Quality performance of SMEs in a developing economy: direct and indirect effects of service innovation and entrepreneurial orientation

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Abstract

Purpose – The purpose of this paper is to examine how innovation and entrepreneurial orientation (EO) affect organizational performance on quality in Asian small enterprise context.

Design/methodology/approach – Drawing from the strategic management literature, we hypothesize and test the direct and indirect relationship between EO, innovation and quality performance in the context of small information technology (IT) firms in an Asian economy. Data analyses follow standard procedures for testing direct and mediating effects.

Findings – Findings indicate a significant direct and indirect positive relationship between EO dimensions and three types of innovation and quality performance. Innovation mediates in the relationship of EO with quality performance.

Research limitations/implications – The paper adds resource-based view and dynamic capabilities theories to extant strategic management literature. Poor representation of women-owned small firms in the study resulting from low participation of females in the IT business sector is a limitation which needs to be addressed in the future, as it hinders a clearer understanding of the perspectives of women business owners.

Practical implications – The paper contributes to managerial practice by underscoring the need for owner-managers of small enterprises to pursue EO-focused and innovation enhancement strategies in an integrated manner.

Originality/value – An integrated model of EO, innovation and performance, tested in small IT service firms in the context of a developing economy. Context does matter. The combination of a developing country context and the significance of IT enhance the contextual contribution of the paper.

Keywords Innovation, Small enterprises, Entrepreneurial orientation, Quality performance, Developing economy, ICT sector

Paper type Research paper

1. Introduction

Understanding why some organizations outperform others continues to be top on the agenda of many researchers and practitioners. There are arguments that organizations can generate sustained competitive advantage through a continuous stream of innovation and ability to leverage other capabilities of the firm. Dynamic capabilities and resource-based view (RBV) research (Eisenhardt and Martin, 2000; Makadok, 2001; Newbert, 2007; Nasution *et al.*, 2011; Teece *et al.*, 1997; Wernerfelt, 1984) support this line of thought, and some further provide a comprehensive explanation on the theory of competitive advantage and how firms can attain advantage through its resources and capabilities. Resources are collections of available factors which are either owned or controlled by the organization, and capabilities are an organization's capacity to deploy resources (Makadok, 2001).

While the importance of resources and capabilities to firm performance is documented in many studies, these studies largely focus on large enterprises. Small firms are mostly ignored because they are considered to be lacking in both areas – bundling and deploying resources; as a consequence, there is very limited understanding of how key resources and capabilities affect the performance of smaller firms. In addition, little known is how pursuant of the strategy of continuous innovation can lead to performance improvements in small firms. Moreover, in all the measures of performance (financial and non-financial) documented in the literature, we do not know of any that has considered quality performance, yet it is generally agreed that quality is a key criterion used by consumers when choosing a product or service, and a crucial basis for differentiation by firms. We, therefore, reason that greater emphasis on entrepreneurial orientation (EO) and enhancement of innovation capability are strategies that small and medium enterprises (SMEs) can apply in pursuit of superior quality performance.

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The current study makes several key contributions at the theoretical, contextual and managerial levels. At the theoretical level, we contribute to the strategic management literature by extending the premises of the RBV theory and dynamic capabilities to small information technology (IT) firms and discuss the linkages between EO, innovation and quality performance. First, we propose EO components (namely, proactiveness, autonomy and risk-taking) as critical factors for innovation (i.e. product/service innovation, process innovation and administrative innovation) in small IT firms. Second, we test the direct and indirect link between EO, innovation and quality performance, and conclude that innovation mediates in the EO–quality performance relationship.

Of importance is the developing country context of the study. The study is on small IT companies in Pakistan. Pakistan is located in South Asia; the pace of growth of the nation's IT sector is faster than in any other industry (PASHA, 2010). The IT industry in Pakistan shares a key role in providing quality services at low cost due to the presence of talented human capital. The IT industry offers specialized solutions for various sectors of Pakistan, such as retail banking and financial products, medical transcription, utilities and insurance applications, enterprise resource planning software, document management, mobile contents and animation and graphics (PASHA, 2010). It continues to play a key role in the development of Pakistan, especially in facilitating good governance, economic stability, industrial energy and poverty alleviation, and reflects a positive impact on international foreign policies (PASHA, 2010). Context does matter; IT is often seen as a leading edge of technology, and Pakistan is (incorrectly) generally viewed as more inclined toward low technology. Hence, the combination of a developing country context and the significance of IT enhance the contextual contribution of the paper. Gassmann *et al.*, (2011) have stressed on the importance of emphasizing context in R&D and technology research, as differences in contexts or culture can suggest the need for adaptation of interventions to suit the different settings. Moreover, Howells' (2008) insights drive home the point made above on the need to examine R&D, innovation and technology contextually, especially in the East.

The paper contributes to managerial practice by underscoring the need for managers to pursue EO and continuous innovation strategies, and to manage organizational capabilities for improved performance. We argue that the planning and management of a portfolio of available resources and capabilities would require identifying current as well as future gaps in the portfolio relative to overall firm strategy and striking a balance between exploiting current technology and marketing-based competencies and exploring new markets and/or technologies. According to Seebode *et al.* (2012), innovation takes place within an assumed core configuration of technological and market element.

2. Strategic management, RBV theory and dynamic capabilities

As stated earlier, the concept of EO stems primarily from the strategic management literature. The interconnectedness of strategy, resources and capabilities has been recognized in the early definitions of strategy by strategic management scholars. For example, Chandler (1962) defined strategy as the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals. Andrews (1971) saw strategy as the pattern of objectives, purposes and goals and major policies and plans for achieving these goals. EO and continuous innovation are thought to be part of or the strategy of the firm, which can be honed till they become the firm's capabilities – a special type of resource, specifically an organizationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm (Makadok, 2001). Early empirical research within the RBV commenced with the theorizing that a firm is a unique collection of resources developed to compete in markets (Barney, 1999; Newbert, 2007; Peteraf and Barney, 2003; Wernerfelt, 1984). There are also the perspectives that a firm's strategic resources is the main source of its competitive advantage, and that a firm's ability to produce a superior combinations of resources (capabilities) can lead to superior market performance (Hooley and Greenley, 2005; Newbert, 2007). Others (Collis and Montgomery, 2008) present the definition of capabilities – as the firm's capacity to use its resources to perform tasks. Leonard-Barton (1992, p. 113) defines capabilities as "the knowledge set that distinguishes and provides a competitive advantage". Capabilities have also been referred to as core competency and have been applied at the firm and individual levels. The issue of competence development has been explained through the RBV lens. For example, Peteraf and Barney (2003) argue that the RBV of the firm has introduced considerable explanation to the subject of competence development in the past few decades. Prahalad and Hamel (1990) relate the core competence of the organization to the company-wide skills and expertise. Organizations must combine its individuals' competence and corporate competencies in ways superior to those of competitors to achieve superior performance. In short, the RBV theory is primarily concerned with how firms acquire, deploy and re-deploy the factors needed to create capabilities that form the basis for establishing and sustaining competitive advantage (Eisenhardt and Martin, 2000; Teece *et al.*, 1997).

In the context of EO and innovation, of special interest to us is the concept of dynamic capabilities that enables a firm to reconfigure its resource base and adapt to changing market conditions, thereby creating value (Eisenhardt and Martin, 2000; Zollo and Winter, 2002). Teece *et al.* (1997, p. 516) define dynamic capabilities as "what enables a firm to integrate, build, and reconfigure internal and external competences to address rapidly changing environments"[1]. According to these authors, the term dynamic refers to the capacity to renew competence so as to achieve congruence with the changing business environment. While competence represents underlying knowledge and resource base (Yang and Jiang, 2006), innovation platforms develop these competencies through a system of dynamic routines and processes to generate product/service derivatives for various markets and segments. These architectural rules and routines govern how the subsystems embodying various competencies are integrated and deployed to form specific product offerings for each customer group. Strategy research

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suggests that it is the deployment of intelligent resource, as opposed to the absolute magnitude of resources that accounts for differential firm performance (Makadok, 2001). This is of special significance to small firms in general that lack the absolute magnitude of resources (including human resources), but can overcome such deficiencies by dynamically reconfiguring competence toward competitive advantage. Therefore, the value of innovation platforms lies in their capacity to dynamically apply strategic routines and processes to a set of existing competencies rather than in the competencies themselves.

While competence can be duplicated across firms, innovation platforms allow firms to rapidly adapt, integrate and reconfigure their capabilities, thereby sustaining competitive advantage (Eisenhardt and Martin, 2000). We, therefore, reason that EO will lead to innovation and, in turn, to superior quality performance. We define EO as processes, practices and decision-making activities that lead to new entry – i.e. entering new or established markets with new or existing goods or services (Lumpkin and Dess, 1996). Its three competencies (i.e. risk-taking, proactiveness and autonomy) (Miller, 1983), when uniquely and timely combined and deployed to meet changing market conditions, will yield competitive advantage. EO also requires dynamically configuring the right combinations of risk-taking, proactiveness and autonomy to changing organizational and environmental conditions for organizational success (Lumpkin and Dess, 1996). Innovation is defined as a set of competence (i.e. product/service, process and administrative innovation) that are developed by setting up innovation platforms through a system of dynamic routines and processes to generate product/service derivatives for various markets and segments. These architectural rules and routines govern how the subsystems embodying various competencies are integrated and deployed to form specific product offerings for each customer group. The next session discusses the research framework and hypotheses development.

3. Research framework and hypotheses

3.1 Entrepreneurial orientation

McDougall and Oviatt (2000) define EO as a combination of innovative, proactive and risk-taking behavior that is intended to create value in organizations. An organization can have an entrepreneurial structure, and a member of an organization can be entrepreneurial, and each complements the other to provide synergy (Echols and Neck, 1998). EO is characterized and distinguished by the following principal entrepreneurial processes:

- risk-taking (McClelland, 1961; Miller, 1983; Ndubisi *et al.*, 2005);
- autonomy (Dunkelberg and Cooper, 1982; Hornaday and Aboud, 1971; Miller, 1983); and
- proactiveness (Echols and Neck, 1998; Miller, 1983; Nasution *et al.*, 2011).

Miller (1983) suggests that the degree of EO could be seen as the extent to which organizations take risks, innovate and act proactively. Matsuno *et al.* (2002) argue that EO facilitates organizational members' willingness and ability to commit to market learning activities, to recognize the need to reduce uncertainty and take more calculated risk. An entrepreneurial organization:

- is proactive in obtaining intelligence on customers and competitors;
- implements the response, which entails some degree of risk and uncertainty (Barrett *et al.*, 2003); and
- allows teams a sufficient degree of autonomy (Dunkelberg and Cooper, 1982; Miller, 1983).

3.1.1 Proactiveness

Schumpeter's (1934) recognized this entrepreneurial quality which he referred to as taking "initiative". In their documentation of opportunity recognition as a characteristic of entrepreneurs, Hornaday and Aboud (1971) also reflected on the concept of proactiveness. Proactiveness has been defined as an opportunity-seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create change and shape the environment (Lumpkin and Dess, 2001). Some of the elements of proactiveness identified in the literature include future orientation, idea creation, preempting problems, effective communication, adaptability, implementation of new process and new product or service launch (Morris and Kuratko, 2002; Nasution *et al.*, 2011). In Miller's (1983) research on proactiveness, efforts were made to identify firms based on their degree of initiative, and some of the measures include:

- following versus leading competitors in innovation;
- favoring the tried and true versus emphasizing growth, innovation and development; and
- trying to cooperate with competitors versus trying to undo them.

Thus, proactive firms are apt to be more entrepreneurial than reactive ones. Past studies have found a significant relationship between proactiveness and entrepreneurial activity (Kickul and Gundry, 2002) and a link between proactiveness and innovation (Nasution *et al.*, 2011).

3.1.2 Risk–taking

Risk-taking is a propensity to take bold actions such as venturing into unknown new markets, committing a large portion of resources to ventures with uncertain outcomes (Lumpkin and Dess, 2001). Morris (1998) argues that entrepreneurs take calculated risk and attempt to find ways to mitigate, shift or share risk. Extant literature highlights the types of risk that entrepreneurs and entrepreneurial ventures take:

- personal risk (the risks that an executive assumes in taking a stand in favor of a strategic course of action);
- financial risk (requires that a company borrow heavily or commit a large portion of its resources to grow); and
- business risk (i.e. venturing into the unknown, untested markets or committing to unproven technologies) (Dess and Lumpkin, 2005).

Kuratko (2009) identified the following risks:

- financial risk (of losing investment, profit or income);
- career risk (of losing employment security);
- family and social risk (competing commitments of work and family); and

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- psychological risk (psychological impact of failure on the well-being of entrepreneurs).

From the past to the present, several studies on entrepreneurship and EO (e.g. Mill, 1848; McClelland, 1961; Timmons, 1978; Welsh and White, 1981; Morris, 1998; Ndubisi *et al.*, 2005) have recognized risk-taking as a characteristic of entrepreneurs and entrepreneurial firms. But there are also a few exceptions. For example, Brockhaus's (1980) study compared risk preference patterns of entrepreneurs and managers and found no statistical difference. However, more recent studies have recognized and measured risk-taking as an entrepreneurial quality with significant effect on technology and innovation creation and diffusion (Nasution *et al.*, 2011; Ndubisi *et al.*, 2005). As such, we reason that risk-taking can have a significant impact on innovation and performance of entrepreneurial small IT firms.

3.1.3 Autonomy

Autonomy is the authority to follow through one's conviction. Early reports on autonomy as a characteristic of entrepreneurs and EO dimension include those of Davids (1963), Hornaday and Aboud (1971), Miller (1983). Autonomy has been defined as an independent action by an individual or team aimed at bringing forth a business concept or vision and carrying it through to completion (Lumpkin and Dess, 2001). Lee (1997) sees it as doing things regardless of others' opinion, remarking that people with a high need for autonomy generally prefer self-directed work, care less about others' views and rules and make decisions alone. It is germane to mention that many organizations are still reluctant to grant autonomy to members or groups, even though there is evidence to show that intra/entrepreneurs need some degree of autonomy to innovate. Dess and Lumpkin (2005) showed that many of the best ideas for new corporate ventures, however, come from the "bottom-up"; as a result, entrepreneurial organizations are increasing by empowering people by giving more autonomy. Organizations need to empower employees to make decisions about their work processes and avoid criticizing employees for making mistakes when being innovative (Nasution *et al.*, 2011).

3.2 Innovation

There are many definitions of innovation in the literature. It refers to the creation of new product or process (Cumming, 1998), or a new way of delivering quality or better value (Knox, 2002). For others, innovation is a form of knowledge or the creation of new idea (McAdam *et al.*, 1998; Urabe *et al.*, 1998). Damanpour (1991) defines organizational innovation as the adoption of an idea or behavior new to the adopting organization, which involves all dimensions of organizational activities, such as a new product or service, a new production process technology, a new structure or administrative system, and a new plan or program within the organization. Of the various classifications of innovation, three dimensions are relevant and of interest to this study, namely:

- process innovation (the process of bringing new technology into use) (Lukas and Ferrell, 2000);
- administrative innovation (involving administrative elements and their relationships to the social system of an organization) (Pennings, 1998).

It is important for organizations to adopt innovation and innovative thinking in their decision-making to achieve superior customer value (Knox, 2002).

3.2.1 Product/service innovation

Product/service innovation involves the introduction of new products or services, including modifications of the existing products or services, or distribution of the products to new sets of customers (Nasution *et al.*, 2011). The end product or service offered by the organization changes by this type of innovation (Cooper, 1998). This upgrade or newness in product or service is necessary for sustaining the firm's success in the market (Johne, 1999). Oktemgil and Greenley (1997) reveal three types of organizational activities that describe high levels of product innovation:

1. "capacity to recognize product-market opportunities";
2. "constructing marketing competencies to respond to identified market opportunities"; and
3. "capability to swiftly pursue opportunities".

Service/product innovation is associated with speculation and risk, and is considered as a key resource allocation decision. Various studies suggest that market-driven businesses create products that transform market needs (Jaworski and Kohli, 1993; Narver and Slater, 1990). Hamel and Prahalad (1994) highlight the likelihood of the organization suffering from what they dub the tyranny of served markets, without product development (1994). Mavondo *et al.* (2005) argue that product innovation can lead to easier manufacturing, and it is important for effective marketing and financial growth of firms. Further, Song and Xie (2000) present evidence for the moderating role of product innovativeness in the link between three integrations (market analysis activities, technical activities and launching activities) and new product performance.

3.2.2 Process innovation

Process innovations are those that affect the production process, right from the transformation of raw material to end product, as well as all the associated support activities (Mavondo *et al.*, 2005; Nasution *et al.*, 2011). Several authors have examined the benefits associated with several aspects of process innovation, namely, product improvement, increased turnover of inventories and shortened delivery cycles (Clarke *et al.*, 1989; Meredith, 1987; Skinner, 1985). Process innovation stands for changes in the steps taken by organizations to produce end products or services (Utterback, 1994). It includes "quality function" (Cumming, 1998), and offers ways for protecting and improving quality (Johne, 1999). Furthermore, Nasution and Mavondo (2008) suggest that process innovation involves personal interaction among customers and employees. An example is the implementation of the relationship marketing strategy and shunning the transactional approach by sales force as a means of improving marketing outcomes or the firm's competitive position. It has been argued that various aspects of process innovation improve the competitive position of a firm (Lefebvre and Lefebvre, 1993; Meredith, 1987).

3.2.3 Administrative innovation

Administrative innovation deals with managing elements and their relationship to the community (social system) of an

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organization (Pennings, 1998). It includes social structures (rules, procedures, rewards and information systems) and communication/authority structures that govern the relationships between members. Other authors have listed the various domains of administrative innovation including:

- work redesign and work systems (Acheson and Ferris, 1990; McCalman and Buchanan, 1990);
- skills enhancement (Behar, 1991);
- management systems (Damanpour, 1991);
- total quality control (Blauw and During, 1990); and
- just in time (Cartaya and Medina, 1989).

These innovation elements have a direct effect on productivity of work and increase overall performance of an organization (Nasution *et al.*, 2011).

3.3 Performance

Extant literature has used several approaches to measure business performance. These include financial performance, market effectiveness and strategic objectives. The most common performance dimension is financial performance and consists of indicators such as return on asset, return on investment, gross margin and profitability (Barney and Clark, 2007). Another dimension which is common among marketing researchers is market effectiveness, which includes metrics such as market share, sales volume, sales growth and new product introduction (Venkatraman and Ramanujam, 1986). The most uncommon dimension of performance is strategic objectives. Some of the indicators include achievement of overall customer satisfaction, overall performance of the organization and achievement of the strategic objectives (Sarkar *et al.*, 2001). Some of the relatively new and emerging dimensions of strategic objectives of the firm include overall quality performance and environmental performance. The recent interest in green business has created more research interest in environmental performance of firms (D'Souza *et al.*, 2006; Ndubisi, 2008; Ottman, 1993); however, quality performance is still seldom applied by practitioners and rarely examined by researchers. This is due mainly to its lack of immediate payoff. Yet it is well acknowledged that superior quality performance is one of the sustainable outcomes organisztions desire.

In the current research, we argue for the facilitating roles of EO and innovation in service quality performance of small IT firms. Quality is consistently listed as one of firms' top competitive priorities and a prerequisite for global marketplace success (Forker *et al.*, 1996), as many try to obtain comprehensive performance ratings to measure quality performance of the employees, productions and services (Mavondo *et al.*, 2005; Ritchie and Dale, 2000). We define quality performance as management's perception of quality of services the firm renders to its customers including service attributes, technical support, competence and company image. Quality performance is also a critical outcome metric used by clients when outsourcing their IT solutions to vendors in developing countries. For instance, three quarters of the US managers surveyed by the American Management Association reported that outsourcing outcomes had failed to meet expectations (Barthelemy and Adsit, 2003). Duke University CIBER/Archstone Consulting (2005) study reports, among others, perceptions of service quality as the most significant risk of offshoring. In this study, quality performance refers to the firm's reputation for quality in both services and image. Quality reputation of the firm plays a key role in product differentiation (Shetty, 1987) and offers positioning advantages (Day and Wensley, 1988).

3.4 Link between EO and innovation

An early definition of entrepreneurship posited by Schumpeter (1934) defines entrepreneurship as an endeavor that is centrally characterized by innovation. Schumpeter (1934) and Vesper (1980) suggest that five categories of behavior characterize entrepreneurship (i.e. new entry):

1 introduction of new goods;
2 introduction of new methods of production;
3 opening of new markets;
4 opening of new sources of supply; and
5 industrial organization.

The growing importance of innovation and small enterprises in the development of the new economy (economy and technology) has led to an increasing interest in innovation in the context of smaller firms (Acs and Audretsch, 1988). While small enterprises normally face considerable resource constraints, they are often successful innovators (Nooteboom, 1994; Vossen, 1998). Ndubisi *et al.* (2005) argue that this is plausibly because entrepreneurial small firms are nimbler than their larger counterparts; they can move faster and are more flexible, proactive and are keener to assume risks. The introduction of innovative products, services, processes or business models tailored to attractive niches is an additional opportunity for small enterprises to stand out from competition (Porter, 1980), and they can benefit from higher customer value and the uniqueness of the innovation (Lieberman and Montgomery, 1988).

The literature on the link between EO and innovation suggests that a juxtaposition of EO with market-oriented culture contributes significantly to successful innovation (Slater, 1997). Nasution *et al.* (2011) reasoned that entrepreneurial qualities coupled with learning orientation, integrated market orientation and human resource practices lead to innovation. Based on RBV theory of dynamic capabilities, innovation capabilities of firms are developed by applying strategic routines and processes to various products, processes and administrative sub-systems in the face of a changing environment. EO and the knowledge of unserved and underserved markets lead firms to product and process innovation generally done by dynamically reconfiguring capabilities in technology platforms. For instance, in IT firms, technology-based platforms are process oriented, similar to know-how and therefore more codified (Garud, 1997). Newer product/service capabilities are developed by renewing technology-based platforms to serve unmet needs of the current market or to cater to new markets (Yang and Jiang, 2006).

Further, there are studies which have shown that EO can lead to better performance (Dewan and Ren, 2007; Dewan *et al.*, 2007; Ho *et al.*, 2011; Walsh *et al.*, 2009). For example, Dewan *et al.* (2007) found that firms characterized by high IT risk have a higher marginal product of IT relative to firms with low IT risk. Ho *et al.* (2011) showed that autonomy positively moderates the relationship between IT investment and firm

performance. Walsh *et al.* (2009) found that proactiveness in conflict handling improves relational outcomes. Following these suggestions and lines of argument, we propose that EO will have significant direct influence on innovation and performance of small IT firms:

H1. EO dimensions (a) proactiveness, (b) risk-taking and (c) autonomy are positively associated with service innovation.

H2. EO dimensions (a) proactiveness, (b) risk-taking and (c) autonomy are positively associated with process innovation.

H3. EO dimensions (a) proactiveness, (b) risk-taking and (c) autonomy are positively associated with administrative innovation.

H4. Proactiveness is positively associated with quality performance.

H5. Risk-taking is positively associated with quality performance.

H6. Autonomy is positively associated with quality performance.

3.5 Innovation and performance

Hurley and Hult (1998) hold the view that innovation and the capacity to implement innovations determine whether the organization will achieve superior performance. According to the researchers, firms which combine capacity to innovate with resources are more successful in responding to their environments and developing new capabilities, which leads to competitive advantage and greater innovative capacity, resulting in superior performance. Innovative products may create new demand and thus, facilitate firm's growth. Exploiting innovation capabilities involves dynamically applying various architectural rules to sub-systems and relinking them in existing markets, whereas leveraging innovation capabilities involves relinking existing technology in new markets (Danneels, 2002). Technology platforms impact firm performance by both exploiting and leveraging innovation capabilities in that the returns are fairly predictable (March, 1991). In line with Porter's (1985) argument, if innovation in (small) enterprises manages to set high barriers, preventing competitors from market entry, the company's position in the industry will be further strengthened, and the innovation can lead to persistent above-average returns.

As firms encounter global competition, there is an emergent recognition of the focal role of technological innovations in shaping market success (Mitchell, 1990). The salience of innovation is underlined by an observation that innovation, in an increasingly hostile market environment, represents a means of long-term survival and not just growth (Han *et al.*, 1998). Studies on SME performance including both financial and non-financial, and their drivers are many (Mavondo and Farrell, 2003; Nasution *et al.*, 2011; Ndubisi, 2008; Rajaguru and Matanda, 2009). However, quality performance continues to be ignored. In this study, quality performance is measured in terms of quality service and reputation. Quality service and reputation has a vital role in innovation, as it helps in product differentiation (Shetty, 1987) and positioning advantages (Day and Wensley, 1988). We, therefore, argue that through innovative products/services, processes and administration, small firms can achieve superior quality performance. We also argue that through innovation, EO will translate to quality performance:

H7a. Service innovation is positively associated with quality performance.

H7b. Process innovation is positively associated with quality performance.

H7c. Administrative innovation is positively associated with quality performance.

H8a. Innovation mediates in the relationship between proactiveness and quality performance.

H8b. Innovation mediates in the relationship between risk-taking and quality performance.

H8c. Innovation mediates in the relationship between autonomy and quality performance.

4. Research methodology

4.1 Overview of small enterprises and IT sector

Small enterprises in Pakistan (the study's location) are those having full-time employee size of < 250 employees (SMEDA, 2010), so our study includes enterprises with 250 employees or less. They represent a significant component of the economy in terms of employment generation and value added. Small enterprises constitute nearly 90 per cent of all enterprises in Pakistan; their contribution to gross domestic product is approximately 40 per cent, and they employ 80 per cent of the non-agricultural workforce (SMEDA, 2010). By all standards, SMEs are the lifeline of Pakistan's economy. With the advancement of technology, the demand for IT and IT-related products is increasing in almost every industry. To fulfill such needs, small IT firms play a key role in providing solutions to individuals and businesses at a cheaper cost compared to larger IT firms. IT has radically changed the face of modern business and organizations (Hasan and Harris, 2009) and is considered a powerful competitive factor for organizations (Barney, 1999; Porter and Miller, 1985). Entrepreneurs and business owners are making enormous use of IT to innovate or create new solutions to the needs of business and consumers.

4.2 Methods

This study utilizes both primary and secondary sources of data. To understand the impact of EO and innovation on quality performance, a structured questionnaire was used to gather relevant data. The list from PASHA (Pakistan Software House Association) served as the sampling frame for the study. All the 350 local software firms listed in the directory were invited to participate in the study, which was purely voluntary. Although some 200 firms accepted the invitation and were sent the survey forms, about 130 forms were returned. Of this, 6 were discarded because of incomplete data, resulting in 124 usable responses. This figure represents 35 per cent of all listed local software firms. The outcome of

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the survey also satisfies the 1:5 ratio of variable to observation requirement suggested by Malhotra (2007). The firms were represented by the owner-manager or chief executive officer based on the key informant method because of their knowledge of the research issues, their formal role in the organization and their willingness to respond. We used guidelines in selecting key respondents from previous research (Campbell, 1955). Key informants are viewed as appropriate respondents if appropriate selection procedures are used (John and Reve, 1982).

From the valid responses, 97.6 per cent were males and 2.4 per cent were females, which shows that the industry (if not all entrepreneurial activities in Pakistan) is dominated by males. Roomi and Parrott (2008) highlighted that female entrepreneurs in Pakistan do not enjoy the same opportunities as males do due to cultural values of male dominance and traditions. Information on the respondents' education shows that majority (54.5 per cent) hold postgraduate degree, 44.7 per cent of them are first-degree holders and only 8 per cent are A-levels holders. Majority of the respondents are between the ages of 29-42 years (57.7 per cent), followed by the age group of 18-28 years (32.5 per cent) and the remaining in the age group of 43-63 year. Majority of the firms have 1-35 full-time employees (53.6 per cent) and the rest have between 36 and 250 full-time employees.

The issue of content validity was tackled from the beginning of the study for the development of measurement items and instrument as recommended by Sonquist and Dunkelburg (1977). In the literature review, measurement scales were identified and modified to suit the research purpose of the study and the local context (Gu *et al.*, 2008). This was supplemented with interviews with a few managers. Additionally, the questionnaire was pilot tested in the field and modifications were made. The measure of EO developed by Nasution and Mavondo (2008) and revalidated by Nasution *et al.* (2011) was adopted in this study, and consists of three components:

1 proactiveness (five items);
2 risk-taking (five items); and
3 autonomy (three items).

The innovation construct measures process innovation, product/service innovation and administrative innovation with 15 items adapted from Hurley and Hult (1998), Mavondo *et al.* (2005), Song and Xie (2000) and Zahra (1996). Each of the components of innovation was measured with five items. Quality performance was operationalized in terms of quality reputation, and the measures were adapted from Nasution *et al.* (2011). They include six items measuring the firm's reputation for quality. Entrepreneurship and innovation items were measured on a 7-point scale ranging from (1) "not at all" to (7) "a very great extent". Quality performance items were measured on a 7-point scale ranging from (1) "strongly disagree" to (7) "strongly agree".

5. Analysis and results

5.1 Factor and reliability analyses

Factor analysis helped establish the questionnaire items' suitability for the subsequent hierarchical multiple regression model used to evaluate the relationship among the variables. The hierarchical regression model was used so that the increase in R^2 corresponding to the inclusion of each category of predictor variables and the unique variance in the dependent variable explained by the predictor categories could be examined (Cohen and Cohen, 1975). The mediating effect of innovation was assessed based on the study by Baron and Kenny (1986). From the factor analysis results, we observed that 34 items loaded well on seven factors. The results are based on parsimonious sets of variables, using factor loadings of 0.50 and above (Hair *et al.*, 1998). Total variance is 73 per cent, and as such the measures are valid Table I.

Cronbach's alpha (coefficient alpha) is the most common measure of internal consistency. This coefficient varies from 0 to 1; and a value of 0.6 or less generally indicated unsatisfactory internal consistency reliability, and coefficient alpha $>$ 0.60 is considered reliable (Malhotra, 2007). Reliability estimates (Cronbach's alpha) for the dimensions in this study are as follows:

- proactiveness (0.80);
- risk-taking (0.77);
- autonomy (0.80);
- process innovation (0.86);
- service innovation (0.88);
- administrative innovation (0.90); and
- quality performance (0.93).

All reliability test results show an alpha value exceeding 0.60, the lower limit of acceptability; thus, items grouping for the respective variables are reliable (Malhotra, 2007).

5.2 Relationships – predictors of innovation

The results in Table II show that proactiveness, risk-taking and autonomy contribute significantly (F = 56.10; *p-value* = 0.000) and explain 59 per cent of the variations in overall innovation. Thus, EO predicts a significant change in overall innovation capabilities of small IT firms in Pakistan. Next, we consider the influence of EO dimensions on three types of innovation as well as try to confirm our hypotheses.

Table II also confirms that proactiveness, risk-taking and autonomy contribute significantly (F = 33.27; *p-value* = 0.000), (F = 57.22; *p-value* = 0.000), (F = 37.01; *p-value* = 0.000) and explain 46, 59 and 49 per cent of the variations in service innovation, process innovation and administrative innovation, respectively. As such, EO predicts a significant change in innovation capabilities of the small firms.

The results further show that there is a significant relationship between proactiveness ($p < 0.001$), risk-taking ($p < 0.010$) and service innovation at the 5 per cent significance level. There is no significant relationship between autonomy and service innovation ($p > 0.05$). There is significant evidence for accepting *H1a* and *H1b*, as well as for rejecting *H1c*. Furthermore, there is a significant relationship between proactiveness ($p < 0.001$), risk-taking ($p < 0.001$) and process innovation at the 5 per cent significance level. There is no significant relationship between autonomy and process innovation ($p > 0.05$). As such, *H2a* and *H2b* are accepted, while *H2c* is not. Similarly, there is a significant relationship between proactiveness ($p < 0.001$), risk-taking ($p < 0.001$) and administrative innovation at the 5 per cent significance level. There is no significant relationship between autonomy and administrative innovation ($p > 0.05$). *H3a* and

Table I Factor loadings and reliability estimates

Key dimensions and items	Loadings	Cronbach's α	Mean
F1. Service innovation (eigenvalues = 16.03; variance = 13.41)			
SVI1 – Our organization has introduced many new services to the market	0.68	0.88	5.1138
SVI2 – Our organization has introduced many modifications to the existing services	0.50		
SVI3 – Our organization constantly seeks to find new services	0.57		
SVI4 – Our organization has introduced more new services than our competitors	0.65		
SVI5 – The new services we introduced have caused significant changes in the industry	0.58		
F2. Administrative innovation (eigenvalues = 2.47; variance = 13.39)			
ADI1 – We constantly introduce new ways of managing our business	0.60	0.90	4.9724
ADI2 – Our organization invests in updating administrative procedures	0.70		
ADI3 – Management constantly seeks new ways to improve administration systems	0.82		
ADI4 – Our organization empowers employees to take initiatives	0.60		
ADI5 – Our competitors use our administrative systems as a benchmark	0.70		
F3. Quality performance (eigenvalues = 1.65; variance = 12.96)			
QTP1 – Our organization delivers services of the highest quality	0.61	0.93	5.5339
QTP2 – The quality of our service is consistently high	0.68		
QTP3 – Our customers consider our services very reliable	0.71		
QTP4 – Our organization is considered a top"quality IT company"	0.57		
QTP5 – Our staff treats customers with great respect	0.75		
QTP6 – Our customers genuinely enjoy the experience of our services	0.74		
F4. Risk-taking (eigenvalues = 1.45; variance = 10.39)			
RIS1 – In this organization, uncertainty is treated as a challenge	0.76	0.77	5.1339
RIS2 – Employees are encouraged to venture into unexplored territories	0.60		
RIS3 – Management accepts that certain suggestions may fail when implemented	0.54		
RIS4 – Our organization emphasizes opportunity for success rather than chances for failure	0.73		
RIS5 – In this organization, new venture failure is viewed as a learning experience	0.60		
F5. Process innovation (eigenvalues = 1.23; variance = 8.80)			
PRI1 – We constantly benchmark our operating systems to world-class standards	0.50	0.86	5.1220
PRI2 – Work practices are constantly updated to increase productivity	0.50		
PRI3 – We constantly use technology to enhance service quality	0.50		
PRI4 – Our organization invests heavily in developing new operating systems	0.58		
PRI5 – We continuously train our people in emerging industry technologies	0.85		
F6. Proactiveness (eigenvalues = 1.10; variance = 8.66)			
PRO1 – We constantly seek new opportunities related to the present operations	0.60	0.80	5.2790
PRO2 – We are usually the first to introduce new services in the industry	0.55		
PRO3 – We are constantly on the lookout for business that can be acquired	0.53		
PRO4 – We constantly seek opportunities to improve our business performance	0.52		
PRO5 – We are trying ahead of our competitors in responding to market challenges	0.62		
F7. Autonomy (eigenvalues = 1.00; variance = 5.61)			
AUT1 – Employees are encouraged to take responsibility for their work	0.62	0.80	5.3011
AUT2 – Employees are supposed to get the job done with minimum supervision	0.63		
AUT3 – Employees are encouraged to prioritize their work	0.76		

Note: KMO = 0.914; Total Variance = 73.23; Approximate chi-square = 3288.86; df = 0.561; Significance = 0.000

H3b are accepted, while *H3c* is rejected based on empirical evidence.

5.3 Relationships: predicting quality performance

The results in Table III show that entrepreneurial qualities, namely, proactiveness, risk-taking and autonomy contribute significantly ($F = 44.74$; *p-value* = 0.000) and account for 53 per cent of the variations in quality performance of the firms. Table III also shows that service innovation, process innovation and administrative innovation contribute significantly ($F = 54.54$; *p-value* = 0.000) and account for 58 per cent of the variations in quality performance of the firms.

The results further show that there is a significant relationship between proactiveness ($p < 0.010$), risk-taking ($p < 0.010$), autonomy ($p < 0.050$) and quality performance at the 5 per cent significance level. These results justify the acceptance of *H4*, *H5* and *H6*. Therefore, EO leads to enhanced quality performance in small-and medium-sized IT

Table II Entrepreneurship as predictors of innovation

Predictors	Overall innovation			Service innovation			Process innovation			Administrative innovation		
	β	*t*-value	significance	β	*t*-value	significance	β	*t*-value	significance	β	*t*-value	significance
Proactiveness	0.541	5.574	0.000	0.501	4.501	0.000	0.490	5.124	0.000	0.378	3.593	0.000
Risk-taking	0.322	3.777	0.000	0.268	2.746	0.007	0.398	4.642	0.000	0.379	3.926	0.000
Autonomy	−0.046	−0.517	0.606	−0.0053	−0.513	0.609	−0.071	−0.811	0.419	−0.014	−0.144	0.885
R	0.765			0.675			0.770			0.696		
R^2	0.586			0.456			0.593			0.485		
AR^2	0.575			0.442			0.582			0.472		
F (Significance)	56.10	0.000		33.27	0.000		57.22	0.000		37.01	0.000	

firms in Pakistan. The results also show that there is a significant relationship between service innovation ($p < 0.050$), process innovation ($p < 0.050$), administrative innovation ($p < 0.001$) and quality performance at the 5 per cent significance level. These results justify the acceptance of *H7a*, *H7b* and *H7c*. Therefore, innovation in services, processes and administration can lead to enhanced quality performance in the sample small firms. The positive sign of the estimates shows that the higher the level of EO and innovation capabilities, the greater the level of quality performance.

5.4 Indirect relationship: mediation effect of innovation

Next we examine the mediating effect of innovation in the association of EO with quality performance using Baron and Kenny's (1986) recommendation. Table IV shows the results of this analysis.

Innovation mediates in the association of proactiveness and risk-taking with performance. From the table, it can be observed that there is an increase in the coefficient of determination (R^2) of approximately 10 per cent from models 1 to 2 of the regression results. Furthermore, the beta coefficients have decreased significantly from models 1 to 2 for both proactiveness and risk-taking. Such an increase in R^2 and decrease in beta coefficients explain the mediation effect of innovation. As for the relationship between autonomy and performance, innovation has no mediating effect. Thus, there is an indirect relationship between proactiveness and risk-taking and quality performance through innovation and a direct relationship between autonomy and quality performance. The results in Table V provide support for *H8a* and *H8b*. *H8c* is not supported.

We tested the robustness of our findings by controlling for firm size. In each of the three linkages, i.e. entrepreneurship–innovation link, entrepreneurship–performance link and innovation–performance link, firm size did not show any significant moderating effect ($p < 0.05$); thus, size is not a confounding factor.

Table III Predictors of quality performance

	Beta coefficients	*t*-value	*p*-value
Entrepreneurship variables			
Proactiveness	0.306	2.977	0.004
Risk-taking	0.307	3.389	0.001
Autonomy	0.201	2.114	0.037
Innovation variables			
Service innovation	0.211	2.128	0.035
Process innovation	0.245	2.066	0.041
Administrative innovation	0.370	3.627	0.000

Notes: $R^2 = 0.528$; $F = 44.74$; Significance $F = 0.000$; $R^2 = 0.579$; $F = 54.54$; Significance $F = 0.000$

6. Implications

6.1 Theoretical findings

The model developed for this research has been derived from existing theories and research. The dynamic capabilities and RBV of the firm (Barney, 1999; Eisenhardt and Martin, 2000; Nasution *et al.*, 2011; Newbert, 2007; Peteraf and Barney, 2003; Teece *et al.*, 1997; Wernerfelt, 1984) provides a succinct lens for understanding the effects of EO and innovation capabilities on quality performance of small IT firms. The outcome of the study corroborates most of the earlier studies and adds further value by demonstrating that both EO and innovation capabilities are important for both small firms in pursuit of enhanced quality performance. The outcomes of the study indicate that all three innovation types, namely, service innovation, process innovation and administrative innovation have a direct effect on quality performance. In addition, EO dimensions, proactiveness, risk-taking and autonomy have a significant influence on quality performance. However, autonomy has no significant relationship with any of the three forms of innovation.

It is important to mention the striking consistency of the results of this study. *First*, both proactiveness and risk-taking are consistently and significantly associated with all three types of innovation as well as overall innovation. That is, the

Table IV The mediating effect of innovation

Independent variables	Model 1	Regression without innovation β (*p*-value)	Model 2	Regression with innovation β (*p*-value)
Proactiveness	0.306	0.004	0.047	0.649
Risk–taking	0.307	0.001	0.172	0.044
Autonomy	0.201	0.037	0.230	0.008
Innovation			0.464	0.000
	$R^2 = 0.528$		$R^2 = 0.624$	

Notes: R^2 change = 0.528; *F* change = 30.59; Significance = 0.000

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Table V Summary of the list of hypotheses, evidence and conclusion

Hypothesis		Evidence	Supported/ not supported
H1a.	Proactiveness is positively associated with service innovation	$p < 0.001$	Supported
H1b.	Risk-taking is positively associated with service innovation	$p < 0.010$	Supported
H1c.	Autonomy is positively associated with service innovation	$p > 0.050$	Not supported
H2a.	Proactiveness is positively associated with process innovation	$p < 0.001$	Supported
H2b.	Risk-taking is positively associated with process innovation	$p < 0.001$	Supported
H2c.	Autonomy is positively associated with process innovation	$p > 0.050$	Not supported
H3a.	Proactiveness is positively associated with administrative innovation	$p < 0.001$	Supported
H3b.	Risk taking is positively associated with administrative innovation	$p < 0.001$	Supported
H3c.	Autonomy is positively associated with administrative innovation	$p > 0.050$	Not supported
H4.	Proactiveness is positively associated with quality performance	$p < 0.010$	Supported
H5.	Risk taking is positively associated with quality performance	$p < 0.010$	Supported
H6.	Autonomy is positively associated with quality performance	$p < 0.050$	Supported
H7a.	Service innovation is positively associated with quality performance	$p < 0.050$	Supported
H7b.	Process innovation is positively associated with quality performance	$p < 0.050$	Supported
H7c.	Administrative innovation is positively associated with quality performance	$p < 0.010$	Supported
H8a.	Innovation mediates the relationship between proactiveness and quality performance	Significant increase in R^2 and F ($p < 0.001$) and Significant decrease in βs	Supported
H8b.	Innovation mediates the relationship between risk taking and quality performance	Significant increase in R^2 and F ($p < 0.001$) and Significant decrease in βs	Supported
H8c.	Innovation mediates the relationship between autonomy and quality performance	Significant increase in β	Not supported

entrepreneurial orientation of proactiveness and risk-taking behaviors are critical qualities for the small IT service firms, with the effect of proactiveness being more pronounced. The process of proactiveness is market driving, rather than market driven as in conventional marketing, as it preempts competition and shapes and creates new market and product domains, both of which are expressed and latent (Johnson *et al.*, 2003; Teece *et al.*, 1997). The acquisition and deployment of real-time market knowledge facilitates the configuration of product and process technology platforms so as to effectively serve existing and new markets. This is possible due to the modular architecture in the IT industry that facilitates the reconfiguration of innovation platforms quite easily, leading to the development of a stream of product and service derivatives for niche market segments. *Second*, is the non-significant impact of autonomy on all three types of innovation, including overall innovation. Extant research is clear that organizational learning orientation that fosters shared vision, double-loop learning and dissemination and participative decision-making leads to innovation (Sinkula *et al.*, 1997; Baker and Sinkula, 1999; Hurley and Hult, 1998), and our finding in the current study raises questions about the role of autonomy in innovation. A plausible explanation for this outcome is the recently unfolding evidence and importance of collaboration and teams in creativity and innovation. In recent times, more and more organizations are using collaborative and interdependent heterogeneous teams to pursue creativity and innovation. Notwithstanding, its non-significant influence on innovation, autonomy was significantly linked with firm quality performance. *Third*, it is firm innovation capabilities that mediate proactiveness and risk-taking orientations of the smaller IT firms and firm quality performance. Similar to the technology-based platforms that have characterized the innovation success of many large firms, especially in modular architecture industries (McGrath, 1995; Sawhney, 1998; Sawhney *et al.*, 2006), product/service and process innovation together with administrative innovation are the underlying processes for quality performance in the study's sample. Our results are consistent with that of large firms where product and process platforms directly impact firm performance, and process platforms have been referred to as the core capabilities embedded within product platforms that are the crown jewels of the firm (Meyer and DeTorre, 2001). Thus, innovation in IT SMEs is very essential in creating higher-quality performance. *Fourth*, differing firm size does not moderate any of the relationships measured. The relationship between EO and innovation, EO and performance as well as innovation and performance is not different between different sizes of firms, for example, micro and small firms. These are consistent and insightful results, as the key to quality performance is based on leveraging the right combinations of entrepreneurial orientations and innovation capabilities rather than the absolute size of the resources, a covariate of firm size. However, more research is warranted on this issue. The model tested in this research explains a considerable amount of variance in quality performance. Of the 18 hypotheses tested, 14 were supported (Table V).

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6.2 Implications for managers

This study has a number of implications for managers. As quality is a critical feature of software designs, the firm that enjoys superior quality reputation will outperform the competitors. From the results, it is observed that the innovation and entrepreneurial orientations of small firms are positively related to their quality performance. Therefore, entrepreneurial qualities are equally important for micro and small IT firms in developing innovation capabilities and reputation for quality. Similarly, innovation capabilities are important for small firms in enhancing performance on quality. Compared to large firms, small enterprise owners and managers should recognize the fact that smaller size or resources does not mean smaller entrepreneurial and innovation capabilities and weaker performance, and thus should approach market competition with confidence. Such positive attitudinal disposition will eventually pay off in greater success. They should approach market competition with the right orientations and continuous innovation and a clear sense of direction, effectively leveraging capabilities. Management must continue to invest in building their and employees' competencies. They should be proactive in serving customer needs, willing to try out new ideas and strategies and encourage employees to do the same, empower internal customers to a reasonable degree to exercise judgment and discretion in handling their tasks and, at the same time, promote team culture and encourage work teams.

Managers of small IT and service firms in developing nations are beginning to accept the quality revolution that has swept across many developed markets and some developing ones. The focus and emphasis on quality which started with the Japanese manufacturing system has taken over the thinking of much of the world's industry, spreading now through manufacturing and service industries, as customers increasingly demand more and better features, performance and benefits. Moreover, as managers engage in the global market, they realize that many of these markets, unlike in the past, are getting more sophisticated and sometimes demanding unrealistic quality levels. In highly competitive sectors, such as IT, customers' demand for superior quality must be addressed or else they will turn to competitors. Our findings are consistent with the Duke University CIBER/Archstone Consulting (2005) study that reports service quality as one of the most significant concerns of offshoring as perceived by clients in developed countries. As such, small service enterprises should be conscious of quality and seek the benefits of quality reputation, which comes through innovation and entrepreneurial capabilities as the study shows, and try to develop these capabilities. Managers who succeed in developing such competence will end up with superior quality performance which is a competitive advantage for the firm. At the same time, managers need to understand the necessary resources and capabilities to invest in, when and how much to invest and over what period as they pursue superiority in quality performance.

Finally, our study confirms the need for SME managers to plan and manage entrepreneurial orientations and innovation capabilities in an integrated manner. The planning and management of a portfolio of competencies would require identifying current as well as future gaps in the portfolio relative to the overall firm strategy and striking a balance between exploiting current technology-and marketing-based competence and exploring new markets and/or technologies. For example, identifying current gaps in marketing competence would require mapping and assessing all boundary-spanning firm processes that link marketing-and technology-based platforms. Existing innovation platforms should be maximally leveraged to multiple market applications (i.e. technology leveraging), as new products can be developed rapidly and efficiently. Similarly, small firms should engage in continuous product platform renewal by leveraging their organizational memory and market insight into the requirements of a new product or process platform (i.e. market leveraging). The real challenge for managers is to seek out opportunities in which the firm can simultaneously engage in full-leverage expansion path for continuous growth – i.e. both technology-based innovation and market leveraging.

7. Conclusion

The challenge for small enterprises today is to improve their overall performance and remain ahead of the competition. Enhanced quality performance is a source of competitive advantage. Our study, aimed at investigating the direct and indirect effects of entrepreneurial orientation and innovation capabilities on quality performance shows that EO and innovation can bring about high-quality performance. The paper draws from the strategic management literature and dynamic capabilities-based RBV theory of the firm as theoretical foundations and builds on the work of other authors in its efforts to achieve its objectives. Both entrepreneurial orientation and innovation capabilities have a direct impact on quality performance. In addition, innovation mediates the relationship between entrepreneurial orientation and performance. From this study, researchers and practitioners can gain valuable insight into the subject matter.

Note

1. We use the terms competence and capabilities interchangeably in this paper. It is interesting to note that while Teece *et al.* (1997) delineate internal and external competence as referring to intra-firm resources (e.g. systems integration) versus extra-firm resources (e.g. collaborative relationships), such distinctions may be somewhat blurred given the prevalence of alliance-capitalism at both technology and marketing aspects of competence. The rise of alliance capitalism, as opposed to hierarchical capitalism, has been motivated by reductions in the transaction cost, circumvention of entry barriers and enhancement of firm-specific ownership advantages. Today's global firms have responded with strategic flexibility by disinternalizing activities outside of their core competence and entering into strategic alliances and network relationships (Dunning, 1995). In our study, therefore, we do not make the distinction between internal and external competence.

References

Acheson, K. and Ferris, J.S. (1990), "Organizing shopping services: trends in Canadian retailing, 1972-1987", *Services Industries Journal*, Vol. 10 No. 4, pp. 680-699.

Acs, Z.J. and Audretsch, D.B. (1988), "Innovation in large and small firms: an empirical analysis", *American Economic Review*, Vol. 78 No. 4, pp. 678-690.

Andrews, K.R. (1971), *The Concept of Corporate Strategy*, Irwin, Homewood, IL.

Baker, W.E. and Sinkula, J.M. (1999), "The synergistic effect of market orientation and learning orientation on organizational performance", *Journal of the Academy of Marketing Science*, Vol. 27 No. 4, pp. 411-427.

Barney, J. (1999), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.

Barney, J.B. and Clark, D.N. (2007), *Resource-Based Theory: Creating and Sustaining Competitive Advantage*, Oxford University Press, New York, NY.

Baron, R.M. and Kenny, D.A. (1986), "The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 3, pp. 1173-1182.

Barrett, H., Balloun, J. and Weinstein, A. (2003), "Success factors for entrepreneurial organizations", UIC Research Symposium Papers, University of Illinois Institute for Entrepreneurial Studies, Chicago, IL.

Barthelemy, J. and Adsit, D. (2003), "The seven deadly sins of outsourcing", *Academy of Management Executive*, Vol. 17 No. 2, pp. 87-100.

Behar, M. (1991), "The skill crisis", *CIO*, Vol. 5 No. 2, pp. 58-59.

Blauw, J.N. and During, W.E. (1990), "Total quality control in Dutch industry", *Quality Progress*, Vol. 23 No. 2, pp. 50-52.

Brockhaus, R.H. (1980), "Risk taking propensity of entrepreneurs", *Academy of Management Journal*, Vol. 23 No. 3, pp. 509-520.

Campbell, D. (1955), "The informant in quantitative research", *American Journal of Sociological*, Vol. 60 No. 4, pp. 110-133.

Cartaya, V. and Medina, E. (1989), "New organization techniques: a survey", *Journal of Economic Literature*, Vol. 18 No. 1, pp. 64-92.

Chandler, A.D. (1962), *Strategy and Structure – Chapters in the History of American Industrial Enterprise*, MIT Press, Cambridge, MA.

Clarke, K., Ford, D. and Saran, M. (1989), "Company technology strategy", *R and D Management*, Vol. 19 No. 3, pp. 215-229.

Cohen, J. and Cohen, P. (1975), *Applied Multiple Regression/ Correlation Analysis for the Behavioral Sciences*, Lawrence Erlbaum Associate Publishers, Hillsdale, NJ.

Collis, D.J. and Montgomery, C.A. (2008), "Competing on resources", *Harvard Business Review*, Vol. 84 No. 7, pp. 143-150.

Cooper, J.R. (1998), "A multidimensional approach to the adoption of innovation", *Management Decision*, Vol. 36 No. 8, pp. 493-502.

Cumming, B.S. (1998), "Innovation overview and future challenges", *European Journal of Innovation Management*, Vol. 1 No. 1, pp. 21-29.

Damanpour, F. (1991), "Organizational innovation: a meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, Vol. 34 No. 3, pp. 555-590.

Danneels, E. (2002), "The dynamics of product innovation and firm competences", *Strategic Management Journal*, Vol. 23 No. 12, pp. 1095-1120.

Davids, L.E. (1963), *Characteristics of Small Business Founders in Texas and Georgia*, Bureau of Business Research, University of Georgia, Athens, GA.

Day, G. and Wensley, R. (1988), "Assessing advantage: a framework for diagnosing competitive superiority", *Journal of Marketing*, Vol. 52 No. 2, pp. 1-20.

Dess, G. and Lumpkin, G. (2005), "The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship", *Academy of Management Executive*, Vol. 19 No. 1, pp. 147-156.

Dewan, S. and Ren, F. (2007), "Risk and return of information technology initiatives: evidence from electronic commerce announcements", *Information Systems Research* Vol. 18 No. 4, pp. 370-394.

Dewan, S., Shi, C. and Gurbaxani, V.C. (2007), "Investigating the risk-return relationship of information technology investment: firm-level empirical analysis", *Management Science*, Vol. 53 No. 12, pp. 1829-1842.

D'Souza, C., Taghian, M. and Lamb, P. (2006), "An empirical study on the influence of environmental labels on consumers", *Corporate Communications: An International Journal*, Vol. 11 No. 2, pp. 162-173.

Duke University CIBER/Archstone Consulting (2005), *Offshore Survey Results*, December, Offshoring Research Network.

Dunkelberg, W.C. and Cooper, A.C. (1982), "Entrepreneurial typologies", in Vesper, K.H. (Ed), *Frontiers of Entrepreneurship Research*, Babson Centre for Entrepreneurial Studies, Wellesley, MA, pp. 1-15.

Dunning, J.H. (1995), "Reappraising the eclectic paradigm in an age of alliance capitalism", *Journal of International Business Studies*, Vol. 26 No. 3, pp. 461-491.

Echols, A.E. and Neck, C.P. (1998), "The impact of behaviors and structure on corporate entrepreneurial success", *Journal of Managerial Psychology*, Vol. 13 No. 1/2, pp. 38-46.

Eisenhardt, K.M. and J.A. Martin (2000), "Dynamic capabilities: what are they?", *Strategic Management Journal*, Vol. 21 No. 10/11, pp. 1105-1121.

Forker, L.B., Vickery, S.K. and Droge, C.L.M. (1996), "The contribution of quality to business performance", *International Journal of Operations and Production Management*, Vol. 16 No. 8, pp. 44-62.

Garud, R. (1997), "On the distinction between know-how, know-why, and know-what", in Walsh, J. and Huff, A. (Eds), *Advances in Strategic Management*, Vol. 14, pp. 81-101, JAI Press, Inc., Greenwich, CT.

Gassmann, O., Daiber, M. and Enkel, E. (2011), "The role of intermediaries in cross-industry innovation process", *R & D Management*, Vol. 41 No. 5, pp. 457-469.

Gu, F.F., Hung, K. and Tse, D.K. (2008), "When does guanxi matter? Issues of capitalization and its dark sides", *Journal of Marketing*, Vol. 72 No. 4, pp. 12-28.

Hair, J.F. Jr, Anderson, R.E., Tatham, R.L. and Black, W.C. (1998), *Multivariate Data Analysis*, Prentice Hall, Englewood Cliffs, NJ.

Hamel, G. and Prahalad, C. (1994), *Competing for the Future*, Harvard Business School Press, Boston, MA.

Han, J.K., Kim, N. and Srivasta, R.K. (1998), "Market orientation and organizational performance: is innovation a missing link?", *Journal of Marketing*, Vol. 62 No. 4, pp. 30-45.

Hasan, M. and Harris, E. (2009), "Entrepreneurship and innovation in e-commerce", *Journal of Achievement in Materials and Manufacturing Engineering*, Vol. 32 No. 1, pp. 92-97.

Ho, J.L.Y., Wu, A. and Xu, S.X. (2011), "Corporate governance and returns on information technology investment: evidence from an emerging market", *Strategic Management Journal*, Vol. 32 No. 6, pp. 595-623.

Hooley, G.J. and Greenley, G.E. (2005), "The resource underpinnings of competitive positions", *Journal of Strategic Marketing*, Vol. 13 No. 2, pp. 81-104.

Hornaday, J.A. and Aboud, J. (1971), "Characteristics of successful entrepreneurs", *Personnel Psychology*, Vol. 24 No. 2, pp. 141-153.

Howells, J. (2008), "New directions in R&D: current and prospective challenges", *R and D Management*, Vol. 38 No. 3, pp. 241-252.

Hurley, R. and Hult, G.T. (1998), "Innovation, market orientation, and organizational learning: an integration and empirical examination", *Journal of Marketing*, Vol. 62 No. 3, pp. 42-54.

Jaworski, B.J. and Kohli, A.K. (1993), "Marketing orientation: antecedents and consequences", *Journal of Marketing*, Vol. 57 No. 3, pp. 53-70.

John, G. and Reve, T. (1982), "The reliability and validity of key informant data from dyadic relationships in marketing channels", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 517-524.

Johne, A. (1999), "Successful market innovation", *European Journal of Innovation Management*, Vol. 2 No. 1, pp. 6-11.

Johnson, J.L., Lee, R.P-W., Saini, A. and Grohmann, B. (2003), "Marketing-focused strategic flexibility: conceptual advances and an integrative model", *Journal of the Academy of Marketing Science*, Vol. 31 No. 1, pp. 74-89.

Kickul, J. and Gundry, L.K. (2002), "Prospecting for strategic advantage: the proactive entrepreneurial personality and small firm innovation", *Journal of Small Business Management*, Vol. 40 No. 2.

Knox, S. (2002), "The broad room agenda: developing the innovative organization", *Corporate Governance*, Vol. 2 No. 1, pp. 27-36.

Kuratko, D.F. (2009), *Entrepreneurship: Theory, Process and Practice*, Cengage Learning, South-Western, Mason OH.

Lee, J. (1997), "The motivation of women entrepreneurs in Singapore", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 3 No. 2, pp. 93-110.

Lefebvre, L.A. and Lefebvre, E. (1993), "Competitive positioning and innovative efforts in SMEs", *Small Business Economics*, Vol. 5 No. 4, pp. 297-305.

Leonard-Barton, D. (1992), "Core capabilities and core rigidities: a paradox in managing new product development", *Strategic Management Journal*, Vol. 13 No. S1, pp. 111-125.

Lieberman, M. and Montgomery, D. (1988), "First-mover advantages", *Strategic Management Journal*, Vol. 9 No. S1, pp. 41-58.

Lukas, B.A. and Ferrell, O.C. (2000), "The effect of market orientation on product innovation", *Journal of Academy of Marketing Science*, Vol. 28 No. 2, pp. 239-247.

Lumpkin, G.T. and Dess, G.G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *Academy of Management Review*, Vol. 21 No. 1, pp. 135-172.

Lumpkin, G. and Dess, G. (2001), "Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role environment and industry life cycle", *Journal of Business Venturing*, Vol. 16 No. 5, pp. 429-451.

McAdam, R., Armstrong, G. and Kelly, B. (1998), "Investigation of the relationship between total quality and innovation: a research study involving small organizations", *European Journal of Innovation Management*, Vol. 1 No. 3, pp. 139-147.

McCalman, J. and Buchanan, D.A. (1990), "High performance work systems: the need for transition management", *International Journal of Operations and Production Management*, Vol. 10 No. 2, pp. 10-25.

McClelland, D.C. (1961), *The Achieving Society*, D.Van Nostrand, Princeton, NJ.

McDougall, P.P. and Oviatt, B.M. (2000), "International entrepreneurship: the intersection of two research paths", *Academy of Management Journal*, Vol. 43 No. 5, pp. 902-908.

McGrath, M.E. (1995), *Product Strategy for High-Technology Companies*, Irwin, Homewood, IL.

Makadok, R. (2001), "Towards a synthesis of resource-based and dynamic capability views of rent creation", *Strategic Management Journal*, Vol. 22 No. 5, pp. 387-402.

Malhotra, N.K. (2007), *Marketing Research: An Applied Orientation*, 5th ed., Pearson International Edition, New Jersey, NJ.

March, J.G. (1991), "Exploration and exploitation in organizational learning", *Organization Science*, Vol. 2 No. 1, pp. 71-87.

Matsuno, K., Mentzer, J.T. and Ozsomer, A. (2002), "The effect of entrepreneurial proclivity and market orientation on business performance", *Journal of Marketing*, Vol. 66 No. 3, pp. 18-32.

Mavondo, F. and Farrell, M. (2003), "Cultural orientation: its relationship with market orientation, innovation and organizational performance", *Management Decision*, Vol. 41 No. 3, pp. 241-249.

Mavondo, F., Chimhanzi, J. and Stewart, J. (2005), "Learning orientation and market orientation: relationship with innovation, human resource practices", *European Journal of Marketing*, Vol. 39 No. 11/12, pp. 1235-1392.

Meredith, J.R. (1987), "Implementing new manufacturing technologies; managerial lessons over the FMS Life Cycle", *Interfaces*, Vol. 17 No. 6, pp. 51-62.

Meyer, M.H. and DeTore, A. (2001), "Perspective: creating a platform-based approach for developing new services", *The Journal of Product Innovation Management*, Vol. 18 No. 3, pp. 188-204.

Mill, J.S. (1848), *Principles of Political Economy with Some of their Applications to Social Philosophy*, John W. Parker, London.

Miller, D. (1983), "The correlates of entrepreneurship in three types of firms", *Management Science*, Vol. 29 No. 7, pp. 770-791.

Mitchell, G. (1990), "Alternative framework technology strategy", *European Journal of Operational Research*, Vol. 47 No. 4, pp. 153-161.

Morris, M. (1998), *Entrepreneurship Intensity: Sustainable Advantages for Individuals, Organizations and Societies*, Quorum Books, Westport, CT.

Morris, M.H. and Kuratko, D.F. (2002), *Corporate Entrepreneurship*, Harcourt College Publishers, Fort Worth, TX.

Narver, J.C. and Slater, S.F. (1990), "The effect of a market orientation on business profitability", *Journal of Marketing*, Vol. 54 No. 4, pp. 20-35.

Nasution, H.N. and Mavondo, F.T. (2008), "Organizational capabilities: antecedents and implications for customer value", *European Journal of Marketing*, Vol. 42 No. 3/4, pp. 477-501.

Nasution, H.N., Mavondo, F.T., Matanda, M.J. and Ndubisi, N.O. (2011), "Entrepreneurship: Its relationship with market orientation and learning orientation and as antecedents to innovation and customer value", *Industrial Marketing Management*, Vol. 40 No. 3, pp. 336-345.

Ndubisi, N.O. (2008), "Socio-environmental marketing in developing nations: a comparison of African and Asian businesses", *Journal of Asian and African Studies*, Vol. 43 No. 3, pp. 251-277.

Ndubisi, N.O., Gupta, O.K. and Ndubisi, G.C. (2005), "The moguls' model of computing: Integrating the moderating impact of users' persona into the technology acceptance model", *Journal of Global Information Technology Management*, Vol. 8 No. 1, pp. 27-47.

Newbert, S.L. (2007), "Empirical research on the resource based view of the firm: an assessment and suggestions for future research", *Strategic Management Journal*, Vol. 28 No. 2, pp. 121-146.

Nooteboom, B. (1994), "Innovation and diffusion in small firms: theory and evidence", *Small Business Economics*, Vol. 6 No. 5, pp. 327-347.

Oktemgil, M. and Greenley, G. (1997), "Consequences of high and low adaptive capability in UK companies", *European Journal of Marketing*, Vol. 31 No. 7, pp. 445-466.

Ottman, J.A. (1993), *Green Marketing-Opportunity for Innovation*, NTC Business Books, IL.

PASHA. (2010), "Pakistan Software House Association", available at: www.pasha.org.pk/show_page.htm?input=page_131220070524

Pennings, J.M. (1998), "Innovations as precursors of organizational performance", in Galliers, R.D. and Beats, W. (Eds), *Information Technology and Organizational Transformations: Innovations for the 21st Century Organization*, John Wiley and Sons, London, pp. 153-178.

Peteraf, M.A. and Barney, J.B. (2003), "Unravelling the resource-based tangle", *Managerial and Decision Economics*, Vol. 24 No. 4, pp. 309-323.

Porter, M.E. (1980), *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York, NY.

Porter, M.E. (1985), *Competitive Advantage Creating and Sustaining Superior Performance*, The Free Press, New York, NY.

Porter, M. and Miller, V. (1985), "How information gives you competitive advantage", *Harvard Business Review*, Vol. 63 No. 4, pp. 149-160.

Prahalad, C.K. and Hamel, G. (1990), "The core competence of the corporation", *Harvard Business Review*, Vol. 68 No. 3, pp. 79-90.

Rajaguru, R. and Matanda, M.J. (2009), "Influence of inter-organizational integration on firm performance: the mediating role of organizational-level supply chain functions", *Journal of Enterprise Information Management*, Vol. 22 No. 4, pp. 456-467.

Ritchie, L. and Dale, B.G. (2000), "Self-assessment using the business excellent model: a study of practice and process", *International Journal of Production Economics*, Vol. 66 No. 3, pp. 241-254.

Roomi, M.A. and Parrott, G. (2008), "Barriers to development and progression of women entrepreneurs in Pakistan", *Journal of Entrepreneurship*, Vol. 17 No. 1, pp. 59-72.

Sarkar, M.B., Echambadi, R., Cavusgil, S. and Aulakh, P. (2001), "The influence of complementarity, compatibility and relationship capital on alliance performance", *Journal of the Academy of Marketing Science*, Vol. 29 No. 4, pp. 358-373.

Sawhney, M.S. (1998), "Leveraged high-variety strategies: from portfolio thinking to platform thinking", *Journal of the Academy of Marketing Science*, Vol. 26 No. 1, pp. 54-61.

Sawhney, M., Wolcott, R.C. and Arroniz, I. (2006), "The 12 different ways for companies to innovate", *MIT Sloan Management Review*, Vol. 47 No. 3, pp. 75-81.

Schumpeter, J.A. (1934), *The Theory of Economic Development*, Harvard University Press, Cambridge, MA.

Seebode, D., Jeanrenaud, S. and Bessant, J. (2012), "Managing innovation for sustainability", *R and D Management*, Vol. 42 No. 3, pp. 195-206.

Shetty, Y.K. (1987), "Product quality and competitive strategy", *Business Horizon*, Vol. 30 No. 3, pp. 46-52.

Sinkula, J., Baker, W.E. and Noordeweir, T. (1997), "A framework for market-based organizational learning: linking values, knowledge, and behavior", *Journal of the Academy of Marketing Science*, Vol. 25 No. 4, pp. 305-318.

Skinner, W. (1985), *Manufacturing: The Formidable Competition Weapon*, Wiley, New York, NY.

Slater, S.F. (1997), "Developing a customer value-based theory of the firm", *Journal of the Academy of Marketing Science*, Vol. 25 No. 2, pp. 162-167.

SMEDA (2010), "Small and Medium Enterprises Development Authority", available at: www.smeda.org/

Song, M. and Xie, J. (2000), "Does innovativeness moderate the relationship between cross-functional integration and product performance?", *Journal of International Marketing*, Vol. 8 No. 4, pp. 61-89.

Sonquist, J.A. and Dunkelburg, W.C. (1997), *Survey and Opinion Research: Procedures for Processing and Analysis*, Prentice-Hall, Englewood Cliffs, NJ,.

Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.

Timmons, J.A. (1978), "Characteristics and role demands for entrepreneurship", *American Journal of Small Business*, Vol. 3, pp. 5-17.

Urabe, K., Child, J. and Kagono, T. (1998), *Innovation and Management: International Comparison*, W. de Gruyter, Berlin.

Utterback, J.M. (1994), *Mastering the Dynamics of Innovation: How Companies can Seize Opportunities in the Face of Technological Change*, Harvard Business School Press, Boston.

Venkatraman, N. and Ramanujam, V. (1986), "Measurement of business performance in strategy research: a comparison of approaches", *Academy of Management Review*, Vol. 11 No. 4, pp. 801-814.

Vesper, K.H. (1980), *New Venture Strategies*, Prentice Hall, Englewood Cliffs, NJ.

Vossen, R.W. (1998), "Relative strengths and weaknesses of small firms in innovation", *International Small Business Journal*, Vol. 16 No. 3, pp. 88-94.

Walsh, G., Ndubisi, N.O. and Ibeh, K.I.N. (2009), "After the horse has left the barn, it's too late to close the door: a study of service firms' conflict handling ability", *Proceedings of ANZMAC Conference*, Vol. 34, *Melbourne*, pp. 1-8.

Welsh, J.A. and White, F.J. (1981), "Converging on characteristics of entrepreneurs", in Vesper, K.H. (Ed), *Frontiers of Entrepreneurship Research*, Babson Center for Entrepreneurial Research, Wellesley, MA, 504-515.

Wernerfelt, B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, pp. 171-180.

Yang, C. and Jiang, S. (2006), "Strategies for technology platforms", *Research: Technology Management*, Vol. 49 No. 3, pp. 48-57.

Zahra, S.A. (1996), "Governance, ownership, and corporate entrepreneurship: the moderating impact of industry technological opportunities", *Academy of Management Journal*, Vol. 39 No. 6, pp. 1713-1735.

Zollo, M. and Winter, S.G. (2002), "Deliberate learning and the evolution of dynamic capabilities", *Organization Science*, Vol. 13 No. 3, pp. 339-351.

Further reading

Abernathy, W. and Utterback, J. (1978), "Patterns of industrial innovation", *Technology Review*, Vol. 80 No. 7, pp. 41-47.

Allocate, M.A. and Kessler, E.H. (2006), "Innovation speed in small and medium-sized enterprises", *Creativity and Innovation Management*, Vol. 15 No. 3, pp. 279-295.

Arrow, K.J. (2002), "Innovation in large and small firms", in Svedberg, R. (Ed.), *Entrepreneurship: The Social Science View*, Oxford University Press, New York, NY, pp. 229-242.

Bouthillier, F. and Shearer, K. (2002), "Understanding knowledge management and information management: the need for an empirical perspective", *Information Research*, Vol. 8 No. 1, available at: http://InformationR.net/ir/8-1/paper141.html

Carland, J.W., Hoy, F., Bolton, W.R. and Carland, J.C. (1984), "Differentiating entrepreneurs from small business owners: a conceptualization", *Academy of Management Review*, Vol. 9 No. 2, pp. 354-359.

Day, G.S. (1994), "The capabilities of market-driven organizations", *Journal of Marketing*, Vol. 58 No. 4, pp. 37-52.

Hansemark, O.C. (1998), "The effects of an entrepreneurship programme on need for achievement and locus of control of reinforcement", *International Journal of Entrepreneurial Behavior and Research*, Vol. 4 No. 1, pp. 28-50.

Khalil, T. and Bayraktar, B. (1994), "Management of technology IV-the creation of wealth", *Proceedings of the Fourth International Conference on Management of Technology*, February 27-March 4, Miami, FL, pp. 23-32,

Laforet, S. and Tann, J. (2006), "Innovative characteristics of small manufacturing firms", *Journal of Small Business and Enterprise Development*, Vol. 13 No. 3, pp. 363-380.

Mustafa, I. and Khan, F.M. (2005), "Small and medium enterprises in Pakistan", *South Asian Journal*, Vol. 9, available at: www.southasianmedia.net/Magazine/Journal/9-small_Medium_enterprises_pakistan.htm

O'Regan, N., Ghobadian, A. and Sims, M. (2006), "Fast tracking innovation in manufacturing SMEs", *Technovation*, Vol. 26 No. 2, pp. 251-261.

Riquelme, H. (2002), "Commercial Internet adoption in China: comparing the experience of small, medium and large businesses", *Internet Research*, Vol. 12 No. 3, pp. 276-286.

Rothwell, R. (1983), "Innovation and firm size: a case for dynamic complementary or, is small so beautiful?", *Journal of General Management*, Vol. 8 No. 3, pp. 5-25.

SBP (2005), "State Bank of Pakistan", available at: www.sbp.org.pk/press/2005.asp

Slater, S.F. and Narver, J.C. (1995), "Market orientation and the learning organization", *Journal of Marketing*, Vol. 59 No. 3, pp. 63-74.

Wiklund, J. and Shepherd, D. (2003), "Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses", *Strategic Management Journal*, Vol. 24 No. 13, pp. 1307-1314.

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