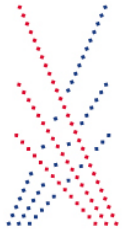

BRITISH ACADEMY
OF MANAGEMENT

BAM
CONFERENCE

3RD-5TH SEPTEMBER

ASTON UNIVERSITY BIRMINGHAM UNITED KINGDOM

This paper is from the BAM2019 Conference Proceedings

About BAM

The British Academy of Management (BAM) is the leading authority on the academic field of management in the UK, supporting and representing the community of scholars and engaging with international peers.

http://www.bam.ac.uk/

Title: An Exploratory Research of Entrepreneurial Orientation, Bricolage and Innovation Outcomes for Social Enterprise

Wentong Liu*, Essex Business School, University of Essex, 11 Elmer Approach, Southend, United Kingdom; wliuf@essex.ac.uk.

Caleb CY Kwong, Essex Business School, University of Essex, 11 Elmer Approach, Southend, United Kingdom; ckwong@essex.ac.uk.

Young Ah Kim, Essex Business School, University of Essex, 11 Elmer Approach, Southend, United Kingdom; yakim@essex.ac.uk.

* Corresponding author.

Title: An Exploratory Research of Entrepreneurial Orientation, Bricolage and Innovation Outcomes for Social Enterprise

Summary: This study deconstructs bricolage into internal and external bricolage, examines how two specific resource constraints - financial and knowledge- affect bricolage behaviours, how two types of bricolage influence on the incremental and radical innovation for social enterprises. Furthermore, social entrepreneurship differs from commercial companies for their dual-mission, it ought to explore if resource limitation results in high level of entrepreneurial orientation (EO) and how the extent of EO impacts on social firm's bricolage behaviour. A survey of 278 Chinese social firms suggests that social entrepreneurs should form high-EO contrary to the conventional view, they can improve resource mobilisation capacity through different bricolage and then lead to better innovation performance in resource penurious environments.

Word count: 6831

Abstract

Generally speaking, social enterprises are confronted with resource constraints challenges because they have social and commercial objectives at the same time. Bricolage as one resource mobilisation strategy to overcome resource limitation has been explored in entrepreneurship academic field and practice. However, bricolage was empirically tested as a unitary theory before, overlooked the complexity of the effects of different bricolage on their outcomes. Despite the significant role of bricolage impact in firms' innovativeness, the consequences of internal and external bricolage for incremental and radical innovation outcomes remain unknown. This study deconstructs bricolage into internal and external bricolage, examines how two specific resource constraints - financial and knowledge- impact on bricolage behaviours, how two types of bricolage influence on the innovation performance in social entrepreneurship context. Furthermore, social entrepreneurship differs from traditional commercial companies for their dual-mission, it ought to explore if resource limitation results in high level of entrepreneurial orientation (EO) and how the extent of EO will impact on social firm's bricolage strategy preference. A survey of 278 Chinese social firms shows that financial and knowledge constraints positively impact on both internal and external bricolage, but only financial constraint affects EO. Besides, the social enterprise with a high level of EO will more prefer to do external bricolage to solve resource limitation. Both internal and external bricolage have a positive influence on incremental and radical innovation, but outcomes are different.

1. Introduction

Social enterprise combines the practice of traditional for-profit organisations with the visions for social change of non-profit organisations (Mair et al., 2012), typically regard as dual-mission, both social and business mission at meantime (Austin et al., 2006; Desa and Basu, 2013; Zahra et al., 2008). It is precisely social firms hammer at creating social value as the initial objectives via commercial pathways, they then face more challenges in comparison to those commercial competitors, especially for resource acquisition and allocation (Desa and Basu, 2013; Mair and Martí, 2006; Zahra et al., 2008). From the resource-based view, bricolage, which was defined as "making do by whatever at hand and/or recombine existing resources for new problems or new purposes" (Baker and Nelson, 2005), has attracted broader concerns in practice and academic area (Janssen et al., 2018). The companies may against resource penurious through bricolage strategy to access necessities or ideal resources and to achieve efficacy resource mobilisation (Duymedjian and Rüling, 2010). Traditionally, social firms are not that keen on the financial return or fast growth since their unique dual-mission, and they may do not have less entrepreneurial passion than conventional players. However, scholars have found that social enterprise needs to survive within competitive markets and to extend their social value through better performance (Hoogendoorn et al., 2011; Lyon and Sepulveda, 2009). It means, social entrepreneurship is one special business type rather than the non-for-profit organisation, which needs they have some extent of entrepreneurial orientation (EO). Hence, this paper examines (1) the impact of resource constraints (financial or knowledge constraint) on two types of bricolage behaviour (internal and external); (2) whether resource limitation may reduce or stimulate social entrepreneurs' EO; (3) the potential relationship between EO and bricolage behaviours; and (4) the innovative consequences of internal and external bricolage.

Review of past research highlighted that bricolage is one of important strategy to solve the shortage of resources for entrepreneurs and firms in penurious contexts in entrepreneurship and organisation literature research (Baker et al., 2003; Baker and Nelson, 2005; Garud and

Karnøe, 2003). Bricolage offers entrepreneurs a quick method to find solutions based on the resources at hand (Bechky and Okhuysen, 2011), empowers firms to survive through identifying, recombing and reusing resources at hand (Baker and Nelson, 2005), but also impacts on innovativeness(Andersen, 2008; Ferneley and Bell, 2006; Halme et al., 2012; Kickul et al., 2018), performance (Kariv and Coleman, 2015; Senyard et al., 2009, 2010), and growth (Baker and Nelson, 2003). Regarding the particular model of social entrepreneurship, social enterprises face more challenge than traditional business to access resources, which make social firms have a very close relationship with bricolage (Di Domenico et al., 2010). Accordingly, previous studies have argued bricolage can be a very appropriate approach for social enterprise to do resource acquisition and mobilisation in both resource limitation or non-constrained contexts (Desa and Basu, 2013; Gundry et al., 2011; Janssen et al., 2018). Refer to the former research, the findings suggest that resources scarcity environment fit with the bricolage makes social enterprises develop more innovativeness (Baker and Nelson, 2005; Linna, 2013; Nicholls, 2009), sometimes result in pioneering new capabilities (Di Domenico et al., 2010; Gundry et al., 2011; Phillips and Tracey, 2007). Also, Desa (2012) also indicates that different combinations of various bricolage strategies then affect the diffusion of social innovations. Meanwhile, prior research shows that social enterprises with stronger commercial ideology will be more likely to find and mobilise resources other than waiting for donations. EO as one business awareness, it offers the attitudes and essential skills for firms to better access and utilises resources (Lumpkin and Dess, 1996; Richard et al., 2004). EO is relevant to strategy-making processes for firms. It will influence the strategic roads of their ventures for finding and exploiting new opportunities (Covin and Miles, 2018). Besides, the more significant environmental dynamism for start-ups or the players in new industries tends to have higher EO to obtain a chance (Daft and Marcic, 2016).

Even past studies suggest that social entrepreneurship gives an interesting and useful field to examine bricolage behaviours, prior research scarcely investigate bricolage occurs in social enterprises to solve their unique dual challenges (Kickul et al., 2018; Ladstaetter et al., 2018). The research of the role of bricolage in generating innovations of social enterprises reflects critical limitations of previous research. Scholars have differed on sort of bricolage, such as parallel and selective bricolage (Baker and Nelson, 2005), necessity and ideational bricolage (Desa and Basu, 2013), and internal and external bricolage (Tasavori et al., 2018; Vanevenhoven et al., 2011). Unfortunately, bricolage has been seen as a holistic concept when the majority of prior researcher examined the relationship between bricolage and others but overlooked to exploit environmental factors for various bricolage and the vary of bricolage behaviours' impact on outcomes. However, bricolage never happens in the same situation and shows in the same shape (Kickul et al., 2018; Tasavori et al., 2018; Vanevenhoven et al., 2011), bricolage behaviours are distinct when the firms mobilise resources to response financial or knowledge constraint (Shen, 2018). Hence, it is meaningful to investigate how resource constraints drive to different types of bricolage, and which bricolage type will increase innovativeness.

Additionally, exiting research did not explicitly explore the relationship between bricolage strategy and innovation focus (incremental or radical). However, it is worth to test the specific innovation outcomes through bricolage strategy, since different innovations may lead to different performances (Madjar et al., 2011; Oke et al., 2007). Bricolage shares the similar characteristics as radical innovation because entrepreneurs tend to find new ways to use and/or recombine the existing resources which lead to pioneer functions (Andersen, 2008; Baker and Nelson, 2005). However, social enterprises may attempt to avoid colossal uncertainty and challenge (Keupp and Gassmann, 2013; Partanen et al., 2014), then they might prefer to create incremental bricolage instead, especially they may not strong enough to

take risks when they face resource limitation and use bricolage as a "second-best" solution (Garud and Karnøe, 2003; Lanzara, 1999). Thus, it needs to investigate if internal and external bricolage can result in different type of innovation in social entrepreneurship filed.

Furthermore, the effect of resource shortage on EO of social enterprises and the effect of EO on internal/external bricolage strategy preference remain unclear. From the resource-based view, EO plays a critical role in the strategic decision process during the entrepreneurial process (An et al., 2018; Wang, 2008), but it depends on the resource context (Jiang et al., 2018; Liu et al., 2014). Besides, EO may lead to different levels of impact on internal and external bricolage. A management team with high EO may better at utilising a network to collect resources and achieve the mission rather than only be restricted to an internal environment (Morris et al., 2007).

To address these gaps, this study aims to examine the effect of financial and knowledge constraint on EO and diverse type of bricolage including internal and external, the effect of EO on internal and external bricolage, and the relationship between internal/external bricolage and two type of innovation (incremental and radical) on a firm level. Drawing from Resource-based view, Resource-dependency theory and network theory, we assume that both financial and knowledge constraints help social enterprises to do more internal bricolage and external bricolage. We also assume that internal bricolage may result in more incremental innovation while external bricolage may lead to more radical innovation than incremental innovation. We also propose resource constraints lead to high EO for social enterprises. We finally suppose EO affects external bricolage more than internal bricolage in social entrepreneurship area. We tested our hypotheses by using the social enterprise sample from a transitional economy - China, which lack sufficient finance and knowledge resource to innovate. In the following, we explain the theoretical foundations supporting the conceptual model before developing the hypotheses. Methodology section is presented in the next section which introduces the sample, measurement design in detail. Then, the results and analysis will be stated and discussed respectively, followed by the conclusion section includes contributions, theoretical and managerial implications, and limitations for future research.

2. Theoretical background and hypotheses

2.1.Social enterprise and Bricolage

Social entrepreneurship can be defined as the act of recognising and pursuing opportunities to social problems through the creativity of the typical entrepreneurial process (Mair and Martí, 2006). There is no denying that social enterprises have dual entrepreneurial and social orientation, they are going to solve social problems and/or meet social needs that other social sectors ignored or did not fill but meanwhile through business models to survive sustainably. Many social enterprises can be found in the poverty areas or undeveloped regions. They face a set of challenges because they purposely located their activities in areas where markets function poorly (Bacq et al., 2015; Desa and Kotha, 2006; Mair and Marti, 2009). When social entrepreneurs take entrepreneurial actions, they need to solve resource mobilisation problems during the entrepreneurial process same as traditional commercial entrepreneurs. However, social enterprises on the contrary with those for-profit organisations are difficult to access to capital markets and attract skilled employees, because social firms usually are hard to offer a competitive salary, inability to use price mechanisms, and operate in poverty macro environments (Gundry et al., 2011). Social entrepreneurs then need to concentrate on building affordable and sustainable solutions with limited resources supported (Desa, 2012;

Sunley and Pinch, 2012), and to achieve their social value rather than focusing solely on commercial value (Di Domenico et al., 2010; Kickul et al., 2018).

The resource-based view (RBV) suggests that firms possess bundles of resources and capabilities that they combine in unique ways to generate superior performance (Barney, 1991). Meanwhile, the resource-dependency theory (RDT) scholars suggest that venture may obtain resources by cooperating with internal and external network then foster sustainable survival (Hillman et al., 2009). Bricolage, the concept was developed in the framework of RBV and RDT, which explain when and how firms may use bricolage strategy (Desa, 2012), and it was initially introduced by Lévi-Strauss (1966) from a French word, which aims to distinguish between the actions of engineers and handymen. He defined bricolage as "making with whatever is at hand", which may create "stop-gap solutions" or "second-best solution" (Garud and Karnøe, 2003; Lanzara, 1999). Nonetheless, bricolage has been more interested in scholar since Baker and Nelson (2005) further developed the construction of bricolage. They defined bricolage is "making do by applying combinations of resources at hand and/or existing recombination resources for new problems or new purposes". Since then, the number of papers developing and making use of bricolage has been increasing rapidly, recognised bricolage as one of crucial strategy to solve the shortage of resources for entrepreneurs and firms in penurious contexts in entrepreneurship and organisation literature research (Baker, Miner and Eesley, 2003; Garud and Karnøe, 2003; Baker and Nelson, 2005).

Regarding the social entrepreneurship context, bricolage can be further defined as providing innovative solution through making do or recombining with resources at hand to create social value that traditional organisations fail to address in an adequate way (Mair and Martí, 2006; Di Domenico, Haugh and Tracey, 2010; Desa, 2012; Desa and Basu, 2013). Social enterprises face resource scarcity (Desa and Basu, 2013; Zahra et al., 2008) and institutional weak (Mair and Martí, 2006), resource mobilisation is a big challenge for social ventures (Austin et al., 2006). Because resources-constrained environments make social entrepreneurship and bricolage very close between each other, bricolage is the most appropriate approach (Janssen et al., 2018) for social enterprises because most of the social enterprise operating in institutional constraints or weak regulatory or lack of political support contexts (Di Domenico et al., 2010; Gundry et al., 2011). Besides, bricolage strategy is also a sustainable way for the social entrepreneurship operated in non-constrained contexts survive (Desa and Basu, 2013).

Scholars differ on sort of bricolage from the past studies. For instance, Baker and Nelson (2005) advance parallel and selective bricolage according to what domains of bricolage that firms applied, a similar term of selective is serial bricolage was initially introduced by Baker and Nelson (2003). Desa and Basu (2013) suggest bricolage could be divided into necessity and ideational bricolage in line with the availability of resources in use, Bojica *et al.*, (2018) further develop this category to four forms as necessity, ideational, selective and limited bricolage with a view of autonomy of firms when they use resources. Whereas, more scholars outline internal and external bricolage on the grounds of sources of resources (Tasavori et al., 2018; Vanevenhoven et al., 2011). That because social enterprises rely on both internal and external bricolage to introduce new products and expand into a new market (Tasavori, Kwong and Pruthi, 2018). Internal bricolage pays attention to mobilise pre-existing resources and competencies internally available, instead, external bricolage construct emphasises patterns of behaviour in which entrepreneurs depend on contact as their primary means at hand and provides a useful contact with networking and other behaviours in which entrepreneurs seek resources from strangers (Vanevenhoven et al., 2011). External bricolage is also deemed to collective bricolage (Duymedjian and Rüling, 2010; Kwong et al., 2017; Sandeep Salunke, Jay Weerawardena, 2013) and network bricolage (Baker, 2007; Baker et al.,

2003; Tasavori et al., 2018). The external network of firms may significantly contribute to the firm's outcome according to social capital theory, and strategic networking theory. RDT also support external bricolage will provide a critical way for social enterprises to access resources (Hillman et al., 2009) and lead to better performance in competitive markets (Ha Hoang and Antoncic Bostjan, 2003).

----------Insert Table 1 ----------

2.2.Resource constraints and bricolage

Based on RBV, resource constraints are generally referred to the firms with no sufficient resources exist to overcome challenges and/or seek entrepreneurial opportunities (Gibbert and Hoegl., 2007). Apparently, lack of resources is harmful to SMEs performance and growth according to some studies (Brouthers et al., 2015). However, by reviewing the past research, the facts of resource constraints can be an inhibitor as well as an enabler for innovativeness process (Keupp and Gassmann, 2013; Senyard et al., 2009). Further, firms with resource shortage are likely to extend broader sources to access more potential resources and leverage their resources mobilisation efficiently (Phillips and Tracey, 2007). Keupp and Gassmann (2013) demonstrated that resource constraints could be divided into financial and knowledge limitation. Financial constrain means the degree of lacking internal and external financial support during the entrepreneurial activities. Likewise, knowledge constraint can be defined as the extent of knowledge and skill limitation to solve challenges and pursue opportunities. As new ventures typically lack the resources they need, social enterprises are particularly unlikely to access enough resources (Doherty et al., 2014), whether necessities or ideal resources(Duymedjian and Rüling, 2010; Witell et al., 2017), particularly for most of social ventures root in resource-poor contexts (Sunley and Pinch, 2012).

Bricolage is an alternative behaviour for new firms to successfully work under constraints contexts (Baker and Nelson, 2005). Resource constraints may trigger bricolage behaviours since bricolage frequently occurs in resource-limited contexts (Baker and Nelson, 2005). Resource constraints have been argued as a drive of a variety of novel practices to meet the challenges that firms face (Schulze and Hoegl, 2006), which share the similarity with bricolage that recombination of existing resources to solve problems (Baker and Nelson, 2005; Bradley et al., 2011; Wiklund and Shepherd, 2009). Bricolage may drive firms to reuse and recombine of whatever knowledge and skills at hand as well as, financial resource constraint may force entrepreneurs to improve allocative efficiency and seek novel resource recombination (Bradley et al., 2011). Indeed, accumulating evidence has suggested that new ventures in resource constraint contexts could engage in bricolage (Baker and Nelson, 2005; Di Domenico et al., 2010; Senyard et al., 2014). However, do resource constraints make firms generate internal or external bricolage for social enterprises? Past studies suggest that firms without adequate resources tend to focus on both internal efficiency and discover external opportunities (Cheng and Kesner, 1997).

Meanwhile, firms may be forced to use money carefully and seek external financial support if they lack financial resources. People will be more likely to come up with unexpected ideas and more productive when they face resource restricted (Gibbert and Hoegl., 2007; Gibbert and Scranton, 2009). Social ventures have more resource scarcity challenges due to their dual-missions comparing with traditional entrepreneurship, which is they hardly access resources through traditional and standard procedures (Baker, 2007; Desa, 2012). Thus, social enterprises may rely on both internal and external bricolage to introduce new products and expand into a new market (Tasavori et al., 2018).

Then, we propose,

Hypothesis 1: Financial constraint is positively related to (a) internal bricolage and (b) external bricolage for social enterprises.

Hypothesis 2: Knowledge constraint is positively related to (a) internal bricolage and (b) external bricolage for social enterprises.

2.3.Resource constraints and EO

Entrepreneurial orientation is a firm-level construct that has been defined as the propensity by a company's top management to take calculated risks, be innovative, and demonstrate strategic proactiveness (Covin and Miles, 2018; Covin and Slevin, 1989). The previous research indicates that entrepreneurial orientation is one essential capability for SMEs that they can use to develop sustainable competitive advantages according to the resource-based view (Wiklund and Shepherd, 2003, 2005). There is no denying that social enterprises have dual entrepreneurial and social orientation, they are going to solve social problems and/or meet social needs that other social sectors ignored or did not fill but meanwhile through business models to survive sustainably (Chell, 2007; Dacin et al., 2011). Social ventures dislike traditional for-profit organisations, which aim to achieve their social goals and also be operated as businesses. Even social enterprises differ from commercial business, it is precisely that they should build business awareness to support their social missions which make social entrepreneurship is different with non-profit organisations (Dees, 1998; Morris et al., 2007). It is critical to balance social and economic missions for social enterprises, therefore, achieve their objectives in a stable and sustainable pathway.

Furthermore, most social enterprises root in resource-constrained contexts thus entrepreneurs need to seek and mobilise resources to create value and against with resource shortage (Di Domenico, Haugh and Tracey, 2010). Social enterprises with stronger commercial ideology will be more likely to find and mobilise resources other than waiting for donations or half-assed. It can be regarded as an attitude in the management area, it is relevant with strategy-making processes for firms, and it is an important corporate culture provides organisations with a basis for entrepreneurial decisions and actions (Lumpkin and Dess, 1996; Richard et al., 2004). Therefore, entrepreneurial orientation gives social enterprises with the resource-based capabilities to efficacy utilise the limited resources they can obtain and to efficiently access additional resources from external sides (Wiklund and Shepherd, 2003). Entrepreneurial behaviour requires the consumption of large quantities of resources, so having access to these resources should facilitate the use of strategies derived from entrepreneurial behaviours (Covin and Slevin, 1989; Wiklund and Shepherd, 2005). As mentioned above, EO is related to risk tolerance, innovation and proactiveness, so firms may have higher EO to seek innovative pathways to ease their resource constraints. Entrepreneurs with high EO will show more ambitious in competitive markets, which may get attention from both internal and external channels (Jiang et al., 2018; Zhao et al., 2011). Even for social enterprises, resource constraints give social entrepreneurs more driving forces to form a higher level of EO, which means they can figure resource limitation and achieve their social value.

Hence, we propose,

Hypothesis 3: Financial constraint has a positive relationship with the extent of EO of social enterprises.

Hypothesis 4: Knowledge constraint has a positive relationship with the extent of EO of social enterprises.

2.4.EO and bricolage

Will people become more creative to find solutions for challenges in a resource scarcity environment? The answer is yes from cognitive psychology studies (Durham et al., 2000; Moreau and Dahl, 2005). Prior studies refer to entrepreneurial orientation as one business awareness, it is a capacity of a firm to apply novel behaviours to forecast, response and adapt future potential changes in the external environment, and the willingness to undertake investments with uncertain results (Brouthers et al., 2015; Covin and Miles, 2018; Varadarajan and Kaul, 2016). Organisations with the high level of entrepreneurial orientation are more likely to introduce new products, diversify their activities, expand their business to new markets and learn how to thrive in an uncertain environment (Jiang et al., 2018; Wang, 2008). Also, social firms which have a high level of business thinking may also have more ambitious to serve more innovativeness products or services, expand their business, and hence, to achieve better performance and complete their social missions (Liu et al., 2014; Morris et al., 2007). Since bricolage is seen as making do whatever at hand, by creative combination of resources and/or re-use resources for new problems or new purposes (Baker and Nelson, 2005), EO offers the attitudes and essential skills for firms to use internal resources better, access to external resources, and efficiently utilise resources to sustainably survive.

Consequently, EO shares similar functions with bricolage in obtaining and mobilising resources (An et al., 2018). Mosakowski (2002) stated that firms with the resource shortage prefer to make do whatever at hand to pursue entrepreneurial opportunities through innovative pathways. Previous research in entrepreneurship area also support this finding, for example, Bradley, Wiklund and Shepherd (2011) demonstrated that entrepreneurs might become more active and be pushed to seek a novel solution when they lack sufficient resource (Gao et al., 2007).

Meanwhile, bricolage as a “second-best” or “low-cost” strategy is preferable for social enterprises rather than non-profit organisations especially if social enterprises with business awareness, since reducing cost plays a crucial role in business activities (Garud and Karnøe, 2003; Baker and Nelson, 2005; Senyard, Baker and Davidsson, 2009; Varadarajan and Kaul, 2016). Social ventures may try to use every method include bricolage strategy to obtain necessary resources and create potential values if social entrepreneurship has a high level of business thinking. In short, social entrepreneur with a high level of EO may be likely to put more efforts to find solutions from internal and network sources.

Thus, we propose,

Hypothesis 5: EO is positively related to (a) internal bricolage and (b) external bricolage for social enterprises.

2.5.Innovation consequences of bricolage

Innovativeness is an idea, practice or material artefact perceived to be new by the relevant unit of adoption (Zaltman et al., 1973). It is widely distinguished between incremental and radical innovations (Mole and Elliott, 1987; Tidd, Joe, John Bessant, 2005), which is the most established classification of innovation (Dewar and Dutton, 1986). Incremental innovations are defined as extensions of existing products, maybe they are minor improvements or simple adjustments in current technology, but incremental innovations can still benefit firms as well-known drivers for firms to gain competitive advantages (Madjar et al., 2011). In comparison to incremental innovations, radical innovativeness as the development or application of significantly new technologies or ideas is a fundamental

change that represent revolutionary changes in many aspects, it represents clear departures from existing practice (Song and Di Benedetto, 2008). The significant difference between these two categories of innovation is the degree of novel technological process and new knowledge embedded in the innovation, radical innovation requires specific firm capacities and capabilities compare with incremental innovation, which has a lower of novelty (Johannessen et al., 2001).

New firms are usually confronted with their limited resources in their innovation process (Senyard et al., 2014), even innovation is critical for long-term organisational success (Covin and Miles, 2018; Herrera, 2015). Indeed, for new firms with limited resources, entrepreneurial bricolage could be an important pathway to innovation because it allows firms to creatively recombine resources for which they were not designed initially (Baker and Nelson, 2005; Senyard et al., 2014). It is not hard to understand because companies engaged in bricolage render numerous products/services or process by creating something from nothing and/or through a new combination of resources at hand (Baker and Nelson, 2003, 2005). Moreover, bricolage sometimes results in pioneering new capabilities as well (Di Domenico et al., 2010; Gundry et al., 2011; Phillips and Tracey, 2007). Firms that innovate radically desire to move away from current organisational routines, to replace current by new knowledge bases, to redefine existing or create new markets.

Hence, we propose,

Hypothesis 6: Internal bricolage positively affects (a) incremental innovation and (b) radical innovation for social enterprises.

Hypothesis 7: External bricolage positively affects (a) incremental innovation and (b) radical innovation for social enterprises.

----------Insert Figure 1----------

3. Methodology

3.1.Sample and data collection

To investigate the proposed hypotheses, a questionnaire-survey approach was adopted for data collection on a sample of Chinese social enterprises. Social enterprise has increasingly recognised as an important method to solve social problems and meet social needs in China. However, social entrepreneurship is still in an initial stage in China as a new type of venture. There is not any research database related to social enterprises only as far as we aware. Therefore, we created a single database of social enterprises in China by gathering information from different lists of Chinese social entrepreneurship announced by the various organisations. The sample includes the enterprise that got social enterprises award by Social Enterprise Research centre sponsored by British Council in China; the enterprises certificated by China Philanthropy Research Institute, or the social enterprises listed on the three leading NGO database websites: China Development Brief, China Foundation Center, NGO2.0.

We searched for organisations that fulfilled the following three criteria, as also suggested in the previous literature about the definition of social enterprise (Dees, 1998; Liu et al., 2014). First, the social enterprises in our sample should have clear social or environmental goals, which should also be their primary or priority missions. Second, they need to generate income from business or commercial activities. Third, our social enterprise samples need to have clear surplus distribution regulation. We identified social enterprises with above 50 per cent of surpluses should be used to further social or environmental goals. Finally, we collected 863 social enterprises for our database.

The questionnaire was developed in an English version, some variables created from cited relevant research and others were designed based on the measurements from previous studies which have shown high reliability and validity. The authors and two Chinese-English interpreters who familiar with SMEs or social enterprises translated the English-language version of the questionnaire into Chinese independently, then we got a consensus of Chinese questionnaire after discussion. Afterwards, three social entrepreneurs or two top managers in social enterprises helped us to verify the relevance and wording of the questionnaire. We further revise the questionnaire based on their suggestions on several minor modifications. Before we manually sent our survey to the social firms, the authors contact the top managers or entrepreneurs of social firms first to confirm if the organisation is still subsisting. We then explained our research objectives and project detail to them, to make sure whether they would like to participate in our research. The response rate was 32.21%, 278 firms were used for our study.

Table 2 shows the essential characteristics of the sample firms, which include the category of social enterprise, firm age and firm size. Among others, 16.9% of the sample firms are in the Education field, 15.1% of them comes from the social/health care area, and the environmental social enterprises account for 14.4%. Firms between one to two years old account for 41.0%, 3-5 years old account for 34.2% and 13.3% of the total sample firms are less than one year. 45.0% of the sample firms have 11-49 employees while 39.6% of the total have less than 10 full-time employees. The result is consistent with the report of Chinese social enterprises from SEFORIS (2016) and Greater China Social Enterprise Survey Report by SERC and DSB (2017).

----------Insert Table 2----------

3.2.Measurement

Table 3 details the constructs and their operationalisation, and all the measures used in this paper were at the firm level. A Five-point Likert Scale was used for the measurements of the constructs, because it would reduce the frustration levels of respondents, increase the response rates and quality (Dawes, 2008; Sachdev and Verma, 2004).

Dahlqvist and Wiklund (2012) developed a commonly utilised measurement for innovativeness that covers four dimensions: product/service, process, marketing methods and target market selection. We adopted their dimensions and adjusted this measurement by combining the measurement from Oke, Burke and Myers (2007). Respondents were asked to estimate the extent of their innovativeness of four dimensions within past three years, from 1 (minor improvements or adaptation) to 5 (Major improvements or adaptation). Similar to incremental innovation measurement, radical innovation was measured in four dimensions through combining two research from Dahlqvist and Wiklund (2012) and Oke, Burke and Myers (2007). The participants need to measure their radical innovation from “new to existing markets” to “entirely new to world”.

We focus on two type of bricolage: *internal* and *external*. Internal bricolage pays attention to mobilise pre-existing resources, no matter tangible and intangible resources, and competencies internally available. No existing measurements were found for internal bricolage in the literature. Thus, we designed the measurement for this construct by combining with the definitions suggested by Baker and Nelson (2005) and Di Domenico, Haugh and Tracey (2010), then created four items based on the prior research that state internal bricolage detailed (Kwong et al., 2017; Tasavori et al., 2018; Vanevenhoven et al., 2011). External bricolage here means tangible resources such like finance and other assets and networking or social capital (Baker et al., 2003). We considered external bricolage as the

companies employ pre-existing network or extended new network to acquire resources (Di Domenico, Haugh and Tracey, 2010). Then we adapted and further developed prior scale including the Baker-Davidsson's Scale in accordance with material, labour and skill, which was seen as the essential implements for enterprises (Fisher, 2012). We referenced the prior research about the concept of external bricolage (Baker and Nelson, 2005; Desa, 2012; Desa and Basu, 2013; Garud and Karnøe, 2003; Phillips and Tracey, 2007) and created four items to measure it.

Entrepreneurial orientation measurement was adapted from Zhao *et al.*, (2011), which including six items and adjusted according to Chinese context. All items were measured on a five Likert scale ranging from 1=totally disagree to 5=totally agree.

The measurement for financial constraints was adapted from Keupp and Gassmann (2013) and Shen (2018). It captured the key feature of financial constraints that firms lack the necessary finance-related resources for innovation goals. Two items were measured on a five Likert scale ranging. Likewise, the measurement for knowledge constraints was adapted from Keupp and Gassmann (2013) and Shen (2018). All four items were measured on a Likert scale from 1 to 5, from totally disagree to totally agree.

Refer to the previous research (e.g. Senyard, Baker and Davidsson, 2009b; Schmitt *et al.*, 2017; Kickul *et al.*, 2018), we measured and controlled for organisational size (number of full-time employees), the age of social enterprise, and the number of senior management team.

----------Insert Table 3----------

4. Data analysis and results

4.1.Measurement model

We applied Structural Equation Modelling (SEM) in Amos 25 to test the goodness of fit of the model and examine the hypothesised relationships among our constructs. Before we did the test, we evaluated reliability and validity by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Each measurement item loaded only on its latent construct. All scales of constructs have good internal consistency with Cronbach's alpha coefficient reported exceed 0.7.

We assessed the convergent and discriminant validity of the focal constructs. The chi-square test was statistically significant, which $p<0.001$. The comparative fit index (CFI), Bollen's incremental fit index (IFI), and the root mean square error of approximation (RMSEA) indicated a good fit with the hypothesised measurement model (CFI=0.938, IFI=0.939, RMSEA=0.043; see Table 3) (Hu and Bentler, 1999). The ratio of the chi-square to the degree of freedom was 1.517, which is below 4. The composite reliabilities (CR) of financial constraint, knowledge constraint, EO, internal bricolage, external bricolage, incremental innovation and radical innovation were 0.79, 0.81, 0.82, 0.81, 0.80, 0.75, 0.85, respectively. They were both exceed 0.70 and thus acceptable (Hundleby and Nunnally, 2006). Table 4 shows descriptive statistics and correlations for all constructs. Furthermore, all indicator loadings were statistically significant ($p<0.001$) and exceed 0.5. Generally, the threshold of average variance extracted (AVE) is 0.5, but the convergent validity of the construct is still adequate if CR is higher than 0.6 when AVE exceed 0.4 (Fornell and Larcker, 1981). Thus, we concluded that the measures demonstrated adequate convergent validity and reliability.

Common method bias can occur with self-reported data (Philip M Podasakoff et al., 2003). To avoid common methods bias, we designed and distributed questionnaires to respondents

with anonymity and confidentiality statement, that they should answer as honestly as possible, and there is no right or wrong answer but only about their firms' situation. We adjusted the measurement questions words in a measured and neutral way through pre-test then. We also used Harman (1967)'s one-factor test, and no single factor was found. In terms of EFA test, it was applied to all of the measurements and the un-rotated solution extracted 7 factors with eigenvalues greater than 1.0, which accounts for 63.64% of the total variance of the data. Hence, we conclude that common method variance does not bias the study results.

----------Insert Table 4----------

4.2.Hypothesis testing

We estimated the hypothesised model by using structural equation modelling, with the Amos 25 program. Table 5 provides the results of the hypothesis testing. As Empirical results (see Table 5) show, the chi-square test was statistically significant ($\chi 2$ (379) =579.194; ρ<.001). The scores achieved for the fit measures showed that the hypothesised model acceptable fit with the data: $\chi 2$/df=1.528; CFI=0.927; IFI=0.928; TLI=0.916; RMSEA=0.044.

Financial constraint shows significant associated with internal bricolage (β= 0.194; p<0.05), and external bricolage (β= 0.198; p<0.05), confirming H1a and H1b respectively. The effect of knowledge constraint on internal bricolage is significant (β= 0.205; p<0.05), and knowledge constraint have the positive influence on external bricolage in a 90% confidence level (β= 0.162), which support H2a and H2b. The empirical test results support H3 that financial constraint significantly and positively associated with entrepreneurial orientation (EO), but our study shows knowledge constraint not significantly affect EO for social enterprises, thus, not supporting H4.

H5 predicted positive relationships between EO and internal bricolage (a), EO and external bricolage (b). The effect of EO on internal bricolage was not significant, which means H5a was rejected. While, EO showed a positive influence on external bricolage (β= 0.134; p<0.1), confirming H5b.

The effect of internal bricolage on incremental innovation was significantly positive (β= 0.232; p<0.01), meanwhile, internal bricolage also significantly impacted on radical innovation (β= 0.196; p<0.05), hence, supporting H6a and H6b. In terms of hypothesis 7, external bricolage positively impacted on incremental innovation (β= 0.160) in 90% confidence level (supported H7a), and radical innovation (β= 0.184) in 95 confidence level (supported H7b).

----------Insert Table 5----------

5. Discussions

Although past studies have been explored resource constraints enact bricolage behaviours, the empirical research about the relationship between resource constraints and bricolage is still blank for social entrepreneurial filed. We deconstructed the bricolage concept from internal and external sides, tried to find how financial and knowledge constraints affect them respectively. The empirical results showed that financial and knowledge constraints could influence both internal and external bricolage in social entrepreneurship context. Interestingly, we found that financial constraint shows higher influence on external bricolage than internal, even the difference is not very obvious. Conversely, knowledge constraint tends to higher impact on internal than external bricolage, which means social entrepreneurs prefer to find the solution through internal channels rather than extend their contacts to acquire new

knowledge and skills. The scarcity of knowledge resource may trigger the exploration of knowledge elements by creatively recombining knowledge that already exists in the organisation (Gibbert and Scranton, 2009). Comparing knowledge constraint, social entrepreneurs may have to seek financial support from outside, similar to past study about traditional business (Gibbert and Hoegl., 2007).

We found only financial constraint has significantly and positively effect on EO in social entrepreneurship context. Social entrepreneurs may prefer to ignore potential risks, become more innovative and take pro-actions when they face financial limitations to survive in competitive markets. Consistent with the existing literature, EO shows a positive effect on network utilise (Jiang et al., 2018), we found that EO has a positive influence on external bricolage only. By reviewing past paper, researchers overlooked the relationship between EO and bricolage in the social entrepreneurship field. We believe this is the first quantitative study trying to explore whether EO affects internal and external bricolage, which as resource mobilisation strategy in practice for social enterprises.

When it comes to the innovative consequences of bricolage, many previous papers have demonstrated that bricolage encourages innovation (e.g. Baker and Nelson, 2005; Nicholls, 2009). On the one hand, bricolage is an important pathway to innovativeness for resource-constrained firms (Senyard et al., 2014), on the other hand, innovation is a crucial outcome for bricolage behaviours (Andersen, 2008). Although both two bricolage strategies have positive influences on incremental and radical innovation according to our empirical results, internal bricolage leads to more incremental innovation, yet, external bricolage brings more radical innovation. Social enterprises may need to use limited resources and knowledge at hand to do innovative activities, which may result in incremental innovation rather than radical. Whereas social enterprises can have more unexpected resources through external bricolage, and most resources may be useless or ignored by other organisations then social firms may get it in a cheaper way or for free.

Theoretically, we empirically analysed the effects of financial and knowledge constraint on entrepreneurial orientation and bricolage for social enterprises. We used samples from a developing country- China. We extend the RDT and RBV to provide us with a better understanding of the challenges faced by social enterprises through resource mobilisation strategy. The body of existing research focuses on developed country context, but social enterprises in developing country root in a very different environment and they may have more challenges than their peers in western contexts. We further enriched the quantitative research about bricolage study. Previous studies use bricolage as one constructed concept, and they have explored the relationship between bricolage and innovation. We found that both two bricolage behaviours develop incremental and radical innovation; internal bricolage may result in more incremental innovation, while external bricolage could produce more radical innovation. Then, we found that EO will positively affect external bricolage strategy of social enterprise, which is a new topic in the social entrepreneurship field. Finally, we also believe there is a further methodological contribution. This study contributed to the development of internal and external bricolage measurements. Although there have been discussions of the definition and influences of internal and external bricolage, there is not quantitative research as far as we know. This study developed the measurement items of internal and external bricolage, and examines them in the context of a developing context. It advances our current understanding and research on the bricolage strategy. For managers, because EO has a positive effect on external bricolage, they should become more aggressive in entrepreneurial activities. Social entrepreneurs, or executive teams of social enterprises, they need do more training to form EO capabilities, which will help them to do efficiency resource mobilisation and achieve more innovative outcomes, may produce more social value.

As our empirical results showed, internal and external bricolage have a different impact on two types of innovations. Social entrepreneurs need to analyse their environments and situations, choose internal and/or external bricolage to do more incremental or radical innovation, hence, achieve their sustainable development.

References

An W, Zhao X, Cao Z, et al. (2018) How Bricolage Drives Corporate Entrepreneurship: The Roles of Opportunity Identification and Learning Orientation. *Journal of Product Innovation Management* 35(1): 49–65.

Andersen OJ (2008) A bottom-up perspective on innovations: Mobilizing knowledge and social capital through innovative processes of bricolage. *Administration and Society* 40(1): 54–78.

Austin J, Stevenson H and Wei-Skillern J (2006) Social and commercial entrepreneurship: Same, different, or both? *Entrepreneurship: Theory and Practice* 30(1): 1–22.

Bacq S, Ofstein LF, Kickul JR, et al. (2015) Bricolage in social entrepreneurship: How creative resource mobilization fosters greater social impact. *International Journal of Entrepreneurship and Innovation* 16(4): 283–289.

Baker T (2007) Resources in play: Bricolage in the Toy Store(y). *Journal of Business Venturing* 22(5): 694–711.

Baker T and Nelson RE (2003) Making That Which Is Old New Again: Entrepreneurial Bricolage. *Frontiers of Entrepreneurship Research*: 330–343.

Baker T and Nelson RE (2005) Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly* 50(3): 329–366..

Baker T, Miner AS and Eesley DT (2003) Improvising firms: Bricolage, account giving and improvisational competencies in the founding process. *Research Policy* 32(2 SPEC.). North-Holland: 255–276.

Barney J (1991) Firm Resources and Sustained Competitive Advantage. *Journal of Management* 17(1): 99–120.

Bechky BA and Okhuysen GA (2011) Expecting the Unexpected ? How Swat Officers and Film Crews Handle Surprises. *Academy of Management Journal* 54(2): 239–261.

Bojica AM, Ruiz Jiménez JM, Ruiz Nava JA, et al. (2018) Bricolage and growth in social entrepreneurship organisations. *Entrepreneurship and Regional Development* 30(3–4): 362–389.

Bradley SW, Wiklund J and Shepherd DA (2011) Swinging a double-edged sword: The effect of slack on entrepreneurial management and growth. *Journal of Business Venturing* 26(5): 537–554.

Brouthers KD, Nakos G and Dimitratos P (2015) SME Entrepreneurial Orientation, International Performance, and the Moderating Role of Strategic Alliances. *Entrepreneurship: Theory and Practice* 39(5): 1161–1187.

Chell E (2007) Social enterprise and entrepreneurship: Towards a convergent theory of the entrepreneurial process. *International Small Business Journal* 25(1): 5–26.

Cheng JLC and Kesner IF (1997) Organizational slack and response to environmental shifts: The impact of resource allocation patterns. *Journal of Management* 23(1): 1–18.

China Social Enterprise Research Centre (SERC) and The Development Bank of Singapore Foundation (2017) *Greater China Social Enterprise Ecosystem Survey and Study*.

Covin JG and Miles MP (2018) Corporate Entrepreneurship and the Pursuit of Competitive Advantage. *Entrepreneurship Theory and Practice* 23(3): 47–63.

Covin JG and Slevin DP (1989) Strategic management of small firms in hostile and benign environments. *Strategic Management Journal* 10(1): 75–87.

Dacin MT, Dacin PA and Tracey P (2011) Social entrepreneurship: A critique and future directions. *Organization Science* 22(5): 1203–1213.

Daft RL and Marcic D (2016) *Understanding Management*. *Nelson Education*.

Dahlqvist J and Wiklund J (2012) Measuring the market newness of new ventures. *Journal of Business Venturing* 27(2). Elsevier: 185–196.

Dawes J (2008) Do Data Characteristics Change According to the Number of Scale Points Used? An Experiment Using 5-Point, 7-Point and 10-Point Scales. *International Journal of Market Research* 50(1): 61–104.

Dees GJ (1998) Enterprising non-profits. *Harvard Business Review*: 55–67.

Desa G (2012) Resource Mobilization in International Social Entrepreneurship: Bricolage as a Mechanism of Institutional Transformation. *Entrepreneurship: Theory and Practice* 36(4): 727–751.

Desa G and Basu S (2013) Optimization or Bricolage? Overcoming Resource Constraints in Global Social Entrepreneurship. *Strategic Entrepreneurship Journal* 7(1). Wiley-Blackwell: 26–49.

Desa G and Kotha S (2006) Ownership, mission and environment: An exploratory analysis into the evolution of a technology social venture. In: *Social Entrepreneurship*. London: Palgrave Macmillan UK, pp. 155–179.

Dewar RD and Dutton JE (1986) The Adoption of Radical and Incremental Innovations: An Empirical Analysis. *Management Science* 32(11): 1422–1433.

Di Domenico ML, Haugh H and Tracey P (2010) Social bricolage: Theorizing social value creation in social enterprises. *Entrepreneurship: Theory and Practice* 34(4): 681–703.

Doherty B, Haugh H and Lyon F (2014) Social enterprises as hybrid organizations: A review and research agenda. *International Journal of Management Reviews* 16(4): 417–436.

Durham CC, Locke EA, Poon JML, et al. (2000) Effects of Group Goals and Time Pressure on Group Efficacy, Information-Seeking Strategy, and Performance. *Human Performance* 13(2): 115–138.

Duymedjian R and Rüling CC (2010) Towards a foundation of bricolage in organization and management theory. *Organization Studies* 31(2). SAGE PublicationsSage UK: London, England: 133–151.

Ferneley E and Bell F (2006) Using bricolage to integrate business and information technology innovation in SMEs. *Technovation* 26(2): 232–241.

Fisher G (2012) Effectuation, causation, and bricolage: A behavioral comparison of emerging theories in entrepreneurship research. *Entrepreneurship: Theory and Practice* 36(5): 1019–1051.

Fornell C and Larcker DF (1981) Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research* 18(1): 39–50.

Gao X, Liu J, Chai KH, et al. (2007) Overcoming 'latecomer disadvantages' in small and medium-sized firms: evidence from China. *International Journal of Technology and Globalisation* 3(4): 364.

Garud R and Karnøe P (2003) Bricolage versus breakthrough: Distributed and embedded agency in technology entrepreneurship. *Research Policy* 32(2 SPEC.). North-Holland: 277–300.

Gibbert M and Hoegl. M (2007) In praise of Resource Constraints. *MIT Sloan management review*.

Gibbert M and Scranton P (2009) Constraints as sources of radical innovation? insights from jet propulsion development. *Management and Organizational History* 4(4): 385–399..

Gundry LK, Kickul JR, Griffiths MD, et al. (2011) Entrepreneurial Bricolage and Innovation Ecology: Precursors to Social Innovation? *Frontiers of Entrepreneurship Research* 31(19): Article 3.

Ha Hoang and Antoncic Bostjan (2003) Network-based research in entrepreneurship - A critical review. *Journal of Business Venturing* 18(2): 165–187.

Halme M, Lindeman S and Linna P (2012) Innovation for Inclusive Business: Intrapreneurial Bricolage in Multinational Corporations. *Journal of Management Studies* 49(4): 743–784.

Harman D (1967) A single factor test of common method variance. *Journal of Psychology*.

Herrera MEB (2015) Creating competitive advantage by institutionalizing corporate social innovation. *Journal of Business Research* 68(7). Elsevier: 1468–1474.

Hillman AJ, Withers MC and Collins BJ (2009) Resource dependence theory: A review. *Journal of Management*.

Hoogendoorn B (Brigitte), Zwan VDPW (Peter) and Thurik a. R (Roy) (2011) Social Entrepreneurship and Performance: The Role of Perceived Barriers and Risk.

Hu LT and Bentler PM (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6(1): 1–55.

Hundleby JD and Nunnally J (2006) Psychometric Theory. *American Educational Research Journal*.

Janssen F, Fayolle A and Wuilaume A (2018) Researching bricolage in social entrepreneurship. *Entrepreneurship and Regional Development* 30(3–4): 450–470.

Jiang X, Liu H, Fey C, et al. (2018) Entrepreneurial orientation, network resource acquisition, and firm performance: A network approach. *Journal of Business Research* 87(June 2017): 46–57.

Johannessen J, Olsen B and Lumpkin GT (2001) Innovation as newness: what is new, how new, and new to whom? *European Journal of Innovation Management* 4(1): 20–31.

Kariv D and Coleman S (2015) Toward a theory of financial bricolage: the impact of small loans on new businesses. *Journal of Small Business and Enterprise Development* 22(2): 196–224.

Keupp MM and Gassmann O (2013) Resource Constraints as Triggers of Radical Innovation: Longitudinal evidence from the manufacturing sector. *Research Policy* 42: 1–40.

Kickul J, Griffiths M, Bacq S, et al. (2018) Catalyzing social innovation: is entrepreneurial bricolage always good? *Entrepreneurship and Regional Development* 30(3–4): 407–420.

Kwong C, Tasavori M and Wun-mei Cheung C (2017) Bricolage, collaboration and mission drift in social enterprises. *Entrepreneurship and Regional Development* 29(7–8): 609–638.

Ladstaetter F, Plank A and Hemetsberger A (2018) The merits and limits of making do: bricolage and breakdowns in a social enterprise. *Entrepreneurship and Regional Development* 30(3–4): 283–309.

Lanzara GF (1999) Between transient constructs and persistent structures: Designing systems in action. *Journal of Strategic Information Systems* 8(4): 331–349. DOI: 10.1016/S0963-8687(00)00031-7.

Lévi-Strauss C (1966) The savage mind.

Linna P (2013) Bricolage As a Means of Innovating in a Resource-Scarce Environment: a Study of Innovator-Entrepreneurs At the Bop. *Journal of Developmental Entrepreneurship* 18(03): 1350015.

Liu G, Takeda S and Ko WW (2014) Strategic Orientation and Social Enterprise Performance. *Nonprofit and Voluntary Sector Quarterly* 43(3): 480–501.

Lumpkin GT and Dess GG (1996) Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* 21(1): 135–172.

Lyon F and Sepulveda L (2009) Mapping social enterprises: past approaches, challenges and future directions. *Social Enterprise Journal* 5(1): 83–94.

Madjar N, Greenberg E and Chen Z (2011) Factors for Radical Creativity, Incremental Creativity, and Routine, Noncreative Performance. *Journal of Applied Psychology* 96(4): 730–743.

Mair J and Marti I (2009) Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of Business Venturing* 24(5). Elsevier Inc.: 419–435.

Mair J and Martí I (2006) Social entrepreneurship research: A source of explanation, prediction, and delight. *Journal of World Business* 41(1): 36–44.

Mair J, Battilana J and Cardenas J (2012) Organizing for Society: A Typology of Social Entrepreneuring Models. *Journal of Business Ethics* 111(3). Springer Netherlands: 353–373.

Mole V and Elliott D (1987) Enterprising innovation: an alternative approach.

Moreau CP and Dahl DW (2005) Designing the Solution: The Impact of Constraints on Consumers' Creativity. *Journal of Consumer Research* 32(1): 13–22.

Morris MH, Coombes S, Schindehutte M, et al. (2007) Antecedents and Outcomes of Entrepreneurial and Market Orientations in a Non-profit Context: Theoretical and Empirical Insights. *Journal of Leadership & Organizational Studies* 13(4): 12–39.

Mosakowski E (2002) Overcoming resource disadvantages in entrepreneurial enterprises: When less is more. *In: M.A. Hitt, R.D. Ireland, S.M. Camp and D.L. Sexton*: 106–125.

Nicholls A (2009) We do good things, don't we?':'Blended Value Accounting'in social entrepreneurship. *Accounting, organizations and society* 34(6): 755–769.

Oke A, Burke G and Myers A (2007) Innovation types and performance in growing UK SMEs. *International Journal of Operations & Production Management* 27(7): 735–753.

Partanen J, Chetty SK and Rajala A (2014) Innovation types and network relationships. *Entrepreneurship: Theory and Practice* 38(5): 1027–1055.

Philip M Podasakoff, Scott B MacKenzie, Jeong-Yeon Lee, et al. (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*.

Phillips N and Tracey P (2007) Opportunity recognition, entrepreneurial capabilities and bricolage: Connecting institutional theory and entrepreneurship in strategic organization. *Strategic Organization* 5(3): 313–320.

Richard OC, Barnett T, Dwyer S, et al. (2004) Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions. *Academy of Management Journal* 47(2): 255–266.

Sachdev SB and Verma H V. (2004) Relative importance of service quality dimensions: A multisectoral study. *Journal of services research* 4(1).

Sandeep Salunke, Jay Weerawardena JRM-K (2013) Competing through service innovation, The role of bricolage and entrepreneurship in project oriented firms. *Journal of Business Research* 66(8): 1085–1097.

Schmitt A, Rosing K, Zhang SX, et al. (2017) A Dynamic Model of Entrepreneurial Uncertainty and Business Opportunity Identification: Exploration as a Mediator and Entrepreneurial Self-Efficacy as a Moderator. *Entrepreneurship Theory and Practice*: 104225871772148.

Schulze A and Hoegl M (2006) Knowledge creation in new product development projects. *Journal of Management* 32(2): 210–236.

SEFORIS (2016) *A first analyses and profiling of social enterprises in China*.

Senyard J, Baker T and Davidsson P (2009) Entrepreneurial bricolage: Towards systematic empirical testing. *Frontiers of Entrepreneurship Research* 29(5): 5.

Senyard J, Baker T and Steffens P (2010) Entrepreneurial Bricolage and firm performance: moderating effects of firm change and innovativeness. In: *2010 Annual Meeting of the Academy of Management- Dare to care: Passion and Compassion in Management Practice & Research*, Montreal, Canada, 2010, pp. 6–10.

Senyard J, Baker T, Steffens P, et al. (2014) Bricolage as a path to innovativeness for resource-constrained new firms. *Journal of Product Innovation Management* 31(2): 211–230.

Shen T (2018) Resource Constraints and Innovation: When Less is More? *Academy of Management Proceedings* 2018(1): 17256.

Song M and Di Benedetto CA (2008) Supplier's involvement and success of radical new product development in new ventures. *Journal of Operations Management* 26(1): 1–22.

Sunley P and Pinch S (2012) Financing social enterprise: social bricolage or evolutionary entrepreneurialism? Teasdale S (ed.) *Social Enterprise Journal* 8(2): 108–122.

Tasavori M, Kwong C and Pruthi S (2018) Resource bricolage and growth of product and market scope in social enterprises. *Entrepreneurship and Regional Development* 30(3–4): 336–361.

Tidd, Joe, John Bessant and KP (2005) *Managing Innovation Integrating Technological, Market and Organizational Change*. 3rd ed. John Wiley and Sons Ltd.

Vanevenhoven J, Winkel D, Malewicki D, et al. (2011) Varieties of Bricolage and the Process of Entrepreneurship. *New England Journal of Entrepreneurship* 14(2): 53–66.

Varadarajan R and Kaul R (2016) Doing well by doing good innovations: Alleviation of social problems in emerging markets through corporate social innovations. *Journal of Business Research* 86. Elsevier Inc.: 225–233.

Wang CL (2008) Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship: Theory and Practice* 32(4): 635–657.

Wiklund J and Shepherd D (2003) Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal* 24(13): 1307–1314.

Wiklund J and Shepherd D (2005) Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing* 20(1): 71–91.

Wiklund J and Shepherd DA (2009) The effectiveness of alliances and acquisitions: The role of resource combination activities. *Entrepreneurship: Theory and Practice* 33(1): 193–212.

Witell L, Gebauer H, Jaakkola E, et al. (2017) A bricolage perspective on service innovation. *Journal of Business Research* 79: 290–298.

Zahra SA, Rawhouser HN, Bhawe N, et al. (2008) Globalization of social entrepreneurship opportunities. *Strategic Entrepreneurship Journal* 2(2): 117–131.

Zaltman G, Duncan R and Holbek J (1973) *Innovations and Organizations*. *New York Wiley*.

Zhao Y, Li Y, Lee SH, et al. (2011) Entrepreneurial Orientation, Organizational Learning, and Performance: Evidence From China. *Entrepreneurship: Theory and Practice* 35(2): 293–317.

Appendix

Table 1: Classification of bricolage

Classification	Key definition	Support studies
Internal bricolage	Mobilise personal experiences, knowledge and skills, pre-existing resources at hand	Baker, 2007; Baker et al., 2003; Duymedjian and Rüling, 2010; Kwong et al., 2017; Sandeep Salunke, Jay Weerawardena, 2013; Tasavori et al., 2018; Vanevenhoven et al., 2011
External bricolage	Also known as collective or network bricolage, depend on pre-existing contact networks as the means at hand to seek resources	

Table 2: Characteristics of sample firms

	Frequency	Percentage (%)
Category		
Education	47	16.9
Environmental	40	14.4
Financial support	29	10.4
Social and health Care	42	15.1
Consulting	29	10.4
Rural	24	8.6
Retail	30	10.8
Community work	11	4.0
Transport and Housing	11	4.0
Culture and Leisure	7	2.5
Others	8	2.9
Firm age (years)		
Less than 1	37	13.3
1-2	114	41.0
3-5	95	34.2
6-10	25	9.0
11-20	4	1.4
More than 20	3	1.1
Firm size (number of employees)		
Less than 10	110	39.6
11-49	125	45.0
50-249	30	10.8
More than 250	13	4.7

N=278

Table 3: Results of the CFA

Constructs and Items	**λ**
Financial constraints (α=.786; CR=.791; AVE=.656)	
My firm or organisation is missing the external financial means to accomplish our innovation objectives.	.873
My firm or organisation is missing the external financial means to accomplish our innovation objectives.	.741
Knowledge constraints (α=.804; CR=.808; AVE=.516)	
My firm or organisation is missing R&D staff that is needed to accomplish our innovation objectives.	.707
My firm or organisation is missing production staff that is needed to produce our products or deliver our services.	.620
My firm or organisation is missing technological or specialised knowledge that is needed to develop our products or services.	.813
My firm or organisation is missing market knowledge that is needed to promote products or services into new markets.	.719
Entrepreneurial oreientation (α=.809; CR=.818; AVE=.429)	
We have an attitude of adventure and pro-activeness when faced with uncertainty	.623
We have a strong tendency for high-risk NPD projects which have a chance for very high returns	.581
We strongly emphasise R&D, technological leadership, and innovation	.741
We prefer to adopt a competitive "undo-the-competitors" posture	.668
We prefer to initiate actions for competitors to respond to	.644
We prefer to be a market leader, always first in introducing new products, services, or technologies.	.662
Internal bricolage (α=.806; CR=.807; AVE=.512)	
We creatively recombined existing resource at hand when we face resources scarcity problems.	.759
We would like to use pre-existing resources at hand rather than purchasing materials.	.700
We prefer to employ our knowledge and experiences to use resources at hand and overcome resources challenges.	.725
Our staff have different roles in a work situation to solve lack of labours.	.676
External bricolage (α=.796; CR=.798; AVE=.498)	
We would like to receive funding support via every channel including government, charity, business or other channels.	.724
We would like to combine resources that were not recognised by other organisations to accomplish resources challenges.	.642
We would like to use our pre-existing relationship to access more resources.	.767
We would like to combine and strengthen the networks of consumers, suppliers and other stakeholders to receive more information or resources.	.684
Incremental innovation (α=.750; CR=.750; AVE=.430)	
Products/Services	.710
Methods of promotion	.613
Target markets/customers	.621
Processes	.673
Radical innovation (α=.847; CR=.849; AVE=.585)	
Products/Service	.839
Methods of promotion	.749
Target markets/customers	.695

Processes	.770

Note: α= Cronbach's alpha; AVE= Average Variance Extracted; CR= Composite Reliability.

Model fit statistics: $\chi 2$ (327) =496.033 (ρ<.001); $\chi 2$/df=1.517; CFI=0.938; IFI=0.939; TLI=0.929; RMSEA=0.043.

Table 4: Means, standard deviations, and intercorrelations for the study constructs.

Variables	1	2	3	4	5	6	7	8	9
1. Firm age	1								
2.Firm size	-.016	1							
3.Financial constraint	.146**	-.054	1						
4.Knowledge constraint	.092	-.125**	.378***	1					
5.Internal bricolage	-.012	-.012	.234***	.260***	1				
6.External bricolage	.017	.055	.230***	.219***	.291***	1			
7.Entrepreneurial orientation	-.022	-.014	.269***	.218***	.186***	.159***	1		
8.Incremental innovation	-.012	-.031	.165***	.121**	.218***	.167***	.315***	1	
9.Radical innovation	-.010	-.059	.156***	.192***	.215***	.196***	.340***	.555***	1
Mean	2.47	1.81	3.22	3.22	3.91	4.05	3.52	3.75	3.32
S.D.	0.956	0.809	1.238	1.099	0.963	0.919	0.878	0.875	1.117

** Correlations are significant at the p<0.05 level

*** Correlations are significant at the p<0.01 level.

Table 5: Results of hypothesis testing

Hypothesised paths	Path coefficient	Conclusion
Hypothesis 1a: Financial constraint → Internal bricolage	0.194 **	Supported
Hypothesis 1b: Financial constraint → External bricolage	0.198 **	Supported
Hypothesis 2a: Knowledge constraint → Internal bricolage	0.205 **	Supported
Hypothesis 2b: Knowledge constraint → External bricolage	0.162 *	Supported
Hypothesis 3: Financial constraint → Entrepreneurial orientation	0.249 ***	Supported
Hypothesis 4: Knowledge constraint → Entrepreneurial orientation	0.111 †	Not supported
Hypothesis 5a: Entrepreneurial orientation →Internal bricolage	0.114 †	Not supported
Hypothesis 5b: Entrepreneurial orientation →External bricolage	0.134 *	Supported
Hypothesis 6a: Internal bricolage → Incremental innovation	0.232 ***	Supported
Hypothesis 6b: Internal bricolage → Radical innovation	0.0196 **	Supported

Hypothesis 7a: External bricolage → Incremental innovation	0.160 *	Supported
Hypothesis 7 External bricolage → Radical innovation	0.184 **	Supported

*** p<0.01; ** p<0.05; * p<0.1; † not significant.

Model fit statistics: χ2 (379) =579.194 (ρ<.001); χ2/df=1.528; CFI=0.927; IFI=0.928; TLI=0.916; RMSEA=0.044.

Figure 1: The conceptual model