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TURNING STRATEGIC NETWORK RESOURCES INTO PERFORMANCE: THE MEDIATING ROLE OF NETWORK IDENTITY OF SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract
This paper examines the relationship between strategic network resources; the network identity (i.e., the self-perceived attractiveness as a partner based on the firm’s existing and prior relationships); and firm performance among established small and medium-sized enterprises (SME). We test our hypothesis within the sample of 199 internationalized SMEs in Finland. We contribute to the discussion on the performance effects of network resources among small firms by demonstrating that (1) networks can become a source of strategic resources for SMEs, which enhance firm performance, and that (2) such concrete strategic resource exchange builds evidence-based identity, which helps to entice and convince customers and other partners to invest in the collaboration so that strategic resources can be transferred to sustain firm performance beyond the early stages.

Managerial summary
The purpose of this paper is to investigate how SMEs strategic collaboration and its attractiveness as a partner enhance firm performance. The key message for practitioners is twofold. First, the conventional view suggests that strategic resources should be kept in-house and that too much dependency on partners may lead to a vulnerable power position. Yet, we demonstrate that SMEs can also enhance their performance by acquiring strategic resources from their partners. Second, while weak affiliations with prestigious partners may help to build credibility in the early stages of firm development, it is the strategic collaboration and concrete resource exchange that seems to attract other customers and business partners to commit to, and invest in, the collaboration, which in turn, enhances performance beyond the early stages.

INTRODUCTION
Small and medium-sized enterprises (SMEs) are key actors in sustaining economic development (Bridge, O’Neill, and Cromie, 1998) and contributing to the welfare of our society (Penrose, 1959; Storey, 1994). To overcome their well-known resource scarcity and to acquire external resources, such firms typically rely on networks (Stuart and Sorenson, 2007; Witt, 2004; Jarillo, 1989), i.e., the set of actors and relationships that link them (Hoang and Antoncic, 2003; Zhao and Aram, 1995). Indeed, the research domain on small firm networks has become a fairly well-mined field (Slotte-Kock and Coviello, 2010; Patel and Terjesen, 2011) by suggesting that networks provide access to resources such as capital (Kwon and Arenius, 2010; Mäkelä and
Maula, 2006; Shane and Cable, 2002), new business opportunities (Batjargal, 2010; Neergaard,
2005; Granovetter, 1985), flexibility (Alvarez and Barney, 2001), market knowledge (Musteen,
Datta, and Butts, 2013; Yli-Renko, Autio, and Sapienza, 2001) and access to new markets
(Coviello, 2006). But while these studies unquestionably advance the theory in the field, most of
them tend to focus on specific types of network resources.

What, then, do we know about the performance implications of utilizing external network
resources? There seems to be a consensus among academics that networks yield performance
benefits for small firms (Semrau and Sigmund, 2012; Sorenson, Folker, and Brigham, 2008;
Watson, 2007; Rickne, 2006; Hite, 2005; Greve and Salaff, 2003; Larson, 1991; Larson and
Starr, 1993). However, while recent meta-analytic studies by Stam et al. (2014) and Rauch et al.
(2016) clearly confirm such positive relationship between small firm networks and firm
performance, the extant empirical evidence is inconclusive due to the conflicting perspectives
about specific network properties that constitute performance, such as the strength of network
relationships (Patel and Terjesen, 2011; McEvily and Zaheer, 1999) and network structure
(Stam, 2010), and the inconsistent results regarding how temporal (Hite and Hesterly, 2005;
Elfring and Hulsink, 2007) and contextual (Batjarga, 2010) contingencies influence the network-
performance relationship. In brief, we build on Stam et al. (2014: 167-169), who conclude that
‘Future research may benefit from further developing fine-grained measures of network content’
and that ‘The current focus on relational and structural network properties in extant literature
must be complemented with research that directly considers the quality of resources held by
entrepreneurs' network contacts and the mechanisms through which they can be accessed and
leveraged.’
The purpose of this paper is to address this research gap by investigating the following research question: *How are strategic network resources associated with SME performance, and what is the role of network identity (i.e., the firms’ attractiveness as a partner based on its existing relationships) in this relationship?* More specifically, to locate our study within the theoretical field and to avoid confusion (cf. Stam *et al*., 2014), we draw on the resource based view (RBV) and focus on strategic network resources, i.e., valuable, rare, inimitable, non-substitutable resources acquired from the firm’s closest network partners (cf. Hernández-Carrió *et al*., 2017: 64) because the prior studies suggest that it is the specific role of strong relationships to mobilize and transfer such complex resources (Hansen, 1999; Batjargal, 2003). We pay special attention to the role of SMEs’ attractiveness, or network identity, since prior studies seem to agree that prestigious network and alliance partners provide legitimacy and consequent performance benefits for small firms (Rauch *et al*., 2016; Hoenig and Henkel, 2015; Stuart, 2000; Gulati and Higgins, 2003; Elfring and Hulsink, 2003; Reuber and Fischer, 2007). This study contributes to the discussion of the performance effects of network resources among small firms in two specific ways. First, we show that networks not only help alleviate firms’ acute, early-stage resource shortages, but that they also can become a source of strategic resources for established SMEs, which, in turn, can be bundled to build distinctive capabilities, competitive advantages, and performance (Lavie, 2006; Lichtenstein and Brush, 2001; Brush, Greene, and Hart, 2001; Gulati, Nohria, and Zaheer, 2000). Second, we demonstrate that attractiveness is much more than a mere tool to secure survival-related resources and has stronger implications on performance than the extant literature suggests; firms must also engage themselves in concrete collaboration and strategic resource exchanges to support their evidence-based network identities (Hoehn-Weiss...
and Karim, 2014; Stuart, Hoang, and Hybels, 1999), and it is the role of such network identity to convince customers and other business partners to help the firms realize the value of their resources and enhance their performance (Newbert, 2007).

The rest of this article is organized as follows: in the next section, we develop our hypotheses. Thereafter we describe our research method, present the results of our analysis, and discuss our findings.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Network resources and network relationships

Drawing on the RBV, we define resources as ‘all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm’ (Barney 1991: 101). Network resources, in turn, refer to resources that a firm acquires through its network relationships (Hoang and Antoncic, 2003). Previous network research has drawn from the RBV to incorporate network resources making three important contributions relevant to our investigation (Lavie, 2006; Dyer and Singh, 1998; Yli-Renko et al., 2001). First, an organization’s critical set of resources extends beyond the boundaries of the firm to include the organization’s relationships with its external partners. Put differently, the network of an ‘interconnected firm’ itself is a resource, which in turn provides access to other resources (Lavie, 2006). Such view is amplified within the SME context as small firm networks are known to be socially embedded (Eisenhardt and Schoonhoven, 1996), having a central role in the entrepreneurial process (Stam and Elfring,
2008; Aldrich and Zimmer, 1996). Or, as Stam et al. (2014: 153) state: ‘We find broad agreement that entrepreneurs' social capital [i.e., the resources that entrepreneurs may access through their personal networks] constitutes a key asset for small firms’. Second, access to resources—in comparison to full ownership or control of resources—is a sufficient condition for firms to gain strategic benefits from their networks (Hitt et al., 2000). Third, network resources can be a source of competitive advantage (Lavie, 2006). We follow this precedent, and in line with the RBV, consider network resources to be strategic when they are valuable, difficult to acquire (or enter into), and are hard for others to imitate or substitute (Lavie, 2006). We also align our view with the RBV’s long-standing assertion that increasingly strategic resources lead to competitive advantages and enhanced performance (Barney, 1991; Barney and Arikan, 2001; Brush et al., 2001; Grant, 1991; Wernerfelt, 1984).

Yet, it is not enough to get access to external resources but also transfer and mobilize them, which occurs through network relationships. Theoretically, there are two opposing views of which types of network relationships facilitate small firm performance and how such facilitation occurs. The weak-tie theory (Granovetter, 1973) suggests that distant and infrequent relationships (i.e., weak ties) seem to be suitable for bridging purposes, i.e., for searching external resources such as new opportunities, novel ideas and new contacts, which all enhance small firm performance (Stam and Elfring, 2008). The downside of weak ties has been argued to be the inability to assemble and exploit such resources (Stam et al., 2014). The strong-tie perspective, in turn, highlights that it is the role of close collaborative relationships (i.e., strong ties) to ‘initiate coordinated action’ (Obstfeld, 2005: 101) and to transfer (Hansen 1999) or bridge (Fang et al., 2015) complex and crucial network resources which, when combined with
internal resources (Brush et al., 2001), build competitive advantage (Lavie, 2006) and enhance firm performance (Lee and Tsang, 2001). Yet, the disadvantages of strong ties have been argued to be over-embeddedness (Uzzi, 1997), redundancy (Burt, 1992), and lack of heterogeneity (Westlund and Adam, 2010).

We do not take a stance on the possible trade-offs between strong and weak ties but simply position our study on the strong tie perspective, because several studies confirm that strong ties are particularly useful in mobilizing and transferring complex and strategic resources (Hansen, 1999; Batjargal, 2003; Elfring and Hulsink, 2007), especially among established small firms (Stam et al., 2014). Even more relevantly, we build on Jack (2005: 1254) who states that, ‘It is the function of a tie and how that tie can be utilized that is important rather than frequency of contact [that determines the strength of a tie]’. Thus, a strategic resource exchange occurs, per Jack’s (2005) definition, within strong ties, as such ties are ‘instrumental for business activity.’

**Network identity**

There exists a wide consensus among scholars that small firms can build their credibility through collaborating with prestigious partners (Reuber and Fischer, 2005; Stuart, 2000). Depending on the theoretical domain, this phenomenon has been labelled as network signaling effect (Hoang and Antoncic, 2003); inter-organizational endorsement (Stuart et al., 1999); prestige borrowing (Shaw, 2006); or overcoming the credibility crisis (Starr and Macmillan, 1990). The scholarly research in this space has concentrated on how early-stage credibility is necessary for firms to secure survival-related resources (Neergaard, 2005; Petkova et al., 2008; Steier and Greenwood, 2000), implying the existence of a relationship between credibility and performance that is
indirect and culminates after survival is achieved (Zimmerman and Zeitz, 2002; Delmar and Shane, 2004).

Theoretically, credibility can be examined from two external or stakeholder perspectives, namely the institutional ‘legitimacy’ approach or the strategic ‘organizational reputation’ approach (Suchman, 1995). Both domains have a substantial degree of overlap (Deephouse and Carter, 2005); their key difference is that while the reputation approach focuses on what is different between organizations, the legitimacy approach emphasizes the similarities or ‘isomorphism’ among the organizations (Bitektine, 2011; Deephouse and Carter, 2005). Network identity, in turn, is a more focused concept. It builds on Anderson et al. (1994) and refers to a firm’s self-perceived level of desirability (or repulsiveness) as a partner based on its existing and prior relationships (Coviello, 2006). This self-perceived view of network identity resonates with such broad concepts as organizational identity (i.e., what insiders think about their organization, see e.g., Albert and Whetten, 1985; Gioia and Thomas, 1996), and a construed external image (i.e., what insiders believe that outsiders think about their organization, see e.g., Gioia et al., 2000; Dutton et al., 1994).

The rationale for adopting network identity into our study is twofold. First, unlike reputation, which can ‘vary considerably across stakeholder groups’ who have ‘different strategic reference points’ (Fischer and Reuber, 2007: 68), network identity allows us to focus solely on the credibility gained through one specific group of stakeholders, namely the most important network partners, and hence provides ‘a reference point against which the firm perceives and judges its own and other firms’ actions’ (Anderson et al., 1994: 4). Second, the self-perceived
perspective of network identity captures managers’ strategic perspectives on leveraging external resources (cf. Bonner, Daekwan, and Cavusgil, 2005) as well as their self-view, which is strongly connected with ‘organizations’ actions and interactions with stakeholders’ (Brickson 2007: 866). By doing so, we subscribe to the subjectivist view of entrepreneurship that allows for entrepreneurial subjective perceptions as drivers that shape reality, rather than reacting to an objective version of the reality (e.g., Foss et al., 2008; Alvarez and Barney, 2007; Sarasvathy, 2001).

The model and hypothesis development

Figure 1 illustrates our theoretical model, which proposes that network identity mediates the relationship between Strategic Network Resources (SNR) and firm performance. More specifically, Hypothesis 1 focuses on assessing how strategic resources gained from network relationships are related to firm performance. Then, Hypothesis 2 focuses on the mechanisms in this relationship, and thus, highlights the role of network identity. The following sections provide the theoretical argumentation for the relationships in Figure 1.

Insert Figure 1 here

Strategic network resources and their impact on SME performance

Early-stage firms go to their networks, such as banks (Birley, 1985), investors (Shane and Cable, 2002), and family-members and prior business contacts (Starr and Macmillan, 1990; Greve and Salaff, 2003; Brudel and Preisendörfer, 1998), to secure resources they typically lack, such as financial (Kazanjian, 1988) and physical assets (e.g., office space, machinery, equipment) (Brush...
et al., 2001). These resources are characterized as ‘utilitarian’ in nature (Brush et al., 2001: 67), because they are not complex and can be imitated or substituted without great difficulty. As such, utilitarian resources are rarely strategic. Or, as Brush et al. (2001: 67) put it, ‘The complexity of a resource may indicate the degree to which it can potentially be transformed, combined, or lead to a unique advantage.’

However, as firms grow, they become increasingly able to transform their resources into more unique and valuable assets, and they can manage resource combinations particularly effectively (Brush et al., 2001; Wiklund and Shepherd, 2009). This happens, in part, because as firms develop, they accumulate resources (e.g., knowledge and experience from partners and their own operations) and build up additional capabilities (Yli-Renko, Autio, and Tontti, 2002) that reduce their early dependence on their networks (Hoang and Antoncic, 2003). The firms then have greater freedom to replace early-stage network resources with their own, leaving network relationships poised for more valuable exchanges. Consequently, firms increasingly expand their networks for more specialized combinations of resources (Hite and Hesterly, 2001) that allow them to outperform their competitors and build competitive advantages (Dyer and Singh, 1998; Yli-Renko et al., 2002). For example, whereas a start-up firm depends on networks for operational capital, information and advice (Semrau and Werner, 2013), an established SME can generate its own financing and may use its networks to secure exclusive partnerships with suppliers (Dyer, 1996), create strategic alliances that are otherwise difficult to establish (Shaw, 2006; Stuart et al., 1999), or strengthen a dominant market position (Kazanjian, 1988).
Resources, like those above are strategic because they contribute value to the firm well beyond the production process and have unique ‘transformational characteristics’ that are idiosyncratic, and hence, difficult to imitate (Gulati et al., 2000). Such resources can lead to improved performance, because firms with increasingly strategic resources will enjoy unique advantages over competitors that cannot access or replicate them elsewhere (Barney, 1991). For example, Dyer (1996) found that car manufacturing firms with specialized supplier networks (offering a strategic resource, due to its value, exclusivity, and difficulties in imitating or substituting) outperformed competitors without similar networks. Numerous studies support this contention within and outside networks (Dyer and Singh, 1998; Gulati et al., 2000; Lavie, 2006; Newbert, 2007). Hence, taking support from these studies, we propose:

H1: Strategic network resources are positively associated with SME performance

Network identity as a mediator between strategic network resources and performance
Resources, and especially strategic resources, form a basis for achieving a competitive advantage (Lavie, 2006; Gulati et al., 2000). That being said, the relationship between resources and performance is mediated by the firm capitalizing on the resources (Ketchen et al., 2007). In this vein, we argue that a focal underlying mechanism, through which a set of strategic resources acquired from network relationships facilitate performance, occurs through network identity (Stam et al., 2014). To begin with, we propose that the exchange of strategic network resources is positively related to the network identity of an SME. The rationale behind this is that without the exchange of strategic resources, the collaboration with partners remains shallow and the consequent network identity is superficial, as it is based merely on endorsements via the characteristics of the affiliates (Stuart et al., 1999). Drawing upon social judgement and
impression formation theories, reputation scholars label this as character reputation, i.e., judgments regarding a firm’s behavioral tendencies based on its prior actions (Mishina, Block, and Mannor, 2012). Yet, through the exchange of strategic resources, SMEs can build an evidence-based identity, or as reputation scholars label it, ‘capability reputation,’ which is based on the concrete evidence on what the firm can actually do (Mishina et al., 2012).

Furthermore, we propose that it is the role of the evidence-based, ‘can do’ identity to reduce the information asymmetries regarding the ‘latent and unobservable quality’ of the firm (Connelly et al., 2011: 42). In this vein, we suggest that the ability to gain valuable resources from its existing networks enhances a firm’s ‘relational identity orientation’ (Brickson, 2005), prior partnering experience (Gulati, Lavie, and Singh, 2009), and relational capabilities (Kale and Singh, 2007), thus contributing to self-perceived network identity and responsiveness (Lavie, Haunschild, and Khanna, 2012) to interact with various business partners (Brickson, 2007). Without a verified network identity, a firm may have difficulties presenting itself in such a way that attracts and convinces other business partners and potential and existing customers to invest time and effort into developing collaborative and trustworthy relationships that would transfer strategic resources and enhance performance. An SME may have strategic resource exchange with, e.g., a few important distribution partners, including customization and product adaptation (Cavusgil, Zou, and Naidu, 1993), and transfer of market-based knowledge (Simonin, 1999). Such concrete collaboration, in turn, builds SMEs’ self-perceived attractiveness, and hence, helps the firm to highlight its capabilities and to interact and convince its customers and other business partners so that they may become more committed to the collaboration, as well as to attract new partners with high potential to contribute to performance. International customers, for instance, may end
up buying more customized products, whereas potential and existing suppliers may provide new products to be sold through such efficient channels, which all help in transferring strategic resources into SME performance.

Other studies make similar claims, if we take reputation research as a proxy for network identity. Most relevant to our mediation inquiry are studies demonstrating that a company’s reputation plays a critical role in the relationship between resources and performance. For example, Benjamin and Podolny (1999) show how wineries in California with the strongest reputation secured the highest benefits from investments made in the quality of its resources. Similarly, Rindova et al. (2005) and Boyd et al. (2010) implicitly demonstrate that the appeal of an organization’s resources related to performance occurs through its reputation. In brief, we build on Hoehn-Weiss and Karim (2014), who highlight that young firms with multi-functional alliances are more likely to experience a positive outcome (i.e., IPO or acquisition), because such portfolios demonstrate the value of their potential resources and capabilities acquired through working with different types of alliance partners. To this end, network identity captures an SME’s self-perceived attractiveness among its customers and partners that can help them overcome the reluctance to commit to the collaboration. Put differently, SMEs need to have a verified, capability-based identity to entice and convince revenue-generating customers and other business partners to invest in the collaboration so that strategic resources can be transferred to sustain firm performance beyond the early stages (Zimmerman and Zeitz, 2002; Delmar and Shane, 2004). Hence, we propose:

**H2:** Network identity mediates the positive relationship between strategic network resources and firm performance
METHODS

Context

To contextualize our research setting (Zahra 2007), which is argued to be especially relevant in inquiries regarding small firm networks and performance (Rauch et al., 2016; Gedajlovic et al., 2013), we investigate internationalized SMEs in Finland. The rationale for this is threefold. First, we examine the phenomenon within the population of rapidly internationalized firms, as networks are known to be especially vital for such firms (Fernhaber and Li, 2013; Musteen et al., 2013; Lu and Beamish, 2001; Coviello and Munro, 1997; Chetty and Campbell-Hunt 2003). Or, as Zander, McDougall-Covin, and Rose (2015: 29) put it, ‘Resource constraints [of internationalized firms] imply the need for clever strategizing […]], including how to balance the use of internal and external resources in the development of the firm.’ Second, and relatedly, highly developed network identity is vital for internationalized firms, as such firms suffer from the liabilities of foreignness and outsidership (Johanson and Vahlne, 2009; Zaheer, 1995). This requirement is even amplified in the context of Finland, as Finnish firms originate from a peripheral area of the EU, and thus, need to establish themselves in international markets without ‘locational legitimacy’ (Rao, Chandy, and Prabhu, 2008: 60).

Third, we focus our investigation on rapidly internationalized, but already established, SMEs, or ‘survivors of early internationalization’ (Coviello, 2015: 20), which have proven the viability of their business, and thus, have a strong track record of performance. The rationale in this is as follows. Prior literature highlights that the signaling value of prestigious alliances is specifically vital for overcoming the liability of newness among young firms (Stuart et al., 1999; Gulati and
Higgins, 2003; Milanov and Shepherd, 2013), and that such signaling value of network partners diminishes alongside firm development, as the firm develops a solid track record (Lechner, Dowling, and Welpe, 2006). Yet, some recent studies propose that attractive identity is beneficial also for established firms and their long-term performance (Roberts and Dowling, 2002). Milanov and Shepherd (2013: 746), for instance, found that ‘the impact of partners’ reputation extends beyond the short-term economic benefits of a focal firm’s growth and performance to position the firm in the social domain for long-term benefits.’ Similarly, the research on network resources has been dominated by studies focusing on nascent or early stages of firm development (Birley, 1985; Semrau and Werner, 2013), thus neglecting the mobilization of external resources among established SMEs. In brief, the existing body of knowledge remains relatively silent on the complex interplay between external strategic resources, a firm’s attractiveness as a partner, and firm performance among established SMEs. As such, we argue that the context of our study is well aligned with the objectives of our research (Johns, 2006; Zahra, 2007).

**Data collection and sample**

To gather data, we developed a survey that was administered between December 2010 and March 2011. The survey was developed in English and then was forward and backward translated by two separate and independent translation service professionals (Brislin, 1970). After correcting any inconsistencies between the two translations, we piloted the questionnaire with the founders or top managers of ten SMEs, who gave us feedback about the clarity of our questions. We improved any discrepancies that emerged before going live and provided respondents with the choice of completing the survey in English or Finnish.
Given the aims and context of our study, we specifically targeted rapidly internationalized, but already established, SMEs meeting the following three criteria. First, they had to meet the European Union definition of an SME, which states that an SME has fewer than 250 employees and a turnover below 50 MEUR (European Commission, 2003). Second, they had to have internationalized within three years of inception (Knight and Cavusgil, 2004) by having at least 25% of their total sales coming from foreign sources. Third, they had to be organizations that were originally incepted as new firms (i.e., not spinoffs, subsidiaries, joint ventures). We excluded firms that had no sales, because of difficulties in evaluating the market acceptance of their products or services. On these bases, we searched for our sample by garnering information from databases and by contacting companies directly.

More specifically, we followed a series of steps to locate our population. First, we compiled a list of all Finnish-based international firms from a commercial database of registered businesses and the Finnish Venture Capital Association (FVCA). We filtered out foreign-owned companies, subsidiaries of foreign-owned companies, and firms without any type of international activity. We also cut out firms registered before 1985. This left us with a group of 1559 businesses in the following industries (based on International Standard Industrial Classification or ISIC codes): manufacturing; professional, scientific and technical activities; information and communication; transportation and storage; and financial and insurance activities. Next, we divided the 1559 companies among six Master’s degree students who called top managers (e.g., CEOs, founders) in all the companies to explain the study’s purposes, recruit their participation, and confirm the firms’ initial classification as international new ventures. A total of 914 companies agreed to participate. Upon agreement of participation, we immediately sent them a web link to the
survey. We sent reminders to all participants who had not yet completed the survey after one and three weeks. We received a total of 567 responses, of which an additional 56 were discarded, because they were not Finnish, had no international activities, were subsidiaries of larger firms, or were established before 1985, thereby reflecting the numerous inaccuracies in the databases originally used to locate such firms. This left us with 511 complete and usable responses, yielding an effective response rate of 32.8%. From this group of responses, 199 were confirmed as meeting our criteria.

Measures

Strategic network resources

Drawing on recommendations by Barney (2001) and Newbert (2007), we designed the measurement scale to assess ‘strategic network resources.’ More specifically, we developed measures to capture the ‘strategicness’ of the network resources due to their ubiquitous absence from the literature. We operationalized strategic network resources as a higher-order construct based on its two underlying dimensions: the value of network resources and the value sustainability of network resources. Barney (2001) asserted that, for resources to be valuable, they must enable a firm to exploit opportunities and/or improve effectiveness and efficiency, and such resources include the relationships that facilitate those benefits (Dyer and Singh, 1998; Lavie, 2006). Based on this assertion, we used two items (1 = ‘strongly disagree’ to 7 = ‘strongly agree’) to measure the perceived value of network resources: ‘The resources my firm gains from its most important business relationships […] have a strong potential to increase customers,
volumes, or our firm’s reputation’ and ‘…enable us to exploit opportunities or improve the firm’s efficiency and effectiveness.’ The coefficient alpha for the value of the network resources scale was .84.

According to Barney (1991), strategic resources should not only be valuable, but they should also be characterized by conditions that make them difficult to imitate or substitute. More specifically, when resources are difficult or ‘imperfect’ to imitate or substitute (Chi, 1994), ‘The advantage is sustainable because competitors face obstacles obtaining competitive parity’ (Crook et al., 2008: 1144). These types of resources typically have a unique historical context that develops in conjunction with business relationships in a particular time and place, making such resources socially complex and difficult for outsiders to fully understand (Barney, 2001; Reed and DeFillippi, 1990). To assess the extent to which network resources were imperfectly imitable or substitutable, we measured value sustainability of network resources with two items (1 = ‘strongly disagree’ to 7 = ‘strongly agree’): ‘The resources my firm gains from its most important business relationships […] would be difficult for firms in our industry to acquire elsewhere or develop on their own,’ and ‘…would be difficult for our firm to substitute or find alternatives.’ The coefficient alpha for the value sustainability scale was .82.

Network identity

We adopted the construct and three measurement items for network identity from Anderson et al. (1994), with minor modifications. On a scale from 1 (strongly disagree) to 7 (strongly agree), the respondents were asked to evaluate the attractiveness of their firm to other firms. The items included, ‘Our firm can attract the most competent business partners,’ as well as, ‘Due to our
business partners, our firm is regarded as one of the most attractive suppliers to our present and potential customers,’ and ‘By working closely with our most important business partners, our firm becomes more attractive to other firms.’ The Cronbach’s coefficient alpha for this scale was .83.

Performance

To evaluate the SME performance, we used both subjective and objective performance indicators that were consistent with prior studies in the field (Zhou, Barnes, and Lu, 2010; Lumpkin and Dess, 2001; Chan, 2005). In doing so, we followed the advice of Stam et al. (2014: 168), who found out that ‘self-reported and archival measures [on small firm performance] produced similar effect sizes,’ and conclude their meta-analysis by stating that ‘future research will benefit from using multiple measures, combining scale items with quantitative indicators’ and ‘from adopting more refined measures of performance that tap into the varied elements of the entrepreneurial process such as opportunity recognition, resource assembly, and legitimacy attainment.’ In terms of the subjective performance indicator, respondents were asked to evaluate their performance relative to their main competitors in the following areas: Return on Investment (ROI), customer satisfaction, and the outlook for the firm’s long-term survival. We adopted this multifaceted approach to measure performance because we wanted to capture firms’ factual performance on financial (i.e., ROI) and non-financial (i.e., customer satisfaction) measures; we also wanted to assess firms’ view on long-term performance (i.e., future outlook). The respondents assessed each of these items on a seven-point scale ranging from one (‘much worse’) to seven (‘much better’) ($\alpha = .76$).
Given that the subjective performance measure is limited by its cross-sectional nature and potential source bias, we also tested the research model using a time-lagged and *objective performance* indicator. This analysis was especially important, as we wanted to confirm that the firms in our sample were established SMEs, not international new ventures that went bankrupt soon after their inception. To conduct the analyses with an objective measure, we gained access to financial data that indicated the change in the firm’s return on capital employed (ROCE) from the time of collecting the survey data (financial statement in 2010) to the subsequent year (financial statement in 2011). The ROCE figures indicated the extent to which a firm has succeeded in generating profits on its fixed assets and working capital; this reflects a firm’s ability to generate value for investors. Thus, the change in ROCE indicates the extent to which the firm’s capacity to generate value for investors has improved or declined. By using a measure of time-lagged subsequent profit growth measure, we also seek to limit the risk of reverse-causality, such that high firm performance would lead to providing more positive survey responses. The objective performance data was available for 103 firms.

*Control variables*

Previous studies have noted that SMEs are prone to suffer from two types of liabilities: the liability of newness and the liability of smallness. These liabilities tend to obstruct their performance (Hannan and Freeman, 1989; Stinchcombe, 1965). To control for ‘the newness’ of the firm, we included the measure of *firm age* in years. This was essential, as our sample included firms established from 1985 and onwards. Consistent with earlier studies (Zahra *et al.*, 2000), we used the *number of employees* as a control variable for organizational size. We captured the number of employees with a categorical variable in 6 categories, ranging from 1-4
employees to 100-249 employees. Finally, we measured interaction to capture the firm’s frequency of interacting with its most important business partners. The respondents were asked to rate the frequency of theses interactions on a scale ranging from 1 = rarely (every three months or less) to 7 = very frequently (daily). With this variable, we aim to ensure and demonstrate that the strength of ties does not offer an alternative explanation for our findings.

ANALYSES AND RESULTS

Validity and reliability of construct measures

Table 1 provides the descriptive statistics and correlations for our measures. To evaluate the measurement model fit, we performed a series of confirmatory factor analyses (CFAs). More specifically, we evaluated the model fit using four indexes that are the most generally recognized and recommended in structural equation modelling (Bagozzi and Yi, 2012; Williams, Vandenberg, and Edwards, 2009): the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the non-normed fit index (NNFI), and the standardized root mean residual (SRMR). The CFA results ($\chi^2 = 29.32, df = 29, RMSEA = .007, CFI = 1.00, NNFI = 1.00, SRMR = .036$) demonstrate that the fit indexes of our hypothesized four-factor model (i.e., value of network resources, value sustainability, network identity, and performance) are above the general cut-off values for a good model fit (i.e., 0.05 for RMSEA, .08 for SRMR, and .95 for CFI and NNFI). Moreover, all items loaded significantly and strongly on their intended factors. Together, these results indicate that the scales possess adequate discriminant and convergent validity. Finally, high average variance extracted (AVE) values reported in Table 1 provide support for the convergent validity (Hair et al., 2010). Following recommendations from Fornell and Larcker (1981) and Hair et al. (2010), we also tested for discriminant validity between our
constructs by comparing their AVEs to the squared correlation between them. As the former was higher than the latter, we found adequate support for discriminant validity.

- - - Insert Table 1 here - - -

**Common method bias**

To mitigate the potential for common method bias, we integrated the procedural and statistical recommendations given by Podsakoff, MacKenzie, and Lee (2003) and Podsakoff and Organ (1986). As our survey was administered online, we separated the predictor and criterion variables by grouping each of them into separate screens, such that the respondent could only view and edit one group at a time. After a respondent completed items on a particular screen and moved on, he or she would be unable to re-edit the responses in the previous screens. We also assuaged the ambiguity, confusion, and vagueness with our items by piloting our survey prior to its administration.

Notwithstanding these precautions, we used Harman’s single-factor test to test the extent to which common method bias might be a problem. Although this test is not able to control for the effects of a common method, it indicates whether common method bias is present in the data (Podsakoff et al., 2003). To conduct the test, we used CFA in lieu of an exploratory factor analysis, because Podsakoff et al. (2003) state that the former is a more sophisticated test of the hypothesis that the variance in the data is caused by method. We created a single factor using the items from our four perceptual constructs. The items loading on a single factor provided a poor fit to the data ($\chi^2 = 419.10$, df = 35, RMSEA = .235, CFI = .61, NNFI = .50, SRMR = .14), which was significantly inferior to our hypothesized four-factor measurement model ($\Delta\chi^2 = 389.78$, $\Delta$df
Because the single factor does not provide an adequate fit to the data, we conclude that common method bias does not pose a significant problem in our data.

**Hypothesis tests**

To test the hypotheses, we started by running a series of structural equation models of subjective performance assessments. Hypothesis 1 predicted that SNRs are positively related to performance. In support of this hypothesis, Model 1 in Table 2 demonstrates that the relationship between these variables is positive and significant (p < .05). As our second hypothesis predicts that the effect of SNR on performance is mediated by network identity, we then specified additional models to test different steps of the mediation. In particular, we carried out formal tests of mediation following the procedures of Baron and Kenny (1986).

We first established the possibility of mediation effects by investigating the significance of relationships between our focal constructs. Table 1 shows that the correlations between SNR and network identity, and SNR and performance, were both statistically significant, thereby establishing network identity as a potential mediator. In testing Hypothesis 1, we also found that SNR had a positive and statistically significant effect on performance, hence confirming the first condition for mediation (Baron and Kenny, 1986). After this, we evaluated the effects of SNR on network identity and the impact of network identity on performance. As shown in Model 2, SNR is positively related to network identity, supporting the second condition for mediation. In addition, Model 3 demonstrates that when network identity is positively and significantly related to performance, and after its inclusion in the model, the effect of SNR is no longer statistically significant. The fit indexes provide evidence of good model fit, further supporting the potential for mediation. Finally, we tested for mediation effects using a nested model approach, in which
we compared a fully mediated model to a direct-effects model using a chi-square difference test.

A mediation effect is identified when this difference is not statistically significant (Hair et al., 2010), which is the case with our models ($\Delta \chi^2 = 3.12, \Delta df = 1, \text{n.s.}$). Overall, these findings lend support for Hypothesis 2.

As a next step, we tested the full-blown hypothesized structural equation model with all the predicted relationships in the same model. This model is shown in the upper part of Figure 2.

The following set of structural equations were defined to test the model for both subjective and objective performance measures:

Equations for the second order-construct of SNR:

- Value of network resources = $\beta_{21} \text{SNR} + \zeta_2$ (indicator of second-order construct)
- Value sustainability = $\beta_{31} \text{SNR} + \zeta_3$ (indicator of second-order construct)

Equations for the relationships among study variables:

- Network identity = $\beta_{11} \text{SNR} + \zeta_1$
- Performance = $\beta_{41} \text{Network identity} + \beta_{42} \text{Firm size} + \beta_{43} \text{Firm age} + \beta_{53} \text{Interaction} + \zeta_4$

Consistent with our predictions, the model demonstrates that SNR is positively related to network identity, which then adds to firm performance. To verify the results of the full model, which were based on cross-sectional and subjective data, we then specified a structural model to examine whether the hypothesized model still holds if the subjective performance measure is replaced with an objective and time-lagged performance indicator. The model depicted in the lower part of Figure 2 indicates that the SNR is positively and significantly related to the network identity ($p < .01$), which then contributes to a positive change in the firm’s ROCE over
the following year \((p < .05)\). These findings reveal a similar pattern of results that we identified in the testing the model with subjective performance variable. That is, our supplementary analyses offer additional support for our theory to conceptualize network identity as a mediating variable in the relationship between SNR and performance, thus supporting our Hypotheses 1 and 2.

- - - Insert Figures 2 and 3 here - - -

**Alternative model**

Different from our hypothesized model, some prior studies suggest that the relationship between network resources and performance is moderated by network identity, such that network identity strengthens the positive relationship between SNR and performance (e.g., Reuber and Fischer 2007; Rindova, Petkova, and Kotha, 2007). The moderated model is founded on an idea that strong identity is a combinatory factor that enables SNR to contribute to performance. Or, as Lechner et al. (2006: 522) put it, ‘Even excellent resources may not suffice to overcome the reluctance of firms to engage in exchange relationships with very young firms [without reputation] since economic exchange with these firms is perceived to be risky.’ Therefore, we tested an alternative model in which we assessed whether this type of moderated model provides a better fit and results than our hypothesized model. Applying Mathieu et al.’s (1991) procedure for testing moderation (see Cortina et al., 2001 for a detailed description of the procedure), we specified a moderated model of subjective performance (upper panel in Figure 3). The model shows that the coefficient for the interactive effect between SNR and the network identity on subjective performance is not significant, indicating that the moderation model is not supported. Moreover, low fit demonstrates that the moderation does not provide a satisfactory fit with the data. In addition, we specified another model (i.e., lower panel in Figure 3) to assess the
possibility that a network identity would moderate the relationship between SNR and objective performance. Similar to the moderated model of subjective performance, the relationships in the lower model are insignificant, indicating that the interaction between SNR and network identity is not significantly related to objective performance, which is consistent with earlier analyses. Low fit indices further show that the alternative model does not provide sufficient fit with the data.

**DISCUSSION**

Drawing on the RBV, our study makes three distinctive contributions to the literature on small firm networks. First, our study informs the extant research by arguing that an increasingly strategic set of network resources is essential for an SME’s sustainable, long-term performance. So, while the prior studies highlight the size (O’Donnell et al., 2001), the structure (Stam and Elfring, 2008) or the strength of the network ties (Patel and Terjesen, 2011; Davidsson and Honig, 2003) and their impact on performance (Semrau and Werner, 2013) in the early stage of firm development (Sullivan and Ford, 2013; Watson, 2007; Hite and Hesterly, 2001), our study highlights the role of strategic resource exchanges, or the ‘content of network interactions’ (Jack, 2005: 1234), which enhances the firm’s performance beyond survival. Moreover, we provide quantitative evidence, which is both a rare and recommended (Fernhaber and Li, 2013) research approach in this literature stream. As such, we answer the call of Hoang and Antoncic (2003: 177), who argue that while networks are ‘a principal medium’ for transferring resources that are critical to entrepreneurial activity, ‘The current work seeking to explain entrepreneurial success is limited by considerable conceptual vagueness regarding the resources that are both rare and valuable to success.’ Or, as Gedajlovic et al. (2013:460-464) put it: ‘Outcomes [of small firm
networks] are typically explained by the nature of relationships or networks rather than including the intervening resources that ultimately lead to outcomes’ and ‘little attention has been given to measuring the actual resources accrued from social relationships or networks.’

Similarly, our research extends the conceptual studies by Dyer and Singh (1998), Gulati et al. (2000), and Lavie (2006), who build on the notion that firms increasingly rely on their networks for specialized resource combinations that allow them to outperform their competitors and build competitive advantages. Our study is one of few investigations that expand the RBV into a firm’s network domain to capture whether network resources are strategic or not. We empirically demonstrate that network resources can indeed be strategic, as their value and difficulty to be imitated or substituted increases. In brief, we contribute to the RBV by shedding a more nuanced light on the interplay between the management of resources and the creation of value (Lichtenstein and Brush, 2001), thus answering the call of Sirmon et al. (2007: 273), who state that ‘RBV research is essentially silent about these effects.’

Second, our study contributes to the discussion on network signaling effects within the context of established SMEs. Indeed, prior studies almost unanimously agree that, for a new firm, its attractiveness is an essential resource for acquiring other resources (Rindova, Petkova, and Kotha, 2007; Reuber and Fischer, 2005) and that prestigious network partners have a direct impact on the performance of small firms (Gulati and Higgins, 2003; Hoehn-Weiss and Karim, 2014; Stuart et al., 1999). We extend these studies, especially upon the view of Lechner et al. (2006), who found that the importance of reputational networks decreases as firms develop their own reputation, but suggest an ancillary explanation. So, reputational networks with a primary
purpose of affiliating the small firm with a prestigious partner (e.g., ‘approved supplier of a well-known corporation’) may indeed help young firms to acquire network resources. The role of such networks probably does diminish along the firm’s development, just as it does with other sources of credibility such as, e.g., patents (Hoenen et al., 2014; Audretsch, Bönte, and Mahagaonkar, 2012) and founders’ track records (Stern, Dukerich, and Zajac, 2013). Yet, without a strong track record, the strength and consequent performance benefits of such shallow affiliations remain modest, as their role is to open new doors and establish weak ties with potential partners (Granovetter, 1973) in the early stages of firm development.

Consequently, we argue that it is the role of concrete collaboration or ‘coordinated action’ (Obstfeld, 2005: 101) in which strategic resources are exchanged between key partners to signal the actual capabilities of the firm, and thus, to build an evidence-based network identity (cf. Hoehn-Weiss and Karim, 2014). This evidence-based identity or ‘capability reputation’ (Mishina et al., 2012), in turn, is necessary to obtain and convince revenue-generating customers and other business partners, so that strategic resources can be not only accessed, but also transferred and mobilized (Hansen, 1999), and hence put to work towards performance. Moreover, network identity was found to contribute to, and mediate relationships leading to, performance in our sample of established SMEs, suggesting that those effects last well after an SME’s early stages. As such, we extend the work of Milanov and Shepherd (2013: 746) and argue that the first relationships can have a significant impact on a firm’s long-term performance, especially when such relationships include the exchange of strategic resources. Put differently, given the reluctance of partner firms to transact with small firms, SMEs must not only address the liability
of newness to emerge (Tornikoski and Newbert, 2007) and survive (Zimmerman and Zeitz, 2002), but also to enhance their long-term performance.

Finally, by taking network identity as a proxy for reputation, our findings can be linked to the discussion and conflicting results on the causal relationship between reputation and performance (Lange, Lee, and Dai, 2011; Deephouse and Carter, 2005). Acknowledging that the relationship may evolve reciprocally along with firm development (Boyd et al., 2010), our analysis nevertheless indicates that, in terms of transforming strategic network resources into long-term performance for SMEs, a strong capability-based identity is associated with subsequent increase in firm performance. As such, we answer the call of Bergh et al. (2010, 622), who state that, ‘Untangling this chicken and egg dilemma represents an important opportunity for future research on reputation and, more generally, for resource-based inquiry.’

Our study also provides several valuable insights for practitioners. First, the conventional view suggests that strategic resources should be controlled and kept in-house, and thus, should not be left as the responsibility of partners. We acknowledge that too much dependency on network partners may lead to a vulnerable power position. Yet, we argue that SMEs may also benefit from collaboration to acquire strategic resources, since such resources (e.g., research and development, distribution) typically require vast labor and/or capital investments. Thus, instead of allocating scarce resources for such operations, an SME can optimize its value creation by collaborating with strategic partners. Second, and relatedly, managers of resource-poor firms should not view prestigious network partners and the consequent increase in the firm’s attractiveness as an important driver only for the firm’s emergence and survival, but also for its competitive advantage and long-term performance. So, while weak affiliations with well-known
partners may help in the early stages of firm development, it is the strategic collaboration and resource exchange that seems to attract other customers and business partners to commit to, and invest in, the collaboration, which in turn, enhances performance beyond the early stages. As such, managers of SMEs must be careful in identifying and building long-term strategic relationships with prestigious partners, because they help define its attractiveness.

As usual, there are some limitations that need to be considered when interpreting the results. First, we need to bear in mind the context of our study i.e., internationalized SMEs in a small open economy that is distant from its major markets. More specifically, performing well in such context may require that firms need to rely more on the signaling power of their prestigious partners, as compared to firms that operate purely in domestic markets and/or originate from well-recognized regions (e.g., Silicon Valley). To validate our results, we encourage future scholars to investigate the phenomenon in other contexts and among other types of SMEs. Second, we investigated the relationships between SNR, network identity, and firm performance in a single direction. In agreement with Zimmerman and Zeitz (2002), this relationship may be bilateral and future studies could evaluate the joint or temporal development and impact of SNR and network identity on firm performance. In any case, future studies should adopt longitudinal designs to confirm the causal order of the variables. Future research could also delve into details explaining which specific network resources are the most strategic and unique (e.g., general vs. industry-specific resources), and when such resources make the greatest contributions to identity and performance. Third, while our study approaches firms’ partnerships aggregately from the firms’ perspectives, future research could investigate the specific characteristics of individual ties
or partnerships more deeply (e.g., frequency of interaction, age), including also the view of the partner.

In conclusion, our study builds upon the notion that, with growth, SMEs rely on their networks for specialized resource combinations that allow them to outperform competitors and build competitive advantages. We reveal that strategic network resources have a positive impact on firm performance, thereby contributing empirical evidence to a research area scantly investigated in the literature. More importantly, we discovered that any effect of strategic network resources on performance is fully mediated by network identity, highlighting our most compelling revelation: That a robust set of external strategic resources of an SME is transferred into performance by supporting the firm’s attractiveness and readiness to work effectively with other actors.

REFERENCES


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|       | CR   | AVE  | Mean | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|-------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1     | Performance | .80  | .58  | 4.65 | 0.98 | 1.00 |
| 2     | Value of network resources | .84  | .72  | 5.54 | 1.25 | 0.32** | 1.00 |
| 3     | Value sustainability | .82  | .70  | 4.38 | 1.48 | 0.12 | 0.40** | 1.00 |
| 4     | Network Identity | .82  | .61  | 4.74 | 1.26 | 0.35** | 0.36** | 0.28** | 1.00 |
| 5     | Firm Size       | NA   | NA   | 3.38 | 1.51 | 0.05 | 0.06 | 0.03 | 0.25** | 1.00 |
| 6     | Firm Age        | NA   | NA   | 12.03 | 6.19 | 0.05 | 0.01 | 0.01 | -0.02 | 0.25** | 1.00 |
| 7     | Interaction     | NA   | NA   | 5.32 | 1.29 | 0.20** | 0.17* | 0.07 | 0.30** | 0.15* | -0.05 | 1.00 |

N = 199
* p < 0.05
** p < 0.01
Table 2: Results of mediation tests

<table>
<thead>
<tr>
<th>Measures</th>
<th>Model 1: Performance</th>
<th>Model 2: Network Identity</th>
<th>Model 3: Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNR</td>
<td>.26**</td>
<td>.51**</td>
<td>.16</td>
</tr>
<tr>
<td>Network Identity</td>
<td></td>
<td></td>
<td>.25*</td>
</tr>
<tr>
<td>Firm age</td>
<td>.10</td>
<td>-.07</td>
<td>.12</td>
</tr>
<tr>
<td>Firm size</td>
<td>-.01</td>
<td>.22*</td>
<td>-.06</td>
</tr>
<tr>
<td>Interaction with key partners</td>
<td>.15</td>
<td>.17*</td>
<td>.10</td>
</tr>
<tr>
<td>Chi-Sq.</td>
<td>22.10</td>
<td>24.26</td>
<td>54.89</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>26</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>p-value</td>
<td>0.68</td>
<td>0.56</td>
<td>0.37</td>
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<tr>
<td>CFI</td>
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<td>1.00</td>
</tr>
<tr>
<td>NNFI</td>
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<tr>
<td>RMSEA</td>
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<td>0.000</td>
<td>0.017</td>
</tr>
</tbody>
</table>

Note: Loadings above are standardized
N = 199
**p<0.01
*p<0.05
Figure 1: Conceptual approach: the mediated impact of SNR on performance
Figure 2: Structural equation models of the hypothesized model
Figure 3: Structural equation models of the alternative model

Network identity

Strategic network resources

Subjective performance

Interaction

Firm age

Firm size

N = 199; $\chi^2 = 123.79$ (df = 15, $p = .00$); RMSEA = .191.

* $p < 0.05$

** $p < 0.01$

Network identity

Change in ROCE 2010 → 2011

Strategic network resources

Interaction

Firm age

Firm size

N = 103; $\chi^2 = 134.97$ (df = 3, $p = .00$); RMSEA = .470.

* $p < 0.05$

** $p < 0.01$