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Entrepreneurial bricolage and its effects on new venture growth and adaptiveness in an emerging economy

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Abstract

Driven by solid economic developments, emerging economies are experiencing significant institutional change, particularly in regulatory structures and market systems. Coupled with fierce market competition and reforms, serious challenges for the sustainable development of new ventures are created due to smallness and newness liabilities. This study examines how new ventures grow and adapt to the rapid environmental shifts in emerging economies by exploring the effects of entrepreneurial bricolage. This study found that entrepreneurial bricolage has a positive impact on both new venture growth and adaptiveness. Further, institutional voids have contrasting effects on these two relationships. The effectiveness of entrepreneurial bricolage on new venture *growth* is stronger in a context with serious institutional voids, while the effectiveness of entrepreneurial bricolage on new venture *adaptiveness* is weaker in a context with serious institutional voids. These findings not only enrich our knowledge on the implications of entrepreneurial bricolage, but also advance our understanding of the emerging economy context.

Keywords Entrepreneurial bricolage · Growth · Adaptiveness · Institutional voids · Emerging economy · New venture · Sustainable development · China

Emerging economies are experiencing significant institutional changes with respect to regulatory adjustments and the emergence of new market systems (Alvarez, Barney, & Newman, 2015), often driven by increased growth in economic development (Ahlstrom, 2010; Tomizawa, Zhao, Bassellier, & Ahlstrom, 2019). Yet growth also brings marketization reforms coupled with heightened competition (Chari & Banalieva, 2015), creating challenges for new venture development (Cope, 2011; McGrath, 1999; Shepherd, 2003; Singh, Corner, & Pavlovich, 2007). Yet new ventures not only face challenges in how to grow, but also how to adapt and survive from uncertain changes from both market and institutional environments (Zhou & Li, 2010). Thus, a key issue in the

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development of sustainable competitive advantage for new ventures in emerging economies is to take account of factors that lead to both growth and adaptiveness under the more turbulent conditions commonly present in those economies (Meyer & Peng, 2016).

Prior literature has tended to address the issues of growth and adaptiveness separately, particularly utilizing the resource-based view and organization theory. Scholars argue that valuable, rare, inimitable and non-substitutable (VRIN) resources is a source of firm heterogeneity that generates superior performance and competitive advantage (Barney, 1991; Black & Boal, 1994; Reed & DeFillippi, 1990). More importantly, that the value of a resource is determined by the environment (Zhou & Li, 2010) and therefore, the value changes in such a way that a VRIN resource often lags behind the rapid changes of the environment.

However, this explanation may be incomplete for new ventures in an emerging economy. Compared to a mature economy, an emerging economy generally has an inadequate institutional arrangement, which generates an underdeveloped strategic factor market and significant institutional voids (Bruton, Su, & Filatotchev, 2018; Luo & Chung, 2013; Mair & Marti, 2009; Puffer, McCarthy, & Boisot, 2010; Shi, Sun, Yan, & Zhu, 2017; Shi, Sun, & Peng, 2012). The underdeveloped strategic factor market impedes new ventures in acquiring VRIN resources from a strategic factor market to support their growth (Deng, 2009; Ireland, Hitt, & Sirmon, 2003; Sirmon, Hitt, & Ireland, 2007; Webb, Ireland, Hitt, Kistruck, & Tihanyi, 2011). Resource constraints for new ventures also result in challenges regarding slack resources to respond to environmental turbulence (Baker & Nelson, 2005; Liu, Wang, Zhao, & Ahlstrom, 2013). With such dynamic market characteristics, this study aims to address not only how new ventures *grow*, but also how they *adapt* to environmental turbulence in an emerging economy.

Entrepreneurial bricolage is defined as "making do by applying combinations of the resources at hand to new problems and opportunities" (Baker & Nelson, 2005: 333). Entrepreneurial bricolage actively and creatively assists new ventures in overcoming resource limitations by responding to environmental changes (Garud & Karnøe, 2003; Baker & Nelson, 2005; Desa & Basu, 2013; Senyard, Baker, Steffens, & Davidsson, 2014; Yu, Li, Chen, & Meng, 2018). It is a strategic orientation that may contribute to growing continuously and buffering environmental turbulence by reconfiguring existing resources.

This study explores the effects of entrepreneurial bricolage on both new venture growth and adaptiveness with the moderating effects of institutional voids. In doing so, it makes three main contributions to current research. First, in terms of theory, this study further develops the entrepreneurial bricolage literature by empirically examining its relationship with two key performance indicators, growth and adaptiveness. Second, this study reveals the moderating role played by institutional voids in the relationship between entrepreneurial bricolage and its outcomes. Prior literature indicates that entrepreneurial bricolage may have both benefits and downsides (Baker, Miner, & Eesley, 2003; Baker & Nelson, 2005), suggesting its effects could be contextual dependent. This study, accordingly, advances our understanding of the implications of entrepreneurial bricolage. Third, revealing the contingent boundary effects of institutional voids, this study contributes to research focusing on the context of emerging economies (Bruton, Ahlstrom, & Li, 2010; Gilbert, McDougall, & Audretsch, 2006;

Khaire, 2010; Luo, Zhou, & Liu, 2005; Sine, Mitsuhashi, & Kirsch, 2006; Wei & Ling, 2015; Yamakawa, Peng, & Deeds, 2015; Zimmerman & Zeitz, 2002). In addition, this study has significant practical value, as its findings can guide new ventures in an emerging economy to leverage entrepreneurial bricolage to foster growth and adapt to environmental turbulence.

Literature review and hypotheses development

Sustainable competitive advantage for new ventures

New ventures play an important role in boosting the economy of an emerging country (Baum, Locke, & Smith, 2001; Goedhuys & Sleuwaegen, 2010; Hitt, Ireland, Camp, & Sexton, 2001; Peng & Heath, 1996; Shane & Venkataraman, 2000; Sun & Lee, 2013). However, they often suffer from a high failure rate (Cope, 2011; Mcgrath, 1999; Shepherd, 2003; Singh et al., 2007), especially in emerging economies. For instance, one recent report indicated that the life expectancy of Chinese new ventures is less than three years, and more than 70% were unable to survive even one year (Wang & Chen, 2010). Thus a major concern of researchers and practitioners alike is how new ventures can develop and then maintain a sustainable competitive advantage, particularly in turbulent environments (Wang, Ahlstrom, Nair, & Hang, 2008).

Two aspects of sustainable competitive advantage have been mentioned, namely, how economic rents can be created and how long such an advantage be maintained (Hall, 1993). These are also two main challenges for new ventures. First, new ventures implement entrepreneurial activities to pursue new opportunities by starting up new business from nothing (Stevenson & Jarillo, 1990). They can have an advantage of newness, perhaps in a first mover advantage. The speed to develop new business determines whether it could survive before other competitive competitors entering the same market (Gilbert et al., 2006). Thus, new venture growth determines whether it can survive from the survival threshold (Zimmerman & Zeitz, 2002).

Second, new ventures are also vulnerable due to the liability of newness that is also present, and which inhibits new ventures to overcome environmental turbulence (Guo, Su, & Ahlstrom, 2016; Phillips & Tracey, 2007; Thornhill & Amit, 2003). For mature companies, slack resources are accumulated to buffer the uncertainty from external environments and from government intervention (Dunbar & Ahlstrom, 1995; Tan & Peng, 2003), while new ventures are often in a resource-constraint condition (Baker & Nelson, 2005). They concentrate all the resources to develop current opportunity to achieve fast growth. Thus, they could easily fail when experiencing environmental turbulence, such that the opportunity may not existing due to an announcement of a new regulation or changes of market demand when they are still freshly exploiting the opportunity. Thus, new venture adaptiveness determines whether new ventures could adapt themselves to the new competitive environment (Eisenhardt & Martin, 2000). Thus, growth and adaptiveness both are two important indicators of sustainable competitive advantage for new ventures.

Although the resource-based view (RBV) provides explanations for sustainable competitive advantage, it is limited in its ability to explain advantages of new ventures in an emerging economy. The RBV proposes that sustainable competitive advantage is

primarily driven by a firm's valuable, inimitable, rare and non-substitutable resources. However, on the one hand, RBV could fail to explain the success of new ventures because new ventures find it hard to acquire VRIN resources (Baker & Nelson, 2005). On the other hand, the RBV does not fully explain how firms achieve competitive advantage in the context of fast changing environments because resource-value is strongly determined by the characteristics of the given environment (Zhou & Li, 2010). Meanwhile, resource changes and adaptations often lag behind environmental changes (Teece, Pisano, & Shuen, 1997). Thus, it is hard to adapt to institutional reform that is taking place in emerging economy.

From entrepreneurial bricolage literature (An, Zhao, Cao, Zhang, & Liu, 2018; Baker et al., 2003; Baker & Nelson, 2005; Desa & Basu, 2013; Duymedjian & Rüling, 2010; Garud & Karnøe, 2003; Phillips & Tracey, 2007; Salunke, Weerawardena, & McColl-Kennedy, 2013; Senyard et al., 2014; Wu, Liu, & Zhang, 2017; Yu et al., 2018), entrepreneurial bricolage is a strategic orientation or choice to recombine resources at hand when firms encounter new problems and opportunities (Baker & Nelson, 2005). More specifically, "making do" implies "a bias toward action and active engagement such that a workable outcome can be created from what is at hand," with a "combination of resources for new purposes" (referring to "the combination and reuse resources for different applications than those for which they were originally intended or used"), and "resources at hand" often had cheaply or for free" (Baker & Nelson, 2005: 334–336). On the one hand, entrepreneurial bricolage provides an approach for firms that have limited resources to grow (Baker & Nelson, 2005). On the other hand, reconfiguration of resources at hand creates a possibility to respond to emergent requirements (Wu et al., 2017). Along this line, this study explains how new ventures grow and adapt to environmental turbulence in an emerging economy from the entrepreneurial bricolage perspective.

Entrepreneurial bricolage and new venture growth

A useful starting point of a new venture is around the creation and exploitation of entrepreneurial bricolage. Entrepreneurial bricolage helps new ventures exploit opportunities for growth. We argue that entrepreneurial bricolage has a positive relationship with new venture growth for the following reasons. First, entrepreneurial bricolage increases the novelty of opportunity creation. The value of opportunity is created from the reconfiguration of means and ends (Shane & Venkataraman, 2000). By utilizing resources in different combinations, new ventures render unique products or services to existing markets or create new markets (Salunke et al., 2013). Using this approach, entrepreneurial bricolage drives new ventures to create and discover innovative opportunities before their competitors do.

Second, entrepreneurial bricolage reduces resource constrains when exploiting opportunities. Opportunities often have substantial resource requirements (Alvarez & Busenitz, 2001; Srivastava, Fahey, & Christensen, 2001). To successfully pursue them, new ventures must be able to satisfy these requirements. Entrepreneurial bricolage facilitates new ventures that explore new combinations

of both existing resources and external resources, which may be available very cheaply or for free (Baker & Nelson, 2005). The efforts to acquire the right resources for exploiting opportunities are not necessary. It thereby contributes new ventures to overcoming their resource constraints for growth by making do and using what is at hand (Prabhu & Jain, 2015). Prior literature has indicated that new ventures in emerging economies often have a higher failure rate in that underdeveloped strategic factor markets not only inhibit firm opportunities for growth, both also impede them from meeting resource requirements to capture new opportunities (Wright, Filatotchev, Hoskisson, & Peng, 2005). Thus, entrepreneurial bricolage contributes to new ventures by offering more opportunities for growth. and to conquer the resource challenges as well. Therefore, we hypothesize:

Hypothesis 1: There is a positive relationship between entrepreneurial bricolage and new venture growth in emerging economies.

Entrepreneurial bricolage and new venture adaptiveness

Adaptiveness refers to the extent new ventures change their resource allocation and operational routines to match the changing environment (Nelson & Winter, 1982). Hitt, Keats, and Demarie (1998) predicted that the technological revolution and globalization would induce to a new competitive landscape, thus adaptiveness would become crucial for new ventures' survival. This study argues that entrepreneurial bricolage has a positive relationship with new venture adaptiveness for the following reasons.

New ventures deploying entrepreneurial bricolage have to constantly scan and monitor the environment, and reconfigure resources to respond to those changes (Vakratsas & Ma, 2009), which enhance new ventures adaptiveness. Entrepreneurial bricolage generates a bias toward action and active engagement with opportunities (Baker & Nelson, 2005). It accordingly drives new ventures to actively search for external changes. Salunke et al. (2013) prove that entrepreneurial bricolage facilitates the development of service entrepreneurship by interacting and learning from different actors. The constant interaction with related linkage helps new ventures to collect wide information about demanding changes. Baker and Nelson (2005) observed that new ventures could use entrepreneurial bricolage to form a close relationship with customers and suppliers. Thus, entrepreneurial bricolage often contributes new ventures to capturing external changes.

On the other hand, entrepreneurial bricolage often involves improvisation and unexpected innovation (Desa, 2012). Entrepreneurial bricolage encourages new ventures to actively recombine resources at hand rather than worrying on whether they are able to do so or not. Improvising with resources at hand help new ventures to respond to changes without hesitation (Baker & Nelson, 2005). And the experimentation process could create unexpected results which may buffer future environmental changes by strengthening new ventures' abilities to identify new opportunities (An et al., 2018; Guo et al., 2016). Thus, entrepreneurial bricolage encourages new ventures to go beyond their boundaries regularly to search for external changes, enlarging their scan scope and to identify opportunities. Therefore, it is hypothesized:

Hypothesis 2: There is a positive relationship between entrepreneurial bricolage and new venture adaptiveness in emerging economies.

The moderating impact of institutional voids

Entrepreneurial bricolage involves crafting existing rules and establishing new routines for utilizing resources at hand (Baker & Nelson, 2005; Desa, 2012; Desa & Basu, 2013; Garud & Karnøe, 2003). Desa (2012) argues that entrepreneurial bricolage is a mechanism to assist the development of new ventures under institutional transformation. Entrepreneurial bricolage breaks existing rules and norms of how to use and combine resources, and the recombination could also be a process to form new rules and norms. This ongoing process depends on the external institutional environment (Desa, 2012; Sarasvathy, 2009). The institutional context indicates rules, norms and beliefs surrounding economic activity that define or enforce socially acceptable economic behaviour (Oliver, 1997). A critical characteristic of institutional context in an emerging economy is that it gradually reforms institutions from a non-market economy to a market economy (Bruton & Ahlstrom, 2003; Chari & Banalieva, 2015). Institutional voids exist when an institutional architecture is still developing (Bruton et al., 2018; Desa, 2012; Mair & Marti, 2009; Shi et al., 2012). Thus, to elaborate the relationship between entrepreneurial bricolage and outcomes, we further investigate the moderating role played by institutional voids.

Institutional voids refer to the absent of rules, norms and beliefs surrounding entrepreneurial (and other commercial) activity (Mair & Marti, 2009; Shi et al., 2012). In emerging economies, institutional voids often presents in terms of lacking prevailing norms or business practices, having difficulties to identify business regulations and rules to follow, the high tolerance on substandard products or services, the weak enforcement of laws and regulations, unexpected changes in regulation, and the like (Desa, 2012; Peng, Wang, & Jiang, 2008; Puffer et al., 2010). Institutional voids generate significant challenges for new ventures to survive and succeed in the market (Aidis, Estrin, & Mickiewicz, 2008; Smallbone & Welter, 2001). For example, Bruton et al. (2018) indicated that institutional voids lead to dysfunctional competition which has a negative impact on new venture performance.

This study argues that institutional voids can positively moderate the link of entrepreneurial bricolage to new venture growth. Institutional voids reflect the situation whereby institutional arrangements that support a market economy are absent, weak, or cannot work effectively (Mair & Marti, 2009). Accordingly, institutional voids impede the market participation of new ventures (Mair & Marti, 2009), in that the new ventures are often in a weak position to capture opportunities for growth (Cai, Chen, Chen, & Bruton, 2017; Deng, 2009; Ireland et al., 2003; Sirmon et al., 2007; Webb, Kistruck, Ireland, & Ketchen, 2010). In a high level of institutional voids, new ventures that take entrepreneurial bricolage as strategic choice can better overcome the inefficiency of factor market. Casper (2000) studied technology firms in Germany during its reform period from a non-market to a market orientated institution. The study found that even though a non-market institution would meet obstacles, the fast growing entrepreneurial firms often used existing practices as a “tool kit” to

develop novel business strategies. In these unsupportive institutional environments, knowing how to mobilize resources at hand to match the opportunity is utmost important (Desa, 2012). Entrepreneurial bricolage is thus a mechanism to mobilize resources under unfavourable institutional environments (Desa, 2012; Gras & Nason, 2015; Mair & Marti, 2009). While entrepreneurial bricolage is also important for new venture growth, in an environment characterized by less of institutional voids; its impact will not be so significant, as entrepreneurial bricolage cannot completely play its facilitating role in new venture growth within this environment. Therefore, we propose:

Hypothesis 3: Institutional voids have a positive moderating effect on the relationship between entrepreneurial bricolage and new venture growth.

In contrast, this study argues that institutional voids negatively moderate the linkage of entrepreneurial bricolage to new venture adaptiveness. The positive function of entrepreneurial bricolage on adaptiveness are mainly through embracing the uncertainty from markets by improving the efficiency of environmental scanning and responding to change. However, these benefits of entrepreneurial bricolage on adaptiveness could be weakened with the presence of strong institutional voids. Desa (2012) analyzed the adaptive function of entrepreneurial bricolage in social ventures and found that with high institutional support, the adaptive effects are lower. During the reform process, strong institutional voids often represents radical policy changes in such aspect. A near-total absence of rules could induce larger changes by creating new rules whole cloth, as compared with improving certain aspects of rules. The positive effects of entrepreneurial bricolage to embrace demanding uncertainty could thus be neutralized by policy changes. With a gradually improving institutional environment, market related information will be easier to obtain. Therefore, we hypothesize:

Hypothesis 4: Institutional voids have a negative moderating effect on the relationship between entrepreneurial bricolage and new venture adaptiveness.

Therefore, the full model of this research is shown in Fig. 1.

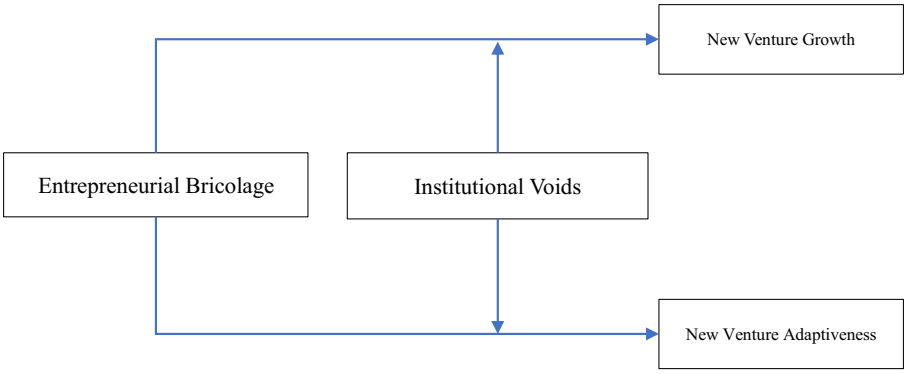

Fig. 1 Research model

Methodology

Sample and data collection

We used survey data to test the hypotheses, from a questionnaire drawing on previous studies. We adopted a back-translation approach to ensure the match between Chinese and English versions (Brislin, 1970). Then, we undertook a pilot study on ten founders and modified the questionnaire based to the results of the pilot test. The survey was administrated in 2016. First, we obtained the directories of firms located in entrepreneurial parks in Beijing, Shanghai, Guangzhou, and Shenzhen. Then, we randomly selected new ventures younger than nine years from the directories. Before the formal survey, we telephoned one founder in each sampled new venture to ensure our response rate. Subsequently, we sent emails enclosed with our questionnaire to these founders and asked them to complete our questionnaire and received 354 valid responses. We conducted a t-test to check the non-response bias along with the ventures' major attributes including firm size, firm age, initial capital, and sales turnover. The results indicated that there is no significant difference between respondents and non-respondents. Hence, non-response bias is not a serious problem in this study.

Measures

We adopted scales from prior studies to measure our variables. All items were measured by a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

New venture growth Gilbert et al. (2006) have indicated that "although there is no single overriding measure of new venture growth, our review of the literature suggests that the most important measures of new venture growth are in terms of sales, employment, and market share". Thus, following Anderson and Eshima (2013), we measured new venture growth by asking each respondent to rate his or her venture's growth relative to its principal competitors over the last three years on: (1) sales growth, (2) market share growth, and (3) employee growth. We employed subjective measures rather than objective measures, since objective data is often unavailable. In addition, subjective measures are better at diminishing the respondents' unwillingness of providing confidential information (Dess & Robinson Jr, 1984; Anderson & Eshima, 2013).

New venture adaptiveness This study developed a four-item measurement of new venture adaptiveness based on the study of Ruekert, Walker and Roering (1985), and Zhou and Li (2010). They were (1) We allow the business to evolve as opportunities emerge; (2) We adapt what we are doing to the resources we have; (3) We are flexible and take advantage of opportunities as they arise; and (4) We avoid courses of action that restrict our flexibility and adaptability.

Entrepreneurial bricolage Following Senyard et al. (2014), we measured entrepreneurial bricolage using eight items. They were: (1) We are confident of our ability to find workable solutions to new challenges by using our existing resources; (2) We gladly take on a broader range of challenges than others with our resources would be able to;

(3) We use any existing resource that seems useful responding to a new problem or opportunity; (4) We deal with new challenges by applying a combination of our existing resources and other resources inexpensively available to us; (5) When dealing with new problems or opportunities, we take action by assuming that we will find a workable solution; (6) By combining our existing resources, we take on a surprising variety of new challenges; (7) When we face new challenges, we put together workable solutions from our existing resources; and (8) We combine resources to accomplish new challenges that the resources weren't originally intended to accomplish.

Institutional voids In emerging economies, institutional voids often present in terms of lacking prevailing norms or business practices, having difficulties to find business regulations and rules to follow, high tolerances for substandard products or services, the weak enforcement of laws and regulations, and the like (Mair & Marti, 2009; Shi et al., 2012). Following the suggestion of Desa (2012), we measured institutional voids from regulative, normative and cognitive facets. Most research on institutional voids are qualitative or conceptual studies (e.g. Mair & Marti, 2009), and only a small number of studies use a quantitative method with second hand data from regional level index (e.g. Shi et al., 2012). We argue that these measurements may not reflect differences between industries and enterprises. Institution itself is an objective environment, but institutional voids tend to be a subjective perception of the institutional environment. Hence, we measured institutional voids using five Likert scale items: (1) Prevailing norms or business practices are lacking; (2) It is difficult to find business regulations to follow, (3) It is difficult to find business rules to follow, (4) The tolerance of substandard products or services is high, and (5) The enforcement of laws and regulations is weak.

Control variables We controlled for ten variables. The first two were firm size (number of employees) and firm age (number of years since foundation) as they were found to have significant impacts on employment growth rate (Baron & Tang, 2009). The third one was sales turnover in the previous year, as it has a profound impact on new venture growth (Anderson & Eshima, 2013). Then, initial capital (firm's capital at funding) was controlled, since it represents the resources base to facilitate new venture growth (Eisenhardt & Schoonhoven, 1990). We also controlled for ownership with 1 representing private ownership and 0 as non-private ownership (Zahra, 1996; Doh, Teegen, & Mudambi, 2004). We especially highlighted private ownership, because it may be more difficulty for private firm to acquire resources (Schulze, Lubatkin, & Dino, 2003). Both locations (Yu, Tao, Tao, Xia, & Li, 2017) and industries (Guillén, 2002) were also controlled as dummies. Finally, we controlled technology uncertainty, market demand uncertainty and competitive intensity (Guo, Tang, & Su, 2014). They were respectively measured by following questions: (1) It is very difficult to keep pace with technological changes in the industry; (2) It is very difficult to predict customer's preference in the future; and (3) We hear of new competitive moves almost every day.

Reliability and validity

Following Anderson and Gerbing (1988), we conducted standard procedures to test reliability and validity of variables. The results are shown in Table 1, containing

Table 1 Measures and validation

Brief items	Loading
Entrepreneurial bricolage (*CA* = 0.896; *CR* = 0.888; *AVE* = 0.499)	
1. We are confident of our ability to find workable solutions to new challenges by using our existing resources	0.771
2. We gladly take on a broader range of challenges than others with our resources would be able to	0.696
3. We use any existing resource that seems useful responding to a new problem or opportunity	0.700
4. We deal with new challenges by applying a combination of our existing resources and other resources inexpensively available to us	0.740
5. When dealing with new problems or opportunities, we take action by assuming that we will find a workable solution	0.688
6. By combining our existing resources, we take on a surprising variety of new challenges	0.709
7. When we face new challenges, we put together workable solutions from our existing resources	0.649
8. We combine resources to accomplish new challenges that the resources weren't originally intended to accomplish	0.694
Institutional voids (*CA* = 0.826; *CR* = 0.829; *AVE* = 0.493)	
1. Prevailing norms or business practices are lacking	0.649
2. It is difficult to find business regulations to follow	0.723
3. It is difficult to find business rules to follow	0.632
4. Substandard products or services could be accepted by customers	0.739
5. The enforcement of laws and regulations is weak	0.758
New venture growth (*CA* = 0.901; *CR* = 0.904; *AVE* = 0.758)	
1. Sales growth	0.925
2. Market share growth	0.875
3. Employment growth	0.808
New venture adaptiveness (*CA* = 0.865; *CR* = 0.868; *AVE* = 0.625)	
1. We allow the business to evolve as opportunities emerge	0.796
2. We adapt what we are doing to the resources we have	0.783
3. We are flexible and take advantage of opportunities as they arise	0.903
4. We avoid courses of action that restrict our flexibility and adaptability	0.663

χ^2 = 379.820; χ^2/df = 2.359; IFI = 0.945; TLI = 0.934; CFI = 0.944; RSMEA = 0.062

Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE), factor loadings and model fit indices.

We assessed the reliabilities of variables. As we have mentioned above, the CA indicators of entrepreneurial bricolage, institutional voids and new venture growth were all above the threshold of 0.700 (Cronbach, 1951), which indicated a good consistency. The CR exceeded the threshold of 0.700 (Hair, Black, Babin, Anderson, & Tatham, 2006), which further indicated our measurements are reliable.

A confirmatory factor analysis (CFA) was conducted to assess the convergent and discriminant validity. The CFA result reports the adequate model fit indices (χ2 = 379.820; χ2/df = 2.359; IFI = 0.945; TLI = 0.934; CFI = 0.944; RSMEA = 0.062), confirming the one-dimensionality of each construct in our model. First, to assess the convergent validity, we found the factor loadings were all above 0.4 (Nunnally & Bernstein, 1994) and significant (Anderson & Gerbing, 1988). Thus, these results

demonstrated convergent validity. Second, the discriminant validity was also proved since the squared correlations between pairs of constructs were lower than the AVE values of the corresponding constructs (Fornell & Larcker, 1981). A chi-square difference test was also conducted by comparing the significant change in chi-square between our model and the model with fixed correlation at 1.0 for each pair of constructs. The three models with fixed correlation at 1.0 had significant difference in chi-square change. For example, comparing a model that allowed for correlation between entrepreneurial bricolage and new venture growth with a model that fixed their correlations at 1.0 yielded a significant change in chi-square ($^{\triangle}\chi^2_{(\triangle df=1, n=354)} = 38.830$, $p < 0.001$). These results indicated good convergent and discriminant validity.

Measures and validation

Common method bias

Common method bias makes one factor account for the majority of covariance in variables (Podsakoff & Organ, 1986). We took the Harman's one-factor test to test it (Podsakoff & Organ, 1986). The test reported that the first factor only explaining 34.143% of the variance, indicating that common method bias was not a serious problem. Moreover, we ran a one-factor CFA model to check common method bias (Korsgaard & Roberson, 1995). The model did not fit well ($\chi^2 = 985.773$; $\chi^2/df = 5.799$; IFI = 0.793; TLI = 0.768; CFI = 0.792; RSMEA = 0.117). As a result, common method bias was not a big issue in this study.

Results

Table 2 presents descriptive statistics on all variables and correlations between them.

Linear regression was employed to test the hypotheses. We calculated variance inflation factor (VIF) statistics in each model to check for the threat of multicollinearity. All of them are well below the threshold of 10 (Neter, Wasserman, & Kutner, 1990). Hence, multicollinearity is not a serious problem in this study. We tested our hypotheses in six steps (shown in Table 3). Model 1–3 tested the relationship between entrepreneurial bricolage and new venture growth. First, we only included control variables into Model 1. Then, we added entrepreneurial bricolage in Model 2. This model reports that entrepreneurial bricolage is positively related to new venture growth ($\beta = 0.503$, $p < 0.001$), supporting Hypothesis 1 that entrepreneurial bricolage has a positive effect on new venture growth in emerging economies. In Model 3, we tested the moderating effect of institutional voids. The results of this model indicate that the interaction of entrepreneurial bricolage and institutional voids is positively related to new venture growth ($\beta = 0.075$, $p < 0.05$). Thus, Hypothesis 3, which predicts that the relationship of entrepreneurial bricolage of new venture growth is positively moderated by institutional voids, is also supported.

Model 4–6 tested the relationship between entrepreneurial bricolage and new venture adaptiveness. First, we only included control variables into Model 4. Then, we added entrepreneurial bricolage in Model 5. This model reports that entrepreneurial bricolage is positively related to new venture adaptiveness ($\beta = 0.551$, $p < 0.001$),

Table 2 Descriptive statistics and correlation matrix

Variables	Mean	S. D.	1	2	3	4	5	6	7	8
1. Firm size [a]	3.891	1.859								
2. Firm age	3.527	1.847	0.069							
3. Sales turnover [b]	7.409	2.104	0.587***	0.078						
4. Initial capital [c]	5.936	2.099	0.582***	0.028	0.592***					
5. Firm ownership	0.780	0.407	−0.364***	0.038	−0.118*	−0.184***				
6 Technology uncertainty	4.941	1.523	0.112*	0.026	0.063	0.091	0.043			
7 Demand uncertainty	4.957	1.371	0.023	0.031	−0.003	0.011	0.023	0.562***		
8 Competitive intensity	5.097	1.357	0.060	0.029	0.059	0.009	0.005	0.724***	0.535***	
9 Industry 1	0.333	0.472	0.101	0.113*	−0.051	0.067	−0.133*	−0.114*	−0.175***	−0.046
10 Industry 2	0.285	0.452	0.089	0.032	0.077	0.018	0.154**	0.221***	0.164**	0.228***
11 Industry 3	0.065	0.247	−0.076	−0.102	0.044	−0.015	0.002	−0.073	−0.091	−0.109*
12 Location 1	0.319	0.467	−0.155**	−0.033	−0.060	−0.059	0.081	0.059	0.016	0.043
13 Location 2	0.186	0.390	−0.124*	0.149**	−0.113*	−0.058	0.081	0.018	0.080	0.086
14 Location 3	0.331	0.471	0.240***	0.011	0.111*	0.069	−0.178***	−0.090	−0.077	−0.147**
15 Institutional voids	4.146	1.140	−0.044	0.015	−0.011	0.009	0.106*	0.171**	0.223***	0.079
16 Entrepreneurial bricolage	5.232	0.883	−0.037	−0.039	0.027	0.056	0.092	0.366***	0.385***	0.453***
17 New venture adaptiveness	5.539	1.030	0.090	−0.082	0.111*	0.108*	−0.020	0.318***	0.279***	0.308***
18 New venture growth	4.849	1.108	0.159**	−0.023	0.054	0.152**	−0.046	0.348***	0.350***	0.298***

Variables	9	10	11	12	13	14	15	16	17
1. Firm size [a]									
2. Firm age									
3. Sales turnover [b]									
4. Initial capital [c]									
5. Firm ownership									
6 Technology uncertainty									
7 Demand uncertainty									

Table 2 (continued)

Variables	9	10	11	12	13	14	15	16	17
8 Competitive intensity									
9 Industry 1									
10 Industry 2	−0.447***								
11 Industry 3	−0.186***	−0.167**							
12 Location 1	0.094	−0.057	0.115*						
13 Location 2	−0.077	0.051	−0.008	−0.328***					
14 Location 3	−0.089	0.035	−0.088	−0.481***	−0.336***				
15 Institutional voids	−0.022	−0.030	0.016	−0.025	0.142**	−0.093			
16 Entrepreneurial bricolage	−0.053	0.075	0.024	0.024	0.042	−0.119*	0.163**		
17 New venture adaptiveness	−0.070	0.041	0.058	0.071	−0.003	−0.082	0.033	0.505***	
18 New venture growth	−0.027	0.046	−0.121*	−0.058	−0.001	0.007	0.257***	0.474***	0.288***

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

[a] Natural log of the number of employees. (The same applies in the following tables)

[b] Natural log of the sales turnover of 2015 in ten thousand. (The same applies in the following tables)

[c] Natural log of the initial capital in ten thousand. (The same applies in the following tables)

Table 3 Results of Hierarchical Regression Analyses

	New venture growth			New venture adaptiveness		
Firm size	0.071+	0.095*	0.095*	0.016	0.041	0.041
	(0.042)	(0.039)	(0.039)	(0.040)	(0.036)	(0.036)
Firm age	−0.021	−0.011	−0.007	−0.048+	−0.037	−0.041
	(0.030)	(0.028)	(0.028)	(0.028)	(0.025)	(0.025)
Sales turnover	−0.053	−0.053	−0.059+	0.029	0.029	0.035
	(0.035)	(0.032)	(0.032)	(0.033)	(0.030)	(0.030)
Initial capital	0.063+	0.038	0.043	0.026	−0.002	−0.006
	(0.034)	(0.032)	(0.031)	(0.032)	(0.029)	(0.029)
Firm ownership	−0.046	−0.128	−0.109	−0.083	−0.173	−0.194
	(0.148)	(0.136)	(0.136)	(0.141)	(0.126)	(0.126)
Technology uncertainty	0.092+	0.095+	0.095+	0.082	0.085+	0.085+
	(0.055)	(0.050)	(0.050)	(0.052)	(0.046)	(0.046)
Competitive intensity	0.086	−0.033	−0.039	0.126*	−0.005	0.001
	(0.061)	(0.058)	(0.058)	(0.058)	(0.054)	(0.053)
Demand uncertainty	0.137**	0.072	0.072	0.085+	0.015	0.014
	(0.050)	(0.047)	(0.046)	(0.047)	(0.043)	(0.043)
Industry 1	−0.110	−0.131	−0.132	−0.125	−0.148	−0.147
	(0.141)	(0.130)	(0.129)	(0.134)	(0.120)	(0.119)
Industry 2	−0.162	−0.148	−0.155	−0.147	−0.131	−0.125
	(0.144)	(0.132)	(0.132)	(0.137)	(0.122)	(0.122)
Industry 3	−0.416+	−0.561*	−0.574**	0.276	0.117	0.130
	(0.237)	(0.219)	(0.219)	(0.226)	(0.203)	(0.202)
Location 1	−0.189	−0.125	−0.113	0.093	0.162	0.149
	(0.162)	(0.150)	(0.149)	(0.155)	(0.139)	(0.138)
Location 2	−0.203	−0.130	−0.126	0.082	0.162	0.158
	(0.187)	(0.172)	(0.172)	(0.178)	(0.159)	(0.158)
Location 3	−0.086	−0.032	−0.024	−0.082	−0.023	−0.031
	(0.165)	(0.152)	(0.152)	(0.157)	(0.141)	(0.140)
Institutional voids	0.196***	0.167***	0.143**	−0.015	−0.047	−0.022
	(0.049)	(0.045)	(0.047)	(0.047)	(0.042)	(0.043)
Entrepreneurial bricolage		0.503***	0.530***		0.551***	0.523***
		(0.065)	(0.066)		(0.060)	(0.061)
Entrepreneurial bricolage* Institutional voids			0.075*			−0.080*
			(0.038)			(0.035)
_cons	2.548***	1.002*	0.960*	4.000***	2.307***	2.351***
	(0.402)	(0.421)	(0.420)	(0.383)	(0.389)	(0.387)
R^2	0.234	0.351	0.359	0.161	0.330	0.340
adj. R^2	0.200	0.320	0.326	0.123	0.298	0.307
F	6.862	11.332	10.992	4.283	10.301	10.131

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

supporting Hypothesis 2 that entrepreneurial bricolage has a positive effect on new venture growth in emerging economies. In Model 6, we tested the moderating effect of institutional voids. The results of this model indicate that the interaction of entrepreneurial bricolage and institutional voids is negatively related to new venture adaptiveness ($\beta = -0.080$, $p < 0.05$). Thus, Hypothesis 4, which predicts that the relationship of entrepreneurial bricolage of new venture adaptiveness is negatively moderated by institutional voids, is also supported.

To better interpret the results, we plotted the moderating effect of institutional voids on the relationship between entrepreneurial bricolage and new venture growth, and the moderating effect of institutional voids on the relationship between entrepreneurial bricolage and new venture adaptiveness, by following the procedures recommended by Aiken and West (1991). As shown in Fig. 2, the relationship of entrepreneurial bricolage on new venture growth is positively stronger with higher institutional voids (high institutional voids, simple slope = 0.926, $p < 0.001$; low institutional voids, simple slope = 0.755, $p < 0.001$), which further supported Hypothesis 3. As shown in Fig. 3, the relationship of entrepreneurial bricolage on new venture growth is positively weaker with higher institutional voids (high institutional voids, simple slope = 0.443, $p < 0.001$; low institutional voids, simple slope = 0.523, $p < 0.001$).

Discussion

Contributions

This study makes three theoretical contributions. First, this study makes a contribution to the entrepreneurial bricolage literature by empirically examining the roles of

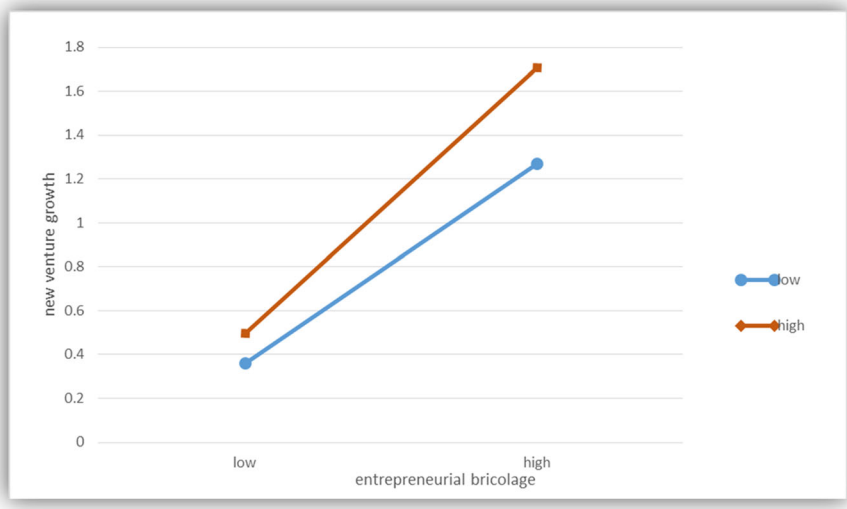

Fig. 2 The moderating effect of institutional voids on the relationship between entrepreneurial bricolage and new venture growth

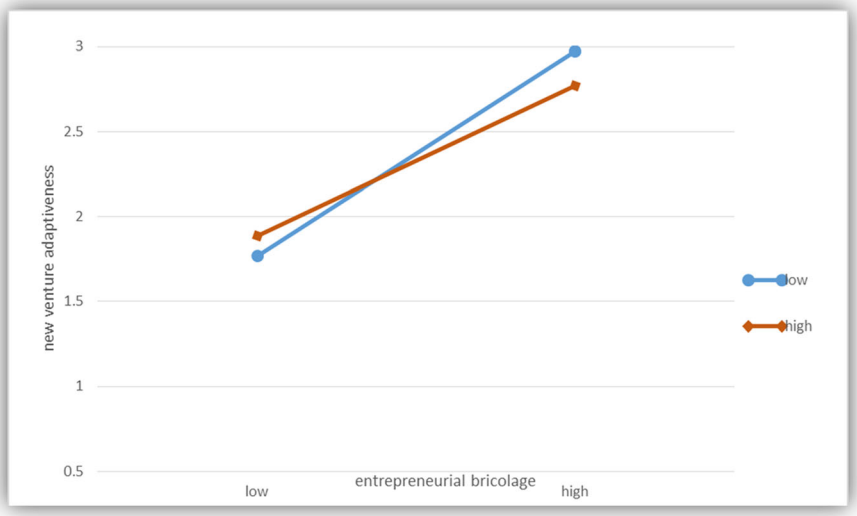

Fig. 3 The moderating effect of institutional voids on the relationship between entrepreneurial bricolage and new venture adaptiveness

entrepreneurial bricolage in emerging economy. Since Baker and Nelson (2005) introduced entrepreneurial bricolage into strategic research, empirical research is limited, and the outcomes of entrepreneurial bricolage is limited to innovative solutions (Senyard et al., 2014). For instance, Senyard et al. (2014) found that entrepreneurial bricolage works as a pathway for new resource-constrained firms to achieve innovation, and Guo et al. (2016) found that besides facilitating business model innovation directly, entrepreneurial bricolage also serves as a conduit through which exploratory orientation affects business model innovation. A more generalized outcome of entrepreneurial bricolage is still unclear (Baker & Nelson, 2005). This study finds that entrepreneurial bricolage positively affects new venture growth and adaptiveness, advancing our understanding on the implications of entrepreneurial bricolage (An et al., 2018; Baker et al., 2003; Baker & Nelson, 2005; Desa & Basu, 2013; Duymedjian & Rüling, 2010; Garud & Karnøe, 2003; Guo et al., 2016; Phillips & Tracey, 2007; Salunke et al., 2013; Senyard et al., 2014; Wu et al., 2017). We expand the outcomes of entrepreneurial bricolage in this research. Both new venture growth and adpativeness can be enhanced through entrepreneurial bricolage.

Second, this research also contributes to the entrepreneurial bricolage literature by finding the boundary condition of entrepreneurial bricolage. Prior literature indicates that entrepreneurial bricolage may have both benefits and downsides (Baker, Nelson, & Eesley, 2003; Baker & Nelson, 2005), thus its effects could be contextual dependent. However, little research has examined the conditional factors. This study finds that institutional voids has a positive moderating impact on the linkage between entrepreneurial bricolage and new venture growth, and a negative moderating impact on the linkage between entrepreneurial bricolage and new venture adaptiveness. As a result, institutional voids can reflect an important boundary condition for entrepreneurial bricolage. This study, accordingly, advances our understanding of the implications of entrepreneurial bricolage, and appeals to more scholars to study the more detailed context of entrepreneurial bricolage.

Third, this study contributes to research focusing on the context of emerging economies by finding out the two-side of institutional voids. Many studies regard institutional voids as the main characteristic of emerging economies and reveal its negative effect (Ahlstrom & Bruton, 2010; Bruton et al., 2010; Gilbert et al., 2006; Khaire, 2010; Peng, 2002; Peng & Luo, 2000; Wei & Ling, 2015; Yamakawa et al., 2015). For example, Bruton et al. (2018) indicated that institutional voids can yield dysfunctional competition, which has a negative impact on new venture performance. However, this study not only finds the dark side of institutional voids but also finds the potentially light side of institutional voids. Therefore, we expand the understanding of emerging economies and how it could affect the performance of new ventures.

Practical implications

This study has two suggestions for new ventures in emerging economies. First, it shows that entrepreneurial bricolage is an effective strategy in an emerging economy as it can enhance both new venture growth and adaptiveness (Hewitt-Dundas, 2006; Rao & Drazin, 2002). In particular, new ventures should take good use of resources at hand and proactively take action (rather than lingering over questions of whether an optimal outcome can be created) through the combining and reuse of resources that are at hand or cheaply available (Prabhu & Jain, 2015). Second, this study implies that the function of entrepreneurial bricolage is contextual dependent. Institutional voids positively moderate the relationship of entrepreneurial bricolage and new venture growth, but negatively moderate the relationship of entrepreneurial bricolage and new venture adaptiveness. As a result, new ventures facing serious institutional voids should pay more attention to entrepreneurial bricolage and how it may be put into use (cf. Prabhu & Jain, 2015; Sarasvathy, 2009).

Limitations and future research

This study has certain limitations that suggest future research. First, its findings are based on data from China, whose developmental experience may not be easily transferable to other economies (Ahlstrom & Ding, 2014). Thus, it is vital to explore whether the findings can be generalized to other emerging and newly developed economies with much different institutional and governance regimes (Acemoglu & Robinson, 2012; Young, Peng, Ahlstrom, & Bruton, 2003). Second, the data used in this study are cross-sectional; a longitudinal dataset would be more effective to test causal relationships between constructs. Third, although little trace of common method bias was found, we cannot thoroughly rule it out based on the current research design. Future research could combine subjective and objective data to more fully manage potential bias. Another way to solve common method bias is to use marketization index (for the four regions/provinces) or use the institutional fragility index to do a robust test (See Shi et al., 2017).

Future studies can be also be conducted in areas such as new venture growth and adaptiveness, particularly with respect to entrepreneurial bricolage. Further research may extend the implications to more performance outcomes. In addition, this study found that the effectiveness of entrepreneurial bricolage is contingent on institutional voids. Future studies may take more (or different) moderators into consideration to draw a more comprehensive picture regarding entrepreneurial bricolage under conditions of institutional voids.

Conclusion

Coupled with economic development, emerging economies are experiencing significant institutional and market change, including to regulatory and market systems (Christensen, Ojomo, & Dillon, 2019). Yet, due to smallness and newness, fierce market competition and a series of reforms, serious challenges for sustainable development of new ventures have been created. This study adds knowledge to current research concerning how new ventures grow and adapt to the rapid environmental shifts in emerging economies by exploring the effects of entrepreneurial bricolage. From the entrepreneurial bricolage literature, this study finds that entrepreneurial bricolage has a positive impact on new venture growth and adaptiveness. This is because entrepreneurial bricolage contributes new ventures to overcoming resource constraints on growth caused by the underdeveloped strategic factor market, and via instant responding to environmental changes. Further, institutional voids have differing effects on these two relationships. The effectiveness of entrepreneurial bricolage on new venture growth is stronger in the context with much serious institutional voids, but the effectiveness of entrepreneurial bricolage on new venture adaptiveness is weaker in that same institutional voids context. These findings not only enrich our knowledge on the implications of entrepreneurial bricolage, but also advance our understanding on the context of emerging economy. We encourage researchers to devote more time in exploring the outcomes of entrepreneurial bricolage in the institutional context of emerging economies.

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