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The Impact of Entrepreneurial Phronesis on Personal Initiative: Examining the Roles of Bricolage and Resource-Mobilization Self-Efficacy

Abstract

Guided by resource mobilization theory and bricolage literature, we developed and tested a moderated mediation model of phronesis on entrepreneurial personal initiative, buttressed by two studies (Pilot study: 205 entrepreneurs; Main study: 301 entrepreneurs) from Ghana. The study found that bricolage mediates the positive association between phronesis and personal initiative. Self-efficacy in resource mobilization moderated the effect of bricolage on personal initiative. We extend the literature on cognition and entrepreneurial behaviour by introducing bricolage, which conveys the beneficial effect of phronesis on personal initiative. Theoretical and practical contributions, along with limitations and avenues for future research are discussed.

Keywords: Phronesis; bricolage; personal initiative; resource mobilization self-efficacy; Ghana.

Introduction

In a rapidly evolving global context exemplified by resource constraints, no entrepreneurial venture is immune to cost and efficiency pressures (Busch & Barkema, 2021; Peng, 2022). Marked by increasing complexities in the business landscape, human capital encapsulates a unit-level resource derived from the knowledge, skills, and abilities (KSAs) of individuals which appear paramount (Ployhart & Moliterno, 2011; Ployhart et al., 2014). However, entrepreneurs often lack the resources (i.e., physical, financial, human, and energy) needed to undertake personal initiatives, make sound decisions, and exhibit astute judgement to ensure the long-term survival of their ventures (Fay & Frese, 2001; Mensmann & Frese, 2019). Following this line of reasoning, we foreground our theorizing on the logic of “resource mobilization as a critical step in entrepreneurship...that influence the quality and quantity of resources that can be mobilized towards the exploitation of an entrepreneurial opportunity” (Kotha & George, 2012, p. 525).

The resource mobilization theory posits that the reorganization of resources is essential for entrepreneurs to capitalize on existing opportunities (Johnson et al., 2025; Reypens et al., 2021). As such, resource mobilization has been proposed as an entrepreneurial activity purposed to access and activate the critical resources enmeshed in one’s network ties (Thornton et al., 2019). To understand how entrepreneurs mobilize resources, it is imperative to consider the unique role that resources play in the venturing process (Kotha & George, 2012). For instance, mobilizing resources such as revenue or investment from investors is essential to gain legitimacy and maintaining the stability of the venture at early stages (Johnson et al., 2025; Scheidgen et al., 2025). Entrepreneurs might enact different processes such as social network ties (Thornton et al., 2019) or hype (Rady et al., 2025) to mobilize critical resources for their ventures. However, this

entrepreneurial activity occurs under challenging conditions. As McMullen and Shepherd (2006, p. 145) suggest, entrepreneurs “frequently face uncertainty in the decisions they make regarding the normal functioning of the enterprise – that is, forecasting consumer demand, projecting costs, and so on”. In resource-constrained environments, uncertainty can hinder resource mobilization “actions either by obfuscating the existence of...opportunity or by contributing to the doubt experienced in the belief that...opportunity exists” (McMullen & Shepherd, 2006, p.138). A cognitive heuristic necessary for addressing uncertainty in resource decision-making is *phronesis* characterised by “a set of moral, epistemic, and practical virtues” (Sass-Werhahn et al., 2020, p. 56). As an “excellence in ethical and practical deliberation about the best course of action in a complex social situation” (Grossmann et al., 2020a, p.66), *phronesis* is a cognitive schema enabling entrepreneurs to adopt optimistic perspective in uncertain contexts. *Phronesis* is essential in uncertain environments where no set of rules uniquely determines the right decision (Roca, 2008). Cultivating this cognitive resource can facilitate the self-initiative and proactive behaviour of entrepreneurs in resource-constrained environments. Consequently, phronetic entrepreneurs have enhanced prudence because of their capacity for optimal emotional response for effective judgement (Darnell et al., 2022; Rego et al., 2024) and performative excellence (Nonaka et al., 2014).

Additionally, despite the stream of research on *phronesis* (Ames et al., 2020; Kristjansson et al., 2021) and entrepreneurial personal initiative (Frese & Fay, 2001; Frese & Gielnik, 2023; Nsereko et al., 2021), both constructs have been pursued independently which limits our knowledge of their proposed relationship, and bricolage as the explanatory mechanism. Perhaps, this is because although *phronesis* has found its way into the management and organisation literature (Chia & Holt, 2008; Sasse-Werhahn et al., 2020), rarely has it been integrated into

entrepreneurship theory and practice. However, we contend that *phronesis* would be a valuable resource for entrepreneurs when push comes to shove, and the need to persist to create something new and develop opportunities become imperative (Frese, 2021; Frese & Gielnik, 2023). Hence, we examine the mechanism through which entrepreneurial *phronesis* lead to personal initiative by integrating insights from resource mobilization theory (Jenkins, 1983; Jensen & Meckling, 1976) with entrepreneurial bricolage theory (Baker & Nelson, 2005) to propose that since *phronesis* is a cognitive resource, phronetic entrepreneurs can leverage their cognition to self-start the venture process and persist in the face of resource challenges. We argue that similar to other cognitive resources such as optimism (Crawford et al., 2010), *phronesis* has a highly arousing experience to provide the impetus that entrepreneurs need to initiate actions and strive to challenge the existing ways of doing things.

Moreover, we aim to answer the question of when resource-constrained entrepreneurs can enhance their resourceful behaviour. For instance, while prior research has posited a positive linkage between bricolage and personal initiative (Frese & Gielnik, 2014, 2023; Gielnik et al., 2015), knowledge is lacking on resource mobilization self-efficacy as a significant boundary condition (Autio et al., 2013; Bacq et al., 2015; Desa, 2012). Two reasons account for our choice of resource mobilization self-efficacy as a moderator. First, resource mobilization self-efficacy is essential for early-stage ventures because “[entrepreneurial] experience...yield diminishing returns for resource mobilizing” (Kotha & George, 2012, p. 531). Second, resourcefully mobilising critical resources has been found to help track the decision-making logic of resource-constrained entrepreneurs (Scheidgen et al., 2025). Therefore, underpinned by the perspective of resource mobilization (Jenkin, 1983), we contend that the presence or absence of entrepreneurs’ implicit belief about their abilities to reorganise resources will determine the (outmost) benefits

they derive from the creative combination of the limited resources at hand. Surprisingly, resource mobilization self-efficacy has not been carefully investigated as a moderator influencing the effect of bricolage. This limitation hinders our understanding of how resource mobilization theory might help address a loophole in bricolage research. Hence, *when* the effect of bricolage on personal initiative is strengthened with the bricoleur's self-efficacy to mobilize resources needs to be investigated. This is because resource-constrained ventures can leverage their resourceful behaviour to stimulate innovation-oriented activities (Mateus & Sarkar, 2024; Senyard et al., 2014).

Building on the above arguments, we examine how bricolage transmits the beneficial effects of entrepreneurs' *phronesis* on personal initiative and the resource mobilization self-efficacy condition under which this relationship occurs. Based on this objective, our overarching research question is "*how and when does entrepreneurial phronesis fosters personal initiative?*" Following this overarching question, we contend that resource-constrained entrepreneurs can leverage *phronesis* or practical wisdom to do bricolage and engage in personal initiative leading to venture success. By adopting Ghana, a non-WEIRD context in Sub-Saharan Africa, as our empirical context supported by two samples (Pilot study: 205; Main study: 301), we make significant contributions to the entrepreneurship literature. First, given the critical role of entrepreneurs' cognition in ensuring the success of venture formation in uncertain environments (Marvel & Lumpkin, 2007; Unger et al., 2011), it is surprising that a paucity of research has been devoted to examining the influence of entrepreneurs' *phronesis* on personal initiative through bricolage. We integrate theory on resource mobilizing (Jenkins, 1983) and entrepreneurial bricolage (Baker & Nelson, 2005) to more clearly show how *phronesis* (cognitive heuristic) fosters resource-constrained entrepreneurs personal initiative (proactive behaviour) indirectly by

means of bricolage (resourceful behaviour). Clarifying the theoretical relevance of the mechanism underpinning our entrepreneurial *phronesis* concept and its consequences helps us to illuminate how entrepreneurs can reorganise and assemble resources in resource-constrained environments. In doing so, we respond to past calls for research on personal initiative and entrepreneurship in developing contexts (Rooks et al., 2016). In addition, by examining the moderating effect of resource mobilization self-efficacy on bricolage and personal initiative link, we extend the utility of the resource mobilization theory to bricolage literature. Finally, amidst the growing scholarly observation of the over-sampling of Western, developed economies in entrepreneurship research – organizations and people from WEIRD contexts (Apicella et al., 2020; Shepherd et al., 2025), we enhance the scholarship of entrepreneurial cognition and behaviour from a non-WEIRD perspective. By doing so, we address recent calls for increased entrepreneurship research from non-WEIRD contexts as a foundation for contextualizing innovative ideas. Shepherd et al. (2025, p.3) emphasise that “theories developed and evaluated using samples from Western, educated, industrialised, rich, and/or democratic nations may not be applicable to non-WEIRD contexts.” Given that culture shapes the development and expression of *phronesis*, we conducted two studies from Ghana, a non-WEIRD cultural context to clearly define its beneficial effects. Therefore, we concur with Shephard et al. (2025, p. 2) to provide theoretical and empirical clarifications for future research interest in “contextualised entrepreneurship theories, such as entrepreneurial *phronesis*, situated in contexts inadequately represented in the predominant entrepreneurship literature mainly focused on WEIRD”, yet account for the majority of the world’s population and rising global powers.

The remainder of the paper is organised as follows. First, we review the extant literature on the resource mobilization theory leading to the development of our hypotheses. We outline the

research methods and study design. Finally, we discuss our key findings and highlight their theoretical and practical implications.

Theoretical background and hypotheses

Resource mobilization theory and entrepreneurial phronesis

This section discusses the resource mobilization theory (hereafter, RMT) as the basis for the development of our hypotheses. Developed primarily to understand the emergence, effects, and relevance of social movements (Edwards & Kane, 2014; Jenkins, 1983), the RMT model explains how social actors (e.g., social entrepreneurs) effectively organize to advocate for social change. The RMT emphasizes the centrality of resources and highlights the capacity of actors to obtain resources and mobilise individuals to achieve social objectives (McCarthy & Zald, 1977).

Within the entrepreneurship context, successful resource mobilization emphasizes how ventures assemble resources to foster survival (Klyver & Nielsen, 2021; Scheidgen et al., 2025). Understanding critical resources, requires the need to consider the types and role of resources in venture formation (Kotha & George, 2012). The RMT portrays different resources (i.e., cognitive, human, cultural, moral and socio-organizational) and the modus operandi for accessing, coordinating, and mobilizing them (Edwards & Kane, 2014; Edwards et al., 2019). However, mobilizing resources often occurs under challenging conditions (Scheidgen et al., 2025). These challenges are often labelled as “wicked problems” because of their uncertainty, complexity, and multidimensionality, necessitating coordinated, and collaborative efforts (Reinecke & Ansar, 2016; George et al., 2016). Inadequate resource capital makes resource mobilization a critical issue in resource-constrained environments (Bradley et al., 2012).

In uncertain environment, entrepreneurs reorganise resources to capitalize on existing opportunities (An et al., 2020; Reypens et al., 2021). A critical cognitive resource that enhances

the capacity of entrepreneurs to deal with uncertainty in the resource environment is *phronesis*. Defined as “a form of excellence in ethical and practical deliberation about the best course of action in a complex social situation” (Grossmann et al., 2020a, p.66), *phronesis* has garnered scholarly attention with different conceptual measures albeit not in the entrepreneurship field (Sasse-Werhahn et al., 2020). Extant research posits that *phronesis* can enable entrepreneurs to manage and enact their resources in a situationally oriented manner (Kupers & Pauleen, 2015).

Accordingly, we build from the above discourse to provide two reasons supporting our conceptualisation of *phronesis* as a cognitive resource from entrepreneurial cognition literature. First, our contention is that *phronesis* depicts entrepreneurs fixed mental attitude or disposition which predetermines how they judge, respond to, and interpret challenges in the business environment (Mitchell et al., 2002; Shepherd & Patzelt, 2018). This mental schema helps entrepreneurs to take a positive outlook of the happenstance in the external environment. Second, we reason that *phronesis* is a strong mental attitude that helps entrepreneurs to turn challenges into successful entrepreneurial action (Darnell et al., 2022; Gregoire et al., 2011; Mitchell et al., 2007). Therefore, we position *phronesis* as the inherent mindset of entrepreneurs influencing their inquiry, judgement, and understanding of situational phenomena in the business environment. This perspective aligns with Rego et al.’s (2024) tridimensional practical wisdom which encompasses multiple necessary functions as an umbrella term (cf. Darnell et al., 2022). As such, our conceptualisation of *phronesis* as a cognitive resource might frame, deepen, and spark the ability of entrepreneurs to mobilize other critical resources for action in resource-scare settings.

In conceptualizing *phronesis* as a unique form of cognition, we differentiate it from entrepreneurial decision-making logic such as effectuation. Although both *phronesis* and

effectuation embrace uncertainty and make judgement about existing opportunities (An et al., 2020; Chia & Holt, 2008), the latter is distinct from the former because it focuses on “choosing between many possible effects using a particular set of means” (Sarasvathy, 2001, p. 245). For example, Lanivich et al. (2025) suggest that entrepreneurs who assume effectual method begins with their available means, make critical judgments based on affordable loss and leverage consistencies. *Phronesis* on the other hand describes a key element of exceptional leadership (Yang, 2011), which helps entrepreneurs to address resource challenges (Adomako et al., 2024). Hence, *phronetic* entrepreneurs exhibit greater prudence because they are imbued with optimal emotional responses to make effective judgements (Chia & Holt, 2008; Darnell et al., 2022; Rego et al., 2024) and strive for “performative excellence” (Nonaka et al., 2014, p. 368).

In resource-constrained contexts, what is required is neither rules nor incentives but rather *phronesis* (Grossmann et al., 202a; Schwartz, 2011). *Phronetic* entrepreneurs show moral resolve and competencies to discern and execute the right judgement in every situation. *Phronesis* assists entrepreneurs to adapt their behaviour to the pressures they encounter in specific contexts (Marker, 2013; Sasse-Werhahn et al., 2020). *Phronetic* entrepreneurs have the capacity to identify existing opportunities in situationally oriented environments and utilise their prudence, experience, and value to determine the appropriate course of action informed by prior learning experience (Meyer & Rego, 2020). This indicates that *phronesis* is situationally oriented and malleable and thus, expected to spark resource-constrained entrepreneurs’ resourcefulness and proactive behaviour. The hypothesized associations examined in this study are illustrated in Figure 1.

Fix **Figure 1** about here

Entrepreneurial phronesis and bricolage

Resource mobilization theory suggests the interplay between the role of resources and their mobilization processes in resource-constrained contexts (Jenkins, 1983). We explicate the link between *phronesis* and bricolage within the resource mobilization framework. Although *phronesis* has rarely made inroad into the entrepreneurship literature, it represents an essential cognitive resource that entrepreneurs can enact to deploy and recombine their limited resources creatively to overcome resource challenges (Duymedjian & Rüling, 2010; Mateus & Sarkar, 2024; Stenholm & Renko, 2016). Rooted in the field of philosophy, the Aristotelian Nicomachean ethics identifies two kinds of wisdom – *sophia* (theoretical wisdom) and *phronesis* (practical wisdom) (Darnell et al., 2019; Darnell et al., 2022). *Sophia* focuses on the domain of necessity and theoretical reasoning while *phronesis* deals with the world of contingents and practical reasoning concerning specific details, ultimately leading to action (Darnell et al., 2019; Grossmann, 2017). *Phronesis* is the Greek term for “prudence,” “practical wisdom,” or “good sense” – crucial for sound decision-making and actions (Ames et al., 2020; Morales-Sanchez & Cabello-Medina, 2015). The entrepreneurship context encapsulates the nature of the general venture environments, which are characterized by uncertainty and potential opportunities. This emphasis on making prudent decisions is grounded in past experiences, knowledge, and the contextual understanding of entrepreneurs. As previously noted, entrepreneurial activities in developing economies are often impeded by resource challenges, which then amplify the problems confronting new ventures.

Bricolage is defined as “*making do by applying combinations of the resources at hand to new problems and opportunities*” (Baker & Nelson, 2005, p. 353). Bricolage sheds light on the entrepreneurs’ capacity to utilise limited resources and overcome constraints in both hostile and

benign environments (Ahsan et al., 2025; Senyard et al., 2014; Steffens et al., 2023). The act of bricolage suggests that entrepreneurs engage in a continuous learning process via the application and reapplication of existing knowledge and resources (Baker & Nelson, 2005; Davidsson et al., 2017). This notion broadly captures the notion of resourceful action with very limited means (Baker & Nelson, 2005; Senyard et al., 2014; Stenholm & Renko, 2016). Extant research suggests that entrepreneurs who are adept at making do with existing resources enhance their chances of success and survival (Ahsan et al., 2025; Johannisson, 2011). This type of practical problem-solving and recombination of resources is crucial for seizing opportunities in challenging contexts. Phronesis is an essential cognitive resource that entrepreneurs can leverage to foster their bricolage behaviour. Accordingly, we contend that *phronesis* is a cognitive resource required by resource constraint entrepreneurs to make do with second best materials by coordinating and recombining them into useful resources to overcome resource challenges and pursue existing new opportunities. The preceding discussion is summarized in the following hypothesis:

Hypothesis 1. Entrepreneurial phronesis is positively associated with bricolage behaviour.

Bricolage and personal initiative

Personal initiative is a proactive behavior characterized by self-starting and future-oriented action towards change (Frese & Fay, 2001; Frese & Gielnik, 2023). Prior research has identified bricolage as one form of resourceful behavior that shapes entrepreneurs' personal initiative (Frese & Gielnik, 2014). Bricolage is the practice of making do with existing materials to create new purposes through recombination (Baker & Nelson 2005; Baker et al., 2003). As such, it emphasizes the relevance of not planning in detail but improvising and recombining limited resources at hand (Adomako et al., 2024; Baker & Nelson, 2005; Senyard et al., 2014).

As a resourceful behavior for successful entrepreneurship in resource-constraint environments, bricolage has been argued as a panacea for overcoming the liabilities of newness and smallness which hinders new ventures from gaining access to resources to exploit new opportunities and overcome challenges (Bacq et al., 2015; Desa, 2012; Salunke et al., 2013).

We reason that such an approach to mobilizing resources stimulates entrepreneurs' self-initiative and proactive behavior in resource-scarce contexts (Frese & Gielnik, 2023; Gielnik et al., 2015). Perhaps, this explains why several studies have established the usefulness of bricolage in resource-constraint and challenging business contexts in advancing the venture creation process (Adomako et al., 2024; Ahsan et al., 2025; Baker & Nelson 2005; Baker et al., 2003; Desa, 2012). Personal initiative is often epitomized by self-starting and proactive approach by entrepreneurs to take action (Frese & Fay, 2001; Rauch & Frese, 2000; Rooks et al., 2016). It is a self-driven behavior that strives to capitalize on current resources within the remit of the individual (Frese, 2009; Rooks et al., 2016; Frese & Fay, 2001). In other words, some kind of "self-starting and persistence in the face of barriers and obstacles that need to be overcome" (Frese, 2009, p. 444). Personal initiatives often reflect the inner drive and power to undertake changes and course of actions in line with demands of the environment (Nsereko et al., 2021; Frese, 2009). This is reflected in actions undertaken to explore and exploit opportunities (Choi & Shepherd, 2004; Choi, Lévesque, & Shepherd, 2008). We posit that entrepreneurial bricolage is likely to drive action towards capitalizing on market opportunities despite resource constraints and ambiguities which leads to the following hypothesis:

Hypothesis 2. Bricolage is positively associated with personal initiative.

Mediating role of entrepreneurial bricolage

We have so far enacted the resource mobilization logic to argue that *phronesis* influences the bricolage behaviour of resource-constrained entrepreneurs, since it serves as a cognitive resource enabling them to transform resource challenges into successful entrepreneurial ventures (Rego et al., 2024). On the other hand, we have argued that bricolage, as a form of resourceful behaviour stimulates the motivation to participate in entrepreneurial initiatives and proactive behaviours in goal pursuit (Frese & Gielnik, 2023). Bricolage is an action-oriented approach aimed at resource orchestration (Senyard et al., 2009). Bricolage is a method of innovative use of resources other than their original goal whereby business owners challenge constraints placed on their resources (Baker & Nelson, 2005; Lanivich et al., 2025). An important characteristic of the bricolage concept is the tendency to make do through improvisation and recombination of existing resources at hand in a creative manner (Baker & Nelson, 2005; Stenholm & Renko, 2016). In bricolage entrepreneurs capitalize on opportunities by not waiting for perfect environmental conditions or abundant resources. That is, they assemble different resources and apply their creativity to thrive in resource-constrained environments. Hence, we argue that bricolage will transmit the beneficial effect of *phronesis* to personal initiative by acting as a mediating variable, leading to the following hypothesis:

Hypothesis 3. Bricolage mediates the positive link between entrepreneurial phronesis and personal initiative.

Moderating role of resource mobilization self-efficacy

Resource mobilization theory recognizes the possible interplay between resources and their mobilization process, herein, bricolage and resource mobilization self-efficacy, suggesting these factors can mutually reinforce each other (Edwards & Kane, 2014; Gilham & Edwards,

2011; Jenkins, 1983) in prompting how entrepreneurs self-initiate and proactively pursue new opportunities. In addition, even though previous research has determined resource mobilization self-efficacy's direct effect on entrepreneurial action (Autio et al., 2013; Villanueva et al., 2012), its moderating effect remains unclear in entrepreneurship literature. Accordingly, despite extant research position that resource-constrained entrepreneurs can leverage on their bricolage behavior to make do with second-best resources to stimulate their personal initiative (Ahsan et al., 2025; Steffens et al., 2023), we argue that the reaction of entrepreneurs in resource-scarce contexts may differ based on their resource mobilization self-efficacy.

Based on the above logic, we propose that the impact of bricolage on personal initiative is supported by entrepreneurs' resource mobilization self-efficacy. Precisely, we contend that in resource-scarce contexts where accessing valuable resources is impractical if not impossible, entrepreneurs can enact their resource mobilization capability to strengthen the positive effect of bricolage on personal initiative. For instance, the resource mobilization theory acknowledges that entrepreneurial resource mobilization depends on changes in the available resources and the opportunities for collective actions (Edwards et al., 2019; Jenkins, 1983). Since variations in resource availability and decisions about resource mobilization can impact venture success and performance (Baum et al., 2000; Reypens et al., 2021), examining resource-constraint entrepreneurs' self-efficacy in mobilizing resources is a significant area of investigation.

Extant research posits that resource mobilization self-efficacy is more potent in the early stages of the venturing process due to the liabilities of newness and smallness (Baum et al., 2000; Razinskas et al., 2022; Reypens et al., 2021). We contend that when "opportunities for resource mobilization [through bricolage] surface...to tackle societal consequences of crisis" (Scheidgen et al., 2025, p.2) at the initial stages of the venturing process, resource-constraint entrepreneurs

must leverage on their resource mobilization self-efficacy to self-start their new ventures through proactive exploitation of new opportunities. Entrepreneurs high in resource mobilization self-efficacy can easily make do with, by recombining scarce resources in the uncertain environments through experimentation and improvisation to drive their proactive behavior, which is self-starting, future-oriented and persistent (Frese & Fay, 2001; Frese & Gielnik, 2014). Contrary, in a resource-constraint environment, entrepreneurs with low resource mobilization self-efficacy due to doubt in their ability to establish a repertoire of resources are less likely to benefit from their bricolage behavior (Baker & Nelson, 2005; Steffens et al., 2023) and consequently affect their motivation to proactively engage in self-initiated behavior which is meant to contribute to the success of their new venture. Based on our arguments, which is underpinned by resource mobilization logic, we provide the following hypothesis:

Hypothesis 4. Resource mobilization self-efficacy moderates the positive linkage between bricolage and personal initiative, such that the positive link is stronger (rather than weaker) when resource mobilization self-efficacy is high (rather than low).

To broadly understand the intricate path from *phronesis* to personal initiative in the entrepreneurship process, it is necessary to examine the underpinning mechanisms. First, from the core tenets of resource mobilization theory (Agarwal et al., 2020; Edwards et al., 2019) which posits entrepreneurial behaviour as the bridge between cognitive heuristics and entrepreneurial action, we argue that the effect of *phronesis* on personal initiative will be mediated by bricolage. Second, despite being a magic bullet in resource-constrained environments, we contend that bricolage as an action-oriented behaviour for solving resourceful problems is not automatic (Bacq et al., 2015; Senyard et al., 2014). This is because, doing bricolage requires entrepreneurs with strong mental schemas such as *phronesis* to inquire about existing resources, make informed judgement about their relevance, and then creatively

recombine them into useful resources to pursue new entrepreneurial opportunities. As such, we reason that the effect of *phronesis* on personal initiative through bricolage is contingent upon varying levels of the entrepreneur's resource mobilization self-efficacy. Specifically, in a resource-constrained environment where entrepreneurs are confronted with financial resource challenge such as poverty, hindering them from accessing adequate capital resources, their strong willpower in mobilizing existing resources from their immediate stockpile or trove (Autio et al., 2013), will help them override the barriers of capital resource constraint by engaging in proactive behaviors that inure to the realization of their goal pursuit (Chen et al., 1998; Villanueva et al., 2012). In contrast, entrepreneurs who doubt their ability to mobilize resources from their existing repertoire are less likely to make do with resources at hand by recombining them to self-start and proactively pursue opportunities. This will ultimately thwart their ability to initiate new business opportunities, leading us to the following hypothesis:

Hypothesis 5. Entrepreneurial phronesis has an indirect positive effect on personal initiative by increasing (rather than decreasing) bricolage in the case of high (rather than low) resource mobilization self-efficacy.

Methods

Rationale for Research Context

We conducted our study in Ghana, a sub-Saharan African country that has made steady economic progress in the last decade and hence, provides a perfect empirical context to test our hypotheses regarding entrepreneurs' personal initiatives in addressing grand societal challenges in an emerging economy. Despite the current global crisis, the economy of Ghana is regarded as one of the fastest growing in the world, with real GDP growth of 2.9% in 2024 (International Monetary Fund, 2024). In addition, successive governments have introduced several flagship programmes to promote entrepreneurship in Ghana. This has culminated in the establishment of

agencies such as the National Entrepreneurship and Innovation Programme and National Youth Enterprise. These agencies are responsible for creating a business-friendly environment and providing integrated national support for start-ups and small businesses. The Global Entrepreneurship Monitor (2020) rated Ghana as having 1.19 entrepreneurial activity, well above the regional score of 0.87 which signifies that to a greater extent, Ghanaians are entrepreneurial in nature. In addition, entrepreneurs in Ghana face various challenges including limited access to finance, inadequate infrastructure, high taxes, and institutional barriers (Legas, 2015). They might also lack adequate knowledge of the business environment and the skills to manage and grow their business (Acheampong et al., 2024). We examined our theoretical model with two separate samples from Ghana, a sub-Saharan African cultural zone. Drawing insights from Busenitz and Lau (1996) paper, Shepherd et al. (2025, p. 12) stated that cultural norms shape entrepreneurial cognition, specifically on “cognitive decision-making, resourceful behaviour, and venture formation activities”. Thus, we believe Ghana offers the right non-WEIRD context to examine how entrepreneurial *phronesis* and bricolage affect the proactive behaviour of resource-constrained entrepreneurs, based on their resource mobilization self-efficacy.

Sample and procedure

We recruited our participants with the support of state institutions – National Board for Small Scale Industries (NBSSI) – responsible for providing tailor-made educational programs for small and medium-sized enterprises (SMEs) to grow their enterprises (Amankwah-Amoah et al., 2021; Gyensare et al., 2024). As such, it keeps extensive records of the operations of SMEs in Ghana. Accordingly, with help from the NBSSI, we were able to identify a sample of 389 early-stage entrepreneurs operating their ventures in the Greater Accra region.

We collected data in three waves separated by two weeks interval to address the concern of same source bias (Podsakoff et al., 2003). In wave one, we distributed our survey to 389 SMEs and received 337 responses. In the first wave, we collected data on the control variables as well as the independent variable (i.e., *entrepreneurial phronesis*). After a two weeks interval, we distributed wave two survey, comprising the mediator (i.e., *bricolage*) and the moderator (*resource-mobilization self-efficacy*) variables to the 337 SMEs who responded to the first wave survey, and received 318 responses. Finally, after another two weeks' interval, the third survey on the dependent variable (i.e., *personal initiative*) was distributed to the 318 SMEs contacted in the wave two survey, resulting in 309. After omitting incomplete responses, we were left with 301 completed, valid and matched responses (response rate = 77.38). As shown in Table 1, our final sample included 55.8% male and 44.2% female. Regarding educational background, 45.5% had qualifications equivalent to a high school certificate. Also, the average age of the venture was 36.5% for those operating for less than 5 years with an average firm size of 89.4% for those with less than 50 employees. The average start-up experience was 36.5% for those who have found less than five ventures. Finally, most of the SMEs (78.7%) we contacted were hi-tech ventures and operated mostly in the service sector (46.8%).

Fix **Table 1** about here

Measures

We adopted our multi-item measures from existing studies. All our measures were assessed on a seven-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Table 2 provides details of the study's constructs, measurement items, validity and reliability indices.

Entrepreneurial phronesis. Entrepreneurial *phronesis* was operationalised as the capacity to deliberate, judge and execute actions in accord with entrepreneur's best decision-making ability to deal with the prevailing environmental circumstances. Hence, we employed Rego et al.'s (2024) recently validated three-dimensional construct of leader-expressed practical wisdom (i.e., inquiry, judgment, and emotionally regulated action) to assess *phronesis*. Since entrepreneurs are business leaders, we replaced [My leader] in the original item with [I]. Sample items include "I do not seek out information from a variety of sources so the best decision can be made (reversed) (*inquiry*)," "I always pay attention to concrete circumstance under which each decision is made (*judgement*)," and "I make decisions based on the feeling of the moment rather than on careful thought (reversed coded) (*emotionally regulated action*)".

Entrepreneurial bricolage. We assessed bricolage with 8-items from Senyard et al. (2014) which was later validated by Davidsson et al. (2017). Sample items are "when I face new challenges, I put together workable solutions from my existing resources" and "by combining my existing resources, I take on a surprising variety of new challenges".

Personal initiative. We measured personal initiative with the four highest loadings from Frese et al.'s (1997) 7-item measure. Three of the four items were recently utilized by Klyver and Steffens (2022) in their crisis response study. Sample item is "I am particularly good at realizing new ideas"

Resource mobilization self-efficacy. We assessed resource mobilization self-efficacy with a three-item scale from Autio et al. (2013) which was adopted from the Global Entrepreneurship Monitor (GEM) survey. The three items are "I have the right contact network to start a new venture," "It would be easy for me to gather the resources necessary to get the new venture going

(e.g., funding, employees, etc.),” “I have the right business contacts to make a new venture possible.”.

Control variables. We incorporated numerous control variables to avoid omitted variable bias (OVB). The first set of control variables included firm age, firm size, and industry given that these firm-level constructs have been found to be associated with bricolage (e.g., Adomako et al., 2024) and personal initiative (e.g., Klyver et al., 2022). Firm age was measured by the number of years the venture has been operating since its inception. Firm size was captured by the number of full-time employees who are currently working in the business. We collected data from new ventures operating in three industries (1 = manufacturing; 2 = service; and 3 = agriculture). Again, we asked our respondents to indicate whether the business was hi-tech or not (1 = hi-tech; 0 = non-hi-tech).

Furthermore, we included entrepreneurs’ experience, gender and education. These owner-specific variables have been found to impact our proximal and distal outcomes (i.e., bricolage and personal initiative; Adomako et al., 2024; Klyver et al., 2022). Following Hmieleski et al. (2013), we measured entrepreneurial experience by asking respondents to state the number of businesses they had previously founded while education was coded as 1 “high school”, 2 “college diploma”, 3 “bachelor’s degree” and 4 “master’s degree”. Gender was coded 0 “female” and 1 “male.” Again, we adopted three items based on the seminal work of Castrogiovanni (1991) which has been tested empirically by Li et al. (2013) to measure the extent of munificence in doing business in Ghana. We included environmental munificence to avoid confounds or omitted variable bias since it has been determined to impact bricolage and personal initiative (Davidsson et al., 2017; Welter et al., 2016). Finally, we controlled self-efficacy skills with two items in our model because of its link with personal initiative (Klyver et al., 2022).

Common method bias. Despite the rigour of our research design, we could not completely rule out same source bias given that we collected data from the same entrepreneurs over three wave intervals. Therefore, our approach to rule out same source bias were that we (1) guaranteed our entrepreneur participants that their information would be kept anonymous and secure, (2) included items with negative wording to control for patterned response, and (3) used rubrics to establish a psychological distinction in time for the response pattern between the different sections of the survey. Statistically, we conducted out an EFA-based Harman single factor model to determine the percentage of variance explained by the unrotated one factor solution (Podsakoff et al., 2003). One factor solution with eigenvalues greater than 1 explained 25.86% of the variance in the multi-item measures. Again, we performed a CFA model comparison between our hypothesized 8-factor model and the single (Harman-one) factor model. As shown in Table 3, the 8-factor model ($\chi^2 [N = 301, df = 341] = 580.94$; $\chi^2/df = 1.70$; TLI = 0.91; CFI = 0.93; RMSEA = 0.05; SRMR = 0.05) fitted the data better than the one (Harman-single) factor model ($\chi^2 [N = 301, df = 369] = 1343.47$; $\chi^2/df = 3.64$; TLI = 0.68; CFI = 0.71; RMSEA = 0.09; SRMR = 0.09), indicating CMB does not sufficiently describe our data.

Endogeneity bias. Survey-based research often suffers from endogeneity bias (Antonakis et al., 2010; Ullah et al., 2020). Similar to Ahsan et al. (2025), we utilised Zaefarian et al.'s (2017) three-stage least square (3SLS) estimating technique to check endogeneity in our data. Resource mobilization self-efficacy (RMSE) was employed as the instrumental variable in this estimation method. In step 1, we regressed *phronesis* on bricolage and saved the unstandardised residuals. In step 2, we regressed the residuals of bricolage on personal initiative to see how bricolage directly influence personal initiative. Connecting *phronesis_residual*, *bricolage_residual* and *bricolage* $\times$ *RMSE_residual* on personal initiative in Step 3 made it possible for us to assess the moderating

effect of RMSE. The result was noteworthy at 5% and did not differ greatly from the outcome of PROCESS (Table 7). Consequently, we conclude that endogeneity does not affects the authenticity of our results.

Validity and reliability assessment

We employed the CFA technique with the maximum likelihood estimator in AMOS v. 29 (Arbuckle, 2022) to determine the credibility and consistency of our measures. Following prior research (Bagozzi & Yi, 2012; Hair et al., 2019), we relied on six heuristic fit indices – χ^2 , χ^2/df , TLI, CFI, RMSEA and SRMR – to appraise the suitability of our hypothesized model. Based on these six fit indices, we conclude that our eight-factor model showed a good fit to our data ($\chi^2 [N = 301, df = 341] = 580.94$; $\chi^2/df = 1.70$; TLI = 0.91; CFI = 0.93; RMSEA = 0.05; SRMR = 0.05). In addition, as shown in Table 2, the average variance extracted (AVE), composite reliability (CR), maximum reliability (maxR(H)) and Cronbach's alpha (α) indices were all above recommended threshold of ≥ 0.50 , ≥ 0.60 and ≥ 0.70 , respectively (Bagozzi & Yi, 2012; Hair et al., 2019; Nunnally & Bernstein, 1994), suggesting all constructs are credible and consistent. Furthermore, all factor loadings approximated their threshold mark (≥ 0.50 ; Hair et al., 2019) which suggests convergence validity. Finally, to evaluate the discriminant validity of the measures we compared the correlation for each pair of the constructs with square root of AVEs (Fornell & Larcker, 1981) along the diagonal in Table 4. As shown in Table 4, the $\sqrt{\text{AVEs}}$ were greater than the correlation coefficients for each pair of the latent constructs, suggesting discriminant validity assumption has been met.

Fix **Table 2, 3 & 4** about here

Hypothesis testing

To test our hypotheses, we used Model 3 and Model 14 of Hayes (2022) PROCESS macros to estimate our mediation only and the moderated mediation models. Table 5 presents the results of our hypothesis relationship. As expected in Hypothesis 1 and contrary to the finding of the pilot study, entrepreneurial phronesis was significant and positively associated with bricolage ($\gamma = 0.10$, $p < 0.01$), lending support to Hypothesis 1. Furthermore, bricolage was positive and significantly associated with personal initiative ($\gamma = 0.25$, $p < 0.01$), suggesting Hypothesis 2 is supported. We tested our mediation hypothesis by employing the bootstrap technique with the bias-corrected estimate. The indirect effect of entrepreneurial phronesis on personal initiative through bricolage (indirect effect = 0.02, 95% CI = [0.004, 0.0049]). As hypothesized in Table 5, the interaction effect of bricolage and resource mobilization self-efficacy on personal initiative was significant ($\gamma = 0.19$, $p < 0.01$). In line with Hayes (2022), we plotted our interaction effect in Figure 2, in which the effect of bricolage on personal initiative was strengthened (versus weakened) when resource mobilization self-efficacy was higher (versus lower). This led to estimation a moderated mediation model of the effect of entrepreneurial phronesis on personal initiative via bricolage with Model 14 at different levels of resource mobilization self-efficacy. We used the 95% bias-corrected bootstrap confidence interval with 5000 resamples. As shown in Table 5, we found support for a moderated mediation effect at +1 SD levels of resource mobilization self-efficacy ($\gamma = 0.05$, SE = 0.02) with 95% CI ranging from (CI: 0.015, 0.101). On the contrary, resource mobilization self-efficacy at –1SD of, zero was found in the region of 95% CI ranging from (BCCI: -0.027, 0.030). The index of moderated mediation was positive and significant ($\gamma = 0.02$, SE = 0.01) and the 95% CI ranging from (BCCI: 0.004 to 0.043) did not include zero. Put together, this shows that Hypothesis 5 is supported at high levels of resource mobilization self-efficacy.

Fix **Table 5 & Figure 2** about here

Discussion

Previous research has provided limited insights into the role of resourcefulness in the cognition – entrepreneurial action nexus, particularly in non-Western contexts (Frese & Gielnik, 2023; Shepherd et al., 2025). Based on data obtained from entrepreneurs in Ghana, we examined how entrepreneurial bricolage mediates the effect of entrepreneurial phronesis on personal initiative. In support of our theoretical argument, we found that entrepreneurial phronesis was positively associated with bricolage. Our findings also revealed that bricolage was positively associated with personal initiative. Concerning resource mobilisation self-efficacy, we found that the positive association between bricolage and personal initiative was stronger when resource mobilisation self-efficacy was higher rather than lower. Given the scarcity of previous research in this domain and the institutional differences between developed and developing economies, we extend scholarly insights into resource mobilisation self-efficacy and its effect. Thus, it was shown that bricolage mediates the indirect effect of entrepreneurial phronesis on personal initiative.

Theoretical implications

We make several theoretical contributions to entrepreneurship literature. First, we extend entrepreneurial cognition research by adding a new form of cognitive heuristic – *phronesis* – which is situationally oriented and portrays excellence in entrepreneurs’ ethical decision-making mainly in resource-scarce environments confronted with grand challenges. Consequently, we bring strong attention to the utility of entrepreneurial cognition research (Gregoire et al., 2011; Mitchell et al., 2007). Furthermore, because of the novelty of our entrepreneurial phronesis concept, we theorize its effect on bricolage and personal initiative and in doing so we provide a nuanced understanding

of its linkage with action-oriented behaviours (Baker & Nelson, 2005; Frese & Gielnik, 2014). Second, by integrating the literature on entrepreneurial bricolage (Baker & Nelson, 2005; Baker et al., 2003; Lévi-Strauss, 1967) and entrepreneurial phronesis (Darnell et al., 2022; Kristjansson et al., 2021), we contribute to the extant body of knowledge by developing and testing a conceptual model that elucidates how entrepreneurial bricolage mediates the indirect effect of entrepreneurial phronesis on personal initiative. Again, by clarifying the entrepreneurial bricolage mechanism, we progress our knowledge of the mediating variables connecting cognition and entrepreneurial action research (McMullen & Shepherd, 2006; Mitchell et al., 2007; Muller et al., 2023).

Third, by investigating the moderating effect of resource-mobilization self-efficacy in the bricolage – personal initiative relationship, we extend the resource mobilization theory in resource constraint environments and address recent calls to broaden the boundary conditions of bricolage behaviour (Kleine-Stegemann et al., 2024; Steffens et al., 2023; Wu et al., 2024). In spite of such calls, few studies have focused on personal resources, including resource mobilisation self-efficacy as a moderator of bricolage behaviour. Bricolage has been posited as a panacea for action-oriented behaviours and venture outcomes (Ahsan et al., 2025; Davidsson et al., 2017; Senyard et al., 2014). Our analysis of the moderating effect of resource-mobilization self-efficacy emphasizes that the positive effect of bricolage may be more pronounced for resource-constrained entrepreneurs with higher personal resources. We expand upon prior bricolage research that have examine personal resources such as entrepreneurial experience (Kleine-Stegemann et al., 2024) instead of firm-level constructs (e.g., growth expectations, explorative learning, and market orientation) as boundary conditions (Donbesuur et al., 2023; Steffens et al., 2023; Wu et al., 2024).

Finally, regarding the observations of the over-sampling of Western, developed economies in social science research – Western, Educated, Industrialized, Rich, and Democratic (WEIRD)

societies (Apicella et al., 2020; Shepherd et al., 2025), our research also contributes to the existing literature on “institutional dysfunction” (Barnard & Mamabolo, 2022; Khanna & Palepu, 2010) by demonstrating how entrepreneurs and their ventures, when confronted with dual challenges of resources and institutional constraints in developing economies, can utilise their practical wisdom to motivate personal initiative through bricolage behaviour. Indeed, such regions are crucial in addressing grand challenges (Adomako et al., 2024). In fact, by capitalizing on unique data from a developing economy, specifically Ghana, and shedding light on the effects of institutional differences, this study adds to the literature by deepening scholarly understanding of bricolage and how it motives personal initiative. Given the increasing interest in entrepreneurial bricolage (Adomako et al., 2024; Ahsan et al., 2025; Baker & Nelson, 2005; Baker et al., 2003), we expand the scholarly conversation by shifting our focus away from predominantly developed economies to emerging market economies which accounts for a majority of the global population (Smallbone et al., 2014).

Practical implications

From a practical standpoint, our findings show that entrepreneurs endowed with phronesis are more likely to be adept at bricolage due to their ability to reconfigure resources creatively in resource-constraint settings. Such assets are vital in cultivating frugal innovations when existing knowledge is limited. In addition, the findings indicate that bricolage fosters a growth mindset while encouraging personal initiative. The study suggests that when entrepreneurs possess high self-efficacy in resource mobilization, the positive effect of bricolage on personal initiative is amplified. Our findings further indicate that entrepreneurial phronesis has the potential to drive resourceful behaviors in new ventures. By drawing on prior experience and intuition, entrepreneurs can enhance their innovation activities when resources are scarce. Furthermore, we suggest that

entrepreneurs embrace bricolage as a growth mindset emphasizing the combination of resources to drive innovation-oriented activities.

Finally, state institutions like the National Board for Small Scale Industries are encouraged to offer personal initiative training to their SMEs to address societal problems including poverty and climate change. Personal initiative training can help entrepreneurs overcome barriers and undertake the right steps to “solve societal problems with high likelihood of global impact through widespread implementation (George et al., 2016, p. 1881). For instance, Campos et al. (2017) found that personal initiative training increased firm profits by 30% two years after small business owners have received three weeks training. Hence, we call on small business associations to teach personal initiative to small businesses in sub-Saharan Africa to boost their bottom-line agenda.

Limitations and future research directions

There are some limitations that must be noted. First, while previous research has speculated potential antecedents of phronesis (Darnell et al., 2022; Grossmann et al., 2020a; Grossman et al., 2020b; Steyn & Sewchurran, 2021), our research failed to consider key factors that could shape phronesis. Consequently, we ask that future research investigate potential psychological (general intelligence, emotional intelligence and relationality) and socio-cultural (cultural orientation and life span experiences) factors shaping the development and propensity for phronesis. Second, our study focused on personal initiative as distal outcome of phronesis in the theoretical model despite the fact that recent reviews on personal initiative have positioned personal initiative as a proximal rather than distal outcome of cognitive heuristics (e.g. Frese & Gielnik, 2023). We encourage future research to extend our theoretical model by incorporating venture outcomes like opportunity identification, venture growth and success (Campos et al., 2017; Frese & Gielnik, 2014).

Third, despite the robustness of our research design, we are unable to establish causality. To address the issue of causality, we asked that future research conduct longitudinal, experimental

and computer simulation studies to bolster our conceptualisation of phronesis, as a situationally oriented yet malleable construct in the entrepreneurship context. Finally, our study was centred on a single country and an emerging economy as the empirical context, which constrains the scholarly ability to generalize our findings. Thus, there is a need for comprehensive future research that utilises a larger sample across multiple countries in the sub-region. Related to this, we used data from entrepreneurs located in a few cities and regions of the country. Our findings can be amplified by seeking large samples of entrepreneurs to help confirm the robustness of our findings.

Conclusion

Drawing on RMT and bricolage literature, we developed and tested a moderated mediation model of entrepreneurial phronesis on personal initiative. Our findings indicate that the personal initiative of entrepreneurs in resource-constrained contexts is somewhat shaped by their cognitive heuristics (i.e., phronesis) and resourceful behaviours (i.e., bricolage). Entrepreneurial phronesis positively influences bricolage, which we identify as the mechanism through which phronesis fosters personal initiative. This transpires when entrepreneurs engage in bricolage by utilizing available materials and reconfiguring them for distinct purposes. Also, we show that the enactment of bricolage as the mechanism connecting the beneficial effect of phronesis to personal initiative depends on the resource-mobilization self-efficacy of entrepreneurs in resource-scarce contexts.

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Table 1. Sample characteristics

Variables (sub-categories)	Frequency	Percentage (%)
Gender		
Male	168	55.8%
Female	133	44.2%
Highest educational level		
High school	137	45.5%
College diploma	59	19.6%
Bachelor's degree	56	18.6%
Master's degree	49	16.3%
Firm age		
0-5 years	103	36.5%
6-10 years	60	19.9%
11-15 years	69	21.8%
Over 15 years	69	21.8%
Firm size		
<50 employees	269	89.4%
25-50 employees	21	8.0%
51-75 employees	6	2.0%
> 75 employees	5	1.6%
Entrepreneurial experience		
0-5 ventures	279	92.6%
6-10 ventures	12	4.0%
Over 10 ventures	10	3.4%
Industry category		
Manufacturing	63	20.9%
Service	141	46.8%
Agriculture	97	32.3%
Business system		
Hi-tech	237	78.7%
Non-hi-tech	64	21.3%

Table 2. Details of the measures, reliability, and validity

Constructs and details of measures	SFLs
Entrepreneurial phronesis	
<i>Inquiry ($\alpha = 0.70$; $CR = 0.71$; $AVE = 0.54$; $MaxR(H) = 0.70$)</i>	
1. I do not carefully consider all the information available before making an important decision*	0.72
2. I do not seek out information from a variety of sources so the best decision can be made*	0.75
<i>Judgement ($\alpha = 0.74$; $CR = 0.70$; $AVE = 0.57$; $MaxR(H) = 0.72$)</i>	
1. I conscientiously considers a problem from all angels to reach the best decision for all parties.	0.55
2. I grasps the complexity of most situations when making judgements.	0.52
3. I always pay attention to the concrete circumstances under which each decision is made	0.60
4. I usually seek out and understand the pertinent facts before making-a-decision.	0.74
<i>Emotionally regulated action ($\alpha = 0.78$; $CR = 0.78$; $AVE = 0.54$; $MaxR(H) = 0.79$)</i>	
1. I make decisions based on the feeling of the moment rather than on careful thought*	0.77
2. I make a lot of mistakes because I do not think before I act*	0.76
3. I make decisions without considering the concrete realities that each decision entails*	0.68
<i>Bricolage ($\alpha = 0.74$; $CR = 0.71$; $AVE = 0.53$; $MaxR(H) = 0.72$)</i>	
1. I am confident of my ability to find workable solutions to new challenges by using my existing resources.	0.56
2. I gladly take a broader range of challenges than others with my resources would be able to.	0.57
3. I use any existing resources that seems useful to responding to a new problem or opportunity.	0.57
4. I deal with new challenges by applying a combination of my existing resources and other resources inexpensively available to me.	0.49
5. When dealing with new problems or opportunities, I take action by assuming that I will find a workable solution.	0.50
6. By combining my existing resources, I take on a surprising variety of new challenges.	0.53
7. When I face new challenges, I put together workable solutions from my existing resources.	0.53
8. I combine resources to accomplish new challenges that the resources were not originally intended to accomplish.	0.58
<i>Personal initiative ($\alpha = 0.83$; $CR = 0.83$; $AVE = 0.55$; $MaxR(H) = 0.84$)</i>	
1. I take initiative immediately even when others do not.	0.80
2. I use opportunities quickly in order to attain my goals	0.76
3. I usually do more than I am asked to do	0.73
4. I am particularly good at realising new ideas	0.68
<i>Resource mobilisation self-efficacy ($\alpha = 0.83$; $CR = 0.84$; $AVE = 0.63$; $MaxR(H) = 0.84$)</i>	
1. I have the right contact network to start a new venture.	0.75
2. It would be easy for me to gather the resources necessary to get the new venture going (e.g., funding, employees, etc.)	0.84
3. I have the right business contacts to make a new venture possible.	0.80
<i>Skills self-efficacy ($\alpha = 0.69$; $CR = 0.78$; $AVE = 0.63$; $MaxR(H) = 0.78$)</i>	
1. I am confident I would succeed if I started my own firm	0.81
2. I have the skills and capabilities required to succeed as an entrepreneur	0.78
<i>Environmental munificence ($\alpha = 0.80$; $CR = 0.80$; $AVE = 0.57$; $MaxR(H) = 0.80$)</i>	
1. We are in the market almost without external threat to the survival and development of firms	0.74
2. We are in the market with sufficient capital supply	0.81
3. We are in the market with numerous profit opportunities.	0.72
<i>Note. $n = 301$. * Reversed coded. α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. $MaxR(H)$ = Maximum reliability.</i>	

Table 3. Confirmatory factor analysis

Model description	χ^2	df	χ^2/df	TLI	CFI	RMSEA	SRMR	$\Delta\chi^2(\Delta df)$
Hypothesised 8-factor model (INQ; JUG; ERA; BRIC; RMSE; SSE; EM; PI)	580.94	341	1.70	0.91	0.93	0.05	0.05	---
6-factor model (INQ+JUG+ERA; BRIC; RMSE; SSE; EM; PI)	685.45	354	1.94	0.89	0.90	0.06	0.06	104.51 (3)**
5-factor model (INQ+JUG+ERA; BRIC; RMSE+SSE; EM; PI)	707.54	359	1.97	0.88	0.90	0.08	0.06	126.60 (8)**
4-factor model (INQ+JUG+ERA; BRIC+RMSE+SSE; EM; PI)	877.82	363	2.42	0.83	0.85	0.07	0.08	296.89 (22)**
3-factor model (INQ+JUG+ERA+BRIC+RMSE+SSE; EM; PI)	1103.11	366	3.01	0.78	0.78	0.08	0.09	522.17 (25)**
2-factor model (INQ+JUG+ERA+BRIC+RMSE+SSE+EM; PI)	1187.60	368	3.23	0.73	0.75	0.09	0.09	606.66 (27)**
1-factor model (INQ+JUG+ERA+BRIC+RMSE+SSE+EM+PI)	1343.47	369	3.64	0.68	0.71	0.09	0.09	762.53(28)**

Note. $n = 301$. χ^2 = Chi-square; df = Degrees of freedom; χ^2/df = Normed chi-square; TLI = Tucker-Lewis index; CFI = Composite fit index; RMSEA = root mean square error of approximation; SRMR = Standardized root mean square residual.

INQ = Inquiry; JUG = Judgement; ERA = Emotionally regulated action; BRIC = Bricolage; RMSE = Resource mobilization self-efficacy; SSE = Skills self-efficacy; EM = Environmental munificence; PI = Personal initiative.

** $p < 0.01$

Table 4. Means, standard deviation and correlation

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender	1.44	0.50	1.00														
2. Education ^a	2.06	1.14	-0.10	1.00													
3. Firm age ^m	10.53	7.30	-0.05	0.05	1.00												
4. Firm size ^m	12.51	15.16	-0.07	0.30	0.36	1.00											
5. Entrepreneurs experience ^m	1.79	2.83	0.13	0.13	0.43	0.23	1.00										
6. Industry ^b	2.11	0.72	-0.30	-0.10	-0.06	-0.16	-0.27	1.00									
7. Business system (1 = hi-tech) ^c	0.79	0.41	0.05	-0.02	-0.05	-0.01	0.02	-0.03	1.00								
8. Skills self-efficacy	3.79	0.69	-0.01	-0.17	0.06	-0.12	-0.07	-0.04	0.03	0.79							
9. Environmental munificence	4.80	0.94	-0.02	-0.13	-0.03	-0.12	-0.03	-0.01	0.04	0.27	0.75						
10. Inquiry	4.79	1.07	0.13	-0.20	-0.04	-0.30	0.04	0.02	0.07	0.18	0.45	0.73					
11. Judgement	4.90	0.91	0.06	-0.24	-0.04	-0.31	-0.05	-0.08	0.05	0.17	0.38	0.51	0.75				
12. Emotionally regulated action	4.91	1.00	0.12	-0.26	-0.16	-0.35	-0.04	0.06	0.01	0.16	0.47	0.47	0.49	0.73			
13. Bricolage	3.86	0.47	0.03	-0.04	0.09	-0.01	-0.02	0.02	0.06	0.41	0.23	0.16	0.15	0.13	0.73		
14. Resource mobilization self-efficacy	4.68	1.24	0.02	-0.18	-0.05	-0.21	-0.10	0.07	-0.04	0.26	0.45	0.47	0.34	0.50	0.17	0.79	
15. Personal initiative	4.94	0.94	0.05	-0.34	-0.04	-0.35	-0.10	0.02	-0.01	0.12	0.49	0.49	0.43	0.58	0.23	0.47	0.74

Note. $n = 301$. s.d. = standard deviation. Square-root of average variance extracted (AVE) is in bold face along the diagonal

^aFor education level, 1 = High school; 2 = College diploma; 3 = bachelor's degree; 4 = master's degree.

^bIndustry type, 1 = Manufacturing; 2 = Service; 3 = Agriculture.

^mNatural logarithm transformation of the original values.

^cdummy variable.

Correlations with an absolute value larger than 0.10 are significant at the 0.05 level.

Table 5. Mediation, and moderated mediation model

	Bricolage			Personal initiative		
	<i>b</i> (SE)	95%CI	<i>p</i> -value	<i>b</i> (SE)	95%CI	<i>p</i> -value
Intercept	3.36(0.16)	[3.044, 3.683]	0.000	0.62(0.40)	[-0.177, 1.407]	0.127
Control variables						
Gender	0.06(0.05)	[-0.046, 0.163]	0.275	-0.06(0.08)	[-0.225, 0.109]	0.497
Education	0.02(0.02)	[-0.023, 0.069]	0.326	-0.15(0.04)	[-0.221, -0.073]	0.000
Firm age	0.01(0.00)	[-0.003, 0.013]	0.236	0.01(0.01)	[-0.002, 0.024]	0.083
Firm size	0.00(0.00)	[-0.002, 0.006]	0.411	-0.01(0.00)	[-0.016, -0.003]	0.003
Entrepreneurial experience	-0.01(0.01)	[-0.025, 0.015]	0.636	-0.02(0.02)	[-0.056, 0.008]	0.138
Industry	0.04(0.04)	[-0.032, 0.116]	0.263	-0.06(0.06)	[-0.181, 0.055]	0.294
Hi-tech	0.05(0.06)	[-0.068, 0.168]	0.408	-0.11(0.10)	[-0.301, 0.076]	0.242
Skills self-efficacy	0.25(0.04)	[0.180, 0.328]	0.000	-0.20(0.06)	[-0.330, -0.076]	0.002
Environmental munificence	0.05(0.03)	[-0.011, 0.115]	0.103	0.25(0.05)	[0.151, 0.351]	0.000
Direct effect						
Entrepreneurial phronesis (<i>H1</i>)	0.10(0.03)	[0.037, 0.167]	0.002	0.69(0.05)	[0.585, 0.794]	0.000
Bricolage (<i>H2</i>)				0.25(0.09)	[0.072, 0.434]	0.006
<i>R</i> ²	0.310			0.395		
Indirect effect						
Entrepreneurial phronesis → Bricolage → Personal initiative (<i>H3</i>)				0.02(0.01)	[0.004, 0.049]	
Interaction effect						
Resource mobilisation self-efficacy				0.13(0.06)	[0.024, 0.242]	0.017
Bricolage × Resource mobilisation self-efficacy → Personal initiative (<i>H4</i>)				0.19(0.07)	[0.501, 0.331]	0.008
Moderated mediation effect						
Entrepreneurial phronesis → Bricolage → Personal initiative (<i>H5</i>)						
High Resource mobilisation self-efficacy (+ 1SD)				0.05(0.02)	[0.015, 0.101]	
Mean				0.02(0.01)	[0.004, 0.056]	
Low Resource mobilisation self-efficacy (− 1SD)				0.00(0.01)	[-0.027, 0.030]	
Index of moderated mediation				0.02(0.01)	[0.004, 0.043]	

Note. *n* = 301. Unstandardized beta coefficients are reported. SE = standard error. Bootstrap sample = 5000. CI = Confidence interval.

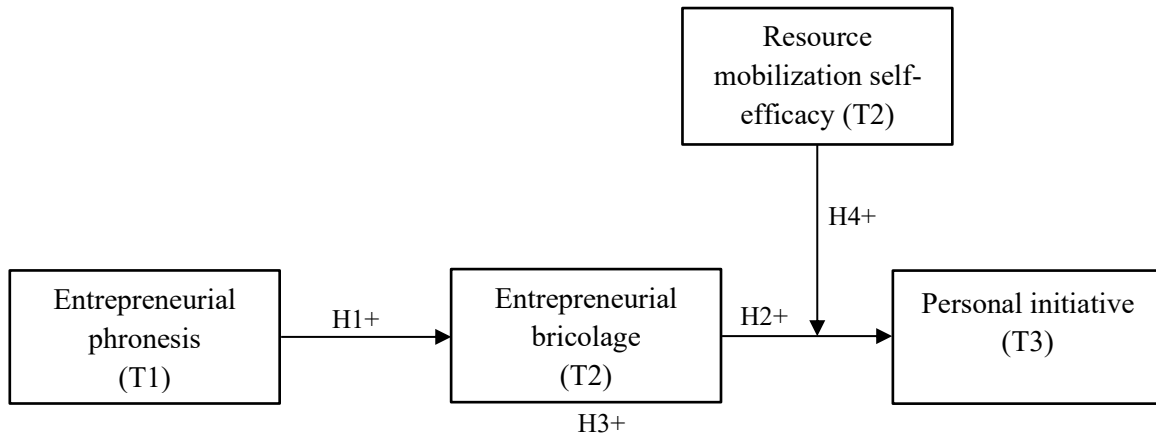


Figure 1. Theoretical model. Mediation effect (H3): Phronesis → Bricolage → PI = 0.02*

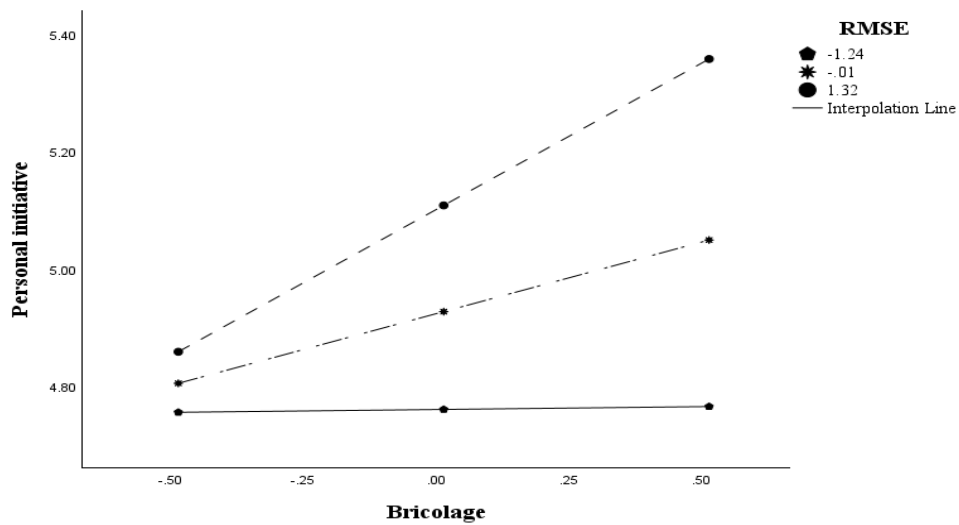


Figure 2. Simple slope of bricolage on personal initiative at different levels of resource mobilization self-efficacy (RMSE).