



The Influence of ‘Outsiders’ on Innovative Behavior by Medium-Sized Firms

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Abstract. In this paper attention is paid to the influence that ‘outsiders’ exert on the innovative behavior by medium-sized firms. We see ‘outsiders’ as people who are independently involved in the firm. From our empirical research it appeared that, in comparison with firms which do not employ ‘outsiders’, firms which do work with ‘outsiders’ invest more often in new products and services. Both the presence as such and the intensity of the presence of the ‘outsiders’ are important for this innovative behavior. Therefore, our conclusion is that the influence of ‘outsiders’ can inspire the entrepreneur to undertake innovative behavior and prevent the entrepreneur from being too preoccupied with his daily business.

Keywords: innovation, entrepreneurship, ‘outsiders’, medium-sized firms.

1. Introduction

Innovation and innovative behavior are key policy issues nowadays. The European Commission e.g., is formulating, influencing and, where appropriate, implementing policies and programmes to increase Europe's innovativeness. The Commission is trying to make sure innovation is thoroughly understood and approached comprehensively, thereby contributing to greater competitiveness, sustainability and job creation (see [www. http://ec.europa.eu/enterprise/policies/innovation](http://ec.europa.eu/enterprise/policies/innovation)). The private sector plays a key role in full filling these ambitions. However, from the literature it occurs that innovation by small and medium-sized enterprises (SMEs) is different from innovation by large firms.

In this paper, we highlight a specific aspect of innovation by medium-sized firms: the influence of so-called ‘outsiders’. The literature indicates that one of the main services of ‘outsiders’ is business advice, and possibly that can also be applied to stimulate the innovative behavior of the firms involved, hence leading

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to innovations. When we find what role 'outsiders' play in the innovation process, we may be more capable of stimulating innovation. We chose to study medium-sized firms only, and not small firms, because the phenomenon of 'outsiders' seems to be more relevant for the former group (this is explained later in our paper).

There is no fixed description of who play the role of 'outsiders' for SMEs, and who do not. We emphasize that in our research project 'outsiders' are not accountants, bank officials, or similar, who are professionally associated with the firm. We see 'outsiders' as people who are independently involved in the firm. Furthermore, neither do we see them as family members or friends who occasionally advise the entrepreneurs, often in an informal setting. The 'outsider' has a more or less formal relationship with the firm, expressed in an oral or written agreement, occasionally even a formal contract with an attached fee.

With this paper we aim to make a contribution to an increased understanding of the innovative behavior of medium-sized firms, by giving insight into the added value of an 'outsider' in this context. Given this increased understanding, it should be possible to improve the innovative performance of medium-sized firms (the 'why' question of this paper).

So our paper is based on two different lines of thought: innovative behavior and 'outsiders'. The role of innovative behavior in the economic process is beyond discussion. But the role of 'outsiders' is not commonly known, let alone the influence they exert on innovative behavior. The combination of innovative behavior and 'outsiders' may add an important insight to the current literature.

This paper focuses on the differences between medium-sized firms with one or more 'outsiders' versus medium-sized firms without any 'outsider'. We want to investigate empirically whether there are differences in the innovative behavior between the two groups of firms. If this relationship exists, we have important information concerning the stimulation of innovative behavior. The relationship between 'outsiders' and the innovative behavior of the firm has not been investigated empirically before in this way. 'Outsiders' are involved with the firms, and thus it can be expected that they want to positively influence the firm's performance, e.g. in terms of innovative behavior. This relationship indicates both the importance and the relevance of this paper. These independent 'outsiders' matter because they can generate knowledge for entrepreneurs, and knowledge is linked with innovative behavior. The independent 'outsiders' are voluntarily involved by the entrepreneurs, and that makes it more apparent that both parties aim to create added value for the firm.

We start this paper with highlighting what is so special about innovation by SMEs. Then we will deal with what researchers have previously written on the role of 'outsiders'. We then deal with firm governance and the position of 'outsiders'. These three sections come together in a bridging section that contains the two hypotheses that will be tested in this paper. Then follows the operationalization of the main concepts used in this paper. This in turn is followed

by the description of the fieldwork. Next, we analyze the data (i.e. test the hypotheses), and discuss the results. The paper concludes with conclusions and recommendations for future research.

2. Innovation by SMEs

Much has been written on innovation over the years, especially on the determinants of innovation and the definitions of innovation. (see, e.g., Atuahene-Gima, 1996; Bell, 2005; Brouwer et al., 2008; Cho and Pucik, 2005; Cooper, 1990; DeCanio et al., 2000; Drucker, 1985; Edgett et al., 1992; Elenkov et al., 2005; Elfring and Hulsink, 2003; Emden et al., 2006; Garcia-Canal et al., 2008; Garcia and Calantone, 2002; Gupta et al., 2007; Hippe, 1988; Kleinknecht et al., 2002; Montoya-Weiss and Calantone, 1994; Parthasarthy and Hammond, 2002; Ruef, 2002; Song and Parry, 1997; Tang, 2006; Tidd, 2001; Wissema and Euser, 1991; Yap and Souder, 1994; Zirger and Maidique, 1990). However, the foundations of modern innovation theory were laid down by Schumpeter (1934), with his process of creative destruction. He mentioned five forms of innovation: creating new products; introducing new production processes; entering new markets; using new supplies; and developing new organizational forms. Through the years, researchers have elaborated on this and presented numerous definitions and forms of innovation. In this connection, one thing is clear: knowledge plays a crucial role for innovation (Major and Cordey-Hayes (2000); Tang, 2006). This is not the place to discuss the flood of innovation definitions and approaches. In Section 6 of this paper we make a well-founded choice about how to work with the concept of innovation, in the context of medium-sized firms and ‘outsiders’.

Innovations are mostly driven by external incentives, although for some people innovation may be a challenge in itself. Anticipating the operationalization of the role of ‘outsiders’ in our empirical fieldwork, the importance of networks as mentioned by Witt (2004) can be elaborated on. Opportunities for, and constraints on, behavior play an important role in networks (see, e.g., Brass et al., 2004). The subject of this paper can be seen in the context of networking, viz. the interpersonal relationship between entrepreneurs and ‘outsiders’. Although they did not mention ‘outsiders’ explicitly, the importance of cooperation and networking for the innovations’ success is also mentioned by Freel and Harrison (2006). Zhang et al. (2006) and Jones and MacPherson (2006) stressed the importance of outward facing, respectively access to, outside knowledge in the innovation process of SMEs.

Several researchers have indicated that SMEs innovate in a different way from larger firms (see, e.g., Barret and Sexton, 2006; Bashkaran, 2006; Nooteboom, 1994; Thurik, 1996; Vermeulen, 2005). This brings us to the general statement (see Welsh and White, 1981): ‘a small business is not a little big business’. In this context, both Zhang et al. (2006) and Freiling (2008) mentioned

the limitations of SMEs in both their managerial capabilities and mechanisms in accessing knowledge from external sources. Therefore, it is important to consider the specific characteristics of SMEs in their innovation process. It is not only their size that makes SMEs special but also the central position of the entrepreneur (the owner / manager), the short time horizon of SMEs and their local and regional orientation. These characteristics also influence the innovative behavior of the firm. Crucial for innovation success is the central position of the entrepreneur (Atuahene-Gima, 1996). Without a doubt, the entrepreneur (including his way of managing the firm) leaves his mark on the innovation process.

According to Nooteboom (1994), there is complementarity between SMEs and large firms in the context of their innovations: large firms tend to be strong in places where SMEs tend to be weak, and vice versa. SMEs can be characterized by their small scale, independence, and personality. SMEs are, in general, strong in innovations aimed at the application of basic technologies, in ventures to develop inventions, and to implement and introduce the results, and in the satisfaction of demand in small niches or residual markets. Large firms are relatively strong in more fundamental research and inventions, and in efficient production and distribution, which exploits the effects of scale and scope. This is confirmed by Yap and Souder (1994), who mentioned the importance of scale economies in innovation issues. Bhaskaran (2006) mentioned that incremental innovations (ongoing improvements to products and processes) are important for SMEs.

Cobbenhagen (2000) confirmed that there are a number of innovation-related problems related to firm size. E.g., in large firms the isolation of the R&D function frequently poses problems, whereas in small firms innovation often is neglected due to hectic day-to-day routines. Furthermore, he stressed that many SMEs still innovate as if it is a steady-state process, whereas the organization should be seen as a variable in the achievement of innovative success.

3. Previous Information on the Role of 'Outsiders'

There is no fixed or unanimous description of who play the role of 'outsiders', and who do not. A number of researchers have elaborated on this theme before. Most of the literature is from the last decade, but also in earlier days researchers were dealing with 'outsiders'. One of the seminal works is by Robinson (1982), who stressed the importance of 'outsiders' in improving the effectiveness of strategic planning in small firms. Robinson (1982) chose to define 'outsiders' as consultants, lawyers, accountants, bankers, and boards of directors, which is not fully in conformity with our definition of 'outsiders' (we will return to this later).

When discussing the kind of firms in which 'outsiders' play a role, the main focus is on SMEs, new ventures and entrepreneurs in the preoperational phase (see Chrisman and McMullan, 2004; Chrisman, 1999; Smeltzer et al., 1991).

Robson and Bennett (2000) drew attention to the relationship between the use of external advice and firm growth.

The most frequently described types of ‘outsiders’ are: (business) advisers (Chrisman and McMullan, 2004; Mole, 2002; Smeltzer et al., 1991), accountants (Bennett and Smith, 2004; Gooderham et al., 2004; Smeltzer et al., 1991; Robinson, 1982), consultants (Tether and Tajar, 2008; Bennett and Smith, 2004; Robson and Bennett, 2000), supporting organizations (Rice, 2002; Robson and Bennett, 2000; Chrisman, 1999; Smeltzer et al., 1991), legal service providers/high trust specialists (Bennett and Smith, 2004; Bennett and Robson, 1999; Smeltzer et al., 1991; Robinson, 1982), bankers (Bennett and Smith, 2004; Smeltzer et al., 1991; Robinson, 1982), friends (Robson and Bennett, 2000; Bennett and Robson, 1999; Smeltzer et al., 1991), relatives/family members (Robson and Bennett, 2000; Bennett and Robson, 1999; Smeltzer et al., 1991), and supply chain members (Robson and Bennett, 2000; Bennett and Robson, 1999).

‘Outsiders’ provide a broad palette of services (Bennett and Robson, 1999). Business advice is one of the main services, although there are very different kinds of advice (Bennett and Smith, 2004; Robson and Bennett, 2000). This could be the provision of start-up counseling assistance (Chrisman and McMullan, 2004), and strategic planning consultation (Robinson, 1982). Furthermore it could be very specific kinds of assistance, such as managing relationships and developing effective networks (Hansen, 1995); building a management team (Rice, 2002); or preparing a business plan (Smeltzer et al., 1991).

Efforts are made and time is spent by the ‘outsiders’, and they often receive a fee for this. There are always activities and time spending, so evaluation is at stake. But how do we evaluate ‘outsiders’? How do we determine whether they did a good job? It is hardly surprising that there is no unambiguous answer to this, as there are many different kinds of ‘outsiders’ with very diverse activities. Chrisman and McMullan (2004) and Chrisman (1999) made it clear that a contextual learning process, directed and facilitated by an experienced ‘outsider’, may lead to the creation of a combination of tacit and explicit knowledge. Furthermore, Chrisman (1999) pointed to the finding that ‘outsider’-assistance leads to more start-ups than the usual figure. Furthermore, evaluation may deal with very concrete evaluation standards, like survival rates (Chrisman and McMullan, 2004), firms’ effectiveness (Robinson, 1982), number of new ventures (Chrisman and McMullan, 2004), and input-output ratios of the firm (Rice, 2002).

We did not find any clear evidence of the relationship ‘outsiders’–innovation, although a number of studies are related to this subject. Åstebro and Michela (2005) mentioned the use of experts who are unrelated to innovation projects: involvement avoids biases potentially associated with innovation project managers’ assessment of their own projects, such as unrealistic optimism and hindsight bias. According to Gumusluolu and Ilsev (2009), external support in the

innovation process is important. Zahra et al. (2007) paid attention to the role that ownership and governance systems have played in innovation and venturing activities. Kroll et al. (2008) argued that vigilance without relevant experience is not enough for board effectiveness: the relevance for this paper is that 'outsiders' may add their experience to that of the entrepreneurs.

4. Governance and the Position of 'Outsiders'

Most SMEs are managed by their investors who are also their daily directors. This situation causes little conflict between ownership and control. As firms grow larger, diffusion of ownership makes it complex for owners to directly manage their interests in a firm. People from the outside may be appointed as board members in order to advise or to supervise the directors of the firm (for general information on corporate boards, see, e.g., Ward, 1997). Such 'outside board members' are not necessarily owners or shareholders of the firm. Appointing outside board members is not compulsory for SMEs in the Continental system, used by the Netherlands (where the data for this paper were gathered).

To understand our definition of 'outsiders', it is important to look at the differences between the Continental or two-tier system, on the one hand, and the Anglo-Saxon or one-tier system on the other (see, e.g., Gedajlovic and Shapiro, 1998; Ooghe and de Langhe, 2002). The one-tier system implies that there is only one board of directors, with both executive (inside) directors and non-executive (outside) directors. In the two-tier system the executive (inside) directors and the non-executive (outside) directors are on different boards. The former are in charge of the day-to-day operations of the firm, while the latter have a more supervisory role.

In general, Dutch firms are obliged to work with the two-tier system when the firm is a limited liability company, subscribed capital exceeds € 11 million, employment in the Netherlands exceeds 100 people, and the employees are represented by a works council (see Postma et al., 2001). So most Dutch SMEs do not fall under this regime, and do not need to have a supervisory board. However, they can still voluntarily choose to install such a supervising board, or a variation of it.

To identify 'outsiders', we used the outside board member as the point of departure. As outside board members are not compulsory for SMEs in the Netherlands, we focused on voluntarily appointed outside board members. As 'outside board members' is not a protected term, we also decided to focus on comparable types, often a hybrid form of a consultant and an outside board member. This consultant is not typically working on a consultancy job within the firm, but plays the role of an outside board member.

5. Hypotheses

We have learned a number of things so far. First, innovation by SMEs is different from innovation by larger firms (see Section 2 of this paper). Second, innovation is being preceded by innovative behavior, and therefore it is worth studying preceding behavior in the context of innovation also. Third, ‘outsiders’ may play an important role in the development of firms, especially SMEs, new ventures, and entrepreneurs in the preoperational phase. Fourth, there is not one unambiguous type of ‘outsider’. Therefore, this paper adds a new insight to the current theories: ‘outsiders’ are known for their positive influence on the operations of SMEs, new ventures, and entrepreneurs in the preoperational phase, and innovation is one of the most important aspects in entrepreneurial operations.

In our hypotheses we focus on medium-sized firms. From previous studies we know that size plays an important role for SMEs in their innovation process. From the expert interviews (see Section 7 of this paper) it was revealed that ‘outsiders’, as we defined them, were supposed to be more relevant in the context of the larger SMEs, because, in general, these firms have a larger budget to employ them. Also the complexity that increases with firm size may have its influence. Therefore we choose to focus on medium-sized firms. This will be confirmed in Section 7 of this paper, where we show that in our empirical fieldwork firms working with ‘outsiders’ were larger than firms without any ‘outsider’.

We recall that it is our aim to make a contribution to an increased understanding of the innovative behavior of medium-sized firms, in order to make it possible to improve their innovativeness. When we combine these insights, for this research project, we reach the preliminary conclusion that ‘outsiders’ may be beneficial to the innovative behavior of medium-sized firms. Therefore, our hypotheses are:

H₁. The presence of ‘outsiders’ in medium-sized firms positively influences their innovative behavior.

H₂. A higher intensity of the presence of ‘outsiders’ in medium-sized firms positively influences their innovative behavior.

So, in our empirical fieldwork, we do not only focus on the dummy presence of an ‘outsider’. We also focus on the intensity of the relation with the ‘outsider’, in terms of number of ‘outsiders’ in the firm; number of visits to the firm by the ‘outsider’; annual ‘outsider’ fee; the position of the ‘outsider’ in terms of power; and the information package that is provided to the ‘outsider’ by the firm. The work of Witt (2004) played an important role in the operationalization of this intensity, as did the expert interviews which preceded our empirical fieldwork.

Knowledge is important to any firm (see Nonaka and Krogh (2009) for an operationalization of knowledge). From Chrisman and McMullan (2004) we know that the assistance of ‘outsiders’ can be a valuable source of knowledge to entrepreneurs, especially when it complements the firm’s own internal innovation

activities and other external sources of knowledge (Teher and Tajar, 2008). On the other hand, we know that managing knowledge is a critical capability for SMEs (Desouza and Awazu, 2006). And, as Tang (2006) put it, innovation is about turning knowledge into economic action. Since SMEs are resource constrained, and cannot devote too much effort to create knowledge, appointing an 'outsider' may be a valuable addition to SMEs. In a sense it compensates for their scale diseconomies. Other valuable inputs of the 'outsiders' to the innovation process are the opportunity to achieve more with a fresh pair of eyes and access to networks. In this way, 'outsiders' may fill the need of the vulnerability of SMEs (see Beckman and Burton (2008) and Sommer et al. (2009) for of this vulnerability).

6. Operationalization of Concepts

A number of choices had to be made, especially concerning the operationalization of the concepts of innovative behavior and 'outsider' intensity. There are numerous definitions of and approaches to innovation. The core of all this is the introduction of new products and services (based on Schumpeter, 1934). This introduction of new products and services takes both money and time of the entrepreneur and time of his personnel. Innovation is being preceded by innovative behavior that can be operationalized as the question whether the firm has invested in new products or new services. And it makes sense to look at a longer period, which is the reason why we asked for information on investment in the previous years. On the other hand, this period should not be too long, given the short-term focus of SMEs.

When measuring the intensity of 'outsider' presence, the number of 'outsiders', the number of visits per year and the annual 'outsider' fee are obvious when it comes to characterizing the relationship between a firm and its 'outsider(s)'. The basis for this operationalization is the efforts made and time spent by the 'outsiders' for which they often receive a fee. The power position of the 'outsider' is measured in terms of advice only, supervision only, or both advice and supervision (proceeding from lower to higher power). The information package covers the fields of finance, production process, clients, innovation and strategy. Covering more fields means providing more information here. This operationalization is based on the expert interviews which preceded the empirical fieldwork and clearly follows Witt (2004).

7. Empirical Fieldwork

From the files of the Dutch Chambers of Commerce, 3,000 names of Dutch medium-sized firms were selected. 'Medium-sized' was defined here as between

50 and 500 employees. In total there were (by January 2004) 10,321 firms with between 50 and 500 employees in the Netherlands.

The official definition of SMEs in the Netherlands is: employing less than 250 people, with small firms employing 10 to 50 people and medium-sized firms employing 50 to 250 people (this definition has replaced the old definition, in which SMEs employed less than 100 people). We decided to change this definition to 500 people, because 'outsiders' may play an important role in the larger SMEs. This latter judgment was based on the expert interviews, as they emphasized a positive relationship between firm size and the participation of 'outsiders'. We choose a threshold of 500 employees because of the fact that in the US small firms are classified as firms up to 500 employees. However, from the data-analysis (see Section 8 in this paper) it becomes clear that size does not play a role in the relationship between the presence of 'outsiders' and the innovative behavior of the firms in our sample.

Furthermore, we eliminated a number of sectors, because it could be expected that 'outsiders' would play a minor role in these sectors. The opinion of the experts played an important role in this elimination. One example of a sector of lesser interest is the hospitality sector because mostly small firms operate in that sector. In addition, those firms without the name of a contact person were eliminated. This resulted in a database of 4,785 firms, from which we selected randomly 3,000 firms.

All the selected 3,000 firms were sent a questionnaire (February 2004) and one reminder (March 2004). The addressees were the directors of the firms, registered at the Chamber of Commerce. This was the approach that came most close to the entrepreneur, who holds a central position in SMEs. Letting entrepreneurs fill in the questionnaire on behalf of the firm is a very acceptable way of working with SMEs. 57 questionnaires were returned as they were incorrectly addressed, and 19 firms made clear that this project was not relevant for them. Ultimately, an effective sample of 2,924 was the result. We received 367 completed questionnaires, of which 11 were Internet versions. So our response rate was 12.5 percent (the quotient of 367 and $(2,924+11)=2,935$). 321 of these 367 firms employ 50 to 250 people, thus being middle-sized firms. In the rest of the paper, the focus will be on these 321 middle-sized firms.

In the period February–March 2004, we held 26 in-depth interviews with experts, 'outsiders' and entrepreneurs. These interviews completed, in a qualitative sense, our picture of the activities of the 'outsiders' and sharpened our questionnaire. These interviews also lead to the preliminary conclusion that 'outsiders' have a positive influence on the innovative behavior by the firms that have involved 'outsiders'.

The average firm size in our research project was 98.1 employees (full-time equivalents). Firms working with one or more 'outsiders' were larger than firms without them (105.8 versus 89.5). This size effect confirmed our decision to focus on medium-sized firms, and not on small firms (see the Introduction and Section

5 of this paper). The firms with 'outsiders' were on average slightly older than firms without them (by two years). There were hardly any differences in the sectors in which firms with or without 'outsiders' were operating.

In our response group, 52.2 percent of the firms considered had 'outsiders' involved in the firm. We may suppose that, in practice, the percentage for *all* medium-sized firms in the Netherlands is lower, because firms with an 'outsider' may be more motivated to collaborate with a project of this kind than firms that do not work with any 'outsider'.

The main reason, by far, to work with an 'outsider' is the added value for the firm: 71.3 percent of our respondents mentioned this. This answer was followed by the usefulness of the 'outsiders' feedback (47.9 percent), the appointment was at the request of shareholders (41.3 percent) and broadening the firm scope for the mid-term (34.7 percent). Increasing the network of the firm (23.4 percent) and tradition of the firm (19.2 percent) came next.

For the purpose of this paper, we looked at five aspects of working with 'outsiders': number of 'outsiders'; number of visits per year; annual fee; position; and information. Most firms make use of one (21.0 percent), two (24.2 percent) or three (26.6 percent) 'outsiders'. On average, the 'outsider' visits his firm 4.1 times a year, and was paid € 7,143 on a yearly basis.

The position of the 'outsider' is reflected in advice, supervision, or both. It is clear that supervision yields more power than advice which, in principle, is free of obligations. It appears that business advice is the main activity (74.3 percent). In second place comes supervision (61.7 percent). Almost half of the respondents (41.9 percent) mentioned a combination of advice and supervision.

The information presented to the 'outsiders' may deal with finance, production process, clients, innovation, and strategy. All these items can be related to the innovative behavior by the firm. Most information comes from the financial field (mentioned by 89.2 percent), followed by strategy (82.0 percent), production process (61.1 percent), innovation (46.7 percent) and clients (39.5 percent).

In order to characterize the innovative behavior by the firm, we asked the question whether the firm had invested in new products or services in the previous years? Almost two-thirds of the participating firms (60.7 percent) appeared to have invested in new products or services in the previous years, and so more than one third (39.3 percent) did not do so. We also asked directly about the influence of the 'outsiders' on innovation. 19.6 percent indicated a positive influence; 67.7 percent indicated unchanged; 1.9 percent indicated a negative influence; 10.8 percent were not able to indicate any influence. So, the tendency in these answers is relatively in the positive direction.

8. Data Analysis

Consequently we have applied a Logit model to examine the relation between the innovative behavior of the firm on the one hand, and the presence and intensity of ‘outsiders’ in the firm on the other hand, in order to answer our research question. This model can be defined as follows:

$$y_i = 1 \text{ as } Y_i = a + b_1 X_{1,i} + b_2 X_{2,i} + \dots + e_i > 0 \text{ and}$$

$$y_i = 0 \text{ as } Y_i = a + b_1 X_{1,i} + b_2 X_{2,i} + \dots + e_i \leq 0,$$

where y_i is an observable indicator of innovative behavior for firm i (whether the firm had invested in new products or services in the previous years, see above);

$X_{1,i}, X_{2,i}, \dots$ are observable indicators of the presence of ‘outsiders’ for firm i ;
 a, b_1, b_2, \dots are unknown regression coefficients; and
 e_i is an error term with expectation zero.

The above Logit model corresponds to the observable indicator of innovative behavior: the firm had invested in new products or new services in the previous years (yes/no variable).

For the independent variables, i.e. the x-variables in the Logit-model, we chose the following: (i) using the experience and know how of ‘outsiders’ (yes/no); (ii) the number of ‘outsiders’ (0, 1, 2, 3, etc.); (iii) the annual number of times the ‘outsider’ visits the firm (0, 1, 2, 3, etc.); (iv) the annual fee of the ‘outsiders’ (numeric value: zero or positive); (v) the position of the ‘outsider’: none, advice, supervision, or both (0, 1, 2, 3); (vi) the number of information fields (0, 1, 2, 3, 4, 5, or 6).

In order to strengthen our empirical study, we added a control variable that indicates whether the results of the analysis are size-related. For this purpose we used the number of employees, in terms of full time equivalents (ftes). On the basis of the median, we split our sample into two groups: firms with a maximum of 82 employees and firms with more than 82 employees. For both subgroups we ran the model.

We used the statistical software package SPSS to obtain the estimation results and test statistics. Extremes were eliminated, i.e. variable values that are extremely large or small (= +/- 3 * standard deviation).

Table 1 presents the results for the Logit model, first for the whole group of respondents and then for the two different firm size groups. The R-square values of the Logit models are 0.550, 0.545 and 0.579 respectively, which means that we can explain the dependent variable rather well by the independent variables.

Table 1: Estimation Results of Logit-Models

Independent variables	Dependent variable: Innovative behavior of all firms		Dependent variable: Innovative behavior of firms with a maximum of 82 employees		Dependent variable: Innovative behavior of firms with more than 82 employees	
	Regression coefficient (marginal effect)	p-value	Regression coefficient (marginal effect)	p-value	Regression coefficient (marginal effect)	p-value
'Outsider' presence	0.842 (2.321)	0.063*	0.756 (2.130)	0.081*	0.884 (2.421)	0.0343**
'Outsider' intensity						
Number of 'outsiders'	0.117 (1.124)	0.043**	0.108 (1.114)	0.038**	0.124 (1.132)	0.021**
Number of visits per year	0.098 (1.103)	0.006*	0.105 (1.111)	0.007***	0.103 (1.108)	0.008***
Annual 'outsider' fee	0.001 (1.001)	0.027*	0.001 (1.001)	0.024**	0.001 (1.001)	0.030**
'Outsider' position	0.089 (1.093)	0.001**	0.069 (1.071)	0.001***	0.090 (1.094)	0.002***
'Outsider' information	0.069 (1.071)	0.002**	0.062 (1.064)	0.003***	0.074 (1.077)	0.005***
	R ² = 0.550		R ² = 0.545		R ² = 0.579	

*** Statistically significant at the 1% level

** Statistically significant at the 5% level

* Statistically significant at the 10% level

From the first row of this table, we can conclude that firms with ‘outsiders’ invested more frequently in new products or services in the previous years, in comparison with firms that did not work with ‘outsiders’. In other words: firms with ‘outsiders’ more often show innovative behavior than the other firms. This means an acceptance of H_1 : the presence of ‘outsiders’ in a firm positively influences its innovative behavior, in terms of investments in new products or new services in the previous years. The marginal effects of the separate independent variables of our model are similar.

The next step is to look at the ‘outsider’ intensity: do firms that work more intensively with their ‘outsiders’ show more often innovative behavior than firms that work less intensively with their ‘outsiders’? We see significant and positive scores in all five fields: the number of ‘outsiders’; the annual number of visits of the ‘outsiders’ to the firm; the annual fee paid to the ‘outsider’; the position of the ‘outsider’; and the number of information fields that were presented to the ‘outsider’. This all means a more or less unambiguous acceptance of H_2 : the intensity of the presence of ‘outsiders’ in a firm positively influences its innovative behavior. The marginal effects of the separate independent variables of our model are similar.

We also checked to what extent the analysis results are size-related. From Table 1 it follows that the results for both subgroups are also significant and positive, both for the ‘outsiders’ presence and for ‘outsider’ intensity. So we can state that firm size does not effect the positive relationship between ‘outsiders’ and innovative behavior.

9. Discussion

‘Outsiders’ have a positive effect on the innovative behavior by the firm: working with an ‘outsider’, as such, and the more effort the ‘outsiders’ put in, the more often innovative behavior is showed by the firm appears to be. Apparently, it is a quid pro quo game, in which the ‘outsider’ can inspire the entrepreneur to innovate and prevent the entrepreneur from being too preoccupied with his daily business.

How does the influence of ‘outsiders’ work in practice? We showed that not only the decision to work with an ‘outsider’ positively influences the innovative behavior of the firm. The decision to work with more than one ‘outsider’ shows a similar positive influence too. Also the number of times the ‘outsiders’ visit the firm per year and the annual ‘outsider’ fee show a comparable influence. Furthermore, giving the ‘outsider’ more scope to exercise his influence has a payback for the innovative behavior of the firms involved (‘outsider’ position). The same applies to giving more information to the ‘outsider’, so that he is more informed about the firm. These practical insights contribute more in detail to the further understanding of the innovative behavior by medium-sized firms.

Is there an optimum in giving a position to the 'outsider'? It is plausible that there is, although it is not yet clear where this optimum lies. If the 'outsider' is given too much influence, then the entrepreneur gives away commitment to his own firm to a certain extent. But other stakeholders also play a role in determining this optimum, as does the composition of the network of the firm. Furthermore, it may be the case that 'outsiders' only get involved because they are needed to support the complexities involved in innovation.

Our paper is based on two different lines of thought: innovative behavior and 'outsiders'. The important role of innovative behavior is beyond discussion. We focused on the impact of 'outsiders' on the innovative behavior of the firm. This focus is an important step in theoretical development, both for innovation and for 'outsiders', because further insight in the innovative behavior of medium-sized firms is scientifically grounded. This also opens a new practical track to encourage innovation by medium-sized firms.

Although the hypotheses are focused on a causal relationship of the 'outsiders' to innovative behavior, with our empirical data analysis we have only established a strong association between 'outsiders' and innovative behavior. This association leaves open the possibility that the relationship between 'outsiders' and innovative behavior (also) runs in reverse way, i.e. from innovative behavior to 'outsiders', or in other words: it is also possible that more innovative firms chose to work with 'outsiders' more often than less innovative firms.

Another question is whether the outcome of this research is limited to Dutch firms only. It may have to do with typical aspects of Dutch culture. From previous studies (see, e.g., Hofstede, 2001), we know that the Dutch are rather individualistic, which may influence the relationship between entrepreneurs and 'outsiders'. This limitation is one direction for future research. It may also be relevant to look at countries that operate under the one-tier regime, in contrast to the Continental two-tier regime.

10. Conclusions and Recommendations for Future Research

Innovative behavior is a major aspect of economic development. Researchers all over the world have paid considerable attention to this phenomenon. Innovation by SMEs plays a special role in this context, and it may be concluded that SMEs innovate in a special way. One other direction in SME research is the role that 'outsiders' play, especially in the context of firm development. We focused on medium-sized firms because 'outsiders' are more relevant for them than for small firms.

For the purpose of this paper we combined these two angles, focusing on medium-sized firms: do 'outsiders' influence the innovative behavior of these firms? On the basis of our literature study, it could be expected that 'outsiders'

play an important role in the innovation process. Therefore, we formulated two positive hypotheses. This indicates both the importance and the relevance of this paper. From our research it became clear that ‘outsiders’ have a significant and positive influence on the innovative behavior of the firm.

It is important to find out how this process works in detail. We know that ‘outsiders’ provide a broad palette of services, with business advice at the core, but we do not know what exactly happens between the ‘outsider’ and the innovating entrepreneur, and where the optimal relationship lies. Therefore we suggest following firms through time, to study them on a longitudinal basis. Furthermore, the relationship between innovative behavior and successful innovations may be highlighted.

References:

- Åstebro, T. and Michela, J.L. (2005), "Predictors of the survival of innovations", *Journal of Product Innovation Management* 22(4): 322-335.
- Atuahene-Gima, K. (1996), "Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia", *Journal of Product Innovation Management* 13(1): 35-52.
- Barret, P. and Sexton, M. (2006), "Innovation in small, project-based construction firms", *British Journal of Management* 17(4): 331-346.
- Bhaskaran, S. (2006), "Incremental innovation and business performance: small and medium-size food enterprises in a concentrated industry environment", *Journal of Small Business Management* 44(1): 64-80.
- Beckman, C.M. and Burton, M.D. (2008), "Founding the future: Path dependence in the evolution of top management teams from founding to IPO", *Organization Science* 19(1): 3-24.
- Bell, G.G. (2005), "Clusters, networks and firm innovativeness", *Strategic Management Journal* 26(3): 287-295.
- Bennett, R.J. and Robson, P.J.A. (1999), "The use of external business advice by SMEs in Britain", *Entrepreneurship and Regional Development* 11(1): 155-180.
- Bennett, R.J. and Smith, C. (2004), "The selection and control of management consultants by small business clients", *International Small Business Journal* 22(5): 435-462.
- Brass, D.J., Galaskiewicz, J., Greve, H.R. and Tsai, W. (2004), "Taking stock of networks and organizations: a multilevel perspective", *Academy of Management Journal* 47(6): 795-817.
- Brouwer, E., Poot, T. and van Montfort, K. (2008), "The innovation threshold", *Economist-Netherlands* 156(1): 45-71.
- Cho, H.-J. and Pucik, V. (2005), "Relationship between innovativeness, quality, growth, profitability, and market value", *Strategic Management Journal* 22(6): 555-575.
- Chrisman, J.J. (1999), "The influence of outsider-generated knowledge resources on venture creation", *Journal of Small Business Management* 37(4): 42-58.
- Chrisman, J.J. and McMullan, W.E. (2004), "Outsider assistance as knowledge resource for new venture survival", *Journal of Small Business Management* 42(3): 229-244.
- Cobbenhagen, J. (2000), *Successful innovation: Towards a new theory for the management of small and medium-sized enterprises*, Edward Elgar, Cheltenham.
- Cooper, R.G. (1990), "New products: what distinguishes the winners?", *Research Technology Management* 33(6): 27-31.
- DeCanio, S.J., Dibble, C. and Amir-Atefi, K. (2000), "The importance of organizational structure for the adoption of innovations", *Management Science* 46 (10): 1285-1299.
- Desouza, K.C. and Awazu, Y. (2006), "Knowledge management at SMEs: five peculiarities", *Journal of Knowledge Management* 10(1): 32-43.
- Drucker, P.F. (1985), *Innovation and Entrepreneurship*, Harper Collins Publishers, New York.
- Edgett, S., Shipley, D. and Forbes, G. (1992), "Japanese and British companies compared: contributing factors to success and failure in NPD", *Journal of Product Innovation Management* 9(1): 3-10.
- Elfring, T., and Hulsink, W. (2003), "Networks in entrepreneurship: the case of high-technology firms", *Small Business Economics* 21(4): 409-422.
- Elenkov, D.S., Judge, W. and Wright, P. (2005), "Strategic leadership and executive innovation influence: an international multi-cluster comparative study", *Strategic Management Journal* 26(7): 665-682.
- Emden, Z., Calantone, R.J. and Droge, C. (2006), "Collaborating for new product development: selecting the partner with maximum potential to create value", *Journal of Product Innovation Management* 23(4): 330-341.
- Freel, M.S., and Harrison, R.T. (2006), "Innovation and cooperation in the small firms sector: Evidence from 'Northern Britain'", *Regional Studies*, 40 (4): 289-305.
- Freiling, J. (2008), "SME Management: (What) can we learn from entrepreneurship theory?", *International Journal of Entrepreneurship Education* 6: 3-22.
- García-Canal, E., Valdés-Llaneza, A. and Sánchez-Lorda, P. (2008), "Technological flows and choice of joint ventures in technology alliances", *Research Policy* 37(1): 97-114.

- Garcia, R. and Calantone, R. (2002), "A critical look at technological innovation typology and innovativeness terminology: a literature review", *Journal of Product Innovation Management* 19(2): 110-132.
- Gedajlovic, E.R. and Shapiro, D.M. (1998), "Management and ownership effects: evidence from five countries", *Strategic Management Journal* 19(6): 533-553.
- Gooderham, P.M., Tobiassen, A., Doving, A. and Nordhaug, O. (2004), "Accountants as sources of business advice for small firms", *International Small Business Journal* 22(1): 5-22.
- Gumusluolu, L. and Ilsev, A. (2009), "Transformational leadership and organizational innovation: The roles of internal and external support for innovation", *Journal of Product Innovation Management* 26(3): 264-277.
- Gupta, A.K., Tesluk, P.E. and Taylor, M.S. (2007), "Innovation at and across multiple levels of analysis", *Organization Science* 18(6): 885-897.
- Hansen, E.L. (1995), "Entrepreneurial networks and new organization growth", *Entrepreneurship Theory and Practice* 19(4): 7-20.
- Hippe, E. von. (1988), *The Sources of Innovation*, Oxford University Press, New York – Oxford.
- Hofstede, G. (2001), *Culture's Consequences*, 2nd ed. Sage Publications, London.
- Jones, O., and A. Macpherson (2006), "Inter-organizational learning and strategic renewal in SMEs: Extending the 4IO framework", *Long Range Planning*, 39 (2), 155-175.
- Kleinknecht, A., van Montfort, K. and Brouwer, E. (2002), "The non-trivial choice between innovation indicators", *Economics of Innovation and New Technology* 11(2): 109-121.
- Kroll, M., Walters, B.A. and Wright, P. (2008), "Board vigilance, director experience, and corporate outcomes", *Strategic Management Journal* 29(4): 363-382.
- Major, E.J. and Cordey-Hayes, M. (2000), "Engaging the business support network to give SMEs the benefit of foresight", *Technovation* 20(11): 589-602.
- Mole, K. (2002), "Business advisers' impact on SMEs: an agency theory approach", *International Small Business Journal* 20(2): 139-162.
- Montoya-Weiss, M.M. and Calantone, R. (1994), "Determinants of new product performance", *Journal of Product Innovation Management* 11(5): 397-417.
- Nonaka, I. and von Krogh, G. (2009), "Tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory", *Organization Science* 20(3): 635-652.
- Nooteboom, B. (1994), "Innovation and diffusion in small firms: theory and evidence", *Small Business Economics* 6(5): 327-347.
- Ooghe, H. and de Langhe, T. (2002), "The Anglo-American versus the Continental European corporate governance model: empirical evidence of board composition in Belgium", *European Business Review* 14(6): 437-449.
- Parthasarthy, P. and Hammond, J. (2002), "Product innovation input and outcome: moderating effects of the innovation process", *Journal of Engineering and Technology Management* 19(1): 75-91.
- Postma, T.J.B.M., Ees, H. and van Sterken, E. (2001), "Board composition and firm performance in the Netherlands", SOM-theme E: Financial markets and institutions, SOM-reports, University of Groningen, 1-31.
- Rice, M.P. (2002), "Co-production of business assistance in business incubators: An exploratory study", *Journal of Business Venturing* 17(2): 163-187.
- Robinson, R.B., Jr. (1982), "The importance of 'outsiders' in small firms strategic planning", *Academy of Management Journal* 25(1): 80-93.
- Robson, P.J.A. and Bennett, R.J. (2000), "SME growth: the relationship with business advice and external collaboration", *Small Business Economics* 15(2): 193-208.
- Ruef, M. (2002), "Strong ties, weak ties and islands: structural and cultural predictors of organizational innovation", *Industrial and Corporate Change* 11(3): 427-449.
- Schumpeter, J. (1934), *The theory of economic development*, Harvard University Press, Cambridge, MA.
- Smeltzer, L.R., van Hook, B.L. and Hutt, R.W. (1991), "Analysis of the use of advisors as information sources in venture startups", *Journal of Small Business Management* 29(3): 10-20.
- Sommer, S.C., Loch, C.H. and Dong, J. (2009), "Managing complexity and unforeseeable uncertainty in startup companies: An empirical study", *Organization Science* 20(1): 118-133.

- Song, X.M. and Parry, M.E. (1997), "The determinants of Japanese new product successes", *Journal of Marketing Research* 34(1): 64-76.
- Tang, J. (2006), "Competition and innovation behavior", *Research Policy* 35(1): 68-82.
- Tether, B.S. and Tajar, A. (2008), "Beyond industry-university links: Sourcing knowledge for innovation from consultants, private research organizations and the public science-base", *Research Policy* 37(6-7): 1079-1095.
- Thurik, A.R. (1996), "Introduction: Innovation and small business", *Small Business Economics* 8(3): 175-176.
- Tidd, J. (2001), "Innovation management in context: environment, organization and performance", *International Journal of Management Reviews* 3(3): 169-183.
- Vermeulen, P.A.M. (2005), "Uncovering barriers to complex incremental product innovation in small and medium-sized financial services firms", *Journal of Small Business Management* 43(4): 432-452.
- Ward, R.D. (1997), *21st Century corporate board*, Wiley, New York.
- Welsh, J.A. and White, J.F. (1981), "A small business is not a little big business", *Harvard Business Review* July-August 18-32.
- Wissema, J. and Euser, L. (1991), "Successful innovation through inter-company-networks", *Long Range Planning* 24(6): 33-39.
- Witt, P. (2004), "'Entrepreneurs' networks and the success of start-ups", *Entrepreneurship and Regional Development* 16(5): 391-412.
- Yap, C.M. and Souder, W.E. (1994), "Factors influencing new product success and failure in small entrepreneurial high technology electronic firms", *Journal of Product Innovation Management* 11(5): 418-432.
- Zhang, M., MacPherson, A., and Jones, O. (2006), "Conceptualizing the learning process in SMEs: Improving innovation through external orientation", *International Small Business Journal*, 24 (3), 299-323.
- Zahra, S.A., Neubaum, D.O. and Huse, M. (2007), "Entrepreneurship in medium-size companies: Exploring the effects of ownership and governance systems", *Journal of Management* 26(5): 947-976.
- Zirger, B.J. and Maidique, M.A. (1990), "A model of new product development: an empirical test", *Management Science* 36(7): 867-883.