored with *not at all innovative* (1) and *very innovative* (6).

#### 3.2.3 Degree of internationalization

To measure the degree of internationalization, we followed the established measurement recommended by Schwens et al. (2018). This study “refers to a firm’s percentage of foreign sales to [the] total sales and expresses the extent to which the firm is exposed to foreign markets” when defining the degree of internationalization (Schwens et al., 2018, p. 737). Therefore, we asked the ventures to allocate 100% of their total generated revenue to their home market versus foreign markets. The foreign markets in question were categorized on a legislative and geographic basis (i.e., members of the Eurozone, European countries outside the Eurozone, North America, South America, Africa, Asia etc.). This approach is in line with other studies measuring the degree of internationalization as the proportion of foreign revenue (Cavusgil, 1984; Riahi-Belkaoui, 1998; Schwens et al., 2018).

#### 3.2.4 Governmental programs

To assess the extent of institutional support for entrepreneurial ventures in the ventures’ respective environments, we used data from the GEM 2014. Specifically, participants were asked to rate six items about the perceived availability and effectiveness of GESPs in their

country on a 5-point Likert scale anchored from *completely false* (1) to *completely true* (5). An example item is as follows: *In my country, a wide range of government assistance for new and growing firms can be obtained through contact with a single agency* (Singer et al., 2015). The Cronbach's alpha was 0.97, confirming good scale reliability (Nunnally, 1978). Additionally, we conducted an EFA, which showed that all items loaded on one factor, confirming the unidimensional assessment of GESPs.

We used GESPs in a venture's home country because more than half of examined European ventures (57.3%) follow an internationalization strategy involving exporting products/services to foreign countries, indicating that internationalization is largely controlled from the venture's home country. Only 20.9% of the ventures indicated that they pursue a strategy including foreign branches or subsidiaries. Accordingly, at least for the European ventures in our sample, GESPs in the home market will play a more important role than those available in the target country.

### 3.2.5 Control variables

This study uses a set of control variables to control for the exogenous influences on the firm and country levels. First, on the firm level, we control for firm age (months since a firm's foundation) and firm size (number of employees). Additionally, we follow Stenholm and Renko (2016) and control for industry effects by including the dummy variable "industry" (1 = service; 0 = other industries) in our analyses. Second, we include the two country-level variables "entrepreneurial finance" and "commercial and legal infrastructure" from the GEM (2014) (see Singer et al., 2015). In so doing, we can control for important differences between countries concerning the availability of financial resources and the presence of commercial and legal infrastructure that might impact the development of entrepreneurial ventures (Alsos et al., 2006; Golovko & Valentini, 2011; O'Shea et al., 2005). Controlling for relevant variables at the firm and country levels is suggested by a variety of previous studies combining the fields of entrepreneurship and internationalization (e.g., Schwens et al., 2018).

### 3.3 Method validation

In line with common methodological recommendations, we conducted both procedural ex ante and statistical ex post techniques (e.g., Keith, 2014; Podsakoff et al., 2003) to ensure the reliability and validity of our scales and to check for common method variance.

First and ex ante, we mitigated the potential hazards derived from the cross-sectional nature of our data by incorporating different scale types and spreading the focal variables throughout the questionnaire (Chang et al., 2010). We assured participants that their answers would remain anonymous (Podsakoff et al., 2003). Additionally, we asked founders and C-level executives of entrepreneurial ventures to participate in the questionnaire to reduce the potential confirmation bias of founders.

Second, to confirm reliability and validity of our measures, we assessed relevant statistical criteria ex post. We started to assess reliability using Cronbach's alpha. The values of the latent constructs exceed the recommended threshold of 0.70 and thus confirm good internal reliability (Cronbach, 1951; Nunnally, 1978). We also conducted an EFA to confirm internal reliability and convergent and discriminant validity. The EFA loadings for bricolage ranged from 0.64 to 0.80 and, for GESPs, from 0.88 to 0.97 (KMO=0.89,  $p < 0.001$ ), confirming the proposed two-factor structure. By building on the EFA, we



further tested for internal reliability using composite reliability (CR) and convergent validity through the average variance extracted (AVE) of both bricolage and GESPs. We obtained satisfactory CR scores of 0.83 for bricolage and 0.98 for GESPs, which were above the recommended threshold of 0.70 (Fornell & Larcker, 1981). The AVE values recorded were 0.55 for bricolage and 0.89 for GESPs, confirming convergent validity by exceeding the recommended threshold of 0.50 (Hair et al., 2019). Additionally, conducting confirmatory factor analysis (CFA) showed that loadings ranged from 0.50 to 0.86 for bricolage and from 0.86 to 0.97 for GESPs. CFA demonstrates a good model fit ( $\chi^2=57.137$ ,  $\chi^2/df=2.381$ ,  $p<0.001$ ; comparative fit index = 0.995; root mean square error of approximation = 0.045; standardized root mean square = 0.039) (e.g., Hair et al., 2003). As standard approaches used to test for discriminant validity might fail to detect a deficiency in common research situations (Henseler et al., 2015), we also assessed the recommended heterotrait–monotrait ratio of correlations (HTMT). To do so, the HTMT test “requires the calculation of a ratio of the average correlations between constructs to the geometric mean of the average correlations within items of the same constructs” (Voorhees et al., 2016, p. 124). The emerging HTMT test has, despite its newness, already been frequently applied in various research fields, such as entrepreneurship research (e.g., Anderson et al., 2019; Bacq & Alt, 2018; Moore et al., 2021). We applied the strict cut-off value of 0.85, as recommended in the literature (Voorhees et al., 2016). The HTMT ratio was well below the recommended cut-off value, so this test further confirmed the discriminant validity of our constructs. The results confirm the sound statistical structure within and between the independent constructs (Hmieleski & Ensley, 2007).

Third, we checked for common method variance. We started by applying Harman’s single-factor test. The test result of 44.73% for the first factor is in line with prior studies and offers empirical evidence that our results are not affected by common method variance (Podsakoff et al., 2003). Furthermore, and as recommended by Podsakoff et al. (2012), we applied the latent method factor technique, which has also been used in entrepreneurship research (e.g., Hughes et al., 2014). To do so, we constructed a separate CFA model that contained all the items of the latent constructs and loaded these items on only one single factor. Subsequently, we compared this constructed single latent factor model with our hypothesized two-factor measurement model. The results of the chi-square-difference ( $\Delta\chi^2$ ) test show that the single latent factor model is inferior when compared to the superior two-factor model ( $\Delta\chi^2=339.205$ ;  $df=1$ ;  $p<0.001$ ). The latent method factor technique thus indicates that our results are not affected by common method variance. We also used the marker variable technique (Lindell & Whitney, 2001) to show that theoretically unrelated variables of the questionnaire are not significantly correlated with our study variables. We chose to use the internal structure of the venture as the unrelated marker variable that was assessed by asking the respondents, “How would you rate the following statements regarding the internal structure of your start-up?”<sup>4</sup> As expected, this variable showed no significant correlation with our study variables. The correlations between our study variables did not significantly change when excluding the marker variable. Additionally, the hypothesized moderated mediation model is itself less prone to common method variance, as respondents typically do not anticipate the relationships of this rather complex model and do not adjust their answers respectively (Aiken et al., 1991; Harrison et al., 1996). In summary, various tests confirm the robustness of our measures and indicate that

<sup>4</sup> This variable was addressed by  $n=531$  European ventures on a 6-point Likert scale. A sample item is as follows: “Our employees have fixed job descriptions”.



**Table 1** Descriptive statistics and correlations among the study variables

	Mean	SD	CR	1	2	3	4	5	6	7	8
1. Entrepreneurial bricolage	4.14	0.61	0.83	(0.72)							
2. Product/service innovativeness	5.18	1.05		0.12**	(-)						
3. Degree of internationalization	34.85	37.65		0.00	0.10**	(-)					
4. GESPs	2.89	0.46	0.98	0.05	-0.07	0.01	(0.97)				
5. Firm age <sup>a</sup>	29.07	23.37		-0.03	0.01	0.15***	0.01				
6. Firm size <sup>b</sup>	6.37	12.99		0.04	0.05	0.12**	0.11**	0.38***			
7. Industry	0.72	0.45		0.04	-0.01	-0.07	0.10*	-0.01	0.09*		
8. Entrepreneurial finance	2.69	0.33		0.02	-0.04	0.01	0.39***	0.07	0.13***	0.05	
9. Commercial and legal Infrastructure	3.24	0.32		0.05	-0.05	0.04	0.63***	0.08*	0.12**	0.05	0.67***

*N* = 681. Cronbach's alpha values for scale reliability in parentheses

*SD* Standard deviation, *CR* Composite reliability, *GESPs* Governmental entrepreneurship support programs

<sup>a</sup>Months

<sup>b</sup>Number of employees

\**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001

common method variance is not a threat in our study. Table 1 summarizes the descriptive statistics and the correlations among the variables/constructs.

## 4 Analyses and results

### 4.1 Analytical approach

To test our hypothesized moderated mediation model, we followed the approach suggested by Hayes (2017b) and applied regression-based bootstrapping techniques using the PRO-CESS macro (Models 4 and 58) by SPSS. The software enables us to simultaneously test the mediation hypotheses (Hypotheses 1–3), the moderation hypotheses (Hypotheses 4 and 5), and the overall moderated mediation effect.

### 4.2 Results

To test our proposed research model, we conducted three consecutive analytical steps (Kollmann et al., 2019). First, we started by testing the baseline mediation model, including the direct relationships between bricolage and product/service innovativeness (H1), product/service innovativeness and the degree of internationalization (H2), as well as the indirect effect of bricolage on the degree of internationalization through product/service innovativeness (H3). As shown in Table 2, we found that bricolage had a direct significant effect on product/service innovativeness (effect=0.20, 95% confidence interval [CI] [0.07; 0.33]), and product/service innovativeness had a direct significant effect on the degree of internationalization (effect=3.67, 95% CI [0.98; 6.36]). Accordingly, we can confirm support for Hypotheses 1 and 2. Moreover, our results provide empirical evidence for a positive and significant indirect effect of bricolage on the degree of internationalization through product/service innovativeness (effect=0.74, 95% CI [0.15; 1.56]), as the respective confidence intervals do not include zero. As there is a significant indirect but no significant direct effect of bricolage on the degree of internationalization, our analysis reveals a full mediation. Accordingly, we can confirm Hypothesis 3.

Second, we tested the two moderation hypotheses of our model, proposing that GESPs positively moderate the relationship between bricolage and product/service innovativeness (H4) and the relationship between such product/service innovativeness and the degree of internationalization (H5). Our findings reveal two different results. The first is that there is no statistically significant interaction effect of bricolage and GESPs on product/service innovativeness (effect=0.11, 95% CI [-0.17; 0.40]), indicating no support for Hypothesis 4. The other result, however, is a positive and statistically significant moderating effect of GESPs on the relationship between product/service innovativeness and the degree of internationalization (effect=6.46, 95% CI [0.46; 12.46]), indicating support for Hypothesis 5. Table 3 summarizes the respective results. Figure 2 depicts the interaction plot for the significant moderating effect of GESPs on the relationship between product/service innovativeness and the degree of internationalization for low and high GESPs. The results of the simple slope test show that the effect of product/service innovativeness on the degree of internationalization is positively significant for high GESPs (simple slope=5.95,  $p < 0.001$ ) and non-significant for low GESPs (simple slope=0.00,  $p = n. s.$ ). Thus, in accordance with Hypothesis 5, the slope becomes significantly steeper with a higher extent of GESPs (i.e., availability and effectiveness of governmental entrepreneurship support programs).

**Table 2** Results of the simple mediation analysis (PROCESS, Model 4)

Step 1: Mediator variable model (baseline model)	Dependent variable: Product/service innovativeness				
	<i>Coeff</i>	<i>SE</i>	Bootstrapped <i>CI</i> [95%]		<i>p</i>
			<i>LL</i>	<i>UL</i>	
Firm age	−0.00	0.00	−0.00	0.00	0.87
Firm size	0.00	0.00	−0.00	0.01	0.22
Industry	−0.03	0.09	−0.20	0.15	0.75
Entrepreneurial finance	−0.05	0.16	−0.37	0.27	0.75
Commercial and legal infrastructure	−0.15	0.17	−0.48	0.18	0.38
Entrepreneurial bricolage	0.20	0.07	0.07	0.33	0.00
Step 2: Outcome variable model (baseline model)	Dependent variable: Degree of internationalization				
	<i>Coeff</i>	<i>SE</i>	Bootstrapped <i>CI</i> [95%]		<i>p</i>
			<i>LL</i>	<i>UL</i>	
Firm age	0.19	0.07	0.06	0.32	0.00
Firm size	0.22	0.12	−0.02	0.45	0.07
Industry	−5.89	3.17	−12.13	0.34	0.06
Entrepreneurial finance	−4.94	5.77	−16.26	6.38	0.39
Commercial and legal infrastructure	6.83	6.06	−5.06	18.72	0.26
Entrepreneurial bricolage	−0.51	2.36	−5.15	4.13	0.83
Product/service innovativeness	3.67	1.37	0.98	6.36	0.01
Mediation model (baseline model)		Effect	Boot SE	Boot LLCI	Boot ULCI
Indirect effect of entrepreneurial bricolage on degree of internationalization		0.74	0.36	0.15	1.56

*N* = 681. Bootstrap sample size = 5000. *LL* = Lower limit. *UL* = Upper limit. *CI* = Confidence interval

Third, given our overall moderated mediation model, we also tested the conditional indirect effects of bricolage on the degree of internationalization at low (16th percentile), medium (50th percentile) and high (84th percentile) levels of GESPs, as suggested by Hayes (2017a). Table 3 displays our results confirming the positive and statistically significant indirect effect of bricolage on the degree of internationalization when there are at least medium levels of GESPs—that is, when these programs are available and effective to a medium or high extent (50th percentile: effect = 0.62, 95% CI [0.02; 1.45]; 84th percentile: effect = 1.80, 95% CI [0.24; 3.79]). By contrast, when there are low levels of GESPs, the indirect effect of bricolage on the degree of internationalization is not statistically significant (16th percentile: effect = 0.02, 95% CI [−0.87; 0.88]).

### 4.3 Robustness tests

To confirm the robustness of the results of our baseline mediation model, we conducted an additional multilevel analysis (e.g., Hörisch et al., 2017). As the entrepreneurial ventures in our sample were located in different countries across Europe that provide distinct manifestations of GESPs, the ventures were nested in their respective countries for this analysis. We confirmed the necessary preconditions using the likelihood ratio test

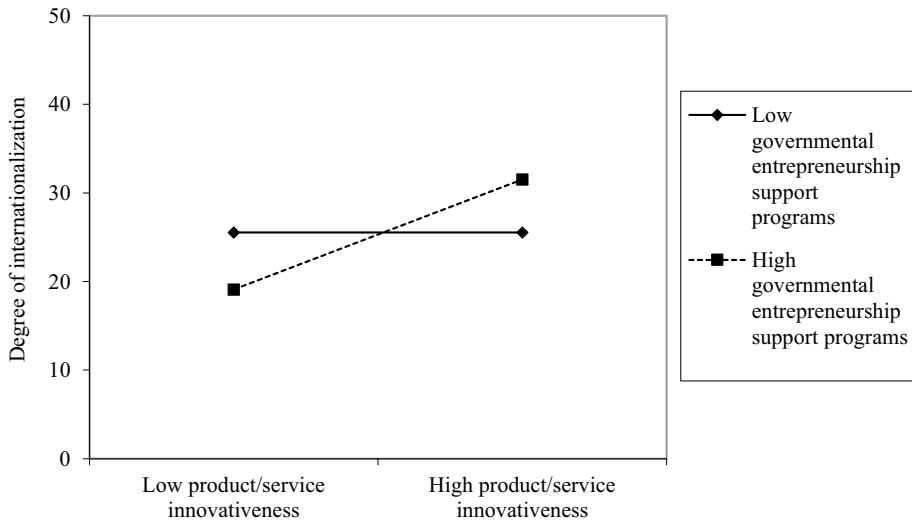
**Table 3** Results of the moderated mediation analysis (PROCESS, Model 58)

Step 1: Mediator variable model (full model)		Dependent variable: Product/service innovativeness				
		<i>Coeff</i>	<i>SE</i>	Bootstrapped <i>CI</i> [95%]		<i>p</i>
				<i>LL</i>	<i>UL</i>	
Firm age		−0.00	0.00	−0.00	0.00	0.80
Firm size		0.00	0.00	−0.00	0.01	0.19
Industry		−0.02	0.09	−0.19	0.16	0.85
Entrepreneurial finance		−0.06	0.16	−0.38	0.26	0.70
Commercial and legal infrastructure		0.03	0.20	−0.37	0.43	0.88
Entrepreneurial bricolage		0.21	0.07	0.08	0.34	0.00
GESPs		−0.19	0.11	−0.41	0.03	0.09
Entrepreneurial bricolage × GESPs		0.11	0.14	−0.17	0.40	0.43
Step 2: Outcome variable model (full model)		Dependent variable: Degree of internationalization				
		<i>Coeff</i>	<i>SE</i>	Bootstrapped <i>CI</i> [95%]		<i>p</i>
				<i>LL</i>	<i>UL</i>	
Firm age		0.19	0.07	0.06	0.32	0.00
Firm size		0.21	0.12	−0.03	0.45	0.08
Industry		−5.97	3.18	−12.22	0.27	0.06
Entrepreneurial finance		−5.09	5.77	−16.41	6.24	0.38
Commercial and legal infrastructure		6.43	7.19	−7.68	20.54	0.37
Entrepreneurial bricolage		−0.46	2.36	−5.10	4.18	0.85
Product/service innovativeness		2.97	1.41	0.21	5.74	0.04
GESPs		−0.26	4.00	−8.11	7.60	0.95
Product/service innovativeness × GESPs		6.46	3.06	0.46	12.46	0.04
Moderated mediation model (full model)						
Conditional indirect effect of entrepreneurial bricolage on degree of internationalization	Level of moderator	GESPs	Effect	Boot SE	Boot LLCI	Boot ULCI
	16th percentile	−0.44	0.02	0.41	−0.87	0.88
	50th percentile	0.00	0.62	0.37	0.02	1.45
	84th percentile	0.57	1.80	0.92	0.24	3.79

*N* = 681. Bootstrap sample size = 5000. *LL* = Lower limit. *UL* = Upper limit. *CI* = Confidence interval. GESPs = Governmental entrepreneurship support programs

(Hayes, 2006) and conducted an additional multilevel analysis by applying the MLMED macro in SPSS, as recommended by Hayes and Rockwood (2020). The results of the additional multilevel analysis confirm the findings of our baseline model and thus its robustness.

In addition, we addressed potential threats of reversed causality by using the reversed model approach as suggested by Kollmann et al. (2020). Doing so, we calculated two models in which we swapped the dependent and independent variable as well as the dependent and mediator variable. The reversed models showed mainly non-significant



**Fig. 2** Interaction plot for the moderating effect of governmental entrepreneurship support programs on the relationship between innovativeness and degree of internationalization

effects among the focal direct and indirect relationships. Accordingly, our model is not significantly affected by reversed causality problems.

## 5 Discussion

This study explores the contingent moderating effects of GESPs on the relationship between bricolage behavior, innovation capability, and the degree of internationalization in entrepreneurial ventures across different European countries. Our results show that bricolage behavior services as an important pathway to a high degree of internationalization because it fosters product/service innovativeness in entrepreneurial ventures. Interestingly, our findings demonstrate that GESPs have no influence on the relationship between bricolage and innovativeness but do have a positive effect on the relationship between innovativeness and the degree of internationalization in that they further enhance this positive relationship. Furthermore, the results of our moderated mediation model revealed that the effect of bricolage on internationalization through product/service innovativeness is significant only at medium to high levels of GESPs. Overall, our findings bear several theoretical and practical implications, as we outline below.

### 5.1 Theoretical implications

#### 5.1.1 Resourceful behavior and the pathway to internationalization

Our paper contributes to the entrepreneurship literature on resourceful behavior, innovativeness, and internationalization of entrepreneurial ventures. First, we find that resourceful bricolage behavior directly enhances product/service innovativeness in entrepreneurial

ventures. This confirms the positive link between bricolage and innovativeness, as already demonstrated by prior studies (e.g., Garud & Karnøe, 2003; Senyard et al., 2014). By corroborating these earlier findings with a broad sample of European ventures, our results address calls to test the generalizability of this link, even across different contexts (e.g., Davidsson et al., 2017; Fisher, 2012). The empirical evidence therefore suggests the seminal arguments by Lévi-Strauss (1966), Baker and Nelson (2005), and Baker (2007) of “ideational” bricolage that allows bricoleurs to discover and exploit opportunities from their immediate environment through creative solutions with the resources at hand, regardless of their home country.

Second, we find a direct positive effect of ventures’ product/service innovativeness on their degree of internationalization. Thereby, we extend recent findings by Martínez-Román et al. (2019) about the importance of innovativeness for internationalization in European SMEs to entrepreneurial ventures, a topic that has previously not yielded conclusive results (Saridakis et al., 2019). The advantages of increased innovativeness can help a venture adapt to specific or changing market preferences (Schueffel et al., 2014; Weerawardena et al., 2019) and enable it to offer new and differentiated products/services that create a competitive advantage in foreign markets (Hsieh et al., 2019; Oviatt & McDougall, 1995).

Third, we find that ventures’ product/service innovativeness plays a mediating role in the relationship between bricolage behavior and the degree of internationalization. By identifying the indirect effect of bricolage on the degree of internationalization through innovativeness, we add empirical evidence to the limited state of research on bricolage and internationalization. Previous research mainly used explorative qualitative case studies (e.g., Nowinski & Rialp, 2013; Su, 2013) or investigated other/similar phenomena and discovered bricolage patterns rather as a by-product (Y. Chandra et al., 2012; Evers & O’Gorman, 2011). To the best of our knowledge, we are the first to provide empirical evidence using a broad sample of European ventures regarding the exact relationship between bricolage and internationalization. Our findings suggest that resourceful behavior per se does not increase a venture’s degree of internationalization but frequent bricolage behavior helps entrepreneurial ventures to develop innovative products/services (Dai et al., 2014), as it enables creative freedom and the recombination of resources that can trigger innovation (Baker et al., 2003). This innovativeness then enhances entrepreneurial ventures’ degree of internationalization. We find a full mediation (cf., Kozlowski & Ilgen, 2006; Preacher & Hayes, 2004, 2008), which empirically underlines that bricolage behavior, innovativeness, and internationalization are a sequence of processes rather than parallel ones. In so doing, we can also empirically substantiate recent findings from case studies (Weerawardena et al., 2019) that ventures pass through certain phases and follow subsequent steps when going international (Evers & O’Gorman, 2011). Thereby, we contribute to a more nuanced understanding of which activities or behaviors may represent important drivers and/or enablers of internationalization (Hsieh et al., 2019; Tan et al., 2007) and, more generally, to the limited knowledge about bricolage for firm growth (An et al., 2020; Baker & Nelson, 2005).

### 5.1.2 The contextual role of governmental programs

Our paper contributes to the literature on the institutional context of entrepreneurial ventures. We answer the research call by Welter et al., (2019, p. 327) to provide more “sensible approaches to contextualization” by investigating the interaction of

entrepreneurial activities and institutional contexts in a differentiated way. First, we find that the relationship between bricolage behavior and innovativeness is not moderated by the availability and effectiveness of GESPs. We hereby confirm and expand the recent finding by Lashitew et al. (2020) and the theoretical foundations by Fisher (2012) that bricoleurs tend to focus on their existing means at hand and draw on their idiosyncratic resource troves when it comes to innovation rather than rely on institutional environments (e.g., GESPs). Our results also suggest that bricoleurs may be a specific type of entrepreneur (Stenholm & Renko, 2016)—one capable of being effective only by focusing on existing means and by using and recombining their resources at hand (Baker & Nelson, 2005; Fisher, 2012; von Friedrichs & Wahlberg, 2015), regardless of additional freely or cheaply available resources from their institutional environment. However, while this finding indicates that bricoleurs can innovate independent of external institutional support mechanisms, such as GESPs, these programs might still be useful for non-bricoleurs, who tend to rely more strongly on external resource acquisitions from the institutional environment (Baker & Nelson, 2005).

Second, we find that the relationship between innovativeness and the degree of internationalization is significantly moderated by GESPs. Being located within an institutional environment that offers effective GESPs, helps firms to grow internationally by providing necessary resources, whether tangible or intangible (e.g., Brüderl & Preisendörfer, 1998; Bruneel et al., 2012; Busch & Barkema, 2020). Through, for example, the proximity to other firms in incubators or science parks, knowledge exchange and spillovers are fostered (Audretsch & Feldman, 1996; Laursen et al., 2012a). In such networks, the venture might gain specific market knowledge on product/service preferences or ideas for more innovative opportunities. This, in turn, might lead the venture to purposefully improve its innovative products/services until it achieves a perfect market fit, which is often challenging for ventures (Cavusgil & Kirpalani, 1993). In addition, single agencies or dedicated government-funded acceleration programs often aim “at developing and internationalizing local start-ups” (Politis et al., 2019, p. 591). They also offer access to a large network with experts familiar with certain international market or regulatory knowledge, for instance, investors or patent lawyers (Bartlett & Mroczkowski, 2019). Thus, our findings underline that being in a supportive institutional environment can play a decisive role in growth endeavors in the form of internationalization (Campos et al., 2021; Lerner, 2010).

Overall, as GESPs do not significantly affect the link between bricolage and innovativeness but between innovativeness and internationalization, this offers interesting insights. Apparently, GESPs and their support through various programs, science parks, business incubators, or single agencies may not influence the effective use of resourceful bricolage behavior for innovative output. Instead, GESPs may rather play an important supportive role in a later stage of the innovation and growth process (e.g., Cao & Shi, 2021). These findings suggest that entrepreneurial ventures are capable to create innovative products/services through resourceful bricolage behavior even without external support (Senyard et al., 2014), but when it comes to surviving and growing in highly competitive and complex international markets, ventures profit from external support in the form of GESPs. In greater detail, the overall moderated mediation revealed that the conditional indirect effect of bricolage on internationalization through innovativeness is significant only for medium to high levels of GESPs. Based on this finding, we underline that the overall process of generating innovative products/services and successfully leveraging them in international markets is a result of the creative use of the resources at hand combined with rather well-developed (i.e., available and effective) GESPs. With these findings, we add to



the emerging discussion on the complexity of different institutional support mechanisms in entrepreneurial ecosystems (Ács et al., 2014; Cao & Shi, 2021; Kuckertz, 2019).

## 5.2 Practical implications

Our findings highlight several important aspects that should be considered in practice. We find that entrepreneurs can increase their innovative power through bricolage behavior by consciously using the creative freedom that arises from this resourceful entrepreneurial behavior (Baker, 2007; Senyard et al., 2014). In particular, entrepreneurs who frequently apply bricolage can successfully innovate with their resources at hand and create “something from nothing” (Baker & Nelson, 2005, p. 329) through creative tinkering and ingenious solutions. When it comes to more complex endeavors, such as venturing into foreign markets, this innovativeness supports the internationalization of entrepreneurial ventures (Martínez-Román et al., 2019) but is further enhanced when entrepreneurs can additionally draw freely or cheaply available resources from their institutional environment (Baker & Nelson, 2005; Busch & Barkema, 2020; Vanevenhoven et al., 2011). More specifically, ventures should pay attention to the availability and effectiveness of GESPs, which include support through, for example, science parks or business incubators that can foster internationalization through dedicated programs (Goswami et al., 2018; Politis et al., 2019). For entrepreneurs who pursue an internationalization strategy, comparing the effectiveness and availability of GESPs across different countries and proactively situating themselves in a beneficial institutional environment to benefit from additional freely or cheaply available resources can be very important. Especially given the freedom of movement within the EU, this might open up interesting avenues for high-growth ventures (Bock & Hackober, 2020). Our study also offers important insights for policymakers and institutions in that we show how the institutional context in the form of GESPs affects venture innovativeness and internationalization patterns (Lecerf & Omrani, 2020). Such programs may not aim to influence how ventures deal with their resources at hand but should offer them opportunities to further leverage their (innovation) capabilities by providing them with additional resources and knowledge that aim to facilitate growth through international market access. In so doing, they may boost the internationalization of entrepreneurial ventures, which is often a desired goal in terms of economic policymaking (Laffan, 2010).

## 5.3 Limitations of the study and avenues for future research

Despite various contributions, this study has some limitations that simultaneously present valuable avenues for future research. First, although our study uses a unique and broad dataset of European ventures and countries, our firm-level data (ESM) is cross-sectional. Hence, we could not analyze our proposed baseline mediation model over time and test for causality. Future research might use longitudinal firm-level data, which would also help to preclude potential reverse causality due to any bidirectional influences between bricolage, innovativeness, and internationalization in entrepreneurial ventures. For example, one could argue that a higher degree of internationalization might lead to more opportunities or higher pressure to innovate products and services.

Second, because we use data from the ESM and GEM, we can offer a comprehensive picture of ventures across many European countries but not all of them. This approach was commonly used by previous studies (Bosma, 2013), but it still creates a limitation and thereby

avenues for future studies that could offer a more representative picture of all European countries or even other regions of the world.

Third, future studies should focus on new research methods that allow the disclosure of the dynamics of contextual factors. One emerging research method that enables the investigation of different configurations of the respective factors combined with other variables is fuzzy-set qualitative comparative analysis (Douglas et al., 2020). Further variables could be, for example, different configurations of entrepreneurial behaviors, such as effectuation/causation and improvisation (Fisher, 2012) or different contextual factors, such as national cultures. This may offer a more nuanced understanding of different contextual dynamics and their impact on entrepreneurial behavior and outcomes.

Fourth, our theoretical research model and empirical sample concentrate on entrepreneurial ventures. While this focus allows a detailed inspection of this type of venture, it also limits the generalizability of the results. Thus, the context of entrepreneurial ventures is certainly valuable in showing that entrepreneurial bricoleurs might represent a specific type of entrepreneur capable of operating successfully independent of support systems promoted by the government. At the same time, it opens up important frontiers for future research to examine our proposed research model in the context of incumbent firms (An et al., 2018).

Finally, given that we used the definition and data for entrepreneurship-related governmental support programs from the GEM, and this definition mainly captures the general availability and effectiveness of specific programs in a country (Singer et al., 2015; Sternberg & Wennekers, 2005), other studies might refine the picture of how more specific tangible and intangible support resources are definitively used and, in turn, how the use of such resources influences the capability and internationalization patterns of entrepreneurial ventures in greater detail. Overall, we are confident that this study will prompt further investigations in this burgeoning field by suggesting meaningful avenues for future research.

## Appendix

See Tables 4 and 5.

**Table 4** Study variables and items

Variables	Items
Entrepreneurial bricolage	<p><i>Please rate the following statements regarding how you go about doing things in your start-up</i></p> <p>We are confident of our ability to find workable solutions to new challenges by using our existing resources and other resources inexpensively available to us</p> <p>When dealing with new problems or opportunities, we act by assuming that we will find a workable solution</p> <p>We combine resources to accomplish new challenges that the resources were not originally intended to accomplish</p> <p>We gladly take on a broader range of challenges than others with our resources would be able to</p> <p>We are predominantly using external resources when taking on new challenges or opportunities</p>
Product/service innovativeness	<i>How innovative is your start-up regarding your products/services?</i>
Degree of internationalization	<p><i>Where does your start-up generate revenue?</i></p> <p><i>Please allocate 100% to the following markets:</i></p> <p>Home country</p> <p>Euro currency area</p> <p>Other European countries</p> <p>Middle East</p> <p>North America</p> <p>South America</p> <p>Africa</p> <p>Asia</p> <p>Australia/Oceania</p>
Governmental entrepreneurship support programs	<p><i>Governmental programs — In my country...</i></p> <p>In my country, a wide range of government assistance for new and growing firms can be obtained through contact with a single agency</p> <p>In my country, science parks and business incubators provide effective support for new and growing firms</p> <p>In my country, there are an adequate number of government programs for new and growing businesses</p> <p>In my country, the people working for government agencies are competent and effective in supporting new and growing firms</p> <p>In my country, almost anyone who needs help from a government program for a new or growing business can find what they need</p> <p>In my country, government programs aimed at supporting new and growing firms are effective</p>

**Table 5** Country-level statistics and means of focal variables

Country	Number	Share	Firm age <sup>a</sup>	Firm size <sup>b</sup>	Entrepreneurial bricolage	Product/service innovativeness	Degree of internationali- zation
		%	Mean	Mean	Mean	Mean	Mean
Austria	68	9.99	29.96	7.84	4.29	5.09	38.29
Belgium	57	8.40	36.88	8.46	4.16	5.09	34.81
Croatia	1	0.15	23.00	3.00	5.00	4.00	66.00
Denmark	1	0.15	12.00	3.00	4.75	5.00	5.00
Estonia	1	0.15	47.00	14.00	3.00	5.00	100.00
Finland	22	3.23	40.77	13.91	4.17	5.55	56.64
France	19	2.79	27.63	7.11	4.21	4.95	29.74
Greece	23	3.38	18.04	2.61	4.12	5.35	46.57
Hungary	38	5.58	34.82	7.84	4.03	5.13	52.84
Ireland	51	7.49	26.65	3.00	4.03	4.88	41.63
Italy	66	9.69	29.62	3.27	4.10	5.35	23.94
Latvia	1	0.15	23.00	5.00	5.00	4.00	60.00
Luxembourg	1	0.15	22.00	6.00	4.50	5.00	1.00
Netherlands	31	4.55	25.55	3.74	4.13	5.23	26.74
Poland	22	3.23	22.91	4.23	3.98	4.77	35.55
Portugal	79	11.60	28.01	4.19	4.14	5.27	28.75
Romania	1	0.15	37.00	4.00	4.00	4.00	0.00
Spain	49	7.20	29.06	4.98	4.08	5.04	24.51
Slovenia	55	8.08	25.27	4.29	4.12	5.45	38.11
Sweden	16	2.35	33.81	14.44	4.36	5.50	36.25
Switzerland	62	9.10	28.84	12.87	4.16	5.21	37.37
UK	17	2.50	21.71	4.24	4.25	5.06	14.41
Total sample	681	100	29.07	6.37	4.14	5.18	34.85

<sup>a</sup>Months<sup>b</sup>Number of employees

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**Code availability** Not applicable.

## Declarations

**Conflict of interest** The authors have no conflicts of interest to declare that are relevant to the content of this article.

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