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# THE ROLE OF HUMAN AND SOCIAL CAPITAL IN BUSINESS MODEL ADAPTATION OF NEW VENTURES

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## ABSTRACT

Practitioners have long since considered the business model an important competitive tool. More recently, academic researchers have shown that it contributes independently to firms' economic performance. It stands to reason that constructive adaptation to elements of the business model should be an important driver of competitive advantage and performance. We conducted a longitudinal study of new ventures discovered via a large random survey of households. We argue that business model adaptation reflects organisational learning and that human and social capital are important antecedents of such adaptation in new ventures. Our findings support this view. They also show, curvilinear and interactive effects.

## INTRODUCTION

Getting the business model right is "of exceptional importance to managers" (Baden-Fuller, Demil, Lecoq and MacMillan 2010: 143), because it makes an important contribution to the firm's economic performance (Malone, Weill, Lai, D'Urso, Herman, Apel and Woerner 2006; Zott and Amit 2007; Zott and Amit 2008). Hence purposeful adaptation of the business model can provide competitive advantage and lead to superior performance or ensure survival (Andries and Debackere 2007; Björkdahl 2009), in the face of changing market conditions (Teece 2007 ; Teece 2010) or internally driven changes (Chesbrough and Rosenbloom 2002).

The introduction of new technologies, or other innovation, often also needs a business model different to the mainstream in order to be successful (Chesbrough 2007; Björkdahl 2009). This requires either adapting elements of the extant business model (Björkdahl 2009) or running multiple business models within the organisation (Markides and Oyon 2010). Developments in very mature markets can also erode the value of existing business models, hence require adaptation by incumbents (McGrath 2010; Sabatier, Craig-Kennard and Mangematin 2012). Firms that decide to adapt then navigate a process of experimentation (Chesbrough 2010; Doz and Kosonen 2010; Sosna, Trevinyo-Rodriguez and Velamuri 2010). Through experimentation, they learn, whether by assessing the outcomes of their own investments, or from competitors' moves in the marketplace (McGrath 2010).

Past research tells us that not all firms adapt successfully, nor even commence a process of adaptation (Linder and Cantrell 2007; Bock, Opsahl, George and Gann 2012). Large established firms have difficulty adapting, possibly due to specificity of the business model. One very important study found "no significant relationship between prior change success and business model innovation efforts" which tells us that the lessons learnt elsewhere might be difficult to transpose to the business model (Bock et al. 2012: 296). Past research on the business model is generally nonaccretive and either descriptive or only incidentally covers adaptation (Sosna et al. 2010; George and Bock 2011; Zott, Amit and Massa 2011).

Previous studies on business model adaptation are based on case studies of large established firms. Yet, the entrepreneurship literature has highlighted distinctive features of new ventures. They "exist in stark contrast to the larger incumbents in an industry" (West and Noel 2009: 5) display

greater flexibility and speed of execution, relying heavily on founders' prior market knowledge (Nicholls-Nixon, Cooper and Woo 2000 ; West and Noel 2009).  Similarly, past research on business models also suggests that adaptation "may proceed differently in start-ups compared to established organizations" (Sosna et al. 2010: 403.)  In addition, Chesbrough and Rosenbloom (2002: 552) posit that "adaptation appears to be either more highly motivated or more easily implemented in independent [ie spinout/SME] ventures than in established firms."  There are very few systematic quantitative studies in the literature (examples: (Bigliardi, Nosella and Verbano 2005; Malone et al. 2006; Zott and Amit 2007; Zott and Amit 2008; Bock et al. 2012)).  They are sectorally based and the one study where business model innovation is important (Bock et al. 2012) treats it as a moderator between structural reconfiguration and structural flexibility, rather than the dependent variable.  Thus, theory based research on business model adaptation in new ventures is particularly underdeveloped.

We contribute to filling this gap by generating methodologically sound longitudinal observations. We take an organizational learning perspective, in new ventures.  In particular, the main research question for this study is: What is the impact of different aspects of social capital and human capital on business model adaptation in new firms across the economy?  By answering this question, our work makes several contributions to the literature.  First, we add to the organizational learning literature.  We apply the theory of human capital and social capital to view business model adaptation as a phenomenon reflecting organizational learning.  Second, we contribute new knowledge to the research task of understanding what factors facilitate or impede business model adaptation.  We do so in the entrepreneurship context.  And we apply statistical evidence based on a large economy-wide panel study.  We are not aware of such an approach in the top academic outlets.  Our approach allows us to generalise the results across sectors.  Finally, we expand their boundary conditions for the theory of human capital and social capital by applying them to the new research topic of the business model and we provide partial support for their interactive effect, which is often hypothesised but rarely reported.

The paper proceeds as follows.  First, we review relevant literature on organisational learning and social and human capital to develop our hypotheses.  Then, we outline our method and present our results.  This is followed by a discussion of implications for theory, practice and further research.

## THEORY AND HYPOTHESES

There are four broad schools of organisational learning: economic, developmental, managerial, and process (Bell, Whitwell and Lukas 2002).  The economic view has tended to focus on learning curves, or experience curves, where cumulative experience in production processes can bring cost savings.  It is mostly backward looking, often relying on past success or failure as a source of learning (Gunther McGrath 1999; Minniti and Bygrave 2001).  The developmental approach sees organisations taking a pro-active learning attitude, as in the dynamic capabilities literature.  It theorises that learning changes in manner and content, based on age and size (Sinkula 1994), as well as the history of the organisation (Cohen and Levinthal 1990; Shane and Venkataraman 2000).  For example

> ... typically, newly conceived organizations possess congenital knowledge that focuses on generalized, rationalized concepts of how markets work with less situation-specific knowledge than they would desire, because such knowledge often comes only with trial and error. (Sinkula 1994: 38)

In the managerial school, the organisation sets up systems, processes or a culture to foster learning. Finally, the processing school of thought highlights the importance of individuals, such that different groupings of individuals will lead to different learning patterns (Brown and Duguid 1991; Ployhart and Moliterno 2011). This study proposes the developmental perspective as being more closely aligned to business model adaptation processes in new ventures. We apply theoretical components of social capital and human capital to gain new insights.

**Social capital**

Social capital can enhance organisational advantage through its effect on learning (Brown and Duguid 1991; Nahapiet and Ghoshal 1998) especially for managers "with few peers" within the firm (Burt 1997: 345). This is the situation often found in new ventures struggling with the liability of newness (Stinchcombe 1965). Discussions about social capital distinguish between strong, bonding ties and weak, bridging ties in one's networks.

Bridging ties connect individuals to networks with which one has relatively few interactions, where the sense of common purpose is fairly diffused. Information flows tend to be slower, but can reach out more broadly making them a more useful means of collecting and disseminating novel ideas and practices (Rogers 1962 ). Useful bridging ties can accelerate learning especially when markets or technologies are uncertain (Teece 1996), or the young firm has limited accumulated human capital (West and Noel 2009).

Bonding ties occur when there are high levels of camaraderie and trust (Becker and Murphy 1992; Cope 2011). Information flows rapidly, and there is strong positive reinforcement of behaviour (Sobel 2002). This can lead to excessive reliance on internal communication hence impede adaptation (Kautonen, Zolin, Kuckertz and Viljamaa 2010). That said, networks from personal life (bonding ties) can interact with those from more arm's length business relationships (bridging ties) (Payne, Moore, Griffis and Autry 2011) and help integrate new material discovered through bridging activities into the firm's thinking and into action (Tiwana 2008). This occurs because the stronger bonding ties carry a higher degree of trust and common understanding of history and objectives.

Because of the relative lack of rigorous academic research on the topic, discussion around business models and their adaptation is more likely to be heard in business-related networks. In fact, there exist online networks devoted to discussing issues related solely to business models. Social capital exposes the firm's members to new ideas and actions. The entrepreneur can learn about different business models that are better suited to the firm's desired outcomes. They can also learn about how to implement business model adaptation effectively. These are particularly important contributions that social capital can make to constructive business model adaptation.

Excessive networking is a risk, however, if it leads to loss of control of operations and strategic direction (Sullivan and Marvel 2011; Pierce and Aguinis 2013). We therefore hypothesise

> H1a     With greater component of family and friends in the new venture founding team, business model adaptation will fall
>
> H1b     Greater use of network connections of the bridging type will lead to greater business model adaptation, with diminishing returns
>
> H1c     Having more family and friends in the founding team will facilitate the translation of ideas gained from bridging ties into business model adaptation

**Human capital**

Human capital is both an important driver and recipient of organisational learning. It comprises "the resources in people" (Becker 1964: 1) and is typically taken as the accumulated stock of knowledge from certified and experiential learning (Arrow 1962; Brown and Duguid 1991). Past research has found that prior stock of knowledge allows learning to occur from new information and the uneven distribution of such stock across the economy impacts on how the information is processed and on entrepreneurial outcomes (Shane 2000; Davidsson and Honig 2003). These higher cognitive abilities should also facilitate business model adaptation. There are three main steps in the process.

First, a firm with greater human capital should be better able to process and absorb new data or information regarding mismatches between its business model and its desired market status. Second, it should be better able to reach a conclusion about improvements to the business model. Third, it should better convert knowledge into action, for a closer match of the firm's business model with the market it aims to meet. Empirical evidence on the relationship between education and returns is not uniform. In the entrepreneurship literature, education has been found to relate differently to economic performance (Haber and Reichel 2007), dynamic capabilities (McKelvie and Davidsson 2009), or creation vs exploitation in new ventures (Davidsson and Honig 2003). This is consistent with the view that the various factors contributing to bounded rationality (Simon 1955; Nelson 2008) will eventually "tend to make it harder to pack more knowledge into a person without running into diminishing returns" (Becker and Murphy 1992: 1150).

We have broadly explicated how human capital should impact upon business model adaptation. In his seminal work, Becker (1964) distinguished between generic and specific forms of human capital. Generic human capital can be applied across domains with low switching costs and loss of returns (Becker 1964; Reed and De Fillippi 1990). Specific human capital is less easily transferred, precisely because its value is more specific to particular settings. We now draw hypotheses based on these theoretical categories.

Greater depth and breadth of *generic human capital* enhances the ability to learn. Through this mechanism, it provides a larger platform on which to attach stimuli from disparate sources, hence affords the capacity for more radical, or swifter adaptation (Marvel and Lumpkin 2007). Broad understanding of market dynamics helps, because:

> ... firms that develop a higher-quality stock of context-generic human capital also may be more able to adapt ... to environmental dynamism and change (Ployhart and Moliterno 2011: 143)

For example, greater exposure to international cultures and markets through periods of work or study abroad can open one's mind to different ways of behaving. This can have a lasting effect on the firm's actions (Autio, Sapienza and Almeida 2000). More years of general management experience provide a more diverse palette of experiences from which to recognise new patterns or opportunities (Marvel and Lumpkin 2007). On the other hand, prior experience in large, established firms should be detrimental to the extent that new ventures are different, as previously discussed. The executive with large corporate experience will be used to having resources and established structures and routines as a support base, hence especially struggle with the liability of newness. We therefore hypothesize:

> H2a    Owners' greater generic human capital in the form of international experience and general management experience will lead to greater business model adaptation in new ventures, with diminishing returns
>
> H2b    Owners' prior managerial experience in large, established corporations will reduce business model adaptation in new ventures
>
> H2c    Higher levels of generic education in the leadership team will increase business model adaptation in new ventures

Because of its closer relevance to particular circumstances, *specific human capital* is likely to have more immediate impact on behaviour and performance. In the context of this study, specific human capital can be defined to include any elements that could help the new venture recognise the desirability of business model adaptation and bring it to fruition.

Formal classes in business disciplines make up the education component of specific human capital. Theories from these disciplines can provide parsimonious frameworks within which to analyse, process and convert data and information into knowledge and action. This might be of limited value for two reasons. First, the novelty of the business model concept in academic research means there is very limited theory specifically developed to aid design and adaptation of business models (McEvily, Das and McCabe 2000). Second, the unifying nature of the business model makes it difficult for research and teaching to cross the disciplinary boundaries (Chesbrough and Rosenbloom 2002). The entrepreneur and their helpers would therefore need to re-interpret their business and managerial related education for business model purposes.

Various forms of experiential learning can add to specific human capital. Time spent in the same market space, will expose one to idiosyncrasies that would take a new comer longer to discern (Marvel and Lumpkin 2007; West and Noel 2009). As a result, experience in the specific industry of the current venture can allow greater capacity to maintain a venture alive for longer, if the entrepreneur can learn and act upon the learning (Shane 2000). Owners' prior entrepreneurial experience contributes to specific human capital, because of the distinctiveness of new ventures. Over time, decisions that have produced successes would be repeated and those that produced failures would be discarded (Minniti and Bygrave 2001). Enacting adaptation in a new venture might then depend on whether the decision maker's specific business experience comes from other start-ups or from more established firms (West and Noel 2009).

Relevant knowledge may be distributed across an organisation (Brown and Duguid 1991). It is therefore important that human capital embodied in its members be accessible to the firm. In other words, an employee's experience can contribute to the firm's learning, if the new venture can draw upon it. This is especially relevant to early stage firms relying on few and unsystematised resources (McKelvie and Davidsson 2009; Bradley, Aldrich, Shepherd and Wiklund 2011).

All these forms of experiential learning can also create a dominant logic that inhibits adaptability (Leonard-Barton 1992; Burgelman and Grove 1996; Pennings, Lee and Van Witteloostuijn 1998). Indeed, Delmar and Shane (2006) argue that experience has nonlinear effects on new venture performance, but find a different impact on survival and sales outcomes. We therefore test:

> H3a    Higher levels of specific education are associated with greater business model adaptation in new ventures
>
> H3b    More same-industry experience will lead to greater business model adaptation in new ventures, with the positive effect declining as a function of experience

H3c      Owners' participation in a larger number of prior start-ups will lead to greater business model adaptation in new ventures, with diminishing returns

H3d      Having access to greater specific human capital in the form of owners', employees' and other non-owner helpers' work experience that contributes to specific business functions will increase business model adaptation in new ventures, with the positive effect declining as a function of experience

**Interaction between human capital and social capital**

Past research hypothesises complementarities between human and social capital (Nahapiet and Ghoshal 1998; Ployhart and Moliterno 2011). It follows that their interaction should also have an impact on business model adaptation. When entrepreneurs discover a new business model through their network, they need the capacity to analyse its value for their own situation and to implement any decision they take. A greater stock of human capital will help gain more value from the social capital than lower levels of human capital. Therefore, we hypothesise

H4a      There is a stronger positive relationship between bridging social capital and business model adaptation for those with high levels of human capital than for those with low levels of human capital

H4b      There is a weaker negative relationship between bonding social capital and business model adaptation for those with high levels of human capital than for those with low levels of human capital

## METHODS

**Source of data**

Data are drawn from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) which adopts a methodology developed by the Panel Study of Entrepreneurial Dynamics (PSED) (Gartner et al. 2004; Reynolds 2007). Telephone contact of a random sample of 30,105 households in Australia, generated 1,186 new ventures in its first wave (Davidsson, Steffens, Gordon and Reynolds 2008). Interviews were conducted repeatedly over four years. In wave four, 382 respondents were asked questions about their firm's business model.

This design deals with two important sources of selection bias. First is the danger of sampling from an incomplete population, or a non-random selection of a complete population (Martinez 2011) say, when using public registers, because not all new ventures are recorded. The second source is sampling on the dependent variable (eg successful firms, to find sources of success) or when using selected empirical settings (eg a particular industry) (Denrell and Kovács 2008).

These problems can be solved by sampling the entire population of households and by following events longitudinally (Denrell and Kovács 2008; Martinez 2011). Both practices were adopted for this study. We have temporal separation of dependent and independent variables (Scandura and Williams 2000) and varied question type over a lengthy interview (Podsakoff, MacKenzie, Lee and Podsakoff 2003), in a theory-based model. Thus, our design aids inferences of causality.

**Measures**

**Dependent variable**

The survey script instructed interviewers to introduce the business model thus

> I would now like to ask some questions about the characteristics of your 'business idea', or 'business model'. By 'business idea' and 'business model' we here mean your core ideas about things like What you are going to sell; who you will sell it to; how you will sell it, and how you will acquire or produce what you are going to sell.

In waves 2-4 we also asked about adaptation of the elements of their business model:

> For each of the following statements I would like to know whether there has been any *important change during the last 12 months* and, if so, roughly how many changes there have been of that kind. [emphasis in original]

Possible answers ranged from No/0 to Yes/5+. We drew our dependent variable from the answers to wave four. We aggregated the number of changes for each element of the business model. The raw data were then augmented by 1 and a log-normal transformation taken.

**Independent variables**

Human and social capital were operationalised using variables for each theoretical category (ie generic/specific, bridging/bonding.) Some are formative measures (Leonard-Barton 1992) constructed as a combination of several items in the database, typically as an index consisting of a count of the relevant components (McKelvie and Davidsson 2009). Others are single item measures. Observations were mostly taken in wave one, with some from wave two.

We asked questions about the ownership team's collective *generic experience*: years of general management experience; whether anybody had worked in management in a large corporation for more than a year (dummy variable); number of countries in which all owners had either worked or studied as an adult for a period greater than three months. Our measure of *generic education* is the percentage of owners with any postsecondary qualification.

Questions relating to the ownership team's collective *specific experience* asked about: number of years in the same industry as the current new venture; number of prior start-ups created as owner or part-owner. Further, we constructed an index to capture how the firm's prior work experience was useful to the new venture. Respondents were asked whether, on the basis of work experience, they or any other owner could help the business across five functional areas. For the same functional areas, we asked if any other unpaid, non-owner helpers had made "important contributions." In wave 2, we also asked whether employees or other paid helpers had made important contributions in the same areas, during the previous year. Similar variables have been labelled Business Skills Index (Haber and Reichel 2007) or comprehensiveness of knowledge (Sullivan and Marvel 2011) but generally denote a larger stock of human capital, the higher the index count. This firm work experience index has a range of 0-20.

To measure *specific education*, we asked whether any of the owners could help the business in certain areas, based on their education and training. These were the same business functions as in the measure of firm work experience. An index was created, with a range of 0-10.

We adopted one measure of bonding ties and two of bridging ties.

*Bonding ties* typically relate to family and close, long standing connections (Davidsson and Honig 2003; Cope, Jack and Rose 2007). We therefore asked respondents if any two owners were related by marriage or blood, were friends from work or social environments, or were otherwise strangers. This generated a count index ranging 0-4 with an extra count for each form of bonding tie.

Important forms of *bridging ties* consist of connections in networks that are explicitly business related (Davidsson and Honig 2003). We have adopted this method and created an index counting membership of face-to-face and online business networks, industry groups/associations, as well as aspects of international activities. The index ranges 0-6. As well as asking about membership of networks, which can be a passive activity, we sought information about possible sources of information and advice that had been "*not used at all*; a *minor* source; or a *major* source" [emphasis in original]. To compile this external advice index, we listed fourteen potential sources, ranging from employers or colleagues to customers and business media.

As *contextual variables* (Johns 2006) we used age, gender, product/service dummy, and technology/innovation intensity. We asked the age of the youngest and oldest partners. To capture gender effects, we took the proportion of female partners in the ownership team. The product/service dummy was based on whether the firm's offering was mostly a product or service. To measure technology intensity, we created a count index by asking whether: the technology for the firm's offering was new/old; R&D investment was a major priority; the firm was considered to be hi-tech; their offering had been developed internally; they possessed proprietary technology or processes; they had applied, or would apply, for intellectual property protection.

**Statistical procedure**

Hierarchical multiple regression analysis was conducted to test the hypothesised relationships. Contextual variables, measures of human capital, measures of social capital, squared items and interaction terms were entered as separate steps in the analysis, in order to determine the impact of each as a group. We report unstandardised regression coefficients, when the variables first enter the regression. The linear multiple regressions indicate how much of an impact the independent variables have on the respective dependent variables (Hair, Black, Babin and Anderson 2010).

We conducted the analysis in eight models. This was to obviate multicollinearity problems (Chandler, McKelvie and Davidsson 2009). The results are shown in Table 1. In the first three columns, we report the effect of: linear and quadratic social capital variables; generic education and specific experience; generic experience and specific education. Moderation hypotheses are tested in the following columns, while controlling for generic human capital.

Given that the appropriate test for curvilinear effects is to observe the change in $R^2$ (Hair et al. 2010), we entered each quadratic term as a separate step. The significance of each term is the same as that of the change in $R^2$, hence we do not report that latter, in order to manage the size of the table. Before testing for interaction effects, we centered the respective variables on their mean (Jaccard, Wan and Turrisi 1990). We then entered into the moderation step of the regression a cross-product of the hypothesised predictors and moderators (Frazier, Tix and Barron 2004). In the equations testing for moderation effects, all variables are centered on their mean.

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**RESULTS**

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Hypothesis 1a-c predicted that bonding ties would be detrimental to business model adaptation that bridging ties had a positive, curvilinear effect, and that bonding ties would positively

moderate the effect of bridging ties. The relevant results are in columns 1 and 4 of Table 1. There was no support for H1a and partial support for H1b. Linear terms for bridging social capital were both significant and positive, but only the external advice had a significant and negative quadratic term. The interaction terms between bridging and bonding ties in column four were insignificant, hence do not support H1c.

Hypothesis 2a-c predicted a positive curvilinear effect for generic international and general management experience, a negative linear effect for experience in large corporations, and a positive linear effect of generic education. The results in column 3 show a significant, positive coefficient for international experience, but an insignificant linear result for general management. Quadratic terms are insignificant for international experience, but significant and positive for general management: limited support for H2a. The dummy variable for large corporate experience was significant, but positive, contrary to H2b. Column 2 shows that generic education was not significant, rejecting H2c.

Hypothesis 3a-d predicted a positive linear effect for specific human capital, with diminishing returns for levels of experience. Specific education, in column 4, was not significant, rejecting H3a. In column2, we see that specific experience was significant as a step. Same industry experience was insignificant in its linear form, but positively significant in its squared term, contrary to H3b. Prior start-ups had a significant and positive effect, but the quadratic term was insignificant, partly supporting H3c. H3c was supported, with a positive linear term and negative squared term for firm work experience.

Hypothesis 4a-b predicted that human capital would have a positive moderating effect on social capital. Neither general nor specific education had a significant moderating effect, as shown in columns 5-6. Significant moderation steps were found for general management experience, large corporate experience and same industry experience. We did not find evidence of moderation for international experience, number of start-ups, firm work experience. Hence there is partial support for H4a. There was only one marginally significant interaction term for bonding ties and it had a negative coefficient: H4b is rejected.

In the control group, we find a significantly positive effect for technology/innovation intensity. The product/service dummy was also significant: product firms displayed greater adaptation.

## DISCUSSION

The business model is an important construct of recent interest to researchers, and great practical relevance to firms (Baden-Fuller et al. 2010). In this context, our objective was to discover if human and social capital was beneficial for business model adaptation as a form of organizational learning in new ventures. We aimed to discover if it is possible to have "too much of a good thing" (Pierce and Aguinis 2013) and if there are synergistic effects between the constructs.

### Implications for theory

Consistent with prior research, our findings show that greater human capital supports new ventures in their business model adaptation and that social capital contributes to fill the gaps. Within those broad constructs, we found that bridging ties and both the generic and specific experience categories were significant, but not bonding ties, nor the educational variables. Further, we find more nuances, in the form of curvilinear effects for certain bridging ties and forms of experience.

This is consistent with the thesis presented by Pierce and Aguinis (2013) that researchers should delve beyond simple linear relationships, in order to improve theory development and testing.

**Implications for practice**

Our findings suggest that – *for the purpose of aiding business model adaptation* – new ventures should seek out external, bridging sources of help, but avoid family and friends.  They should be careful, however, not to spend too much energy networking and seeking external advice.  It appears that formal education provides no advantage, nor any disadvantage.

It is useful to have had experience – of business and of the world at large – before starting a new venture.  Education providers might wish to adapt their courses, to include greater proportions of experiential learning.  Service providers (eg banks, legal and accounting firms) can contribute by bringing together clients who might learn from each other.  Policymakers should encourage relevant networking activities where none exist due to market failure.

**Implications for further research**

In this study, we presented research on the combined business model.  It is possible that different elements could behave differently.  As a result, it will be useful eventually to conduct studies with greater granularity.  The importance of social capital suggests that extroverts and boundary spanners (Tushman and Scanlan 1981; Janowicz-Panjaitan and Noorderhaven 2008) have an important role to play.  This relates to the extent of external orientation displayed by the firm and its members.  Given that it reflects learning and the results of experimentation, it would be interesting to know if the relative distance from prior human capital has a bearing on business model adaptation.  That we did not find interaction effects between bridging and bonding ties is possibly due to our operationalisation, especially of bonding.  Further research in this area is therefore warranted.

Our design ensures high population validity for new ventures in Australia and is theory-accretive, which is rare in business model research.  The results, therefore, though very promising are relevant to that geographic context.  As a result, there would be considerable practical and research value created by conducting similar studies in other countries.  The Global Entrepreneurship Monitor would be an excellent vehicle for this.

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| **TABLE ONE** **Moderated hierarchical regression analysis** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Social Capital | Gen Educn; SpecExp | Gen Exp; Spec Educn | SC*SC | Gen Educn * SC | Spec Educn * SC | GenExp*SC | SpecExp*SC |
| *Controls* | | | | | | | | |
| Constant | .90*** | .92*** | .89*** | .89*** | .89*** | .89*** | .89*** | .89*** |
| Technology Intensity | .10*** | .10*** | .10*** | .10*** | .10*** | .10*** | .10*** | .10*** |
| Product/Service | -.24** | -.24** | -.23** | -.24** | -.24** | -.24** | -.24** | -.24** |
| Female Owners % | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AgeYoungest | -.01 | -.01 | -.01 | -.01 | -.01 | -.01 | -.01 | -.01 |
| AgeOldest | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| No of Owners | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Step $R^2$ change | .09*** | .09*** | .09*** | .09*** | .09*** | .09*** | .09*** | .09*** |
| *Social Capital* | | | | | | | | |
| Bonding ties | -.01 | -.02 | -.01 | -.01 | -.01 | -.01 | -.01 | -.01 |
| Global SC | .11*** | .11*** | .11*** | .11** | .11** | .11** | .11** | .11** |
| Ext Advice | .02* | .02† | .02† | .02† | .02† | .02† | .02† | .02† |
| Step $R^2$ change | .05*** | .04*** | .05*** | .04*** | .04*** | .04*** | .04*** | .04*** |
| Global SC$^2$ | -.02 | -.02 | -.03 | -.02 | -.02 | -.02 | -.02 | -.02 |
| ExtAdvice$^2$ | -.004* | -.004* | -.004* | -.004* | -.004* | -.004* | -.004* | -.004* |
| *Human Capital* | | | | | | | | |
| GenEducn | | .00 | | .00 | .00 | .00 | .00 | .00 |
| Step $R^2$ change | | .01 | | .00 | .00 | .00 | .00 | .00 |
| Same Indy Exp | | .00 | | | | | | -.01* |
| FirmWorkExp | | .03* | | | | | | .05** |
| Start-ups | | .03* | | | | | | .02† |
| Step $R^2$ change | | .03** | | | | | | .05*** |
| Same Indy Exp$^2$ | | 3.35E-5** | | | | | | |
| FirmWkExp$^2$ | | -.002† | | | | | | |
| Start-ups$^2$ | | .00 | | | | | | |
| BusEducn | | | .02 | | | .01 | | |
| Step $R^2$ change | | | .01 | | | .00 | | |
| GenMgmtExp | | | .00 | .00 | .00 | .00 | .00 | .00 |
| LgeCorpExp | | | .21** | .23** | .23** | .23** | .23** | .23** |
| IntlExp | | | .03* | .03* | .03* | .03* | .03* | .03* |
| Step $R^2$ change | | | .02* | .03** | .03** | .03** | .03** | .03** |
| GenMgmtExp$^2$ | | | 3.82E-5** | 3.61E-5* | 3.61E-5* | 3.61E-5* | 3.61E-5* | 3.61E-5* |
| IntlExp $^2$ | | | .00 | .00 | .00 | .00 | .00 | .00 |

| | | TABLE ONE (cont.) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Moderated hierarchical regression analysis** | | | | | | |
| | Social Capital | Gen Educn; SpecExp | Gen Exp; Spec Educn | SC*SC | Gen Educn * SC | Spec Educn * SC | GenExp*SC | SpecExp*SC |
| *Interaction terms* | | | | | | | | |
| Global SC*Bonding | | | | -.02 | | | | |
| ExtAdvice*Bonding | | | | -.02 | | | | |
| Step R² change | | | | .01 | | | | |
| GenEducn*Bonding | | | | | -.05 | | | |
| GenEducn*GlobalSC | | | | | -.03 | | | |
| GenEducn*ExtAdvice | | | | | .00 | | | |
| Step R² change | | | | | .01 | | | |
| BusEducn*Bonding | | | | | | -.01 | | |
| BusEducn*GlobalSC | | | | | | .01 | | |
| BusEducn*ExtAdvice | | | | | | .00 | | |
| Step R² change | | | | | | .01 | | |
| IntlExp *Bonding | | | | | | | .02 | |
| IntlExp *GlobalSC | | | | | | | -.01 | |
| IntlExp *ExtAdvice | | | | | | | .00 | |
| Step R² change | | | | | | | .00 | |
| GenMgmtExp *Bonding | | | | | | | -.01 | |
| GenMgmtExp *GlobalSC | | | | | | | -.004* | |
| GenMgmtExp *ExtAdvice | | | | | | | .00 | |
| Step R² change | | | | | | | .02† | |
| LgeCorpExp *Bonding | | | | | | | -.15 | |
| LgeCorpExp *GlobalSC | | | | | | | .11 | |
| LgeCorpExp *ExtAdvice | | | | | | | .04† | |
| Step R² change | | | | | | | .02* | |
| Start-ups*Bonding | | | | | | | | .00 |
| Start-ups*GlobalSC | | | | | | | | .00 |
| Start-ups*ExtAdvice | | | | | | | | .00 |
| Step R² change | | | | | | | | .00 |
| SameIndyExp*Bonding | | | | | | | | -.22† |
| SameIndyExp*GlobalSC | | | | | | | | .00 |
| SameIndyExp*ExtAdvice | | | | | | | | .04* |
| Step R² change | | | | | | | | .02* |
| FirmWorkExp *Bonding | | | | | | | | -.03 |
| FirmWorkExp *GlobalSC | | | | | | | | .00 |
| FirmWorkExp *ExtAdvice | | | | | | | | .00 |
| Step R² change | | | | | | | | .01 |
| *Model statistics* | | | | | | | | |
| $R^2$/ $AdjR^2$ | .15/.12 | .20/.16 | .19/.15 | .19/.15 | .20/.15 | .20/.15 | .22/.17 | .26/.19 |
| Total Model *F* | 5.83*** | 5.04*** | 4.91*** | 4.46*** | 4.36*** | 4.05*** | 3.85*** | 4.10*** |
| *N* | 378 | 376 | 375 | 374 | 374 | 374 | 374 | 374 |
| † $p \le .10$; * $p \le .05$; ** $p \le .01$; *** $p \le .001$ | | | | | | | | |