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Managing competence acquisition and financial performance: An empirical study of how small firms use competence acquisition strategies

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ABSTRACT

Past research has neglected how small firms manage competence acquisition. Based on transaction cost literature, this article identifies competence acquisition management strategies and their implications for performance. We explore this issue using survey data from 842 small, knowledge-intensive firms. The results outline four aspects of competence acquisition management: (1) competence absorbers, (2) social acquirers, (3) market acquirers, and (4) nonacquirers. Furthermore, we hypothesized and found that market acquirers score higher in terms of financial performance than firms following the other strategies. The market acquirer strategy proved particularly effective under conditions of high dynamism.

Introduction

Resource acquisitions and resource management are important issues for small firms and represent vital components of any coherent competence strategy. A growing body of research deals with issues such as bootstrapping (e.g., Van Auken, 2005; Winborg, 2000); bricolage strategies (Baker and Nelson, 2005; Garud and Kamoe, 2003); and resource cooptation (Starr and MacMillan, 1990; Westphal et al., 2006). Despite the importance of the knowledge provided in this literature, researchers have long observed a need for specific research on how small firms manage competence

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acquisition (e.g., McDermott and Coates, 2007; Teece, 1986). A literature review of small firms' resource management strategies suggests that competence issues are of utmost importance for competitiveness, and scholars have emphasized the need for research into managing such strategies (see e.g., Kelly and Rice, 2001; Verdú-Jover et al., 2006; Wang et al., 2004; Wincent et al., 2010a; Johansson et al., 2012).

Although small firms' competence acquisition management has not been researched extensively, there are certainly better and worse ways to handle the need for competence in a small firm. A main criticism is that scholarly studies have not sufficiently examined theory nor opened academic dialogue to understand the underlying orientations of smaller firms and how they acquire competence (Julien, 1998). We believe the transaction cost framework has much to offer for investigating competence acquisition in small firms because it has been applied well to similar issues. To this end, the purpose of the present research is to draw on this framework and general insights from the small firm literature to outline a taxonomy of competence acquisition strategies to understand how small firms orient themselves to this essential effort. In our taxonomy, we outline that some small firms seem to prefer developing and promoting employees internally, others rely on friendship and social ties, and still others seem to use pure market solutions. We also identify one group of small firms that appear to be reluctant and chaotic in their orientation toward competence acquisition.

After empirically testing the relevance of our identified competence acquisition strategies in a sample of small, knowledge-intensive firms, we compare the financial performance resulting from using these strategies with the degree that the strategies are likely to improve performance. We also examine whether the level of environmental dynamism influences the performance effects of using various competence acquisition strategies. Therefore, we look for patterns of competence acquisition in small firms and show how different strategies can influence firm performance.

The present study extends prior research in several ways. First, to our knowledge, no taxonomy exists to classify how small firms orient themselves toward competence acquisition. Taxonomies enrich the dialogue regarding suitable orientations and help us understand how smaller firms act when acquiring competence. Second, although the literature indicates potential benefits for firm performance from using various modes of competence acquisition, the benefits have received limited empirical attention. Third, because the environmental context of small firms is characterized by various degrees of dynamism, it is important to understand how strategy affects small firm performance in various contexts. Prior research in small firm competence acquisition has paid little attention to this contingency. We subsequently suggest that competence acquisition strategies should be formulated to fit the environmental conditions that a small firm faces. It is thus meaningful to study the strategies that small firms use in specific environmental contexts. Covin et al. (1990) and Mohrman and Von Glinow (1990), for example, argued for the need to consider environmental variables in studies addressing the content and performance of small firm strategies. By including environmental dynamism in the present analysis, we contribute to introducing such a perspective to the study of small firm competence acquisition. We posit that this variable is particularly interesting to include because it can explain why a particular market mode of competence acquisition is effective for smaller firms.

Prior research supports the fact that larger firms are turning increasingly to more innovative external modes of acquisition (beyond mergers or entire purchases), and interest in using external competence sources is on the rise (Castiaux, 2007; Lai et al., 2010; Lavie, 2006; Xu et al., 2012). Several authors have described a historical trend among larger firms of a steady increase in using external sources to acquire and develop technological capabilities and have highlighted the relevant issues surrounding its success (see e.g. Schildt et al., 2005; Tyler, 2001). This may also be the case for smaller firms (Thorgren et al., 2009; Wincent et al., 2009; Malmström and Wincent, 2012). As such, although many factors may motivate the decision to seek and exploit external sources of competence (for a comprehensive overview, see Hagedoorn, 1993), a moderating factor of particular academic interest and practical importance is environmental dynamism (Dreyer and Gronhaug, 2004; Fowler et al., 2000).

This article is structured as follows. The subsequent section discusses the relevance of transaction cost theory for studying small firm competence acquisition. We then review the literature on competence acquisition and outline why a specific set of strategies is likely among smaller firms. After

identifying four strategic orientations, we outline possible performance consequences of each orientation and propose hypotheses regarding smaller firms' orientation preferences and strategies that may work well for conditions of low and high dynamism. We then discuss the methodology, including the dataset, measures, and statistical procedures. Finally, we present the empirical findings from a survey of 842 Swedish small firms and conclude with contributions and implications, limitations, and future areas of research.

Transaction cost theory and competence acquisition strategies

The central question of transaction cost theory (Coase, 1937; Williamson, 1985) is whether a transaction is performed more efficiently within a firm (vertical integration) or by an autonomous contractor outside the firm (market governance). The implication is that firms choose the least costly mode to acquire competence by balancing the costs and risks associated with a specific mode. When a firm deems that the transaction costs incurred from a market mechanism exceed the governance costs from internal exchanges, the firm will use and emphasize hierarchical organizations. Conversely, low transaction costs justify choosing market exchanges. Besides the two forms of markets versus hierarchies, transaction cost theorists view social networking as an intermediate or hybrid form (White, 2000; Williamson, 1991). Social networking is an eclectic choice when the transaction costs involved in an exchange are too high to use the market mechanism but not high enough to form a hierarchy (Ring and Van de Ven, 1992; Williamson, 1985). Applying this logic, transaction cost theorists have posited that the transaction costs of a deal also determine the governance structure of social networking (Deeds and Hill, 1998; Dyer, 1997).

The perceived risk (transaction cost) associated with how competence is acquired develops based on experiences gathered over time and results in a competence acquisition strategy that may be sticky or path-dependent. In other words, history matters (Ahuja and Katila, 2004; Lai et al., 2010). The high cost of developing a new competence acquisition strategy, compared to using an existing strategy, has been suggested as one reason a particular strategy is sticky. Competence acquisition actions are not independent of one another; thus, strategy building is a process that involves repetition and experimentation to increase confidence in certain actions. Competence acquisition generates patterns or routines from successfully solving a particular problem (Minniti and Bygrave, 2001). Previous investments and repertoires of routines constrain future behaviour patterns. The path-dependent nature of competence, the subjectivity of routines, and the possibility of failure all imply that any satisfactory competence acquisition strategy must depart from the standard behaviour of rational expectations, which the transaction cost perspective assumes (Bullard, 1994; Frydman, 1982).

Taxonomy of small firm orientations to competence acquisition

We define competence acquisition as actions that attempt to acquire (or implement) individual abilities to handle situations in a way that serve productive purposes in the firm (inspired by Hamel and Heene, 1994; Sanchez et al., 1996). This definition acknowledges both the successful integration and productive nature of competence. In line with Bierly and Chakrabarti (1996), internal acquisition occurs when members of the firm generate, distribute, and use new knowledge within the boundaries of the firm, for example, through education. External acquisition from either a social networking approach or a market approach occurs when boundary spanners or outsiders bring in competence from an outside source from either an accessing or an absorbing approach (Kale et al., 2000; Bierly and Chakrabarti, 1996; Sanchez et al., 1996). External acquisition via social networks occurs when new employees are hired based on recommendations from friends, relatives, or business acquaintances (i.e., the social network) or the competence is bought or traded with help from the social network. External acquisition via the market occurs, for example, when new employees are hired from the open work market without recommendations from the social network or the competence needed is bought externally with no help from the social network.

As indicated, we expect to find distinct patterns in how smaller firms strategically acquire competence (Mintzberg, 1978). It seems likely that we will find several distinct clusters of firms that pursue similar strategies. Thus, we posit that studying competence acquisition strategies is similar to

previous studies on strategic typologies. Still, in research on competence and knowledge, few studies have explored the possibility of heterogeneity in strategies to solve competence needs regardless of firm size. Bierly and Chakrabarti (1996), for example, proposed four knowledge strategy groups based on combinations of internal and external learning that large corporations in the US pharmaceutical industry use: explorers, exploiters, loaners, and innovators. One conclusion is that most firms retain the same knowledge strategy over time. Also, there is heterogeneity among the strategies that firms pursue.

In strategic management, acknowledging group heterogeneity has led to important advances by introducing generic strategy typologies (e.g., Miles and Snow, 1978; Porter, 1980); strategic archetypes (e.g., Miller and Friesen, 1978); and strategic groups (Caves and Porter, 1977; McGee and Thomas, 1986). These taxonomies have improved our understanding of complex phenomena. Carter et al. (1994) reviewed studies of small and new firms to advance research on generic strategies. Their studies generally departed from the generic strategy typologies of Porter (1980) or Miles and Snow (1978) (see e.g., Boeker, 1989; Chaganti et al., 1989; Covin et al., 1990; Leitner and Güldenberg, 2010; McDougall and Robinson, 1990; Miller, 1991; Raymond and Croteau, 2009; Sandberg and Hofer, 1987). Therefore, we believe several reasons exist to expect group heterogeneity for competence acquisition strategies among smaller firms.

Managers are charged with determining the most effective and efficient ways to meet the development challenges needed to survive in their industry. Accordingly, firms need to find an appropriate combination of internal and external acquisition modes (Cohen and Levinthal, 1990; Grant, 1996; Lau et al., 2009). The decision to develop competence internally or acquire it via external means is a central component of any acquisition strategy (Zahra, 1996b; Lichtenthaler, 2008). Firms must weigh the advantages and disadvantages of each approach—internal or external—to ensure they can compete in today's market. Thus, it is highly likely that firms develop an orientation preference toward either internal or external modes.

A literature review on competence acquisition reveals a basic trade-off between flexibility and independence with associated risks and benefits inherent to the strategic acquisition decision (Levinthal and March, 1981; March, 1991; Volberda, 1996; Lichtenthaler and Muethel, 2012). The trade-off between flexibility and independence relates to whether competence, when needed, should be temporarily accessed externally (via the social network or the market) or whether the firm should use a hierarchy building approach to absorb competence through internal modes and modes that internalize competence on an indefinite basis. Accordingly, the intent of competence acquisition may vary: absorb competence by internalizing it and depending less on others or accessing competence when needed and thus remaining more flexible (Cohen and Levinthal, 1990; Kelly and Rice, 2001; Lichtenthaler, 2008; Tidd et al., 2001; Tidd and Trewhella, 1997). The collective responses to the trade-off between flexibility versus independence form what we call a firm's "competence acquisition strategy." From the view of transaction cost theory, distinct generic strategy types or typologies of competence acquisition strategies can be discerned by taking this trade-off into account.

Based on prior literature and transaction cost theory, we posit there are four strategies for competence acquisition in the small firm context: the two counterparts of (1) the competence absorber (close to the hierarchy polar end) and (2) the market acquirer (close to the transaction cost polar end) and (3) social network acquirers and (4) nonacquirers. As shown in Table 1, which summarizes these strategies, each variant has both advantages and disadvantages. As discussed, the use of these modes is likely to be represented by patterns of actions. Small firms may use combinations of modes to form specific action patterns or strategies as defined by Mintzberg (1978). This implies, for example, that a competence absorber would use absorbing modes more prominently but may still use accessing solutions (cf. Parmigiani, 2007; Parmigiani and Mitchell, 2009; Lichtenthaler, 2008). Furthermore, according to Teece (1986), although a firm might rely primarily on a certain mode, using other modes is also likely because the real world rarely provides polar or pure cases. Decisions to integrate or contract competence, therefore, involve trade-offs, compromises, and mixed modes. Hence, we expect that no strategy is "pure;" instead, a strategy may emphasize the use of particular modes in a dominant combination that creates a pattern in actions. We next elaborate on these strategies and discuss their advantages and disadvantages.

Table 1
Competence acquisition strategies, potential advantages and disadvantages.

Competence acquisition strategies	Strategic action profile/logic	Potential advantage for firm performance	Potential disadvantage for firm performance
Competence absorber	Uses resources that the firm owns or tightly controls (Sanchez et al., 1996; Sanchez and Heene, 1997) to develop internal competences or to permanently absorb competence into the firm via either the social network or the market	- Control over competence - Allows for learning - Strategically directed - Potential for competitive edge	- Long and time consuming - Inflexibility - Costly
Market acquirer	Uses external competence, handled foremost through pure market transactions (Sanchez et al., 1996) based on legal contracts. Focuses mainly on accessing competence when needed.	- Quick access to competence - Fast positioning - Enables environmental scanning - Credibility - High potential for new fresh input - Discovery of new opportunities	- Dependency on other parties - Low control over the competence accessed - Risk of knowledge transfer, exposing core issues
Social acquirer	Uses resources that the firm does not own or tightly control but is able to address and use; here called social network modes. Person-based trust is fundamental in the use of the social network mode (McNeil, 1978, 1980), and transactions via the social network involve the use of so-called relational contracts (Deeds and Hill, 1998; Dyer, 1997). Combines accessing and absorbing competence.	- Easy access to outside knowledge - Low costs - Flexibility - Preparation for environmental changes	Dependency on other parties Limited control Risk of knowledge transfer, exposing core issues Limited potential for fresh new input
Nonacquirer	Avoids acquisition of competence and focuses on retaining status quo. Characterized as hand-to-mouth firms (Storey, 1994). Avoid spending resources on competence issues.	- Needs less financial resources - Preferable when the focus is on milking productive potentials already at the firms	- Blind to the need of competence updates - Risk of being outdistanced by competitors - Difficulties catching up with competitors

Starting with the hierarchy building end of the spectrum, a likely typology is the competence absorbing strategy or the competence absorber. We posit that this strategy aims to internalize competence on an indefinite basis using internal and external (social network and market) competence acquisition modes to fill hierarchy building purposes. We expect that firms using this strategy select modes focused on absorbing competence.

A competence absorbing strategy ensures greater control over competence distribution, maintains viable competence levels for the firm (Cardinal and Hatfield, 2000), and aims to satisfy the firm's desire for independence. This aligns well with the work of Tidd and colleagues (2001), who argued that internal acquisition provides the firm with a potential competitive edge. Knowledge remains inside the firm, is based on learning by doing, is strategically directed, and is under the firm's full control. Overall, the competence absorbing strategy maintains a strong grip on the essence that creates firm performance, because competence is built inside the firm (see Liebeskind et al., 1996; Sanchez et al., 1996; Bolívar-Ramos et al., 2012).

However, firms that try to handle everything internally face time issues, as doing so may be a time-consuming affair (Tidd and Trewhella, 1997). Furthermore, focusing solely on internal acquisition may lead to missing new input in the long-run or becoming inflexible (Wincent, 2008). In addition, this strategy may require greater resources than the firm is willing or able to commit. For example,

Lichtenthaler (2008) suggested that building assets internally offers closer control but is costly in terms of managerial and financial resources.

At the other end of transaction cost theory, competence is mainly accessed through external modes, creating the market acquisition strategy or market acquirer. This strategy is characterized by a temporary approach to accessing competence (Conner and Prahalad, 1996) and aims to maximize flexibility.

The market acquisition strategy reduces the time required to access or absorb certain pre-packaged competence, and the element of time is often emphasized in the quest for firm performance. In addition, accessing competence temporarily gives the firm both flexibility and speed. Tyler (2001) reasoned that acquiring competence through external sources may facilitate rapid development and deployment of commercial technologies and products, while allowing the firm to gain access to state-of-the-art technology. Tidd and Trewhella (1997) stated that acquiring competence externally increases diversity of competence and its benefits, whereas Oviatt and McDougall (1993) and Tidd and Trewhella (1997) rationalized that using a market acquisition mode can quickly establish a position in a particular area. The market acquisition mode might also contribute to the firm's insight into activities taking place in the surrounding environment. Consequently, we may expect to see greater use of external modes when a firm is aiming for new markets (see e.g., Dunne et al., 2009) and when dynamism is high (Tidd and Trewhella, 1997). Using a market mode is accompanied by the potential to build credibility quickly and ultimately improve firm performance (Teece, 1988; Tidd and Trewhella, 1997). Lichtenthaler (2008) stated that an advantage of accessing competence is the absence of the capital expenditures needed to build or invest in assets. All these advantages of using external modes may increase a firm's performance. However, according to Teece (1988), the use of accessing strategies may undermine the need to maintain and upgrade internal competence.

In addition to the two counterpart strategies, a hybrid strategy can be implemented. We refer to this as the social acquisition strategy or social acquirers (see e.g., Parmigiani, 2007). This strategy involves both absorbing and accessing competence. This strategy incorporates building competence hierarchies through internal development or absorbing competence from the social network, as well as temporarily accessing competence through the social network.

The social acquisition strategy and the market acquisition strategy build on two fundamentally different rationales. The social acquisition strategy is based on competence exchange, which in turn is based on trust. So-called relational contracts control for risks in such exchanges (Deeds and Hill, 1998; Dyer, 1997). Andersson et al. (2002) portrayed this strategy as transactions based on long-lasting relationships between actors who have adapted their behaviour extensively to accommodate each other and who have relationships largely based on trust and mutual commitment. Conversely, the market acquisition strategy builds on market efficiency and legal contracts to control for risks; indeed, this strategy is closer to the transaction cost polar end. Andersson et al. (2002) described this strategy as involving purely arm's-length relationships in which transactions between actors are based on economic considerations. The readiness to change partners if changes in price or other factors occur characterizes this strategy.

The social acquisition strategy (using social network modes) allows for flexibility and speed, because competence is accessed temporarily and is grounded in trust. Trust, in turn, lowers the perceived level of risk associated with an acquisition (Bradach and Eccles, 1989), particularly when there is environmental dynamism or a risk of receiving the wrong competence. Teece (1988) emphasised the time-saving potential of this access approach. Tidd et al. (2001) suggested that a social acquisition strategy provides easier access to knowledge that someone else has developed and packaged. Winborg (2000) added the advantages of lower costs and increased preparation for environmental changes, both of which increase the firm's flexibility and provide the firm with legitimacy (Julien, 1998). These qualities, in turn, provide access to new markets and shorten the time needed for getting competence.

We propose a fourth strategy among small firms regarding competence acquisition, that is, nonacquisition or nonacquirers. Small firms are not simply scaled-down versions of large firms (see e.g., Storey, 1994), which is one reason why a nonacquisition strategy is likely to occur in some small firms. Many small firms function hand-to-mouth; as such, a nonacquisition strategy would maintain

the status quo and avoid expending resources to change the current state of affairs. In other words, nonacquiring firms would not rock the boat.

An advantage of this approach is that firms can be followers, moving only after others have completed the trial and error associated with being a first mover. This aligns well with the results of Khan and Manopichetwattana (1989), who found that non-innovative small firms were less proactive and took fewer risks than did innovative small firms. Thus, nonacquirers avoid being at the forefront and avoid taking risks. Consequently, these firms may require fewer financial resources. An additional advantage is that these firms can focus on making the most of what they have and milk the productive potential already at the firm. Khan and Manopichetwattana (1989) framed this strategy in terms of surviving on past success. A disadvantage of this approach is the risk that a firm may not realize the need to update competence and may be consequently outpaced by competitors. Thus, the nonacquisition approach may blind firms, making it difficult to catch up with competitors from behind.

The preceding discussions lead us to formally propose the following:

Hypothesis 1. Small firms cluster in four distinctive generic strategies for acquiring competence: (1) competence absorbers, (2) market acquirers, (3) social network acquirers, and (4) nonacquirers.

Performance implications based acquisition strategy choice

An assumption of the configurational approach of firm strategy is the concept of equifinality (Meyer et al., 1993). This means that within a certain strategic typology, no single strategy is inferior or superior to another strategy (see e.g., Porter, 1980; Miles and Snow, 1978). Many researchers, however, have not accepted this notion (e.g., Aragón-Sánchez and Sánchez-Marín, 2005; Covin et al., 1990; Fiegenbaum and Thomas, 1990; Leitner and Güldenberg, 2010; Sandberg and Hofer, 1987). For example, Sandberg and Hofer (1987) found that new ventures adopting a differentiation strategy performed better than those adopting a focused strategy. Our approach in linking competence acquisition to performance is in line with this view, suggesting that managers make strategic choices that shape and direct the firm's acquisition processes that subsequently determine performance. The competence acquisition decision almost certainly affects firm performance as reflected by financial performance (Lichtenthaler, 2008; Zahra, 1996a). However, the evidence of a relationship between external and internal competence acquisition (as components of a firm's competence acquisition strategy) and firm performance is scarce.

Given this reasoning, we do not expect equifinality among the four competence strategies, because all modes offer potential advantages that are important for firm performance. We subsequently explain our expectations and performance implications for each competence acquisition strategy. In our arguments, we rely heavily on the transaction cost framework.

In line with transaction cost theory, it appears likely that in the small firm context, using strategies to pursue competence-accessing modes (close to the market polar end) is more favourable than using strategies to pursue competence absorbing modes (close to the hierarchy polar end). The transaction cost perspective states that certain dimensions of transactions such as asset specificity and frequency increase costs and create potential for "market failure," thus making vertical integration more efficient than market governance. The *a priori* assumption, however, is that market governance is more efficient than vertical integration because of the benefits of competition (Williamson, 1985). Supporting this position, Oerlemans and Knoben (2010) and Dunne et al. (2009) proposed that entrepreneurs of small firms seldom have the time or financial resources to build competence internally and control all assets. In a similar vein, we expect that the most important aspect of competition for small firms is flexibility (Dreyer and Gronhaug, 2004; Verdú-Jover et al., 2006; Volberda, 1996). Thus, the logic of hierarchy building may benefit large firms but may not be the best approach for small firms. Instead, accepting the specific advantages of small firms may result in better performance.

We also posit that the market acquisition strategy is more favourable than the social acquisition strategy for handling competence acquisition. Some have argued that networking is important because it provides access to others' resources (see e.g., Winborg, 2000). For example, Storey (1994) argued that small firms' characteristically scarce resources force them to use outside resources as a

coping strategy. Because small firms generally have limited resources, and frequently no resources, networking might be used frequently to deal with such resource deficits (Wincent et al., 2010a,b).

Between the two strategies where the rationale is flexibility and speed, however, arguments have been advanced regarding why one may be more favourable than the other. For example, the problem of incomplete contracts and bargaining discussed in transaction cost theory is expected to be a common problem among small firms that use the social network to acquire competence. When examining small firms and their use of the social network, we cannot expect so-called relational contracts (e.g., Deeds and Hill, 1998) to be the most efficient way to access competence or assume that they offer the best competence for a specific purpose. Relying on handshake deals may provide ambiguous results and may not be the most efficient solution, as the parties may have differing ideas of the deal's content and what, exactly, is to be performed. Furthermore, concern for the long-term health of the relationship (e.g., brother-in-law politics) may also impede closing the best deal for firm performance in terms of competence acquisition.

Finally, we believe it is reasonable to posit that firms adopting a nonacquisition strategy will perform significantly worse than firms engaging in any of the other competence acquisition strategies. We base this reasoning on the fact that competence acquisition is significant for high firm performance (Ahuja and Katila, 2004; Deeds, 2000; Hamel and Heene, 1994). Khan and Manopichetwattana (1989) also found evidence along this line: firms surviving on, for example, past success or show low effort were not action- or upgrade-oriented. Therefore, we hypothesize the following:

Hypothesis 2. In general, small firms that pursue a market acquisition strategy will report the highest financial performance compared to small firms pursuing other competence acquisition strategies.

Competence acquisition strategy under environmental dynamism

Contingency factors such as characteristics of the firm's environment are something that small firms need to address. Julien (1998) argued that small firms operate in close relationship with their environment and market, affecting and being affected by both. Merz et al. (1994) pointed out that environmental dynamism in terms of the unpredictable nature of acquiring the adequate quantity and quality of production inputs; unpredictable changes in product demand from sudden shifts in trends and difficult-to-foresee demand; and uncertainties regarding strategic moves by existing firms and potential industry entrants have been influential contingency variables in numerous studies.

The core argument for including dynamism in a study of competence acquisition is that in a rapidly changing environment, existing competences may quickly become obsolete, and new competences may be required (McGarth et al., 2001). Consequently, as the cost–benefit trade-off becomes unfavourable for keeping competence in the hierarchy, we argue that the market acquisition strategy may be more crucial for firm performance with high dynamism. We subsequently expand on this reasoning.

Highly dynamic contexts are expected to lead to increased performance differences among competence acquisition strategies, because greater dynamism is closely aligned with a greater need for information and a greater need for flexibility (Tyler, 2001). In highly dynamic contexts, firms need to remain alert and anticipate and prepare for change (Fowler et al., 2000; Sanchez and Heene, 1997).

When environmental signals are ambiguous, external modes may offer potentially fast and flexible solutions to fill competence needs (Volberda, 1996). Focusing on accessing external competence will allow firms to develop ties to a broad competence arena. A broader arena, in turn, increases the firm's flexibility, which is critical for firms in dynamic environments (Fowler et al., 2000; Grant, 1996; Sanchez, 1995). This aligns well with the reasoning of Tidd et al. (2001) and Deeds and Hill (1998). These authors reasoned that, to remain competitive, firms in a highly dynamic environment must leverage internal competences with those available externally.

Small firms may need to develop contact structures to access competence, for example by cooperating with other firms (see Murray and Worren, 2001; Kale et al., 2000; Sanchez et al., 1996; Thorgren et al., 2012). Tidd and Trewhella (1997) also argued that a firm must be prepared to access competence externally even though it can obtain it internally. Quick, short-term solutions appear to be beneficial for firm performance in high dynamism contexts (e.g., Durand and Quelin, 2000; Tidd

and Trewhella, 1997). Therefore, using a market acquisition strategy mainly to access competence appears to be a favourable choice in contexts of high dynamism because such contexts call for flexibility.

All of these dynamics are reasons a small firm must remain flexible (Dreyer and Gronhaug, 2004) and adopt a strategy built on accessing competence externally. A competence absorbing strategy may be disastrous if the firm commits to a specific trajectory just as changing environmental conditions cause the firm to end up on the "wrong branch of the tree" (Levinthal and March, 1981). High environmental dynamism may cause changes that leave the firm's own competences obsolete and any competence investments may become more or less worthless. Building new competence internally is accomplished neither easily nor quickly. Accordingly, a possible risk of a competence absorbing strategy is that the firm becomes vulnerable to environmental change because internal hierarchy building may cause lock-ins and inflexibility. Sanchez (1995), Verdú-Jover et al. (2006), and Volberda (1996) supported the idea that flexibility is needed when dynamism is high. Sanchez (1995) argued that in dynamic product markets, key challenges are to "identify and acquire the use of flexible resources that can give a firm strategic options to pursue alternative courses of action in responding to developments in its competitive environment, and to develop flexibility in coordinating the use of resources to maximize the flexibilities inherent in the resources available to the firm" (p. 138).

Furthermore, in highly dynamic contexts in which technology develops rapidly, it may be unlikely that a single small firm can incur the expense of trying to build competence internally and bring advanced products to market in a timely and cost-effective fashion (Hagedoorn, 1993). Kelly and Rice (2001) and Tidd and Trewhella (1997) also maintained that with growing dynamism, few firms can afford to maintain competence internally in every potentially relevant area. In the case of reducing product development-to-market cycle times, firms that want to compete may not have the luxury of developing capabilities not already available internally. Some firms may find themselves resource constrained; consequently, the lack of adequate internal resources will require external sourcing of the necessary competence to stay competitive (Leonard-Barton, 1995). Hence, a competence absorbing strategy is expected to be an unfavourable choice in terms of firm performance when environmental dynamism is high. Arguably, flexibility is the better choice when dynamism is high.

We also argue that the market acquisition strategy is more suitable than the social acquisition strategy. Some scholars have suggested that using external modes provides windows into emerging or rapidly advancing areas (Durand and Quelin, 2000; Lai et al., 2010; Tidd and Trewhella, 1997). Therefore, using external modes allows firms to remain aware of cutting-edge issues. Khan and Manopichetwattana (1989) found evidence that firms facing highly dynamic contexts must be innovative to survive, with environmental scanning (i.e., methods to collect information about the environment) being of particular importance for innovation (see also Sun et al., 2012). Tidd and Trewhella (1997) argued that the role of external modes for providing insight into emerging or rapidly advancing areas appears to be important to making good decisions on critical matters, such as when (or whether) to internalize a specific type of competence. Accordingly, external modes can be sensors in highly dynamic contexts.

High dynamism makes it beneficial for a firm to keep its "tentacles" stretched out to enhance the chances of sensing both when changes are at hand and where they will lead (Kelly and Rice, 2001; Tidd and Trewhella, 1997). This reasoning suggests that a market acquisition strategy may be more effective for sensing changes than a social acquisition strategy. Indeed, an external strategy allows the firm to reach beyond the social network.

In further support this position, scholars such as Covin and Slevin (1989), Tidd and Trewhella (1997), and Kelly and Rice (2001) concluded that in a highly dynamic context it appears particularly beneficial to forgo the trust-based social acquisition strategy for a market acquisition strategy. By doing so, the firm helps itself handle the high dynamism because stretching beyond its social networks increases its chances of sensing changes. If we can accept that the stretch of a strategy used to access competence is important for high firm performance with high environmental dynamism, we can expect performance differences between the choice of strategies in such a context.

A highly dynamic environment promotes using a market acquisition strategy. For example, Tidd and Trewhella (1997), Oviatt and McDougall (1993), and Kelly and Rice (2001) proved that under highly dynamic conditions, using the market mode is important for firm performance. Accordingly, in

a highly dynamic environmental context, using a market acquisition strategy may be most beneficial in terms of firm performance. Thus, we hypothesize the following:

Hypothesis 3. Small firms pursuing a market acquisition strategy will report higher financial performance than small firms employing other strategies (i.e., competence absorbers, social competence acquirers, and nonacquirers) in the context of high environmental dynamism.

We posit a somewhat different and murkier picture for competence acquisition in low-dynamism environments. On the one hand, firms operating in less dynamic contexts may not need to be concerned with sensing changes to the same extent as firms operating in high dynamic contexts. Indeed, it is easier for firms to foresee environmental changes when the environment is less dynamic. Kelly and Rice (2001) reasoned that firms that face low dynamism can benefit from absorbing competence on a long-term basis and use external modes less than do firms in contexts of high dynamism.

On the other hand, despite the fact that absorbing competence has been found to be beneficial with low environmental dynamism, small firms still cannot expect to thrive under the large firm logic of hierarchy building just because environmental dynamism levels are low. Although the future is easier to foresee in low-dynamism contexts, small firms may not benefit more from the competence absorbing strategy than from other strategies because the basic competitive logic of being a small firm does not change. Rather than gaining from a market acquisition strategy over other strategies when dynamism is high, it is likely that the chosen strategy does not cause differences in firm performance with low dynamism. Wiklund (1998) and Matthews and Scott (1995) also reasoned that a low-dynamism context might allow for greater variety in solving competence needs. Low dynamism causes the use of any competence strategy to correspond to equal performance levels; that is, using any competence strategy reaches similar performance levels. Thus, in the low-dynamism context, there appears to be equifinality. Thus, we propose our fourth hypothesis:

Hypothesis 4. Small firms will not differ in reported financial performance on the basis of using any of the four competence acquisition strategies (i.e., market acquirers, competence absorbers, social competence acquirers, and nonacquirers) when environmental dynamism is low.

Research methods

Data collection

To test our hypotheses, we used survey data from a sample of small firms in Sweden. We specifically targeted knowledge-intensive industries as we were interested in testing our hypotheses using a sample where competence is important. As such, we targeted one-third of the firms from the electronics and optics industry and the remaining two-thirds from the commercial design and system development industries. The questionnaire was mailed to the CEO of each firm and was followed by two waves of reminder letters to increase the response rate. A total of 842 useful answers were received from the targeted sample of 2,766, for a response rate of 30.5%. Consistent with previous definitions of small firms, the firms employed between 5 and 49 employees. Table 2 presents sample characteristics.

Although acceptable compared to other studies that have investigated competence acquisition, the response rate of around 30% is obviously not an ideal statistical scenario. To handle the fact that two-thirds of the sample did not respond, the respondents were compared statistically with non-respondents restricted to the information in the database. We noticed no overall significant differences in the number of employees or return on sales (ROS), the two variables we used in our analysis and could use for comparisons. Because this study includes three industries, the respondents of each industry were compared to the non-respondents in the corresponding industry. No significant industry differences were found within any of the industries regarding size or ROS.

Measures

The questionnaire was based largely on existing measures (Chandler and Lyon, 2001) and a pilot study of four interviews. We used the pilot to test the adequacy of the concepts and the measures used when we could not rely on previous measurements. In total, the questionnaire was pretested in

Table 2
Sample description.

Variables	Full sample			
	Mean	s.d.	Minimum	Maximum
Number of total employees	14.9	12.5	5	49
Number of employees with university degree	6.1	9.0	0	41
Number of employees with more than three years of work experience	11.0	10.0	0	41
Number of employees in Product development	4.4	6.2	0	32
Number of employees in Production	6.5	8.1	0	32
Number of employees in Marketing	2.8	4.1	0	29
CEO age	47.7	9.7	23	83
Number of years of current CEO in position	5.7	5.0	0	21
Age of firm	13.8	12.5	1	82
ROS	−10.6	104.2	−1425.3	1120.7

several rounds, with adjustments made in between tests to polish the design and consequently try to improve consistency of interpretation (for the procedures used, see Alpar and Spitzer, 1989). The goal of this process was to improve the convergent validity and content validity of the measurements and to reduce perception bias.

We used several approaches to avoid perceptional bias in the study design. In line with Podsakoff et al. (2003) we designed the study and the questionnaire carefully to avoid common method bias. We collected our independent variable (competence acquisition mode) and our moderating variable (environmental dynamism) from questionnaires by asking the entrepreneur to rate the frequency of their activities and perceptions of their environment. The dependent variable, ROS, and the control variables were collected from the archival data base. Moreover, to reduce potential social desirability biases, a self-administrated questionnaire was used. Respondents were informed that their answers would be anonymous and that there were no right or wrong answers to the questions. They were encouraged to answer questions as honestly as possible (cf. Arnold & Feldman, 1981; Fowler, 1995; Podsakoff and Organ, 1986; Thomas & Kilmann, 1975). Furthermore, social desirability was also reduced by avoiding questions revolving around potentially embarrassing or socially unacceptable behavior (Dillman, 2000, p. 226 ff.).

To satisfy the anonymity criteria, each respondent was provided a serial number after completing the survey. This approach enabled us to link questionnaire responses to the necessary archival data (Podsakoff et al., 2003). To deal with item ambiguity, we used seven rounds of feedback to the questionnaire to ensure the consistency of interpreting terms used in questions (cf. Dillman, 2000; Fowler, 1995). We also avoided abstract terminology. For example, when defining social network in the questionnaire, we wrote, "*. . .your network* (*friends, relatives, or business acquaintances*)," and when defining open market we were careful to emphasise that we wanted to capture only competences that were absorbed or accessed "*. . .externally in the open market with no help from your personal contact network*." The goal of this exercise was to ensure accuracy and provide consistency when interpreting the terms presented. The questions were also formulated using a neutral tone, and we avoided using positively or negatively worded items, which has been identified as a source of perception bias (Podsakoff et al., 2003). Furthermore, by using various endpoints on the scales and counterbalancing the order of measurements in the questionnaire, we attempted to reduce anchoring effects and avoid inducing item-context mood state.

Firm performance

Firm performance was measured by ROS, a frequently used measure of financial performance in the strategy literature. The advantages and disadvantages of ROS as a measure of performance are discussed extensively elsewhere, but we noticed that it can be suitable compared to alternatives because it does not bias toward investments (e.g., Charkravarthy, 1986; Venkatraman and Ramanujam, 1986). It should be noted, however, that this financial measure of performance is a narrow conception of performance and does not consider operational (i.e., nonfinancial) measures of

Table 3
Factor analysis[a] on competence acquisition modes and strategic areas[b].

Factor name and Cronbach alpha	Variables and factor loadings
Internal acquisition (α=.6662)	Handle the need in product development internally (0.811); Handle the need in production internally (0.750); Handle the need in marketing internally (0.740)
Social network acquisition mode to absorb competence (α=.6738)	Hire to the product development via the recommendation of the social network (0.768); Hire to the production via the recommendation of the social network (0.773); Hire to the marketing via the recommendation of the social network (0.746)
Social network acquisition mode to access competence (α=.7413)	Buy or trade via the social network for the product development (0.832); Buy or trade via the social network for the production (0.820); Buy or trade via the social network for the marketing (0.736)
Market acquisition mode to absorb competence (α=.6972)	Hire to the product development via the open market (0.749); Hire to the production via the open market (0.836); Hire to the marketing via the open market (0.731)
Market acquisition mode to access competence (α=.7059)	Buy or trade via the open market for the product development (0.803); Buy or trade via the open market for the production (0.788); Buy or trade via the open market for the marketing (0.721)

[a] Rotated Component Matrix Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations. Cumulative Explained Variance=63.4%.
[b] Three Strategic Areas; Product Development, Production, and Marketing.

performance (Kanter and Brinkerhoff, 1981). The ROS data were collected from UpplysningsCentralen, an archival database in Sweden.

Competence acquisition

This measure was based on the product of (1) questions covering how frequently a specific mode was used to solve a specific competence need during the previous three years and (2) the degree that the firm, in general, implemented a particular competence acquisition mode. For the first set of questions covering how frequently a specific mode was used, we asked the respondents to rate the question "How common has it been that you during the last three years used each of the following procedures?" using a scale anchored by 1=*never* to 5=*very often*. We then presented a list of various competence acquisition alternatives. For the individual items used, see Table 3. For the second set of questions, we asked the respondents to rate the degree to which the firm in general managed to implement a particular competence acquisition mode using a scale anchored by 1=*not implemented* to 5=*implemented to a high extent*. We asked "To what extent was the competence implemented during the last three years?" and again provided the list of questions shown in Table 3.

As evident in Table 3, both the market and the social network mode were divided into two variants in line with Lichtenthaler (2008), Sanchez et al. (1996), and Oviatt and McDougall (1993): access, which is buying or trading temporary competence (see e.g., Tidd et al., 2001) and absorb, which is internalizing competence on an indefinite basis, for example, to hire (see e.g., Cohen and Levinthal, 1990; Tidd et al., 2001). A factor analysis ensured that separate questions loaded in the expected dimensions (for the distinctiveness of the dimensions, see Table 3). In the analysis to identify distinctive patterns or separate clusters in the use of competence acquisition modes, we used these factors as input. As Table X shows, although not ideal, the Cronbach's alpha is above the very lower limit for acceptable reliability for all competence acquisition modes (see e.g., Nunally, 1978). In exploring the reliability of our measures further, we also examined individual factor loadings. These tests also indicated support for using these measures.

Environmental dynamism

We measured environmental dynamism using three items (Wiklund, 1998), which captured the pace of change in marketing practices to keep up with competitors (scale ranged from 1=*rare* to 5=*often*); the rate at which products or services become obsolete or renewed in the industry (scale ranged from 1=*very slow* to 5=*very fast*), the pace of change in production and service technology (scale ranged from 1=*not exposed to much change* to 5=*exposed to major change*). The lower and upper

quartiles regarding the index for environmental dynamism were used to identify firms in low- and high-dynamism contexts, respectively. We identified firms scoring 3.35 or lower as low dynamism and firms scoring 4.00 or higher as high dynamism. The three items for environmental dynamism showed acceptable level of Cronbach's alpha ($\alpha = 64$).

Analytical approach and findings

Hypothesis 1, which posited that small firms cluster themselves in four distinctive strategies to acquire competence (i.e., competence absorbers, market acquirers, social network acquirers, and nonacquirers) was tested by cluster analysis. To test this hypothesis, we used the data matrix, or component scores, from the principal components analysis presented in Table 3 as input for the cluster analysis to group (classify) firms into distinct clusters or groups. Knowing that cluster analysis, or classifications, can be distorted by unstandardized data and strongly correlated variables (Hair et al., 1998; Hambrick, 1984; Shaw and Wheeler, 1985), we ensured that the correlations were low and that all variables were standardized using *Z*-scores so that variables with large units would not be overemphasized. Table 4 presents the correlations.

In subsequent steps, the appropriateness of the four-cluster taxonomy was tested using discriminant analysis and ANOVA. ANOVA tests were also used to identify differences among the four clusters with reference to the dependent variable, ROS. This allowed us to test Hypotheses 2–4 and the effects of the proposed moderating variable, environmental dynamism.

Competence acquisition strategies

The results of the cluster analysis are presented in Fig. 1, which illustrates the competence acquisition profiles of each strategy identified. This empirically addresses how groups of small firms acquire competence (Hypothesis 1). Following established procedures (Hair et al., 1998; Hambrick, 1984), we selected the four-cluster solution because it was interpretable and occurred before the distances at which clusters combined became too large. This solution also provided a fairly balanced distribution among clusters. Furthermore, when we tested five clusters one cluster contained only two cases. As we discuss, these clusters support Hypothesis 1.

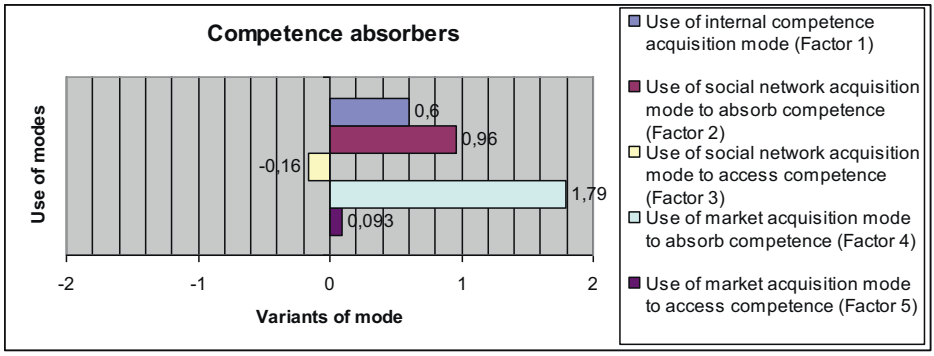
The acquisition profile of the first cluster (illustrated in Fig. 1) shows it has much in common with the competence absorbing strategy. Firms engaging in this strategy prefer to absorb competence (the highest score of any group on the three absorbing modes: internal, the social network, and the market, with low or negative scores on accessing modes). Firms in this cluster combine the development of internal competence with searching for potentially new employees to hire from both the social network and the market to build their internal competence hierarchy.

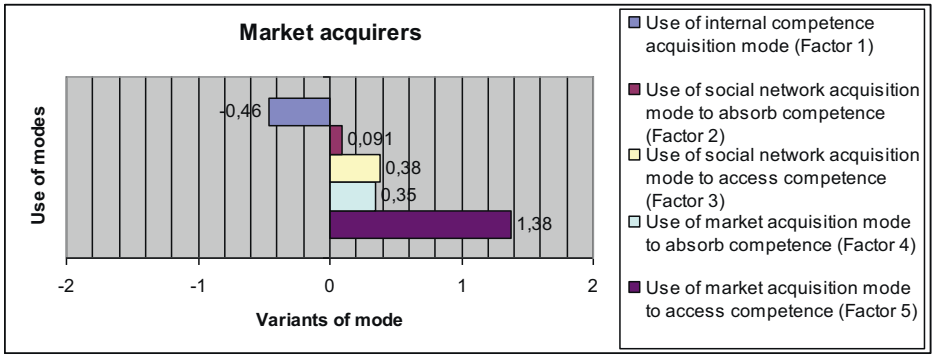
Firms in which market solutions to acquire competence appear important make up the second cluster: market acquirers. Firms pursuing this strategy appear to prefer using modes to access competence temporarily and prefer to use the market for such purposes. Yet, they can also use the

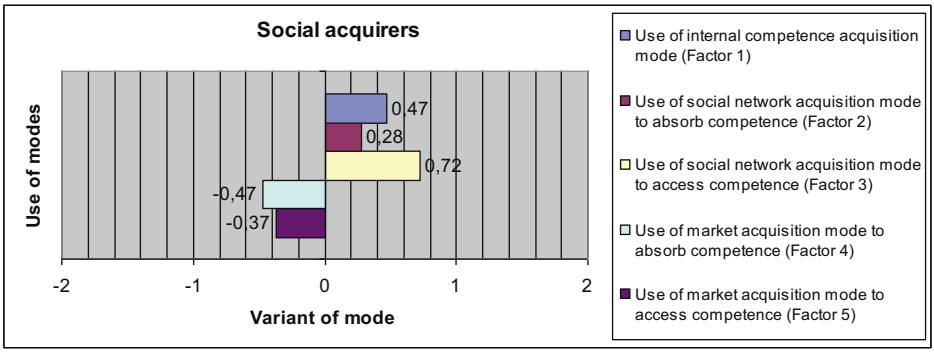
Table 4
Correlation matrix - competence acquisition modes[a]. Pearson correlation.

Competence acquisition modes	Internal acquisition mode	Social network acquisition mode (to absorb)	Social network acquisition mode (to access)	Market acquisition mode (to absorb)	Market acquisition mode (to access)
Internal acquisition Mode	1				
Social network acquisition mode (to absorb)	0.159**	1			
Social network acquisition mode (to access)	0.102**	0.260**	1		
Market acquisition mode (to absorb)	0.061	0.233**	0.102*	1	
Market acquisition mode (to access)	−0.004	0.141**	0.305**	0.324**	1

[a] Standardized scores are used.
* $p < .05$ (two-tailed).
** $p < .01$ (two-tailed).







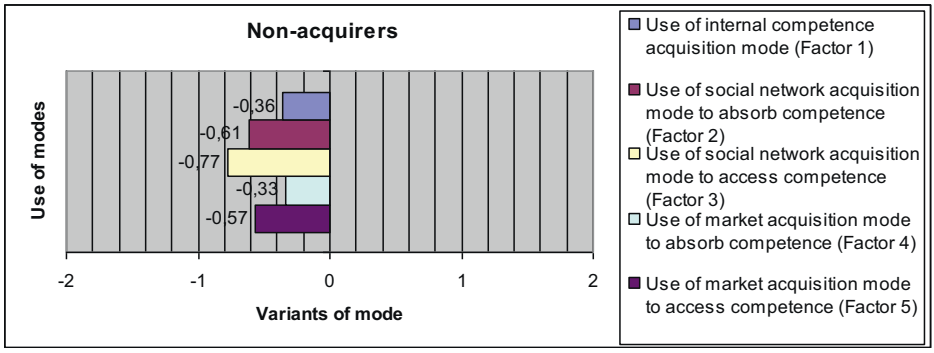


Fig. 1. Illustrations of the four clusters competence acquisition profiles.

social network to access competence. Therefore, these firms appear to aim for flexibility (the highest score of any group on using the market mode to access competence, with moderate scores on using the market mode to absorb competence and using the social network mode to access; negative scores on using the internal mode).

The third cluster includes firms pursuing a strategy that relies mainly on the social network to solve competence needs; these are termed the social acquirers. Firms pursuing this strategy strive to promote their social ties to obtain competence. With this strategy, firms use the social network to access or absorb competence but also develop internal competence (the highest score on using the social network to access competence, with moderately high scores on using the social network mode and absorbing and using the internal mode; negative scores on both market mode variants).

The fourth cluster features nonacquirers. These firms typically avoid taking any action to acquire competence (negative scores on all modes, with the highest negative scores of any group on both social network modes and the market mode; high negative scores on the internal and market modes to absorb competence).

We further validated the results in two ways by following the work of Calantone and Cooper (1981). First, we used ANOVA tests to detect differences in the means of factors. The results were satisfactory, supporting differences between the total sample mean and the mean in each cell. Second, a discriminant analysis was run that indicated the correct classifications had been made. As Table 5 shows, the dominant characteristic of the first strategy is using modes that result in internalized competence. The second strategy emphasizes using the accessing and market modes. The third strategy is strongly associated with using the social network and internal modes. The fourth strategy is low compared to all the other strategies on using each mode. The ANOVA test also supports the categorization. For example, the competence absorbing strategy is significantly different from the other strategies (clusters) in terms of using the market to absorb competence, and the market acquisition strategy is significantly different from the other clusters in terms of using the market to access competence. Similarly, the social acquisition strategy is significantly different from the other clusters in terms of using the social network to access competence. The nonacquisition strategy is, for example, significantly different from the other strategies in terms of using the social network to absorb competence (see Table 5).

The results of the discriminant analysis offer additional insights. The first two canonical discriminant functions account for 77.5% of total variance in the variables. The third function accounts for 22.5% of variance. A standardized canonical discriminant function coefficient matrix shows that in the first function, the market mode to access competence (positive), the market mode to absorb competence (positive), and the social network to absorb competence (positive) are the most dominant variables that discriminate the four clusters (Fig. 2). As Fig. 2 illustrates, the first function separates the nonacquisition strategy and the social acquisition strategy, and both strategies are separated from the competence absorbing strategy and the market acquisition strategy.

In the second function, the social network mode to access competence (positive), the internal mode (positive), and the market mode to access competence (negative) are the dominant variables that discriminate the four clusters. Along this function, the nonacquisition strategy is separate from the social acquisition strategy, the competence absorbing strategy, and the market acquisition strategy.

Along the third function, the distinction is between access and absorb. The market mode to absorb (positive) and access (negative) competence and the internal mode (positive) are the most powerful variables where the competence absorbing strategy and the market acquisition strategy separate from one another, and the nonacquisition and social acquisition strategies are placed closer to one another, between the competence absorbing strategy and the market acquisition strategy (see Fig. 2). Taken together, the empirical results show distinct generic competence acquisition strategies that support Hypothesis 1.

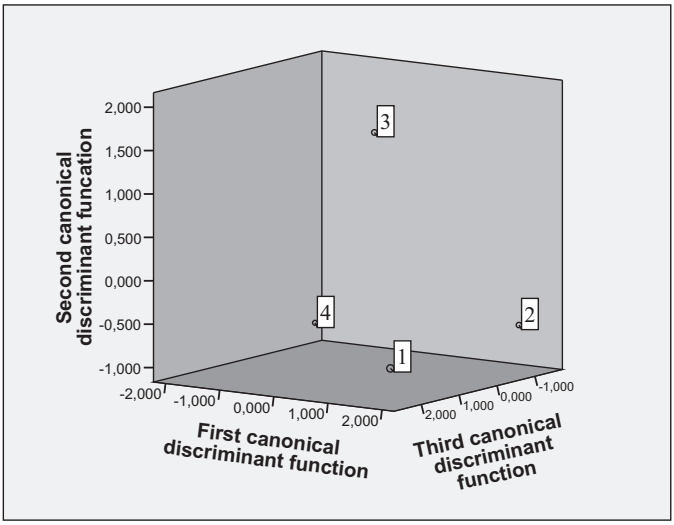
Competence acquisition strategies and performance

We further examined whether a chosen competence acquisition strategy influences financial performance. In support of Hypothesis 2, firms using a market acquisition strategy report the highest ROS compared to all other competence acquisition strategies (see Table 6). Thus, in general, small

Table 5
Mean comparison between clusters on competence acquisition modes.

Variables	Strategy[a]				Tukey HSD comparisons of means[b]						
	Competence absorbing strategy (1)	Market acquistion strategy (2)	Social acquisition strategy (3)	Non-acquisition strategy (4)	1–2	1–3	1–4	2–3	2–4	3–4	F[c]
Internal acquisition mode	0.60 (0.99)	−0.46 (0.82)	0.47 (0.84)	−0.36 (0.91)	*	*n.s.*	*	*	*n.s.*	*	33.82
Social network acquisition mode (to absorb)	0.96 (1.05)	0.09 (0.80)	0,28 (1.06)	−0.61 (0.62)	*	*	*	*n.s.*	*	*	49.15
Social network acquisition mode (to access)	−0.16 (0.96)	0.38 (0.91)	0.72 (0.95)	−0.77 (0.54)	*	*	*	*	*	*	93.43
Market acquisition mode (to absorb)	1.79 (1.21)	0.35 (0.74)	−0.47 (0.53)	−0.33 (0.62)	*	*	*	*	*	*n.s.*	119.69
Market acquisition mode (to access	0.09 (0.86)	1.38 (1.04)	−0.37 (0.61)	−0.57 (0.52)	*	*	*	*	*	*n.s.*	144.07

[a] Standardized means are reported; standard deviations are in parentheses.
[b] *n.s.*=not statistically significant.
[c] Values are derived from ANOVA analysis.
* $p<.05$.



[a]1= Competence Absorbers; 2= Market Acquirer; 3= Social Acquirer; and 4= Nonacquirer.

Fig. 2. Scatterplot - Illustrating the four clusters by their group centroids. 1=competence absorbers; 2=market acquirer; 3=social acquirer; and 4=nonacquirer.

firms pursuing a market acquisition strategy report higher financial performance than do small firms pursuing other competence acquisition strategies. In addition, we also controlled for a set of alternative influences that could potentially bias our results. Because firm size could be a potential variable that could influence our results, we held size constant. We also included the age of the firm, because this could also influence our results. An older firm may be more effective in using the acquisition strategy it has adopted, such that it seems relevant to control for such effects. Moreover, because we had examined industries, we wanted to control for any bias of industry effects. We found identical results as those provided above.

Competence acquisition strategies, performance, and environmental dynamism

Table 6 further indicates that the differences in financial performance among the competence acquisition strategies appear to increase with high environmental dynamism. This is indicated by both significance level and mean differences between average performance levels. The market acquisition

Table 6
Clusters and financial performance in general and in different degrees of dynamism.[a]

Firm performance	Clusters							
	Competence absorbing strategy		Market acquisition strategy		Social acquisition strategy		Non-acquisition strategy	
	Mean (%)	Sd	Mean (%)	Sd	Mean (%)	Sd	Mean (%)	Sd
ROS in general[b]	*−25.24*	91.33	**33.03**	232.72	*−16.60*	136.51	*−14.01*	97.44
ROS high dynamism[c]	*−28,34*	86,30	**83,93**	369,74	*−2,79*	24,98	*−9,35*	42,28
ROS low dynamism	4,22	5,85	−5,03	34,25	−75,07	337,22	−24,14	170.02

[a] Where there is a difference between the means, the bolded mean(s) is (are) the highest. The bolded mean(s) is (are) significantly higher than the mean(s) printed in *italics*. All means that are neither in boldface nor in italics are not significantly ($p < 0.05$) different from the other means.

[b] This row shows the mean financial performance for each group of small firms in general.

[c] In the two last rows the mean financial performance and the standard deviation of the groups of small firms in two extreme dynamism contexts.

strategy reports the highest financial performance and differences with the other three strategies increase. It is interesting to note that firms adopting the competence absorbing strategy report the lowest financial performance of the four strategies. Meanwhile, firms using the social acquisition strategy appear to work somewhat better in a highly dynamic context than the other firms in general. This is also applicable for the nonacquisition strategy.

Conversely, in the low dynamism context, there appear to be no differences in financial performance based on the choice of competence acquisition strategy. Accordingly, with low dynamism, it seems that firms may pursue any competence acquisition strategy and reach similar performance outcomes. Overall, the results indicate that the choice of competence acquisition strategy influences financial performance but particularly in environments characterized by high dynamism. Small firms using a market acquisition strategy appear to report the highest performance. Taken together, these results provide support for Hypotheses 3 and 4. Small firms pursuing a market acquisition strategy report higher performance than do small firms with other strategies (i.e., competence absorbers, social acquirers, and nonacquirers) with high environmental dynamism. Moreover, small firms do not differ in reported performance levels on the basis of using any of the four competence acquisition strategies in the context of low environmental dynamism.

Concluding remarks

The present study aimed to make several contributions to better understand how small firms manage competence acquisition. As such, we believe the study offers several opportunities to extend prior research.

First, this study illustrates that the distinct types of strategies that small firms use to acquire competence can be identified both conceptually and empirically. To our knowledge, there is no existing taxonomy on how small firms orient themselves toward competence acquisition. Taxonomies are important for enriching the dialogue on suitable orientations and for understanding how smaller firms act to acquire competence. The strategies identified in the present study include the competence absorbing strategy, defined as using different modes to build competence hierarchies internally; the market acquisition strategy, defined as using modes to mainly access competence temporarily; the social acquisition strategy, defined as a hybrid of both the absorbing and accessing modes; and the nonacquisition strategy, which entails avoiding acquisition of competence.

Second, although the literature indicates potential benefits for firm performance based on using various modes to acquire competence, these potential benefits have received limited empirical attention. The present study shows that the four distinct generic strategies of competence acquisition that small firms appear to use lead to various effects on firm performance. Overall, it appears that the market acquisition strategy is the most successful with respect to firm performance. This aligns well with the arguments of Tidd et al. (2001), who pointed out that a firm benefits from building up a network of external resources complementary to its own and that this may be just as effective as having all the resources internally (see also e.g., Lichtenthaler, 2008; Tyler, 2001).

The other strategies—the social acquisition strategy, the competence absorbing strategy, and the nonacquisition strategy—result in fairly equal performance levels. It is interesting to note that firms that do nothing reach equal performance levels as firms that use their social network to acquire competence or firms that focus on absorbing competence. The nonacquirers appear to be characterized by the absence of an action plan for competence acquisition or that they even avoid such actions. Consequently, such firms risk becoming paralyzed by the inability to recognize future competence needs or to respond to situations in a more or less ad hoc manner. Such firms may have chosen an asset exploitation strategy. Over time, however, we believe that these firms may be exposed to significant risks that the present study was not able to address.

Third, the environmental context (characterized by various degrees of dynamism) is important for understanding how competence acquisition strategies affect performance, yet this insight is something prior research on small firm competence acquisition has not addressed. Any competence strategy is formulated to fit the environmental conditions a small firm faces. Because we also found that the market acquisition strategy works best under dynamic conditions, it seems meaningful to

study the strategies small firms use in specific environmental contexts of dynamic or complex environmental conditions. Further supporting this belief is that we found no significant difference in performance levels with using any of the four competence acquisition strategies in low-dynamism environments.

In summary, we believe that the results point out the obvious; namely, in most cases, the use of competence acquisition strategies cannot be disregarded when addressing small firms and their ability to improve firm performance. In fact, the results explicitly indicate that the strategy for how firms deal with competence does matter for firm performance. Notably, we would like to remind readers that this study was undertaken to contribute a context to develop theory rather than to attempt to test any theory about small firms' competence strategies. Such theory testing would be premature given the limited development of small firm competence strategy theories or paradigms. Recall that our theoretical development was based on the transaction cost literature. We believe, however, our findings are valuable for future research on small firm competence strategies and future efforts to advance this proposed typology, which guides creating, understanding, and integrating small firm competence strategy alternatives.

We also believe several opportunities exist for further contributions to the shortcomings of this study. As with any study, this research has limitations. For example, our response rate of around 30% is not in line with the ideal statistical scenario. Indeed, the study has a rather large nonresponse rate. To handle the fact that two-thirds of the sample did not respond, we carried out nonresponse analysis, but found no significant differences on number of employees, turnover, or profit. Still, the actions of nonresponding firms regarding competence acquisition are unknown.

In addition, only surviving firms were studied. It is possible that liquidated firms handled their competence acquisition differently. Also, the present study suffers from all the weaknesses associated with a self-report study. For example, respondents may have overestimated the use of various modes or have been influenced by what they perceived as desirable responses rather than indicating their firm's actual use of modes.

Moreover, although we control for some alternative effects, there may be other variables that could potentially influence our findings. One such variable could be the firm's growth rate. Although we have no indications that our results are not robust, we encourage further testing. Also, ROA, another common performance measure, could be an alternative for ROS as we used in this study. We did not use ROA, however, because of our focus on knowledge-intensive industries. These industries are characterized by being heavy on intangible assets, which is not reflected in ROA. However, although ROS is not biased toward tangible assets and is thus potentially more suitable, it has other limitations, such as not being able to capture non-financial aspects. Therefore, we believe other measures could provide additional insights that the present study did not examine.

Finally, although some of the present study's alpha values were rather modest, they are within minimum requirements. It should also be noted that the Cronbach's alpha coefficient depends on the number of items in the construct and that these constructs were built on a limited number of items. As such, future studies may also benefit from adding more items when measuring the construct and refining current measurements. For example, future studies could consider temporal effects (i.e., change of approach over time), strategic choice (i.e., is the approach a strategic decision versus an operational decision), and the lifecycle stage of the business and product. Future research could benefit from alternative measures. For example, the use of objective measures of access to and absorption of competence and other mode ratings of entrepreneurs' competence acquisition would reduce the potential biases of self-report measures. Future research might also use other designs and data analysis approaches to examine how competence acquisition is managed and whether environmental aspects impact the effectiveness of managing competence acquisition in terms of performance. Future researchers should also consider measuring competence acquisition modes at different time periods.

Despite these limitations, which provide opportunities for further research, we believe that our findings deliver important implications for further work. The identified strategy types can be used to provide fresh and contextualized insight into the multifaceted small business phenomenon. The emphasis on exploring heterogeneity in small firms' strategic actions aligns well with the work of Birley and Westhead (1990), who provided evidence that research on small firms should focus on developing theories that describe the heterogeneity of the sector more effectively by analyzing the

development within clusters of firms rather than seeking generalized theories. As such, we believe that the present study has pointed out that additional research attention is necessary to explore the gap in the knowledge base relating to small firm diversity (or types) and competence acquisition. The phenomenon of competence acquisition deserves more attention in future research in small firms.

The conceptual implications of the present study are that concepts such as accessing and absorbing competence and flexibility regarding competence and environmental dynamism are important for understanding the use of competence acquisition modes. Such work has significant practical implications. For example, finding differential impacts among the various competence acquisition strategies on financial performance supports the case for purposeful management decision-making regarding the firm's competence acquisition strategy. A generic competence acquisition strategy typology can offer guidance to small firm managers and help them build a system to acquire competencies.

Moreover, this study implies that small firm managers may benefit from market-based thinking when it comes to competence acquisition and that the act of competence acquisition can be important. Likewise, avoiding such activities altogether may devastate the firm's abilities to survive in the long run or under dynamic environmental conditions. With this in mind, we hope to stimulate further research on this potentially important topic.

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