Review of Managerial Science (2021) 15:1937–1960
https://doi.org/10.1007/s11846-020-00409-w

ORIGINAL PAPER

The relationship between innovation promotion processes and small business success: the role of managers' dominance

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Received: 9 January 2020 / Accepted: 27 July 2020 / Published online: 7 August 2020

Abstract

Many studies on small businesses have pointed to the central role of the manager and to his/her status as centralized pivot for knowledge transfer and decision-making, encompassing the spheres of strategy and resource management. The present study is concerned with an issue that, to date, has received little scholarly attention: the level of manager dominance in processes of innovation promotion, and the impact of that dominance on business innovation and growth. Manager dominance levels in innovation management are assessed in terms of dominance in implementing internal processes of collaboration and knowledge transfer, and in creating an organizational culture that promotes innovation, as well as in terms of manager involvement in the business's processes of engagement with external entities through the utilization of open innovation tools. The empirical study encompassed a sample of 202 small businesses in various industry sectors. The research methodology was a structured, face-to-face interview conducted with the business manager. The study findings indicate, as expected, that manager dominance in innovation promotion processes is exceedingly high. However, contrary to expectations, it was found that manager dominance level has no effect on the business's level of innovation for any of the four innovation types—product, process, marketing, and organization—or on the business's growth rate. These findings may indicate that small business managers have not adjusted their managerial practices to reflect market changes in which innovation is becoming the leading factor in success and growth. They appear to view innovation activity as part of their managerial tasks and they maintain their dominance as in the past, when small businesses focused mainly on achieving operational efficiency. High managerial dominance appears not to guarantee success; in order to promote innovation in small businesses and ensure their growth, other factors are needed.

Keywords Manager's dominance · Small business · Innovation · Innovation management · Entrepreneurship · Organization

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JEL classification M12

1 Introduction

Previous studies on small businesses indicated the manager's high level of dominance and involvement in all business processes, as well as personal managerial style (Franco and Prata 2019; Rolfo and Calabrese 2003; Sanders et al. 2020; Stewart et al. 1999). The manager in small businesses is involved in every aspect of managing the business and serves as a link for the transfer of information and decision-making (Carson 1990; Miller 1983; Schollhammer and Kuriloff 1997; Yew Wong and Aspinwall 2004). Earlier research also showed that the dominance and behavioral patterns of small-business managers have an impact on the level of business success (Laguna et al. 2012; Watson et al. 2020; Wiklund and Shepherd 2005).

The present study addresses a topic that has received less scholarly attention, namely, the manager's level of dominance in innovation promotion processes within the business, and its impact on business innovation and growth.

Our hypotheses are that, in small businesses, managers are dominant in utilizing processes and specific managerial tools for promoting innovation, and that this dominance has a positive impact on business innovation and growth.

In the present work, the manager's dominance in innovation-promoting processes was assessed in terms of the level of manager dominance in implementing processes for the sharing and utilization of knowledge ("sharing processes") and in processes for creating an organizational culture that encourages innovation ("cultural processes"), as well as manager involvement in the business's engagement with the external environment by way of utilizing open innovation tools.

Innovation is a means of creating a competitive advantage leading to the improvement of the business results, and it is essential in businesses of any size or industry (Marques and Ferreira 2009; Teece et al. 1997; Zainol et al. 2018). However, since the innovation process carries risks and is complex to manage (Alsaad et al. 2018; Chesbrough 2003), it becomes difficult especially for small businesses, in view of their size disadvantages and resource constraints (Harel and Kaufmann 2016; Mahto et al. 2018; Wu et al. 2016).

While many studies that deal with SMEs are positioned in the field of entrepreneurship, the present study positions itself in the field of SMEs, knowledge and innovation. The field of entrepreneurship has evolved over time, starting from studying startups and small firms to embracing theories of heterogeneity from other fields, as shown by Ferreira et al. (2019).

This study focuses on small businesses in the industry sectors, which face a variety of barriers to promoting innovation (Harel and Kaufmann 2016; Marom and Lussier 2018; Van de Vrande et al. 2009) that are essential in their development and sustainability (Chesbrough 2003). This group of businesses, despite its unique characteristics, has received relatively less attention in the literature regarding the promotion of innovation.

Most studies regarding business innovation view small and medium-sized enterprises (SME) as one cohesive group (Jeong et al. 2018). For the most part, these

studies focused on product and process innovation (De Toni and Nassimbeni 2003; Mariani and Mealli 2018; Oke et al. 2007; Mosey 2005) as well as on businesses in technological fields and early stages of the business lifecycle (Bianchi et al. 2010; Colombo et al. 2014; Van de Vrande et al. 2009; Vanhaverbeke and Cloodt 2006; West et al. 2006). For this reason, the current study chooses to focus on small businesses in the industry sectors and to distinguish among four types of innovation: product, process, marketing, and organizational innovation.

The decision to study this group of businesses from among all small businesses stemmed from the fact that this is a distinct group, in most cases consisting of businesses that operate in traditional industrial fields and invest relatively small sums in R&D activity. At the same time, the centrality of these businesses to the economy underscores the need to understand the innovation that characterizes them. Furthermore, we explore the promotion of innovation at various stages of the business lifecycle, and not exclusively in early stages of R&D, which are typical of small businesses in the high-tech sector (Hossain 2015).

An understanding of how manager dominance in innovation promotion affects business innovation and growth has theoretical implications for the research literature and practical implications for policy makers in terms of adapting programs to promote innovation while taking into account the particular needs and characteristics of this important group of businesses.

2 Theoretical background

2.1 Innovation

There is a broad range of definitions for innovation, which according to Baregheh et al. (2009), may be reflected in the process of presenting new ideas that will improve business performance. Frankelius (2009), defines innovation as creating value through new solutions to existing needs or through creating new solutions. Frankelius et al. (2019), concluded that the term innovation could be understood as something new with high originality (principally new) that has obtained a foothold in the community (often via the market), and has appeared at a specific point (or over a specific period) of time. According to Smith (2005), quoted by Taques et al. (2020), innovation depends on sustaining learning and knowledge building processes and involves changing business skills and capabilities, leading to better business performance. A similar definition was proposed by West and Anderson (1996), quoted by Wong et al. (2009): "Innovation can be defined as the effective application of processes and products new to the organization and designed to benefit it and its stakeholders."

According to the DTI Innovation Report (2003), innovation is reflected in the successful utilization of ideas, new products, processes, services or business practices and is a critical process in achieving growth and improvement of business performance. According to the OECD, innovation is defined as the implementation of a new or significantly improved product or the implementation of a new process,

marketing method, or organizational method in business practices, workplace organization, or external relations (OECD 2005).

This study adopts the definition of innovation offered by Israel's Central Bureau of Statistics that is based on the OECD definition, which embraces technological innovation in product and process and non-technological innovation in marketing and organization (CBS 2012).

There is a distinction between radical and incremental innovation, which lie at the two extremes of the level of innovation spectrum. Radical innovation is based on different and new knowledge, skills and capabilities in the industry (Nadkarni et al. 2018; Perry-Smith and Mannucci 2017; Taylor and Greve 2006), which may evolve and improve through an organic structure in the business along with generative learning (Wiedeler and Kammerlander 2019). Incremental innovation, on the other hand, is characterized by the expansion of existing organizational capabilities (Bedford et al. 2019; Benner and Tushman 2002). This type of innovation uses existing knowledge and basic technology and is therefore expressed in the preservation of existing capabilities in the industry (Tushman and Anderson 1986; Anderson and Tushman 1990).

This study uses the definition proposed by Oke et al. (2007), according to which incremental innovation is characterized by significant improvements to products or processes that are new to the business, but already exist in the market. Radical innovation is described as the introduction of a product or process that is entirely new to the market. This definition makes it possible to more accurately examine a business's level of innovation on the spectrum between radical and incremental innovation.

2.2 Open innovation

The changes in labor mobility and the wide dissemination of knowledge that have taken place in recent decades have led to changes in the effectiveness of the traditional innovation system. The innovation landscape has changed from a closed innovation model based on internal resources to an open innovation ("OI") model characterized by going beyond the firm's boundaries. The open innovation concept was introduced by Chesbrough (2003), who defines it as the "use of purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation." OI can be expressed in the acquisition of technology or knowledge, the use of networking, cooperation with customers on ideas for product design, and so on. The OI model enables businesses to employ both internal and external pathways and, concurrently, to acquire knowledge from external sources, allowing small businesses to become part of the innovation landscape (Bigliardi and Galati 2018; Chesbrough 2003; Cruz-Ros et al. 2018).

According to Laursen and Salter (2004), the flexibility and specialization of small businesses does give them an advantage. However, only a small number of them have sufficient ability to manage the entire innovation process independently and therefore they need to collaborate with other entities (Mitra 2019). Lee et al. 2010, Radziwon and Bogers (2018), and Van de Vrande et al. (2009), also argue that small businesses need to find ways to benefit from economies of scale and therefore,

they must develop external relationships in order to find the resources they lack for innovation.

Open innovation is manifested in the utilization of networks and collaborations with external entities (Chung et al. 2019; Kaufmann and Schwartz 2008, 2009; Mirkovski et al. 2015; Öberg and Alexander 2019; Schwartz et al. 2008; Stanko et al. 2017), in using online networking sites (Bosua and Evans 2017; Michaelidou et al. 2011), and in using government and public policy tools to support innovation (Schwartz and Bar-El 2015; Zeng et al. 2010).

2.3 Small businesses

Small businesses are defined as businesses that employ up to 50 employees (European Commission 2003; Prime Minister's Office 2014). They are often characterized by limited regional activity and relatively small market share. The manager and employees are often located in one building, and the business has a single or small group of owners, managed by the primary owner. These businesses are generally autonomous, as they are not part of a corporate group or a corporation, and thus their owners have unrestricted authority and effective control over all business activity (Carson 1990; Schollhammer and Kuriloff 1997; Matejun 2017; Yew Wong and Aspinwall 2004). The most important and outstanding characteristic of small businesses is their unique management style, which is personal. Managers know each employee personally, are involved in every aspect of managing the business, and often do not include others in the decision-making process (Abd Aziz and Hanafiah 2020; Carson 1990; Massaro et al. 2019; Miller 1983; Schollhammer and Kuriloff 1997). Managers typically perform multiple roles in the company and serve as a centralized pivot for information transfer and decision-making (Cardoni et al. 2018). The business manager can be a hired manager in exchange for a monthly salary ("non-owner/manager") or the owner of the business who also runs it on a regular basis ("owner/manager"). Many small businesses are family-owned and operated by their primary owners (Coleman and Carsky 1999; Ng and Kee 2018). In such cases, the business manager often views the business as a means of achieving both personal goals and as a source of family income (Stewart et al. 1999).

Small-business managers are generally involved in all operations and have to understand and make decisions on the full range of issues pertaining to the business's management (Carson 1990; Yew Wong and Aspinwall 2004). There is a relationship between managers' personal characteristics and the characteristics of the business (Putra and Cho 2019; Stewart et al. 1999), therefore, the manager's cumulative business experience (Carson 1990) and high level of involvement in all managerial processes, are likely also to affect the business's innovation processes (Rolfo and Calabrese 2003; Stewart et al. 1999).

Small businesses are perceived as an important growth driver in the economy, (Henrekson and Johansson 2010; OECD 2009), and in the ever-changing economic environment, their primary advantages regarding innovation are expressed in flexibility, rapid response, adaptability to market changes, informal communication

coupled with less bureaucracy, rapid decision making, and greater entrepreneurial spirit (Bommer and Jalajas 2004; Vossen 1998; Tzadik 2007).

2.4 Processes for sharing and utilizing knowledge in the business

Knowledge is one of the main sources for innovation and the creation of a competitive edge for a business (Caloghirou et al. 2004; Shrafat 2018; Weijs-Perrée et al. 2019). In order to take advantage of opportunities and exploit knowledge, the business must implement appropriate processes for obtaining and utilizing the knowledge, and eventually integrating this new knowledge into the knowledge and resources that already exist in the business (Björk et al. 2010).

Exposing the business to new external knowledge is not enough to promote innovation (Jansen et al. 2005). Knowledge is a raw material (Johannessen et al. 1999), and in order to internalize and use it effectively, a business must develop appropriate structured processes that will enable the integration of new knowledge into existing knowledge. The structured processes are defined as a routine composed of regular and consistently practiced patterns of individual and business behaviors that institutionalize and organize knowledge through activity and conduct in the business (Knight and Cavusgil 2004). Small businesses are more likely tend to adopt informal processes, so that the knowledge is managed without using language and concepts of knowledge management, and accompanying formal structures (Hutchinson and Quintas 2008).

2.5 Processes for creating an organizational culture that encourages innovation

Many studies have pointed to organizational culture as a major innovation resource and its great contribution to business growth and performance (Ali and Park 2016; Do et al. 2018; Hoyte 2019; Rohlfer and Zhang 2016; Tian et al. 2018). Organizational culture is defined as a framework of shared values and beliefs for employees at all levels of the organization that are reflected in its characteristics, and organizational culture that supports innovation, includes behavior that demonstrates an appreciation of creativity, risk taking, freedom, teamwork, communication, trust, and respect (Dobni 2008; Heinze and Heinze 2020; Miron et al. 2004).

The creation of new knowledge depends on personal tacit knowledge as well as subjective insights and intuitions of any individual employee. Only the creation of a suitable organizational culture that encourages communication and knowledge sharing will make these available for use by the entire organization (Nonaka 2007; Woodfield and Husted 2017).

The organizational culture is a unique product that develops slowly within the organization, cannot be determined or dictated by management, is not easily defined, and is difficult to transfer between organizations (Tellis 2012; Tellis et al. 2009). Each organization has elements of leadership, skills, infrastructure, values, culture, and organizational processes, and the challenge is to adapt these components to an innovation framework that is compatible with the organization and its objectives (Skarzynski and Gibson 2013).

Terziovski (2010), reinforces the claim that developing an organizational culture that encourages innovation is an integral part of the innovation process. This culture can be measured by examining the business's reward system, focusing on teamwork, encouraging informal employee meetings, sharing knowledge and more.

3 Research hypotheses

As noted, a salient characteristic of small businesses is the personal management style, in the sense that the manager knows all employees personally, is involved in all aspects of business operations (Carson 1990; Miller 1983; Schollhammer and Kuriloff 1997), plays multiple roles, and serves as a centralized pivot for knowledge transfer and decision-making on all issues pertaining to business management (Yew Wong and Aspinwall 2004). Accordingly, we may hypothesize that high managerial dominance in small businesses would also manifest in innovation promotion processes in those businesses. Hence the following hypotheses:

H1 Manager dominance in implementing sharing and cultural processes in small businesses is exceedingly high.

H2 Manager involvement in the utilization of open innovation tools in small businesses is exceedingly high.

Given the unique managerial style that characterizes small businesses, we may speculate that a greater amount of resources would be devoted to issues that are the focus of the business manager. Thus, high manager dominance in innovation promotion processes would seem to indicate a focus on this area and would increase the probability of actual innovation promotion in the business.

From this is derived the research question assessing the impact of manager dominance levels on small businesses' level of innovation. The level of innovation is examined in the present study in the four types of innovation: product, process, marketing, and organization, with the research hypotheses being formulated, for simplicity's sake, in a general manner, but tested for each innovation type separately.

This question will be examined via the following hypotheses:

H3 The higher the level of manager dominance in implementing sharing and cultural processes, the higher the business's level of innovation.

H4 The higher the manager's level of involvement in utilizing open innovation tools in the business, the higher the business's level of innovation will be.

Many studies have shown that certain small-business manager behavior patterns have an impact on business success levels (Laguna et al. 2012; Wiklund and Shepherd 2005); the studies have also pointed to a relationship between businesses' innovation and growth levels (Marques and Ferreira 2009; Oke et al. 2007).

From this we derive the following hypothesis regarding the relationship between manager dominance in innovation promotion processes and business growth:

H5 The higher the manager's level of dominance in innovation promotion processes, the higher the business's annual sales growth.

Figure 1 illustrates the hypotheses regarding the relationship between the small business manager's dominance in innovation promotion processes and business innovation and growth.

4 Research methodology

The sample includes 202 small businesses in the industry sectors in Israel that employ between 10 and 50 employees. Micro size businesses of up to 10 employees were excluded from the study, as such businesses exhibit different managerial characteristics. The sample based on data from the Israeli Industry and Craft Association, which includes all small businesses in these sectors that by law are incorporated into this organization. The data file included 370 businesses with a geographical distribution from Hadera in the North to Beer-Sheva in the South. The 370 small business managers were conducted by phone, 202 of whom agreed to a face-to-face interview, resulting in a response rate of around 55%. In examining the list to identify patterns in the characteristics of businesses that accepted or refused interviews, no differences were found that would influence the findings.

Data collection took place over the course of 4 months, during which time the 202 small business managers were interviewed at their premises. The face-to-face interviews lasted no less than 30–40 min each, and in many cases, much longer, as

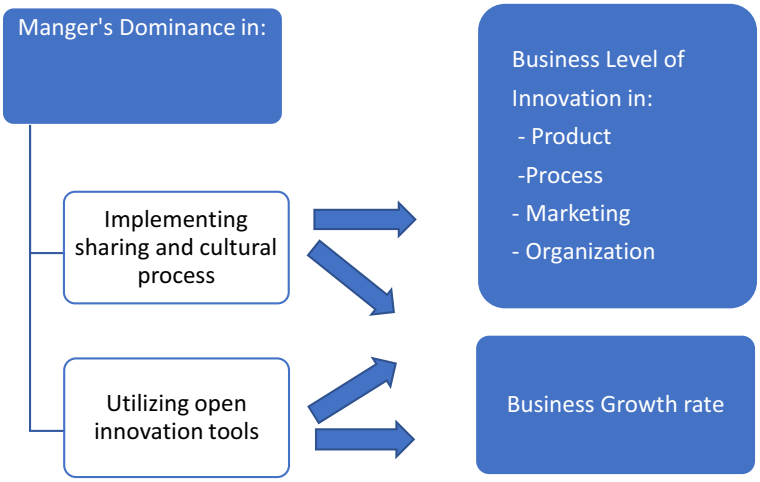

Fig. 1 The relationship between the small business manager's dominance in innovation promotion processes and business innovation and growth

the research objectives were explained to the business managers and the definitions of innovation according to Israel's Central Bureau of Statistics were read aloud (CBS 2012). Data collection was conducted using a structured questionnaire divided into two parts:

A. The indices for estimating a business's level of innovation for the four types of innovation, and an index of business growth.
B. The indices for assessing the level of manager dominance in innovation promotion processes.

4.1 Indices of a business's level of innovation

We measured the level of innovation for each of four types of business innovation—product, process, marketing, and organization—based on the Israel's Central Bureau of Statistics survey definitions (CBS 2012). For each type of innovation, the level of innovation was measured according to four degrees of innovation. First-degree innovation indicates a significant improvement on an existing product, process, or method. Second-degree innovation indicates products, processes, or methods that are new to the business, but exist in the local market. Third-degree innovation indicates products, processes, or methods that are new both to the business and to the local market. Fourth-degree innovation indicates products, processes, or methods that are new to both the business and the global market (Oke et al. 2007). In each interview the business manager was asked to indicate the number of innovations implemented in the business in the last 3 years for each type of innovation, as well as the degree of each innovation on a scale of 1 to 4 (improvements on existing products, processes, or methods; new to the business but existing in the local market; new to both the business and the local market; or new to both the business and the global market). The level of each type of innovation was calculated based on a weighted index of the number of innovations and the degree of innovation (Bobko et al. 2007; Miron-Spektor et al. 2011). From these calculations, we generated four indices that represent the level of innovation in each business for each type of innovation separately.

In order to maintain consistency, the definitions of innovation were read from a written document that was identical in all interviews. The structured questionnaire was filled out by the interviewer according to the responses of the business managers who specified that some of their practices are innovations, without any intervention or directing by the interviewer. The responses of the business managers were verified by means of additional questions intended to clarify the nature of their business innovations. This method of completing the questionnaire ensured this study's validity.

4.2 Business growth index

Growth was assessed in terms of the average rate of the business's sales growth over the past 3 years. The growth rate of sales was calculated in 5% increments and within a range starting from no sales growth to a growth rate of over 15% per year.

4.3 Indices of manager dominance in innovation promotion processes

The manager's level of dominance was assessed according to two parameters: (1) Dominance in implementing processes for the sharing and utilization of knowledge and for creating an organizational culture that encourages innovation; (2) Involvement in the utilization of open innovation tools.

4.4 Implementation of sharing processes in the business

The sharing processes measure includes four managerial practices: holding weekly meetings for sharing and transmitting information, transferring information to employees, reporting on external information after participating in professional conferences and/or meeting with customers, and maintaining processes for implementing and applying innovations in the business (see "Appendix 1"). Selection of the sharing processes to the index was based on independent preliminary pilot research and focus groups made with several relevant small businesses, in combination with processes that were mentioned in the research literature. In a test of internal reliability using Cronbach's alpha, the result was higher than the accepted threshold ($\alpha = 0.73$), indicating the internal reliability of the index that includes the four items.

4.5 Implementing cultural processes in the business

The cultural processes measure includes eight managerial practices. The first five are based on a validated index from a study by Terziovski (2010), while the other three are based on research by Skarzynski and Gibson (2013). The practices are: encouraging employees to hold informal meetings, monitor their own performance, share knowledge, focusing on teamwork, and experimenting with new ways of doing things (Terziovski 2010), discussing innovation in meetings with employees, encouraging employees to propose new ideas and implementing employees' new ideas (Skarzynski and Gibson 2013), (see "Appendix 2"). In an examination of internal reliability using Cronbach's alpha, the result obtained was higher than the standard threshold ($\alpha = 0.85$), indicating high internal reliability of the index that included the eight items.

4.6 Level of manager dominance in implementing processes for the sharing and utilization of knowledge and for creating an organizational culture that encourages innovation

In order to examine the level of the managers dominance in implementing sharing and cultural processes, each manager was asked to assess his/her level of dominance in the implementation of these processes in the business, on a scale of one to five (Likert scale), with 1 indicating "not relevant at all" and 5 indicating "to a very high

level." The higher the score, the higher the manager's dominance in implementing these processes in the business.

4.7 Level of manager dominance in the utilization of open innovation tools

The OI tools include the utilization of networking (Johannissson 1998), the utilization of online sites (Evans 2012; Michaelidou et al. 2011; Sharma 2002; Walters 2008; Wind and Mahajan 2002), the scope of external collaboration (Marques and Ferreira 2009; Zeng et al. 2010), and the use of government and public policy tools to support innovation (Schwartz and Bar-El 2015; Zeng et al. 2010), (see "Appendix 3").

Each manager was asked to assess his/her level of involvement in the utilization of each of the four OI tools, separately, on a scale of one to five (the Likert scale), with 1 indicating "The business does not use this tool" and 5 indicating "Very high level of involvement." For each manager an average of the ratings for each of the section items was calculated; the higher the score, the higher the level of manager involvement in the utilization of OI tools.

5 Findings

5.1 Characteristics of the businesses and the business managers

More than half of the businesses in the sample have between 10 and 19 employees, while one quarter have between 20 and 29 employees and another quarter have between 30 and 50 employees. The average number of employees in the businesses is $M = 22.7$ ($SD = 13.1$) and the businesses average age is $M = 28.3$ ($SD = 14.2$). 40% of the businesses work as subcontractors.

The distribution of the businesses in the sample as per their average annual growth rate of sales for the past 3 years is displayed in Table 1.

The table data show that 42% of the businesses in the sample exhibited no change in growth rate of sales over the past 3 years, while just 8% displayed an annual growth rate of over 15%.

The average number of years of management experience of business managers was $M = 26.9$ ($SD = 10.7$). However, more than 75% of the business managers had managed only one or two businesses, indicating that despite many years of experience, their management experience is not diverse. In 90% of the businesses, the manager of the business was also its owner.

5.2 Manager dominance level

Research hypotheses H1 and H2 relate to the manager's level of dominance in innovation promotion processes within the business. Manager dominance levels were measured via two separate indices: the manager's level of dominance in

Table 1 Businesses' annual growth rate of sales

Average annual growth rate of sales (%)	Percentage of businesses in the sample (%)
No change	41.6
1–5	23.8
5–10	18.3
10–15	8.4
> 15	7.9

implementing sharing and cultural processes, and his/her level of involvement in the utilization of open innovation tools.

Manager dominance level distributions for each of the two indices are displayed in Table 2. Afterward the relationships between these variables and business innovation and growth levels will be displayed.

The table data point to an exceedingly high level of manager dominance. 86% of the business managers exhibit high or very high dominance in the implementation of sharing and cultural processes, while over 70% are involved to a high or very high level in the utilization of open innovation tools.

The distribution of manager involvement levels in the utilization of each of the four OI tools separately is displayed in Table 3.

The table data show that processes engaged in by small businesses to promote innovation with external entities are manifested primarily in the networking sphere. The data also indicate that 73% of managers are involved in networking at high or very high levels, and that 47% are involved in external innovation collaborations at high or very high levels. However, 12% and 45% of the businesses, respectively, do not use these tools at all for innovation promotion purposes. Interestingly, in 85% of the businesses that do engage in networking and external collaborations for innovation, manager involvement is high. Additionally, we can see from the table that 64% of the businesses are not active in online networking sites, nor do they use governmental or public innovation support tools. However, in 40% of the businesses that are active in such sites, and in 80% of the businesses that do use governmental/public support tools, manager involvement is high. To conclude, we see that in businesses that engage in innovation processes by means of OI tools, manager involvement in the utilization of these tools is exceedingly high.

Table 2 Manager dominance level distributions

Level	Dominance in implementing sharing and cultural processes (%)	Involvement in utilizing OI tools (%)
Low	4.0	2.0
Moderate	10.0	27.1
High	34.2	54.3
Very high	52.0	16.6

Table 3 The manager involvement levels in the utilization of OI tools

Level	Networking (%)	External collaboration (%)	Online sites (%)	Public support tools (%)
Innovation tool not utilized by the business	12.4	45.0	64.4	64.4
Low level of manager involvement	1.5	0.5	12.9	2.5
Moderate level of manager involvement	12.9	7.4	8.9	5.0
High level of manager involvement	39.6	18.3	7.9	16.8
Very high level of manager involvement	33.7	28.7	5.9	11.4

Research hypotheses H3 and H4 refer to the relationship between manager dominance in innovation promotion processes and business' level of innovation. The relationships between manager dominance level for each of the indices and level of four types of innovation in the business are presented in Table 4.

The assessment of the relationships between manager dominance in innovation-promoting processes and business levels of innovation, via Pearson correlation coefficients, indicate no significant correlations.

Hypothesis H5 had to do with the relationship between manager dominance level in innovation promotion processes, and annual sales growth rates. Contrary to expectations, here as well the examination of these relationships via Pearson correlation coefficients indicated no significant correlations. It should be noted that the examination of the relationship between annual sales growth rates and business level of innovation found, as expected, significant correlations with each type of innovation, and a particularly high correlation with organizational level of innovation ($r = .41$, $p < .01$).

6 Discussion

This study is a continuation of Harel, Schwartz, and Kaufmann's studies on sharing knowledge and organizational culture processes for promoting innovation in small businesses (2020a, b), and on open innovation in small businesses (2019b). The

Table 4 Pearson correlation coefficients in an assessment of the relationship between manager dominance indices and business levels of innovation

Indices	Product innovation	Process innovation	Marketing innovation	Organizational innovation	*M*	*SD*
Manager dominance in sharing and cultural rocesses	− .01	.01	− .04	− .04	4.33	.85
Manager involvement in OI	− .01	.02	− .03	− .03	4.06	.68

*$p < .01$; **$p < .001$

findings of these studies showed that small businesses that implemented sharing and cultural processes and utilized open innovation tools were more successful in promoting innovation.

Earlier studies on small businesses pointed to the manager's centrality in the business, and his/her role as a pivot for knowledge transfer and decision-making, encompassing the spheres of strategy and resource management.

The present study addresses an issue to which previous research paid less attention, namely, the level of manager dominance in innovation-promoting processes, and its impact on business innovation and growth levels. Manager dominance was assessed in terms of dominance in implementing processes for the sharing and utilization of knowledge and in processes for creating an organizational culture that encourages innovation, as well as involvement in the business's engagement with external entities, by way of utilizing open innovation tools. The research hypotheses were that high manager dominance in implementing these processes and managerial tools for promoting innovation has a positive effect on small businesses' innovation and growth levels. The study focused on small businesses in the industry sectors.

The findings point to an exceedingly high level of manager dominance in innovation-promoting processes. That is, in a high percentage of the businesses, manager dominance in implementing sharing and cultural processes, and manager involvement in the utilization of OI tools, are very high.

Regarding the use of OI tools, it is interesting to note that manager involvement in networking and collaboration with outside parties for innovation purposes is very high. By contrast, manager involvement in businesses' use of online networking sites is relatively low, though the percentage of businesses that employ these sites is also low. Also of interest is the fact that manager involvement in businesses' use of governmental and public support tools for innovation is high, but the percentage of businesses that use these tools is relatively low.

The study findings, as noted, indicate very high manager dominance levels in innovation promotion processes, but—contrary to expectations—the high dominance levels were found to have no impact on business level of innovation, for the four types of innovation: product, process, marketing, and organization. These findings support research hypotheses H1 and H2, according to which manager dominance in innovation promotion processes is high. The findings do not, however, support hypotheses H3 or H4, according to which, the higher the level of manager dominance in innovation promotion, the higher the business's level of innovation will be.

The lack of a significant positive relationship between manager dominance and level of innovation may stem from low variance between the sample businesses in this area. That is, manager dominance was high both for businesses with high level of innovation and for businesses with low level of innovation.

Another explanation for the study findings could have to do with the relationship between strategic planning and level of innovation in small businesses (Wang et al. 2007). Earlier studies showed that in small businesses one has to assess strategic planning in the context of owner/manager motivation levels and personal aspirations (Cliff 1998; Galloway and Mochrie 2006. According to Wang et al. (2007) most small businesses are motivated primarily by non-economic owner/

manager self-fulfillment goals, e.g. independence and work/lifestyle flexibility. They are less motivated by the idea of maximizing profits or growth, and therefore do not necessarily understand the need for strategic planning. This raises a possible explanation for the present study's findings: when high levels of manager dominance in innovation-promoting processes do not translate into strategic planning, they do not necessarily contribute to business' level of innovation.

Beyond strategic planning, previous research has shown that small businesses also do not plan ahead and often do not even prepare a business plan when starting a business (Schwartz and Bar-El 2004). As the findings of the present study indicate, most of these businesses are concerned with survival rather than growth. The findings showed that about two-thirds of businesses have barely increased their sales in the last 3 years (see Table 1), strengthening the conclusion that most of them are engaged in survival and in such a situation are focused mainly on efficiency efforts rather than redirecting resources to innovation that will lead to growth. Hence, even when the manager's level of dominance is high, when insufficient resources are used to promote innovation, this dominance will not have an impact on innovation.

The existing literature on small-business management has had little to say about the relationship between manager dominance in innovation promotion and business level of innovation, let alone about the distinctions between the different types of innovation in the business. Most studies that have looked at the manager-innovation relationship in small businesses have been concerned primarily with various characteristics of tech entrepreneurs. Marvel and Lumpkin (2007) found a positive relationship between business level of innovation and the human capital levels (education and experience) of tech entrepreneurs; Baumol (2005) noted a positive relationship between level of innovation and the personal knowledge and initiative of these entrepreneurs. Baron and Tang (2011) found a positive relationship between business innovation and entrepreneurial creativity; Strobl et al. (2020), noted a positive relationship between managers' innovation behavior and firm-level innovation activities of exploration–exploitation, and Hernández-Perlines et al. (2019), found that innovativeness is the most important dimension of entrepreneurial orientation. Recent research by Bouncken et al. (2020), points to new forms of work such as coworking spaces that can influence individual work satisfaction and empower towards innovation and entrepreneurial performance. Carland et al. (1984) distinguished between high-tech managers and the managers of small businesses of other types. According to the authors, one of the outstanding characteristics of tech entrepreneurs, as opposed to other types of managers, is their innovative behavior and the implementation of strategic management practices in the relevant businesses. Hence their assertion that tech enterprises may be expected to display a positive relationship between manager dominance in innovation promotion processes and the level of innovation in the business.

The study findings also showed that, contrary to expectations regarding the relationship between manager dominance levels in innovation promotion and the business's annual rate of growth in sales, there were no significant relationships. These findings do not support the H5 research hypothesis that relied on the findings of earlier studies

indicating a positive relationship between certain manager behavioral patterns and levels of business success (Laguna et al. 2012; Wiklund and Shepherd 2005).

These findings may indicate that small-business managers are still not adjusting their managerial practices to reflect changes in the market—i.e., to a situation where innovation management is becoming the driving factor behind success and growth. They appear to view innovation activity as one of their managerial tasks, and continue to be dominant as in the past, when small businesses focused mainly on achieving operational efficiency. It appears that high manager dominance in small-business innovation promotion does not guarantee success, and that additional elements are needed in order to promote innovation and ensure their growth.

As previous studies have shown, a business's utilization of networking and collaboration with external entities promotes innovation (Harel et al. 2019b; Vega-Jurado et al. 2008; Xiaobao et al. 2013). However, networking in small businesses is unique in that it is usually personal, reflecting social and business issues simultaneously. Unlike in larger businesses, small business networking is based on the business manager's personal contacts. Most of these are based on commercial relationships with suppliers and customers, so they are rarely exposed to entities outside their closest business environment, such as academia, government institutions, and professional associations. This suggests that the manager's dominance of networking and collaborations with close circle parties may not contribute adequately to promoting innovation in the business. It may be worth considering collaborating with other parties such as direct competitors—"coopetition" (Devece et al. 2019; Kraus et al. 2018a; Maier and Brem 2018), that offers opportunities otherwise unattainable and even to develop radical innovation, as it was suggested by Czakon et al. (2020).

In addition, the study findings showed that most small businesses do not use governmental or public innovation support tools, although in the businesses that do use these tools, the manager involvement in achieving it is high. As a previous study revealed, because small business managers are not highly aware of formal definitions of innovation, they do not readily attempt to solicit support or gain benefits from government programs that support innovation. Their lack of use of these programs places them at a certain disadvantage (Harel et al. 2019a). It can be assumed that with government assistance these businesses will be able to take greater risks in order to promote innovation and thus be able to promote innovation at higher levels than they might if they did not take advantage of such support.

In addition, as suggested by Maier and Brem (2018), given that small business managers are usually busy with day-to-day survival, consideration might be given to appointing one of the senior employees other than the business manager to take a major role in promoting innovation issues as part of the job description. In such a case his/her role and responsibilities must be clearly defined.

7 Conclusion, contribution and implications

The goal of this study was to determine whether in small businesses the level of manager dominance in the implementation of processes and specific managerial tools for promoting innovation, would have a positive impact on their innovation and

growth levels. Dominance in innovation promotion processes was assessed in terms of manager dominance in implementing sharing and cultural processes and manager involvement in utilizing open innovation tools.

As expected, the study findings indicated a high level of manager dominance in innovation promotion processes (H1, H2). However, contrary to expectations, it emerged that manager dominance levels have no effect on business level of innovation for any of the four innovation types examined (H3, H4), or on business growth rates (H5).

This study contributes to the expansion of academic and applied knowledge in the field of innovation management in small businesses. The findings indicate that innovation management in small businesses is not a "one-man show," so a high level of manager dominance in innovation promotion processes may not guarantee success. Therefore, like in larger businesses, it requires commitment, active involvement and diversified skills of additional employees in these processes, as well as increased networking and collaborations with external ecosystem parties. We may assume that widening the circle of participants in internal processes for the sharing and utilization of knowledge, and for creating an organizational culture that encourages innovation, as well as increasing the use of governmental/public support tools, would also promote innovation in these businesses, with greater efficacy.

In addition, it may be concluded from the study findings that small business managers are not necessarily qualified to lead innovation. The innovation process requires a transformation in the leadership "mindset" (Zuraik and Kelly 2019) and requires special skills and qualifications that may not necessarily exist with small business managers. Therefore, higher managerial attention and dominance may not necessarily yield better results. In order to better prepare these managers to cope with the required changes, it is necessary to foster an innovative mood among them as well as encourage and provide guidance in this area.

8 Limitations of the study and future research

The findings were based on data provided by business managers during the interviews. However, filling out the questionnaire during face-to-face meetings enabled the business managers to understand the concept of innovation as well as other issues in the same way. Therefore, the validity of the research was ensured by minimizing subjective differences in the answers stemming from respondents' individual interpretations of the questions.

Future research should expand the parameters to include small businesses in various sectors other than industry. This expansion will allow for a broader, more comprehensive understanding of all small businesses in the market, including those in the commerce, service, and financial sectors.

Additionally, a future study should expand and examine additional parameters and characteristics related to the manager and his/her management-style, which may influence innovation promotion in small businesses. It might also be useful to interview other business personnel besides the manager, to cross-check the data provided.

It may be also interesting for future research to use the Fuzzy-set qualitative comparative analysis (Fs/QCA), which combines quantitative analysis not only with a qualitative perspective, but also with quantitative results confirmation and better reasoning for deviations between expected and actual results for specific success paths (Kraus et al. 2018b). Through the use of this type of analysis, it may be possible to understand the lack of relationship between manager dominance in innovation promotion processes and the level of innovation in small businesses, as the current study points out.

Appendix 1

Measures for examining the contribution of sharing knowledge processes for promoting innovation in business

Processes	The processes in the measure
Sharing processes	(a) Weekly meetings for sharing and transmitting information (b) Manager's practice of transmitting information to employees (c) Practice of reporting external information after exhibitions and/or meetings with clients (d) Structured processes for implementing innovations in the business

Appendix 2

Measures for examining the contribution of cultural processes for promoting innovation in business

Processes	The processes in the measure
Cultural processes	(a) Encouraging employees to hold informal meetings (b) Encouraging employees to monitor their own performance (c) Encouraging employees to share knowledge (d) Focusing on teamwork (e) Encouraging initiatives for examining new ways to perform tasks (f) Discussing innovation in meetings with employees (g) Encouraging employees to propose new ideas (h) Implementing employee's new ideas

Appendix 3

OI tools indices

OI tool	Index items
1. Utilization of networking (Johannissson 1998)	(a) Partners on a commercial basis (suppliers, customers, and other businesses) (b) Partners on a family or friendly basis (c) Partners on a professional basis (consultants in various fields) (d) Entities outside the industry (government professional, or industrial associations and academic institutions)
2. Utilization of online sites (Evans 2012; Michaelidou et al. 2011; Sharma 2002; Walters 2008; Wind and Mahajan 2002)	(a) Conducting activities for marketing promotion (b) Creating indirect effect on web content (c) Receiving consumer feedback (d) Learning the needs and preferences of potential customers (e) Identify new partners for collaboration
3. External collaboration (Marques and Ferreira 2009; Zeng et al. 2010).	(a) Customers (b) Suppliers (c) Other businesses (d) Consultants (e) Academic institutions (f) Public institutions and government authorities (g) Professional and industrial associations
4. Use of public tools (Schwartz and Bar-El 2015; Zeng et al. 2010)	(a) Receiving consultation or training from a government agency (b) Obtaining a grant from the Chief Scientist (c) Obtaining a state-guaranteed loan to promote innovation (d) Participating in professional associations' courses and conferences to promote innovation

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