ABSTRACT

The emerging theory of ‘bricolage’ as a resource behaviour represents an attempt to address the central entrepreneurship research problem of making systematic sense of entrepreneurs that sometimes manage to create significant new economic activity under what appears to be severe resource constraints (Baker & Nelson 2005). However, despite growing interest in bricolage there is little large scale empirical evidence about the effectiveness and outcomes of using bricolage processes while developing innovative outcomes in nascent and young firms. In this research we test bricolage using different forms of innovation using data from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) project. Our results indicate overall positive results of bricolage with all forms of innovativeness. A discussion of the results and recommended future research is provided.

INTRODUCTION

Resources are an essential ingredient for initial survival and subsequent growth in entrepreneurial ventures (Hoegl, Gibbert, & Mazursky 2008) and the availability of the resources is a critical component in nascent and young venture development (Hitt, Ireland, Camp & Sexton 2001). However, most entrepreneurial ventures are characterized by severe resource constraints and as noted by Aldrich, (1999:41) most firms “can’t always get what they want, and certainly don’t always get what they need”. Financial, technical, and human resources are often not available when needed (Bruderl, Preisendorfer & Ziegler 1992), which further shapes venture development and growth.

Currently, a dispute exists within the literature regarding whether and under which circumstances resource constraints can enable or inhibit innovation and subsequent venture development. One stream of literature argues that new firms do not have existing firm knowledge (Cohen & Levinthal 1990), making higher levels of innovation more problematic. In addition, higher levels of innovation require more resources (Rothaermel & Deeds 2006), effectively ensuring that innovation-orientated ventures that face constraints will be less likely to put together the necessary effective solutions, thereby limiting venture performance. Others argue that that ‘necessity is the mother of invention’ and ventures that are created in resource constraints may develop and resource effectiveness remaining flexible and lean with the very little resources they have (Harberger 1959) and these constraints enables, rather than inhibits innovativeness. One promising theory that has emerged to develop a better understanding of how entrepreneurs may cope with resource constraints, while creating something new, is bricolage (Baker and Nelson 2005).
This research aims to contribute to ongoing research dialogue as it deals with the resources constraints and the development of innovative outcomes in a longitudinal setting. The paper is structured as follows: We first evaluate bricolage and then provide preliminary tests of the relationship between bricolage and innovation. More specifically, we test bricolage with innovation as an outcome with four forms of innovation (product/service, promotion, process and market) with three referent categories (new to the world, new to the industry, new to the firm). We test our hypotheses using data from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) project (Davidsson, Steffens, Gordon, & Reynolds, 2008), including 625 nascent (pre-operational) firms and 561 young firms that are operational but less than four years old. In our tests, we make use of the new Davidsson-Baker survey measure of bricolage behavior. We conclude by discussing the theoretical implications of our findings.

BRICOLAGE

Structural anthropologist Levi Strauss first theorised about bricolage and the creative use of available resources in ways they were not originally designed for, by using materials at hand and recombining them to create new and novel responses to challenges (Duymedjian & Clemens Ruling 2010). Bricolage has evolved to be studied in multiple settings (c.f. Baker & Nelson 2005 for an overview) using multiple theoretical lenses and perspectives. More recently defined within entrepreneurship as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson 2003:333). This may include existing resources the firm possesses or accessing discarded, distressed resources considered of little value in the market (Baker & Nelson 2005). It is the use of these idiosyncratic resources that provides the source of “variation” for innovations, with Cunha et al. (2009) suggesting with the “aim of bricolage to generate innovation” (pg 184).

Moreover, bricolage processes and the development of innovative outcomes have been studied in various applications including the development of discontinuous innovation using break-through wind turbine technologies owing to resources combinations (Garud & Karnoe 2005). Additional studies have shown entrepreneurs’ similar reliance on recombining existing resources during post-Soviet transitions in Eastern Europe (Stark, 1996; Smallbone & Welter, 2001). However, in contrast, Ciborra et al. 2002 argue bricolage creates simple, incremental or inconspicuous innovation rather than discontinuous innovation (Anderson 2008) as a consequence of entrepreneurs trying to deal with every day problems. To the best of our knowledge, no empirical tests exist for using bricolage and evaluating innovation forms and what level of novelty exists within these relationships.

INNOVATION

Innovation is considered the cornerstones of continued growth and sustainable competitive advantage in firms (Tushman & O’Reilly 1996) and one of the most important determinants of firm performance (Mone et al. 1998). A recent review of the literature, however, indicates a somewhat fractured approach to its use with increasing numbers of measures, indexes rankings, with limited replicability across industries and different levels of analysis (Crossan & Apaydin 2010). Further, the literature is littered with definitions each concentrating on different innovation forms and levels of classification (Garcia & Calantone 2002). One of the first definitions of the term originated from Schumpeter’s (1934) notion of the “gales of creative destruction” where innovation novelty was stressed: innovation produces 5 classifications of novel outputs or innovation as an outcome: new goods, a new method of production, a new market, a new source of supply and the carrying out of a new organization of any industry. In an recent analysis and synthesis of 525 articles in innovation, Crossan and Apaydin (2010) identify innovation as both a process and an outcome. For the purpose of this research we evaluate innovation in line with Schumpeter, as an outcome.

Dimensions pertaining to innovation as an outcome were further delineated by Crossan and Apaydin (2010) as: Form, including: product or service innovation, process innovation, and business model innovation. Referent which defines the newness of innovation as new to the firm, to the market it serves, or to the industry/world. The magnitude dimension indicates the degree of newness of the innovation outcome i.e. incremental or radical innovation (Gopalakrishnan and Damanpour, 1997). More radical or novel innovation often requires sophisticated resource sets (Rothaermel & Deeds 2006) something that most nascent and young firms have difficulty accessing or acquiring.
NASCENT FIRMS

Nascent firms more often than not, however, face severe resource constraints during venture creation (Shepherd et al., 2000). They may not have access to the necessary resources required for developing innovative outcomes (Teece, 1986). Much entrepreneurial behaviour – and much of the research literature in entrepreneurship – is about “resource seeking” behaviours, that is, it deals with firms attempting to generate ostensibly adequate resources to create innovative outcomes through pursuing an opportunity (Aldrich, 1999). In contrast, others in respond to these resource constraints, may choose to wait for a “better time”, or decline to pursue the opportunity, preferring to have more resources before acting.

In bricolage, however, “making do” includes a bias for action (Baker & Nelson, 2005; Stark, 1989), suggesting that bricoleurs (individuals that engage in bricolage) construct and pursue opportunities in spite of these constraints, not waiting for the perfect bundle of resources to meet the task at hand. After committing to the creation of a firm and during this initial stage of defining what the firm is to become, bricolage may be considered as the “the only thing we can reasonably do” (Lanzara, 1999:347). In this case, necessity (Ferneley & Bell, 2006) resiliency (Weick, 1993) and a determination to get the job done (Berchetti & Hulsink, 2006) often leads firms to critically analyse what resources are available and ways these existing resources may be combined to develop innovative outcomes.

During venture creation, firms experiment with existing resource sets, tinkering with ideas (Turkle, 1995), resource combinations, knowledge and meanings (Orr, 1986) to fuel change and enable novelty in both the way the firm evolves and the outcomes they may produce. Using and establishing dynamic capabilities (Teece et al., 1997) and skills in resource combinations, resources are assembled, tested, discarded, substituted and configured and reconfigured to produce outcomes. If objects do not fit the sketched ideas or notion of what it should be or how it should function or be applied (Baker, 2007) resources are restructured on a local, often tacit basis from existing materials. With each iteration of experimenting and tinkering, firms develop greater in depth knowledge of existing resources and what may be possible in resource combinations. This design reuse (Ettlie & Kubarek, 2008) further fuels more experimentation and learning often going back to the drawing board equipped with a more depth understanding of resource function, form, and flexibility enabling innovative, intuitive outcomes.

Therefore, we hypothesize that:

H1: Bricolage has a positive effect on overall innovative outcomes in the emerging stage of firm creation.

Resource combinations, however, are shaped in part by the potential limitations of not only the existing resource sets but the flexibility of the resources themselves (Sanchez, 2005). Simply, whilst a firm may have a clear idea of an innovative outcome, a lack of fungability in existing resources combinations may hinder a firm’s ability to do create those outcomes. Owing to this we believe that those innovations that or more reliant on tangible or physical objects may be less likely to develop innovative outcomes owing to it being physically impossible to combine resources to create new functions and as such

H2: Bricolage has a negative effect on developing higher levels of product innovation in the emerging stage of firm creation.
One critical aspect of bricolage is the in-depth knowledge of available resources. This provides an understanding not only of what things are, but of how they can be related to one another (Duymedjian & Clemens Ruling 2010) providing flexibility on how they are used and combined, (Mosakowski 2002) and based on the seminal work of Penrose (1959) what bundle of services can be produced. Recent research by Baker 2007 highlights business activities that are not visible to end markets (i.e. sourcing/production innovation) may invoke greater experimentation. In addition, production and sourcing innovation may rely on more tacit resources will benefit from resource flexibility and as such

Therefore we believe that

H3: Bricolage has a positive effect on developing higher levels of sourcing/production innovation in the emerging stage of firm creation.

Marketing provides insight into consumer behaviours and market selection which shapes what innovation is developed. As bricoleurs develop outcomes in situ (Büscher et al. 2001) and often develop intimate knowledge through close ties with customers (Baker and Nelson 2005). This codesign of products and services in conjunction with customers may highlight current shortcomings of existing offerings leading to higher levels of innovation as such we believe that

H4: Bricolage has a positive effect on developing higher levels of promotion in the emerging stage of firm creation.

As nascent firm lack of sales this may produce an overly optimistic idea of how sophisticated and novel offerings are owing to overconfidence due to greater cognitive biases (Baron 2004; Casson 2010). As such, we hypothesise that

H5: Bricolage has a positive effect on developing higher levels of market innovation in the emerging stage of firm creation.

**YOUNG FIRMS**

As firms develop bricolage gradually transform firms to “higher degrees of functionality” (Garud & Karnoe 2003: 296) in that they become more cognisant of markets and ways of doing business. As the knowledge of bricoleurs becomes more developed, through new connections (Kalogerakis, Luthje & Herstatt 2010), applications and new combinations, firms become have the ability to become more versatile and more broad with applying bricolage with more encounters of ideas, objects, or applications. This enables firm members to develop an ability to sense potential uses and to implement another important aspect of bricolage: rule breaking through which firms overcome the biases of existing patterns of meaning, ignoring precedent, rules and values assigned to resources at hand. (Daft & Weick 1984; German & Barrett 2005). Rule breaking enables variation in design, creation and use of resources (Bhide 2000; Halkier & Gjertsen 2004). Young firms using bricolage sit in a perfect position: they have the benefit of a better picture and understanding of their markets (potentially owing to initial sales (Baker & Nelson 2005) and more likely have accumulated and developed more extensive resource set from which to create innovative outcomes. Further, they still remain relatively flexible often not suffering from institutional bonds, path dependence (Garud & Karnoe 2003), they lack organizational inertia and the “habitual way of doing things” (Ciborra & Lanzara 1994) often experienced by established firms that have more structured routines and core rigidities (Hannan & Freeman 1984; Nelson & Winter, 1982, Mowsaki 2002): enabling these firm to continue to experiment and tinker. Owing to this we hypothesize

H6: Bricolage has an overall positive effect on innovative outcomes once the firm is up and running.
Like nascent firms, young firms suffer from fungability issues of resources that are reliant on more tangible resources. This is even more relevant in young firms than nascents, as they now have “skin in the game”, and have better market knowledge. Owing to this we believe that those innovations that or more reliant on tangible or physical objects may be less likely to develop innovative outcomes. More fungible resources including tacit resources (seen in production/ sourcing innovation) will benefit from this flexibility and as such

H7: Bricolage has a negative effect on developing higher levels of product innovation once the firm is up and running.

H8: Bricolage has a positive effect on developing higher levels of production/sourcing innovation once the firm is up and running.

One way entrepreneurial young firms further extend and develop their resource sets is through collaboration (Brown & Duguid 1991), leveraging relationships with customers and network partners (Baker & Nelson 2005). Caron et al (2000) describes this as “leaving a space for final users” (pg 76) enabling prototyping and innovative outcomes more in line with customer needs. Further, through a more in-depth knowledge of their customers, promotions can be highly targeted, specific and relevant. Such promotions may use a variety of techniques, enabling higher levels of promotion novelty.

H9: Bricolage has a positive effect on developing higher levels of promotion innovation once the firm is up and running.

H10: Bricolage has a positive effect on developing higher levels of market innovation once the firm is up and running.

Sample and Data

The data for this research was drawn from the CAUSEE project, a 4-year longitudinal study studying firm emergence (Davidsson, Steffens, Gordon, & Reynolds, 2008) administered through telephone surveys. This study builds on the general empirical approach, some contents and lessons learned from the Panel Study of Entrepreneurial Dynamics (PSED) studies in the US (Gartner, Shaver, Carter, & Reynolds, 2004; Reynolds & Curtin, 2008).

In the CAUSEE main study, 28,383 adults (with equal male/female representation) from randomly selected households completed a screening interview for eligibility. Like the PSED, in order to qualify for inclusion as nascent and young firm in the survey, the respondent first had to answer affirmatively to at least one of the following questions:

1. Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?

2. Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?

3. Are you, alone or with others currently the owner of a business you help manage, including self-employment or selling any goods or services to others?

The nascent respondents to be eligible also had to confirm that:

- They were (or intended to be) owners or part owners of the nascent firm.
- They had undertaken some tangible “start-up behavior” e.g looking for equipment or a location organizing a start-up team within the last 12 months.

If respondents did not answer affirmatively to the above questions they were deemed under qualified and did not continue to the full survey. Further, if nascent confirmed that revenues had exceeded expenses for six of the past 12 months they were deemed overqualified and screened as a young firm.
Young firm respondents also had to confirm that:

- They were owners or part owners of the young firm.
- They confirmed that they started “trading in the market doing the type of business you are currently doing” in 2004 or later.

This process yielded 977 Nascent Firms (NF) (3.4%) and 1,011 Young Firms (YF) (3.6%). These were directed to the full length interview (40-60 minutes) either directly following the screener or later by appointment. The full length interviews were completed by 625 NF and 561 YF cases (representing response rates of 62% and 54% of eligible cases) that are used in our analyses. Of the NF, we were able to recontacted and interview 493 a year later (79% response rate), of which 328 were still continuing businesses. For YF, we reinterviewed 473 (84% response rate) of which 385 were still continuing businesses. Hence our random samples for analysis are 328 NF and 385 YF.

As CAUSEE is a 4 year longitudinal survey it enables us to study nascent and firm development as it happens. This paper analyses data from the two of these four years uses both nascent and young firms to illustrate firms at the different stages of firm development.

**MEASURES**

**Innovation**

We used an elaboration of the scale developed by Dahlqvist (2007) which measures that captures innovativeness of the venture idea. Innovation form was assessed in terms of (1) product/service, (2) method of sourcing/production, (3) method of promotion and (4) type target market/customers. Following Dahlqvist (2007) each of these referents were assessed as a) no novelty; b) substantial improvement over alternatives existing in the served market; c) entirely new to the served market; d) entirely new to the world (the wording was slightly different for the type of market/customer dimension but retained the four-level structure) (Ettlie and Subramaniam, 2004). This more comprehensive measure is in line with other literature reviews that argue for more broad definitions in identifying innovation (Garcia & Calatone 2002). Combining types and levels of innovation for the overall measure, we arrived at a summated, continuous scale with a theoretical range from 0-16.

In the case of evaluating individual forms of innovation, the new to the world and new to the industry referents were collapsed in the ordinal regression techniques to assist in more consistent sample sizes.

Note that our innovativeness measure builds on formative scale construction logic and that factor and Cronbach’s Alpha tests thus do not apply. That is, these scales consists of sub-dimensions that all contribute to the total but where there is no reason to assume a total, latent level of “innovation” causes the variance in the indicators, and thus no reason to expect that these should necessarily be positively correlated (Mackenzie et al., 2005; Diamantopoulos & Winklhofer 2001).

**Bricolage**

We used a newly developed bricolage instrument and scale to measure bricolage. As a new instrument, this required extensive development based on prior grounded research and the multidimensional Baker and Nelson (2005) definition. Its development followed standard protocols for scale development (Brown, Davidsson & Wiklund, 2001; DeVellis, 2003).

One key challenge was the need to design the construct to enable its applicability across multiple industries and its use in heterogeneous firms and stages of firm growth. We began by writing a large number of items based on the literature. We then reduced the number of items through a variety of processes, including review by other scholars familiar with the entrepreneurship and bricolage literatures and by two rounds of pilot testing using a questionnaire.
After extensive pretesting and screening, 9 items were developed to tap each element of the Baker and Nelson’s (2005: 333) definition of the bricolage: “making do by applying combinations of the resources at hand to new problems and opportunities.” In the questions, we used a response scale where 1 means “never” and 5 means “always” (rather than levels of agreement) in order to reflect the behavioral nature of the phenomenon.

After initial tests, we decided to drop one item due to a negative inter-item correlation in one subsample as well as conceptual concerns regarding details of the item wording. The remaining 8 items yield a single factor in an exploratory factor analysis and a Cronbach alpha of .82.

**Controls**

We use four categories of control variables. The first category aims to capture the overall level of resources available for the firm. Specific variables include time in the business and running a concurrent or parallel firm. The second group of control variables aims to capture some of the heterogeneity concerning the ability the firm has to develop resources; these include teams (Hambrick & D’Aveni 1992) (versus solo dummy) and human capital of the start-up team (Aspelund et al. 2005): education (number of owners with a university degree) and management experience (number of years). The third group of control variables relate to future expectations of the firm. The specific variables include expectation of revenue in 5th year of commencement, expectation of number of staff in 5th year of commencement, and likelihood of other businesses participating in the survey continuing in their 5th year. The last group of control variables account for various characteristics. These include service (versus product dummy) and industry controls.

**DATA ANALYSIS**

In this paper, our aim is to explore the relationship between bricolage processes and innovation. To commence, we investigated Hypothesis 1 and Hypothesis 6 using the dependent variable of overall novelty in wave through OLS regression using the two subsamples of both Nascent and Young Firms.

As a first step in the OLS regression, we introduce the wave 1 control variables and the second and final step our key variable of interest, Bricolage (measured in Wave 1), is introduced. Table 2 provides a Summary of the Models. The remaining hypothesis for Nascents (Hypothesis 2 to 5) and Young (Hypothesis 7 to 10) firms we applied Ordinal regression techniques.

Ordinal regression is a generalized linear model of the form \( \text{link}(y_{ij}) = \theta_j - \{\beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k\} \)

where \(y_{ij}\) is the cumulative probability for the \(j\)th category, \(\theta_j\) is the threshold for the \(j\)th category, \(\beta_1, \ldots, \beta_k\) are the regression coefficients, \(x_1, \ldots, x_k\) are the predictor variables, and \(k\) is the number of predictors (McCullagh, 1980).

In the ordered logistic model, it is assumed that the relationship between each pair of outcome groups (i.e., innovation) is the same. In other words, this model is equivalent to \(j-1\) binary regressions (where \(j\) is the number of levels of the dependent variable) with the critical assumption that the slope coefficients are identical across each regression (proportional odds assumption or parallel regression assumption). The ordered logistic model simultaneously estimates \(j-1\) multiple equations; as the dependent variable has 3 outcomes, it has 2 equations: (1) compares category 1 to 2 and 3; (2) compares category 1 and 2 to 3. In order to test the parallel regression assumption for each variable individually, Wald test by Brant (1990) was used. If the test is statistically significant, this provides evidence of the violation of the hypothesis and indicates that the ordered logistic model may not be the most appropriate specification to model the propensity to collaborate. In all hypothesis tests, the Brant test indicates that the parallel regression assumption has not been violated, therefore the ordered logistic is the most appropriate model to be used (Tartari 2009).
RESULTS

Linear OLS Results

The results of OLS regression analysis highlight bricolage as an important process in developing entrepreneurial firms to produce higher levels of innovation. We find that bricolage has a significant positive effect on a firm’s overall innovation (NF = 0.345, p<0.05) with a stronger positive effect on overall levels of innovation in Young Firms (YF:  = 0.746, p<0.001), confirming H1 and H6. Refer Table 1 for OLS Results

Ordinal Results

Nascent Firms

Ordinal Regression analysis was conducted to predict levels of innovation modes and the use of bricolage in nascent firms. The results are as follows:

For product/service innovation a test of the full model against a constant only model was statistically significant indicating that predictors as a set reliably distinguished between higher and lower levels of innovation (chi square=20.70 p<.023 df=11 n=582). In particular, a one unit increase in bricolage prevalence increases the odds of developing the highest level of breakthrough product novelty (new to the world/industry) versus those more incremental product novelty by .24 holding all other variables constant, rejecting H2. These results indicate bricolage prevalence has a positive, not negative effect on product innovation referent categories (i.e. new to the world vs no novelty) in the emerging stage of firm creation. For production sourcing innovation, the overall model was not significant. However, changes in bricolage was statistically significant: a one unit increase in bricolage increases the odds of developing the highest level of breakthrough production sourcing innovation (new to the world/industry) by .26 versus those more incremental production sourcing novelty by .26 holding all other variables constant, confirming H3.

For promotion innovation in nascent firms, the full model tested was statistically significant (chi square=11.23 p<0.05 df=11 n=582). In particular, a one unit increase (in bricolage prevalence) increases the odds of developing the highest level of breakthrough promotion innovation (new to the world/industry) versus those more incremental promotion innovation by .32 holding all other variables constant, confirming H4. Bricolage was the most relevant factor influencing novelty in the model. For market novelty the full model was not statistically significant and a one unit increase in bricolage prevalence) was only marginally significant. The model indicates a one unit increase in bricolage increases the odds of developing the highest level of breakthrough market innovation (new to the world/industry) versus those more incremental or limited market novelty by .33 holding all other variables constant. However, this was not statistically significant, rejecting hypothesis H5.

Young Firms

The results of the ordinal logistic regression indicated more statistically significant results for the use of bricolage on innovation referent categories in comparison to the nascent firms. All models used and bricolage were statistically significant. For product/service innovation the full model against a constant only model was statistically significant (chi square=19.76 p<.000 df=11 n=554). In particular, a one unit increase in bricolage increases the odds of developing the highest level of breakthrough product innovation (new to the world/industry) versus those more incremental product innovation referent categories by .37 holding all other variables constant, rejecting H7. Whilst we hypothesised a negative relationship, a positive relationship was found in this analysis.
In production sourcing innovation tests, the full model indicated that predictors as a set reliably distinguished between higher and lower levels of innovation (chi square=24.46 p<.006 df=11 n=554). The odds of developing the highest level of breakthrough production sourcing innovation (new to the world/industry) versus those more incremental product novelty through a one unit prevalence change in bricolage increase by .54 holding all other variables constant, accepting H8. For promotion innovation the test of the full model against a constant only model was statistically significant indicating that predictors as a set reliably distinguished between higher and lower levels of innovation (chi square=23.08 p<.010 df=11 n=554). In particular, a one unit increase in bricolage prevalence increases the odds of developing the highest level of breakthrough product novelty (new to the world/industry) versus those more incremental product novelty by .47 holding all other variables constant, accepting H9.

For market novelty a test of the full model against a constant only model was statistically significant indicating that predictors as a set reliably distinguished between higher and lower levels of innovation (chi square=43.20 p<.000 df=11 n=554). In particular, a one unit increase in bricolage prevalence increases the odds of developing the highest level of breakthrough product novelty (new to the world/industry) versus those more incremental product novelty by .75 holding all other variables constant, accepting H10. Bricolage represents the most relevant factor influencing 3 modes of innovation (production, promotion and market innovation) in young firms.

Discussion

Our aim in this paper was to systematically study bricolage effects on early stage innovation. We proposed that bricolage would have an overall positive effect on innovative outcomes for both nascent and young firms. This was confirmed in the OLS results in both samples. Contrary to the hypothesised negative relationship between bricolage and product innovation owing to issues in resource fungibility, we find positive relationships in both nascent and young firms. In considering this result, we believe this may be caused by a potential moderation of resource tacitness effects. In our study, all of the other hypothesised relationships between bricolage and production/sourcing, promotion and market innovativeness were confirmed.

In considering the development of innovativeness it is important to recognise it is a term often used by third parties to denote the valued qualities of novel outcome i.e high levels of innovation produces better firm outcomes than lower levels of innovation. It is important to note, however this may not be the case and any level of innovation whether through an act of bricolage or resource seeking behaviours is in a very true sense ‘in the eye of the beholder’. Attributing normative attributes that higher degrees of innovation are better may not be the case. Higher levels of innovation are not synonymous with market acceptance, purchasing of firms offerings, or quality of firm offering. Higher degrees of innovativeness may come at a cost in this critical stage of development, requiring too much from the firm and using existing resources which the firm can ill afford to use. This may have detrimental impact on subsequent firm development. Expected future empirical research will consider these firm outcomes results.
Table 1 OLS Summary For Overall Innovation

<table>
<thead>
<tr>
<th>Model</th>
<th>Nascent Firms</th>
<th>Young Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Main Effect</td>
</tr>
<tr>
<td>Services (or Products)</td>
<td>-.640**</td>
<td>-.632*</td>
</tr>
<tr>
<td>Expected Employees 5th Year</td>
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<td>.002***</td>
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<tr>
<td>Human Capital Business Experience</td>
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<td>.016†</td>
</tr>
<tr>
<td>Bricolage</td>
<td>.345 **</td>
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</table>

<table>
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<th>Model Summary</th>
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<tr>
<td>R squared</td>
<td>.070</td>
<td>.075</td>
<td>.069</td>
<td>.117</td>
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<tr>
<td>F</td>
<td>4.632</td>
<td>4.570</td>
<td>4.160</td>
<td>6.148</td>
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<td>Change in R Squared</td>
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<td>.005</td>
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<tr>
<td>Change in F</td>
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<td>1.988</td>
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† p < 0.1
* p<.05
** p<.005
*** p<.001

Notes: Only statistically significant relationships shown. Tests are two-sided for control variables, and one-sided for hypothesized variable. We report the summary statistics for the final models and the change between the model including all control variables and the final model also including Wave 1 Bricolage.
References


