

Turning an Innovation Intention into a Reality: The Role of Champions and External Agencies

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ABSTRACT

Most research examining innovation measures retrospective innovation, or to what extent a company has adopted innovations during previous years. This longitudinal study was undertaken with small firms to examine two factors that allow organisations to have control and that therefore lead them to invest in future innovations. Using logistic regression the study found evidence suggesting that the decision to proceed with a planned innovation is significantly influenced by the presence of an internal champion within the company and the support of external agencies which are able to provide support to the implementation.

Keywords: innovation adoption, longitudinal study, logistic regression, internal champions, external technology agencies.

The Theory of Planned Behaviour (TPB) suggests that people turn their intentions into a reality when they have control over the situation (Ajzen & Fishbein, 1980). We suggest that this is also true of organisations. Further, we postulate that within an organisation two key manifestations of control are: i) having an internal champion to oversee and push for the innovation to occur, and ii) having help from external agencies in providing access to the innovation or its necessary requirements. To date, however, these postulations have only been tested in a retrospective or cross-sectional manner. This paper uses longitudinal data to examine the role of internal champions, which in the case of small firms is typically the entrepreneurial manager or owner-manager of the business. It also examines the role played by external actors within the innovation cycle of the small firm. Two key propositions underlie this paper. The first is that those organisations seeking to implement innovations are more likely to do so where there is an internal champion of the proposed innovation present. The second is that those organisations that have assistance from external agencies such as professional advisory services will be more likely to proceed with the implementation of their innovation.

LITERATURE REVIEW

This literature review examines the nature of innovation with particular focus on the small firm as well as the role played by internal champions and external actors in the facilitation of innovation. For the purposes of this study, a small firm is defined as one that has fewer than 250 employees and an annual turnover less than \$50 million (OECD, 2004).

Innovation within the Small Firm

Innovation has been defined in many ways. Porter (1990, p.45) suggested that it was an attempt “*to create competitive advantage by perceiving or discovering new and better ways of competing in an industry, and bringing them to market*”. Other definitions have focused on “*the development and*

implementation of new ideas by people who over time engage in transactions with others within an institutional order” (Van Den Ven, 1986, p.590), or the *“creation and implementation of new products, services, processes, relationships, and methods of organisation, and conceptual creativity”* (Stein & Pinchot, 1998, p.75). The OECD (2001, p.9) defines innovation in terms of technological product or process types as follows: *“A technological product innovation is the implementation/commercialisation of a product with improved performance characteristics such as to deliver objectively new or improved services to the consumer. A technological process innovation is the implementation/adoption of new or significantly improved production or delivery methods. It may involve changes in equipment, human resources, working methods or a combination of these.”*

Innovation within small firms has traditionally focused on the application of technology. For example, Rizzoni (1991) suggested taxonomy of innovation in small firms that comprised six types, ranging from stable or “static” firms lacking in any real innovation, through “traditional” and “dominated” firms which have only modest levels of innovation, to “imitative”, “technology-based” to “new technology-based” firms. These last three were more likely to engage in the development of new products with the latter generating more disruptive or discontinuous innovations. Autio and Lumme (1998) in a study of 392 small new technology based firms found four types of innovators. These were labelled “application”, “technology”, “market” and “paradigm” innovators depending on their use of established or new technology and markets. Application innovators were those found in established markets with established technologies, while “paradigm” innovators were characterised by trying to introduce new technologies to new markets. While the “paradigm” innovators were engaged in the most disruptive innovations they were also the smallest, with the less radical “application” innovators proving to be the largest.

While these conceptual frameworks provide a useful structure for defining innovation in small technology-based firms, they tend to ignore the fact that most small businesses are not engaged in high technology. In an attempt to provide a more comprehensive definition of innovation adoption for small firms that is not entirely related to technology, North and Smallbone (2000) suggested that

innovation could take a range of forms. This included product or service innovations, market development and marketing innovations, process technology innovations, and administrative innovations. It is this latter approach that we take in our research.

Unsworth, Sawang, Murray and Sorbello (2009) have suggested that the TPB can be used to understand the adoption of innovation in organisations. Their work posits that attitudes towards innovation adoption, perceived normative pressure to adopt innovations, and control over adopting innovations (or ease of innovation adoption) affect innovation. In testing these hypotheses they found general support for their model. In particular, the level of control over innovation (measured as technological readiness, staff readiness, slack resources and perceived adoption efficacy) was related to innovation adoption behaviour within firms.

Despite its useful contribution, the conceptualisation of control used by Unsworth et al. (2009) missed a key component in the innovation adoption process, namely the “assistance to adopt” that is provided to a firm. The presence of both internal assistance (e.g. internal champions) and external assistance (e.g. technology diffusion agencies) make it easier for an organisation to adopt an innovation. The presence of such internal and external assistance is likely to enhance the likelihood that a firm will adopt an innovation. Furthermore, the work of Unsworth et al. (2009) was cross-sectional, precluding any assumptions of causality. To fully understand the process of innovation adoption in the small firm it is important to know as much about the reasons why they do not choose to proceed with an innovation as it is to understand why they do. While many small business managers express a desire to adopt a particular innovation (e.g. launch a new product), most do not proceed. In this study we seek to illuminate the role that internal champions and outsiders such as technology diffusion agencies play in facilitating innovation adoption.

The Role of Internal Champions in Small Firm Innovation

Within larger firms the impetus for innovation adoption has often been attributed to internal champions who seek to engage in internal corporate venturing as “intrapreneurs” (Pinchot, 1987). Howell and Higgins (1990) identified these managers as “champions of change” who display a drive, energy, persistence and willingness to take risks in order to introduce innovations and new technology. Although they are often faced with obstacles, these managers take a high level of professional risk to see their pet projects succeed.

We suggest that internal champions may be just as important within smaller firms for turning innovation adoption into a reality. Innovation adoption in these firms is typically driven by the entrepreneurial management teams that own and control these ventures. Entrepreneurship is strongly associated with innovation and managers with above average entrepreneurial orientation are more likely to seek innovative solutions to achieving competitive advantage and business growth (Nair & Pandley, 2006). Successful innovation and growth within small firms is also associated with senior management teams that have a good range of cross-functional skills (Weinzimmer, 1997). Entrepreneurs who own and control the majority of the equity in their firm will also have the power to make investment decisions and can use their ownership rights to manipulate the allocation of resources into new innovation investments (Goffee & Seegar, 1986). However, entrepreneurial managers also tend to proceed with investment decisions which might be treated with greater caution by others. They are likely to make greater use of biases and heuristics in their evaluation of the future risks they face; often perceiving risk as less than it might be in their pursuit of opportunities (Busenitz, 1999). It is likely, therefore, that the presence of an internal champion makes innovation adoption easier for the small firm.

Hypothesis 1: Of those organisations who are intending to adopt an innovation, those who have an internal champion for that innovation are more likely to have adopted the innovation one year later.

The Role of External Agencies in Small Firm Innovation

Of course, there are many “outsiders” who are available to assist an organisation in various ways. The role played by outsiders in enhancing the strategic planning and performance of a small firm has been examined within the small business literature since at least the 1980s. Robinson (1982) defined the “outsider” as consultants, accountants, lawyers and even members of the Board of Directors, and his early research pointed to their playing a valuable role in assisting the small firm with strategic planning. Other research has suggested that entrepreneurs and small business managers benefit from participation in strategic networks (Johannisson, 1986; Ostgaard & Birley, 1994; Havenes & Senneseth, 2001). Counselling can provide assistance in problem solving and helping entrepreneurs and small business managers understand how to plan (Johnson, 1992; Pareek & Rao, 1995). This external support can be particularly useful for high-technology firms in which the management teams may not have adequate business skills (Adams, 1982; Oakey & Mukthar, 1999).

The benefit that small firms gain from the assistance of outsiders has been recognised as a useful field of inquiry (Robinson & Pearce, 1984), but it is not one that can easily be demonstrated. For example, Bracker and Pearson (1985) found no significant differences between firms using consultants and those who did not in terms of their performance, although they did suggest that the nature and sophistication of such external assistance needed to be considered. By contrast, Kent (1994) found that small firms who used outsiders such as accountants and marketing professionals did perform better. There also seems to be some evidence that outsiders, such as professional advisors or non executive members of the Board, can enhance the sophistication of planning and decision making (Chrisman, 1989; Atkins & Lowe, 1994).

Thus, the literature suggests that outsiders may affect the success of the relevant actions in which they have expertise. In the realm of innovation adoption, the most relevant outsider is that of technology diffusion agencies, defined as “the public or private sector entity through which an innovation is distributed or made available to the population at large” (Brown, 1981; p.50). These agencies aim to increase innovation adoption through increasing awareness of new innovations, access to new innovations, and assistance in using new innovations. Thus, extrapolating from research on other

outsiders, we suggest that this assistance from external agencies will increase the likelihood that a small firm will act on its intentions to adopt an innovation.

Hypothesis 2: Of those organisations who are intending to adopt an innovation, those who get assistance from external agencies are more likely to have adopted the innovation one year later.

METHODOLOGY

The primary methodology used in this study was a longitudinal analysis of the innovation adoption behaviour of small manufacturing firms from Australia that had identified a particular innovation they were considering for future development or implementation. Longitudinal research into the innovation adoption of small firms is relatively scarce within the literature; however, it is important because innovation adoption is by nature a long term process that takes time to demonstrate its effects. Longitudinal research provides a means of addressing dynamic questions which are unable to be accommodated through cross-sectional analysis (Greve & Goldeng, 2004; Pettigrew, 1990).

Sampling

Two surveys were undertaken over two time periods (TP1 and TP2) approximately 12 months apart to provide the longitudinal separation between the data sets. The initial TP1 survey was undertaken with a cohort of 225 firms that were selected from a database derived from multiple sources, including firms that had contacted a technology diffusion agency providing advice to innovator companies and firms that were listed in the small business register held by the State Government Agencies dealing with small firms. Following an initial telephone survey of these 225 firms, 153 reported that they were considering implementing an innovation during the forthcoming year. This group was retained within the database for subsequent follow up in TP2. During TP2 (12 months later) these same firms were surveyed again using a telephone interview.

During the TP2 survey some problems were encountered in securing access to the original sample group. For example, the phone number for eight of the firms (5.2%) was found disconnected. Of the remaining participants in the TP1 survey, 35 (24.1%) indicated that they wanted to participate, but needed to be called back at another time; these firms were called back three times and sent an email version of the survey as well, but did not subsequently return the survey. Sixty-six firms (45.5%) indicated that the relevant person was not available and/or that they were not interested in participating in the survey. However, 44 firms (30.3%) that had participated in the TP1 survey agreed to undertake the TP 2 survey. Although a 30% response rate is not ideal, it is comparable with other research in this area (Newby, Watson & Woodliff, 2003).

The firms participating in the study were predominantly from the manufacturing industry (38.9%) and were small enterprises comprising less than 50 employees (61.2%) and less than AUD\$5 million in gross revenue (50.1%). The innovations they were considering at time one are outlined in Table 1. Because there are a number of different industries in our sample any positive results could be generalised across these industries – however their presence may engender noise in the data that precludes significant results. Therefore, a control variable of manufacturing/not manufacturing was included in the logistic regression equation.

Measures

Innovation adoption was measured at the second time point (TP2). Participants were asked the question; *“When we last spoke to you, you said that you were considering introducing [the innovation] in your organisation over the last year. Did you end up deciding to implement [the innovation]?”* A binary response (yes/no) was recorded.

The independent variables were all measured at the first data collection point (TP1). Two items from Howell and Shea’s (2001) scale were used to measure the presence of internal champions – *“an individual or group of individuals in the company who expresses confidence in what the innovation*

can do, and points out reasons why the innovation would succeed” ($\alpha = .63$). Assistance from external agencies was measured by asking respondents the question; *“To what extent do [external agencies] provide you and/or your organization with access to this innovation?”* The question was asked about both technology diffusion agencies and technology consultancies and respondents answered on a 5-point Likert-type scale from “Not at all” to “A great deal” ($\alpha = .69$). Finally, to control for differences in the novelty of the innovation, we asked respondents; *“Would you consider your organization to be an early, middle or late adopter of this innovation?”* on a scale from 1 to 3.

RESULTS

In most longitudinal research, there are those who do not participate in the second round of data collection due to attrition and in the case of small firms this can be due to the firms ceasing to trade (Sexton & Van Auken, 1985). This has the potential to lead to a biased sample and inaccurate results. To examine this possibility, we tested for differences in the TP1 data between those who participated in TP2 and those who did not. There were no significant differences on innovation-related variables (previously implemented innovations: $t = -1.23$, ns; outcomes of previous innovation: $t = .43$, ns; this innovation is a good idea: $t = -.15$, ns; certainty of innovation benefits: $t = -1.35$, ns; adopter status: $t = -.15$, ns), on beliefs that specified others think that the organisation should introduce the innovation (suppliers: $t = -.87$, ns; customers: $t = -.53$, ns; competitors: $t = -.19$, ns; TDAs: $t = -1.04$, ns; government departments: $t = -.94$, ns; professional associations: $t = -.75$, ns), or on help from external agencies (access to innovation by technology consultancies: $t = -.84$, ns; access to innovation by technology diffusion agencies: $t = -1.61$, ns). There was also no significant difference between TP2 respondents and non-respondents on the types of innovation being considered ($\chi^2 = 14.1$, $df = 8$, ns). Given the lack of differences between those who participated in the follow-up and those who did not, the chances of our results being a biased sample are small.

We conducted a logistic regression analysis to test the effects of the presence of champions and the degree to which external agencies provide access to the innovation. Binary or logistic regression is a form of regression analysis that is an appropriate technique when there is a dichotomous dependent variable and independent variables of any other type. It can be used to predict a dependent variable on the basis of either continuous or categorical independent variables (Hair et al, 1992). We included a measure of adopter status (early to late) in the equation to control for any effects of the novelty of the innovation and a dummy indicator for being in the manufacturing industry. As shown in Table 2, the results of the logistic regression showed that the overall model was significantly different to the null model ($\chi^2 = 12.64$, $df = 4$, $p < .05$) with a Nagelkerke pseudo- R^2 of 0.44. As our hypotheses were directional and we had a relatively small longitudinal sample size, we deemed it appropriate to use one-tailed tests of the predictors. These tests showed that neither control variable was significantly related to innovation implementation (adopter status: $\beta = -.68$, $SE(\beta) = .43$, ns; manufacturing: $\beta = -1.42$, $SE(\beta) = 1.46$, ns), however, as expected both the presence of an internal champion and access to the innovation from external agencies were significantly related to implementation one year later ($\beta = 1.26$, $SE(\beta) = .76$, $p < .10$; $\beta = 1.48$, $SE(\beta) = .85$, $p < .10$).

DISCUSSION AND CONCLUSION

Research into innovation adoption in small firms is marked by cross-sectional studies that cannot answer dynamic questions. We were interested in understanding how an intention to adopt an innovation was turned into a reality – what helped small companies to turn an idea into actual adoption behaviour. Using the work of Unsworth et al. (2009), as well as the extant innovation adoption and entrepreneurship literatures, we proposed that two forms of control – the presence of internal champions and assistance from external agencies – would increase the likelihood that a small company would act on its adoption intentions one year later. We found support for both these hypotheses.

These findings are important for two reasons. Theoretically, it provides growing support for the contention that control over adopting innovations increases the likelihood of actual innovation adoption. Internal factors such as technological readiness and financial slack had previously been related to innovation adoption (Unsworth et al., 2009), but little was known about assistance either internally or externally. Our results indicate that this assistance is crucial in making the tangible step of adopting an innovation.

This research is also important for practitioners. The findings suggest that outsiders such as specialist technology diffusion agencies can play a key role in the actual adoption of innovation in small firms. As many of these external agencies are partially or wholly publicly-funded, such evidence is useful in determining the value of these agencies. Third party assistance to entrepreneurs has been found to have significant and positive benefits in start up ventures (Chrisman, 1989). Yet many small business managers are reluctant to engage with outsiders, particularly if they feel they are in control of their innovation and its commercialisation process (Birley & Westhead, 1993). Their willingness to engage with third party outsiders is likely to be contingent on their sense of maintaining control over the commercialisation process (Mazzarol & Reboud, 2008).

Our results also suggest that the champions of the innovation can help to push the adoption through to completion. For most small firms the key internal champion is the entrepreneur or owner-manager of the business. They provide the vision and leadership to identify the opportunities for innovation and are crucial to its success. The decision by an entrepreneur to proceed with the adoption of an innovation is likely to hinge on their sense that their customers will embrace the initiative and that they have the resources to exploit the opportunity (Choi & Shepherd, 2004; Mazzarol & Reboud, 2005). The education of entrepreneurs and their senior management teams within small firms as to the benefits of innovation and the process of commercialisation is therefore important. The new product development (NPD) process and the subsequent challenges of commercialisation are complex and demanding. For most small firms the NPD process is focused around projects and is often emergent rather than deliberate in a strategic sense (Gibb & Scott, 1995). However, the commercialisation of a

new product or other innovation requires an understanding of the customer, marketing and the capacity for systematic planning (Manimala, 1998; Huang, Soutar & Brown, 2002).

This study is not without its limitations. The sample size was modest and the study took place in one country and one regional area. Further, the longitudinal analysis was in respect to a single year. Future research should aim to gather larger samples and track the performance of firms over longer time periods. Future researchers should aim to study different industries and jurisdictions in order to enhance the external validity of findings.

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TABLE 1: CATEGORY OF INNOVATION BEING CONSIDERED

INNOVATION	NUMBER	PERCENT
New manufacturing or product based technology	2	4.5%
Changes in business services	1	2.3%
New products	8	18.2%
Changes to existing products	6	13.6%
New processes of work design systems	15	34.1%
New administrative systems	7	15.9%
HRM innovations	1	2.3%
Organisational restructuring	1	2.3%
Other / not specified	3	6.8%
Total	44	100%

TABLE 2: LOGISTIC REGRESSION ON IMPLEMENTED INNOVATION

Variables in the Equation	B	S.E.(B)	Exp(B)
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Manufacturing industry	-1.42	1.46	.24
Adopter status	-.68	.43	.51
External agency helped access to technology	1.48*	.85	4.41
Internal Champion	1.26*	.76	3.53