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The Relevance of Slack Resource Availability and Networking Effectiveness for Entrepreneurial Orientation

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ABSTRACT

Motivated by the resource-based view of the firm and its Penrose-inspired views on resource orchestration, we seek to disentangle how resource availability might affect the emergence of an entrepreneurial orientation within firms, and how firms might redress the resource absorption effects of EO to enhance firm performance. Using a sample of 607 German small and medium-sized enterprises (SMEs), we investigate: 1) the influence of slack resource availability on the EO of SMEs, 2) the mediating effect of networking effectiveness on the relationship between EO and firm performance, and 3) the influence of firm performance on slack resource availability. The results suggest that slack resource availability positively influences EO, networking effectiveness partially mediates the relationship between EO and

firm performance, and the firm performance achieved to date positively influences slack resource availability. Our work reconciles EO with the RBV and contributes new knowledge to understand the resource absorption effects and resource refuelling needs contained within the EO–performance relationship – a hitherto ignored consideration.

Key words: Entrepreneurial orientation, slack resource availability, resource orchestration, networking effectiveness, firm performance, SMEs

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1 INTRODUCTION

Entrepreneurial orientation (EO), capturing the risk-taking, proactive and innovative behaviour of firms, is an important construct in contemporary scholarship on entrepreneurship and has inspired over 30 years of research (Atuahene-Gima and Ko, 2001, Covin *et al.*, 2006). In this time, empirical evidence of a relationship between EO and firm performance widely supports the construct's legitimacy, relevance, and importance as a management and strategic initiative (Rauch *et al.*, 2009). As a result, scholars have now shifted their attention towards the 'black box' of EO.

Seminal studies by Miller (1983), Covin and Slevin (1989, 1991), and Lumpkin and Dess (1996) theorised and partially tested the effects of organisational structure and contingencies in the internal environment of the firm as determinants of entrepreneurial behaviour (or an orientation) within firms. Studies into corporate entrepreneurship have also highlighted the provision of particular organisational conditions as drivers of an internal firm environment that encourages and enables entrepreneurial behaviour (Hornsby *et al.*, 2002; Ireland *et al.*, 2009). However, an assumption remains that in the presence of particular organisational conditions, an EO will then emerge and be enacted within a firm. We feel this oversimplifies the problem.

A basis for our concern stems from the work of Sine *et al.* (2006), who question the extent to which observations and findings relating to larger, established firms are truly compatible with small and medium-sized enterprises (SMEs). The authors found that less-established firms perform better with administrative structures, which may contradict the view that an EO is inspired by an organic structure. A sub-text of their argument is that administrative structures for such firms better marshal the resources they have at hand. From an EO perspective, this observation is important. Voss *et al.* (2008) demonstrated that absorbed, generic resources are associated with increased exploitative activity and decreased

explorative activity. But unabsorbed resources, both generic and rare, result in higher exploration. Exploration is an exhibition of EO (Hughes *et al.*, 2007a). The resource base of the firm and the firm's ability to establish resource slack may then profoundly change the conditions for the emergence of EO and for the firm to profit from EO-led initiatives. Yet we know little about the relationship between a firm's resource base, its EO as a form of resource orchestration and absorption, and its subsequent ability to profit from its EO initiatives.

The resourcing situation of SMEs is different from that of larger firms. EO consumes firm resources and to ignore that ignores the difficulties SMEs will face in resourcing and enacting an EO and profiting from it, and what resourcing activities might alleviate these burdens. Maximising gains is a recurring problem in EO research (Hughes *et al.*, 2007a) and from a resourcing perspective this might be achieved by changing the system of constraints facing the firm (Pfeffer and Salancik, 1978). EO might then be better understood by examining *slack resource availability* (e.g., Pitelis, 2007)—the extent to which organisational resources are uncommitted and can be employed to aid strategic initiatives (Atuahene-Gima *et al.*, 2005; George and Marino, 2011)—and *networking effectiveness* (e.g., Gronum *et al.*, 2012; Newbert, 2007) as determinants of the system of constraints impinging on entrepreneurial activity (de Brentani *et al.*, 2010; Pfeffer and Salancik, 1978; Voss *et al.*, 2008).

Given this discussion, we draw on the resource-based view of the firm (Barney, 1991) and its recent Penrose-rooted extension about resource orchestration (Sirmon *et al.*, 2011) to investigate the following research questions: 1) How does slack resource availability affect the SME's EO? 2) Does networking effectiveness influence the EO–firm performance relationship, and if so, to what extent? 3) Does firm performance influence slack resource availability?

Through an empirical investigation of 607 German SMEs, we offer theoretical, empirical, and methodological contributions. First, although entrepreneurial firms depend on their ability to employ resources more than other types of firms (Kreiser, 2011; Zahra *et al.*, 2009), the effect of slack resource availability on EO has not been previously considered. Available slack resources allow firms to adapt to complex competitive landscapes (Bourgeois, 1981; Cyert and March, 1963; Penrose, 1959), thus influencing the performance frontier of firms (George, 2005)., Understanding the role of slack resource availability is therefore important because it ‘provides resources for creative and innovative experimentation’ (Bourgeois, 1981: 35), and carries the potential to enhance a SME’s overall EO (see Lumpkin and Dess, 1996). We offer a contribution to EO theory in terms of antecedents and mediators as well as to the resource-based view by furthering our understanding of productive channels of resource orchestration. Second, by including networking effectiveness as a mediating variable between EO and firm performance, we extend Walter *et al.*’s (2006) and Stam and Elfring’s (2008) investigations into how interorganisational and interpersonal networking influence the relationship between EO and firm performance. We offer a contribution to knowledge on the interplay between a resource-based view of a firm and a relational view of the firm with respect to EO in this regard. Third, it has been claimed that ‘success tends to breed slack’ (Cyert and March, 1963: 189). By establishing an empirical relationship between firm performance and available slack resources, we offer a methodological contribution overlooked in previous studies.

2 THEORETICAL DEVELOPMENT AND HYPOTHESES

2.1 Entrepreneurial Orientation

The concept of EO was first advanced to conceptualise and capture in a behavioural sense how firms might *be* entrepreneurial (Covin and Miller, 2013; Miller, 2011). EO can be defined as the nature of the decision-making mind-set, behaviours, and processes

underpinning the firm's strategy creation practice, competitive posture, and management philosophy and thus encapsulates the entrepreneurial tendencies of the firm (Covin and Slevin, 1989; Lumpkin and Dess, 2001). As such, EO is considered a driver of firm growth if it is put to good use (Lumpkin and Dess, 1996; Wiklund, 1999; Harms *et al.*, 2010; Kraus *et al.*, 2012). With origins in the strategy literature, EO is viewed as an important antidote to pressures arising from a rapidly changing external environment and a tendency towards inflexibility as firms increase in size and age. Typical activities following from the presence of an EO include the introduction of new products and services, the development of new markets, and the formation of new internal capabilities, processes, and structures (Covin and Miles, 1999).

EO is made up of three dimensions—risk-taking, innovativeness, and proactiveness—that together constitute what it means for a firm to be entrepreneurial (Covin and Slevin, 1989; Kemelgor, 2002; Miller, 1983; Wiklund, 1999). *Risk-taking* describes the tendency to tolerate the uncertainty that results from entrepreneurial behaviour (Lumpkin and Dess, 1996). Such entrepreneurial behaviour within firms involves investing a significant proportion of resources in a project with a high probability of failure. *Proactiveness* means acting in anticipation of future events, needs, and changes and involves taking the initiative, anticipating and exploiting new opportunities, and creating or participating in emerging markets. A firm can create a competitive advantage by anticipating future demand changes or even by shaping the environment and influencing their surroundings rather than being passive observers of environmental pressures (Buss, 1987, Lumpkin and Dess, 1996). Proactiveness also includes the tendency to be the first to the market with new products or services (Miller, 1983). A proactive firm is an initiator of change and as such is resource intensive in nature. *Innovativeness* 'reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or

technological processes' (Lumpkin and Dess, 1996: 142). Therefore, innovativeness can vary in complexity, ranging from changes to existing products, processes, or services to the introduction of new breakthrough technologies that introduce first-time features, offer exceptional performance, or change the rules of the competitive domain. To explore new things that have not previously existed is a resource intensive activity. Taken together, risk-taking, proactiveness, and innovation operate as a triumvirate encouraging the investment of resources towards generating entrepreneurial outcomes. In doing so, it absorbs considerable resources.

2.2 *Slack Resource Availability and Entrepreneurial Orientation*

Understanding the role of slack resources is a central tenet in economic-based theories of the firm. Both Penrose's (1959) theory of the growth of the firm and Cyert and March's (1963) behavioural theory position firm resource slack as pivotal in successful organisations. Notably, Pitelis (2007: 482) argues that 'the most obvious, relevant, and useful similarity between [the growth of the firm] and [behavioural theory] concerns the issue of slack and excess resources and their role in firm growth and innovation.'

Firms have organisational slack when they build or possess excess resources that can be used in a discretionary manner (Bourgeois, 1981; Cheng and Kesner, 1997). In other words, 'organisation slack refers to the difference between the resources required to maintain an organisation and the resources received by a coalition within the organisation' (Pitelis, 2007: 480). Resource slack can also be considered as excess resources available to a firm and can accrue as a result of firm performance in previous periods as well as from effective (e.g., as a buffer) or ineffective planning (e.g., reversed or abandoned decisions) (Voss *et al.*, 2008), or from resource re-bundling (Sirmon *et al.*, 2011). These broad categorizations can be refined further to identify three types of slack resources: *available* (resources that are not yet

committed), *recoverable* (resources that have been absorbed and are subsequently contributing to additional cost but can be recovered through organisational redesign), and *potential* (future resources that can be generated by, for example, raising additional debt) (Cheng and Kesner, 1997; Sharfman *et al.*, 1988). Collectively, extant research positions slack resources as useful either for innovation and change (Bateman and Zeithaml, 1989; Chandy and Tellis, 1998; Cyert and March, 1963; Gatignon and Xuereb, 1997) or as a buffer between organisation and external contingencies (e.g., Galbraith, 1973; Thompson, 1967).

To theoretically frame the role of slack resource availability as an enabler of EO, we draw on recent arguments related to *resource orchestration* theory (Sirmon *et al.*, 2011), which extends the understanding of resource-based theory by moving beyond the ownership of resources to instead consider their relative availability to the firm, and means by which resources might be absorbed and transformed into outcomes that benefit firm performance. Specifically, building on resource management and asset orchestration arguments, Sirmon *et al.* (2011) introduce resource orchestration as a way to better comprehend how firms attain and maintain competitive advantages. They contend that as a firm evolves, what it does with resources is at least as important as what resources it possesses. Empirical evidence leads to the consensus that resources need to be accumulated, bundled, and leveraged, not simply possessed, suggesting that competitive advantage is created when resources are managed effectively (Zahra *et al.*, 2009). A consequence of this approach, however, is the availability of slack resources. Resources ‘encourage firms to utilise proactive and risk-taking behaviours to engage in experimentation and exploration related to new product-markets and the use of new competitive tactics’ (Kreiser, 2011: 1034). But, we surmise that the presence of resources alone is unlikely to determine such action as much of the firm’s resources is likely to be devoted to present product-service-market activities. Thus, it is most likely the presence of *slack* resources being available within the firm that is instead likely to initiate such behaviour.

The availability of slack resources is of particular concern in the case of SMEs, which are often confronted with limited financial and human resources, restricted market power, and a small customer base—the so-called liability of smallness and newness or adolescence (Aldrich and Auster, 1986). Without slack resources being available, a firm is then faced with a complex dilemma. Managers must decide to maintain the devotion of resources to on-going product-service-market activities or re-direct these said resources towards entrepreneurial exploration. The result is likely to be the deterioration of on-going product-service-market activities and thus some short-term performance turbulence. This viewpoint is supported by Voss et al.'s (2008) thesis and empirical evidence that in SMEs, absorbed, internal resources are associated with increased exploitation activity and decreased exploration activity as absorbed resources are normally tied up in present product-service-market initiatives and offerings. By introducing slack, or unabsorbed, resources into the system, the potential for a change in behaviour, the emergence of explorative activity, and therefore EO behaviour increases. The introduction of slack resources enables the firm to place attention on activities it most likely would previously have found difficult to justify (in resource terms). Changing the system of constraints then enables the firm to explore new initiatives, novel offerings, and take risks it could otherwise not take.

Given Penrose's (1959) and Cyert and March's (1963) positioning of slack resources in relation to innovation and subsequent conversations in the EO discourse by Rauch et al. (2009) and others (e.g., Atuahene-Gima *et al.*, 2005; George, 2005; Marino *et al.*, 2008), available slack resources may encourage experimentation within firms, enabling them to pursue new opportunities and pathways that would otherwise consume too many previously-allocated resources (March and Simon, 1958). Furthermore, available resource pools may protect the firm from environmental shocks, should new initiatives fail, which has the added

benefit of encouraging riskier initiatives (Marino *et al.*, 2008). Thus, we propose the following hypothesis:

Hypothesis 1: Slack resource availability positively influences EO.

2.3 *Networking Effectiveness and Entrepreneurial Orientation*

As theorised above, EO is resource intensive and therefore absorbs many resources in the process of enacting risk-taking, innovative, and proactive actions. Therefore, whilst we can theorise that slack resource availability should fuel the firm to adopt and develop an EO, it is unlikely to help in converting the outputs associated with EO into profitable growth for the firm. This is because an initial stock of slack resources is *depleted* as the EO of the firm consumes many of these resources, leaving *less* leftover resources to help convert or implement outcomes into market initiatives that can drive firm growth. At this point, to maintain present activities and to benefit from its EO initiatives, the firm is likely to need another source of resources to change its system of constraints. Networks and relationships offer one such source (Pfeffer and Salancik, 1978) and we suggest that the proactive behaviour embedded in the firm's EO will it to seek out productive relationships that replenish or provide the resources that can help the firm capitalise on the outputs of its EO.

The terms 'network' and 'networking' refer to a large range of phenomena (see Hite and Hesterly, 2001). Even within disciplines, scholars adopt different definitions of what exactly constitutes a network and adopt different units of analyses therein. Broadly speaking, networks fall into two main categories: interorganisational networks and interpersonal networks (O'Donnell *et al.*, 2001). Interorganisational networks are formal linkages among several organisations that enable firms to access a variety of resources and complementary skills. These, in turn, contribute to the development of the firm's knowledge base, provide economies of scale in its operations, and enable resource-based collaboration (Chetty and

Wilson, 2003). Members of interorganisational units typically ‘work in networks and teams to gain insights into potential products, and they get together with customers or partners to quickly develop them’ (Lumpkin and Dess, 1996: 157). Interpersonal networks on the other hand involve informal linkages among individuals that, among other advantages, facilitate the transmission of knowledge or information (Björkman and Kock, 1995). A broader view of the interpersonal network includes personal relationships, business professionals (including other stakeholders, such as government officials), and family and friends. External networks, whether interpersonal or interorganisational, provide entrepreneurial firms with an expanded resource base (Adler and Kwon, 2002; Kreiser, 2011).

Effective interorganisational and interpersonal networking by the strategic decision-makers of the firm is an example of a capability-building resource (see Grant, 1991). Resources need not necessarily be owned or controlled by the firm and the firm’s capabilities can capitalise on a far broader base of resources through networking than if it had to rely solely on its own. EO might be thought of as a capability in that sense but a subsequent set of resources and capabilities potentially outside the boundaries of the firm are then needed to implement or convert EO initiatives into outputs that enhance firm growth given the drain it places on the firm’s own resource stock. Organisations can treat key networks of relationships as capabilities in their own right that enhance the efficacy of their firm-specific capabilities (Kreiser, 2011) by enabling it to access the resources of others in ways that can shape firm performance (Hughes *et al.*, 2007b).

This distinction between resources and capabilities stems from the early work of Penrose (1959), who separated resources from the services they render, and is addressed by Sirmon *et al.*’s (2011) resource orchestration extension to the resource-based view. Resource heterogeneity alone is not a sufficient condition for sustainable advantage. Resources require capabilities to complete the conversion process from resource ownership to profitable

advantages and returns (Sirmon and Hitt, 2003). An EO is one such activity that converts resources owned into *potentially* valuable outcomes. We use the term ‘potentially’ here because EO will drain resources to create those outputs leaving fewer for implementation and the outcomes of EO do carry uncertainty for the firm given their relative novelty and newness. As such, we suggest that networking effectiveness is a capability that can enable the firm to access additional or ancillary resources to resupply its depleted resource slack to better implement or convert EO initiatives into firm outcomes capable of increasing performance. Therefore, a SME achieves economic rents not because it possesses better resources but rather because its distinct capabilities enables it to make better use of its resources or those resources it can acquire or attract (Li *et al.*, 2014). Given the resource–capability dynamic we anticipate (in theory) here, we suspect that upon encountering new resource constraints in implementing the outputs of its EO initiatives, the entrepreneurially oriented firm will proactively seek to attract resource and knowledge through network relationships to provide a pathway to firm growth.

We expect that EO will increase firms’ resource search behaviour in a way that proactively motivates their managers and strategic decision-makers to go outside the boundaries of the firm to change its system of constraints. SMEs that go on to develop a capability in networking with other actors in the external environment are then more likely to realise the performance benefits associated with EO. Managers also engage in networking to diversify risks associated with entrepreneurial strategic initiatives. Effective networking then enables the firm to bring in new resources and knowledge that should lessen the uncertainty surrounding the implementation of EO-derived initiatives.

Taking the above arguments together, we expect that networking effectiveness should mediate the relationship between EO and firm performance. Motivated by a need to resupply resources to mitigate against the poor implementation of EO initiatives that would result from

the absorption of firm resource slack at the hands of EO, we expect EO to motivate firms to proactively set up relationships that mediate the EO–firm performance relationship. Thus:

Hypothesis 2: EO is positively related to firm performance.

Hypothesis 3: Networking effectiveness positively mediates the relationship between EO and firm performance.

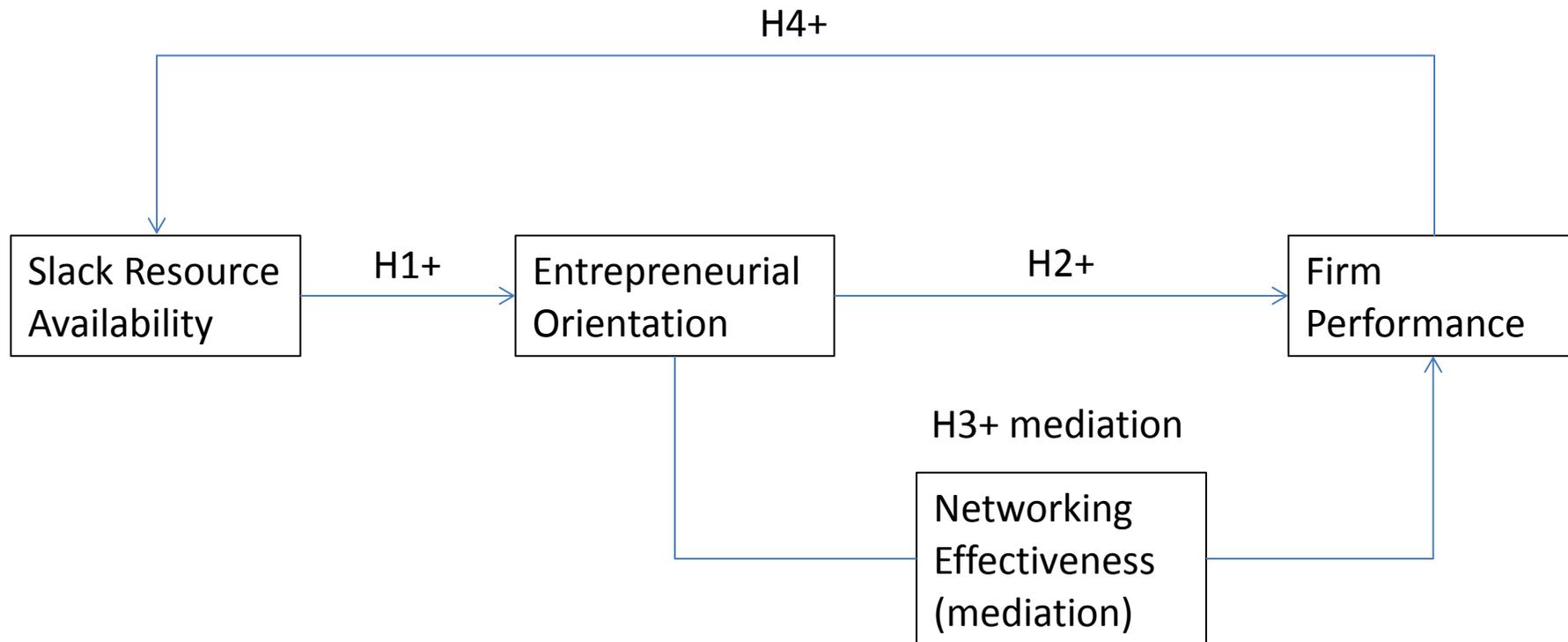
2.4 Firm Performance and the Availability of Slack Resources

Prior research posits that slack resource availability reflects greater resources derived from market power, share, and performance, which enable the SME to exploit existing capabilities, build new ones, develop innovations (Chandy and Tellis, 1998; Cyert and March, 1963; Gatignon and Xuereb, 1997; Penrose, 1959; Rauch *et al.*, 2009), and to make further proactive strategic choices (George, 2005). For SMEs, firm performance to date is the basis to reinvest in developing the firm’s resource base, attract additional resources through investment, or to acquire fresh resources. Thus we put forward the following hypothesis:

Hypothesis 4: Firm performance positively influences slack resource availability.

Figure 1 presents a summary of our hypothesised model.

Figure 1: Hypothesised model



3. METHOD

3.1 Sample

Following the key informant approach (Kumar *et al.*, 1993; Lechner *et al.*, 2006), we contacted chief executive officers, top level managers, or founders of a heterogeneous set of SMEs in Germany who were responsible for formulating and implementing strategic and entrepreneurial decisions. The purpose of the heterogeneous criterion was to create a representative sample of firms. We randomly selected 10,000 companies using the Hoppenstedt Company Database, which lists almost all companies in Germany (300,000 companies) for online data collection. The respondents received an invitation to participate in the research project, and the importance and confidentiality of the research was stressed several times. Because of strict privacy and anti-spam regulations in Germany, only one reminder to complete the questionnaire could be sent.

In total, 607 surveys were completed, for a response rate of 6.1 per cent, which compares favourably with other samples targeting top management team members using online surveys (Newby *et al.*, 2003). We tested for the effects associated with nonresponse bias, but no differences were found between early (first-wave) and late (last-wave) respondents for any of the study's key variables (Kanuk and Berenson, 1975).

The analysed companies belonged to the following industries: professional, scientific, technical services (n = 125); information, communication (n = 72); accommodation, food services (n = 16); manufacturing (n = 144); wholesale and retail trade (n = 71); construction (n = 53); transportation (n = 23); financial and insurance services (n = 11); education (n = 3);

agriculture, forestry, fishing (n = 5); and other (n = 84). With multiple industries represented in the sample, industry membership and environmental effects (e.g., external task environment munificence) can exert effects on firm performance, which might influence the results. Consistent with the work of Powell (1996), the sample was tested for statistical differences in firm performance across the nine industry sectors. No statistically significant differences ($p > .05$) emerged among the different industries, suggesting that the effects of industry membership were limited.

3.2 Measures

The survey was geared toward German-speaking firms, so we subjected the entire questionnaire to double-blind translation by a professional translation firm to improve the validity and reliability of the measurement instruments. The English measures were translated into German and then back-translated to English by independent translators to ensure the validity of the established measures employed in this study (Brislin, 1980). All items were measured on a five-point Likert-type scale, ranging from 1) ‘totally disagree’ to (5) ‘totally agree.’ Items can be found in the following Table 1, which also contains the results of confirmatory factor analysis.

Table 1: Scale Items, Confirmatory Factor Analysis^a, AVEs, and Construct Reliabilities

Dimension	Scale item	Factor loading
Entrepreneurial Orientation (Hughes <i>et al.</i>, 2007a; Miller, 1983; Sciascia <i>et al.</i>, 2006)		
EO1	We value new strategies/plans even if we are not certain that they will always work.	.50
EO2	We encourage people in our company to take risks with new ideas.	.66
EO3	We consistently look for new business opportunities.	.65
EO4	We continuously try to discover additional needs of our customers of which they are unaware.	.70
EO5	When it comes to problem solving we value creative solutions more than solutions that rely on conventional wisdom.	.79
EO6	We consider ourselves as an innovative company.	.77

EO7	Our business is often the first to market with new products and services.	.78			
Slack Resource Availability (Atuahene-Gima, 2005; Atuahene-Gima <i>et al.</i>, 2005)					
SL1	This firm has uncommitted resources that can quickly be used to fund new initiatives.	.72			
SL2	We are able to obtain resources on short notice to support new strategic initiatives.	.87			
SL3	We have substantial resources at the discretion of management for funding strategic initiatives.	.80			
Networking Effectiveness (Hills and Hultman, 2006)					
NE1	We use our key industry friends and partners extensively to help us develop and market our products and services.	.75			
NE2	Most of our marketing decisions are based on exchanging information with those in our personal and professional network.	.78			
Firm Performance (Chen <i>et al.</i>, 2007; Eggers <i>et al.</i>, 2013; Rigtering <i>et al.</i>, 2014)					
FP1	We achieved a higher sales growth than our (direct/indirect) competitors.	.92			
FP2	We achieved a higher profit growth than our (direct/indirect) competitors.	.89			
FP4	We achieved a higher market share growth than our (direct/indirect) competitors.	.78			
Environmental Dynamism (Narver <i>et al.</i>, 2004)					
END1	The technology in our industry is changing rapidly	.79			
END3	A large number of new product ideas have been made possible through technological breakthroughs in our industry	.80			
	EO	Slack Resource Availability	Networking Effectiveness	Firm Performance	Environmental Dynamism
AVE	.49	.64	.59	.75	.75
CR	.87	.84	.74	.90	.90

^a Completely standardized factor loading.

Entrepreneurial Orientation. We captured the three classic sub-dimensions of EO (risk-taking, proactiveness, and innovativeness), but modified the operationalization so that it is more suitable for research within the SME context of our study by adapting the original and well-established EO scales (Covin and Wales, 2012; Covin and Slevin, 1989; Miller, 1983). Sine et al. (2006) have lamented studies that assume the conditions or measures befitting a large firm are relevant to the realities of SMEs, further validating our approach. For example, items such as ‘How many new lines of products has your firm marketed in the past 5 years’ are arguably less suitable for use within the context of SMEs, given their size and focus. In addition, several researchers note advantages in trying new operationalisations of EO (see Covin and Wales, 2012; George and Marino, 2011).

Slack Resource Availability. We measured slack resource availability using a scale developed by Atuahene-Gima (2005) and colleagues (Atuahene-Gima et al., 2005), who asked for the amount of resources available to the firm for deployment. These items attempted to capture slack resources (e.g., free cash flow) available to managers for new strategic initiatives, such as product innovations. The scale demonstrates acceptable scale reliability and is a broad measure of organisational resource slack. We believe that perceptual or subjective scales of resource slack are superior in this instance to an objective proxy because we cannot assume that the presence of, for example, free cash flow alone, correctly accounts for the true extent managers see slack resources as actually available within the firm (or tied into unannounced projects for example). Ketchen et al. (2013) criticise the use of archival proxies as often incomplete measures of a construct or worse, of being applicable to a wide range of potential constructs (thus lacking validity and reliability) (see also Dalton and Aguinis, 2013).

Networking Effectiveness. The effectiveness of a SME’s network is represented by the value the network is able to generate for the firm. A two-item scale from Hills and Hultman

(2006) measured the extent key industry partners cooperate and exchange information to develop and market products and services. It thus covers both inter-organisational network and interpersonal network of the strategic decision-maker. The broad nature of this measure to encompass both types of networks makes the measure ideal for inclusion in this study.

Firm Performance. We measured firm performance with three items that are the most used and insightful indicators of a firm's performance in SME research: growth (Carton and Hofer, 2006; Davidsson *et al.*, 2009), being measured by the increase in sales, profit, and market share—all relative to industry competition (Chen *et al.*, 2007; Eggers *et al.*, 2013; Rigtering *et al.*, 2014). We used subjective measures in part because managers are best placed to comment on the true extent performance has been achieved in growth terms in comparison to competition and in comparison to the firm's desires or objectives. The latter cannot be achieved with an objective proxy per se.

Control Variables. Consistent with our resource-based arguments, we added environmental dynamism as a control measure onto slack resource availability. While environmental turbulence has been associated with an increase in a firm's EO (Kreiser and Davis, 2010; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005), our resource-based arguments lead us to propose that environmental dynamism may change the resource constraints of the firm as a precursor to evoking a firm's EO. To parcel out the effects associated with turbulent environments, we employed the measure of Narver *et al.* (2004) to assess the level of environmental dynamism. We also control for the effects of firm size on available slack resources and firm performance. This was measured by the number of full-time employees present in the company. This value was then logged for analysis purposes.

3.3 *Data Analysis*

To validate the scales through confirmatory factor analysis and test the hypothesised relationships, we employed structural equation modelling (SEM) using LISREL 8.80. We follow the recommendations of Ndofor et al. (2011) and use SEM to test for mediation by examining two competing structural models prior to a Sobel test. The first SEM model constrains the mediation paths to zero while the paths are freed in the second SEM model. The resulting chi-square (χ^2) values are compared to indicate whether mediation occurs. If the SEM model with all paths is superior then there would appear to be mediation effects occurring as the paths have contributed to a reduction in χ^2 . After this, a Sobel test is applied to determine whether the mediation effects are full, partial, or none.

4. RESULTS

Using single respondents to capture both endogenous and exogenous variables with the same data collection method may lead to common method bias. To lower the risk of this occurring, we implemented certain attributes in the research design that should limit the effects of common method and we conducted a test to gauge for their effects. First, we offered the respondents anonymity and confidentiality to diminish the potential for socially desirable answers. Second, we informed the respondents that there were no right or wrong answers and asked them to answer the questions as truthfully as possible (Podsakoff *et al.*, 2003).

To subsequently test for possible common method bias effects, we subjected all the items to a factor analysis (Podsakoff and Organ, 1986), testing for the dimensionality of the data. If a general factor accounting for more than half the variance emerges, this would indicate that common method bias might affect our results. An unrotated principal components factor analysis produced five factors, with the first factor accounting for only 33% of the 67% explained variance. This finding suggests that common method bias is not a serious problem. Fourth, we compared a factor analysis which included the five factors and a

common factor to a factor analysis which only consisted of the six studied factors to gauge the extent that the single common factor accounted for additional variance. The common factor consisted of all scaled items. Our results indicated that the common method factor accounted for only an additional 1% of unexplained variance, which was below the 25% critical threshold (Carlson and Kacmar, 2000). The findings are indicative of common method bias not being evident in the sample. Table 2 presents the descriptive statistics, coefficient alphas, and correlation matrix of the studied variables. The coefficient alphas were all within an acceptable range, and the correlation matrix suggests interdependence of the relationships.

Table 2: Descriptive Statistics, Coefficient Alphas, and Correlations of Studied Variables

Variable	M	S.D.	alpha	1	2	3	4	5
1. Firm performance	3.14	1.10	.90					
2. Entrepreneurial Orientation	3.66	.79	.86	.34**				
3. Slack resource availability	3.25	1.02	.83	.42**	.43**			
4. Networking effectiveness	3.55	.98	.72	.18**	.33**	.23**		
5. Environmental dynamism	2.90	1.14	.78	.24**	.43**	.19**	.29**	

** $p < .01$ (two-tailed test).

Before testing the hypotheses, we employed a confirmatory factor analysis to test the robustness of the measurement items. The model fit statistics demonstrated acceptable model fit ($\chi^2 = 255.19$; degrees of freedom [df] = 121; root mean square error of approximation [RMSEA] = 0.05; Conditional Fit Index = 0.98; Goodness of Fit Index = 0.94). All indices are within generally accepted limits and thresholds. In addition, the factor loading for each item was significant ($p < .05$). As previously mentioned, the loadings ranged from a low of .50 to a high of .92 and were all statistically significant ($p < .05$), indicating convergent validity (Bagozzi, 1988; Gerbing and Anderson, 1992). Discriminant validity would reveal evidence of the squared intercorrelations between constructs being below the average variance extracted (AVE) (Fornell and Larcker, 1981). Squared correlations below the AVE for the

respective constructs would support discriminant validity, which occurred in the study. Although the AVE for entrepreneurial orientation (AVE = .49) was slightly below the recommended .50 threshold (Fornell and Larcker, 1981), the AVEs for the remainder of the constructs were equal to or greater than .50 (see Table 2). In addition the construct reliabilities for each were greater than .70 (see Table 1). With the measurement model validated, we tested the structural model. As discussed previously, two structural equation models were specified, a constrained model and a fully unconstrained (all paths) model (see Table 3).

Table 3: Model Fit

	χ^2	df	χ^2 / df	RMSEA	CFI	IFI	NNFI	GFI
CFA	255.19	121	2.11	.05	.98	.98	.98	.94
SEM-Constrained^a	332.60	127	2.62	.06	.97	.97	.96	.92
SEM-All paths^{b c}	302.65	127	2.38	.05	.97	.97	.97	.93

^a Mediation paths constrained to zero.

^b Mediation paths freed (all paths specified).

^c SEM model with all paths specified has superior model fit and should be used for hypothesis testing purposes. The improved chi-square and fit implies a mediation effect is present.

The structural model containing all paths (SEM-All paths) is demonstrably superior to the constrained model which did not include the mediation paths. The chi-square value reduced by 29.95 points, RMSEA improved by 0.01 as did the values for NNFI and GFI. This implies that there are mediation effects present and as such should be tested for through the Sobel test. This test is conducted for H3. Hypothesis testing results are presented in Table 4.

Table 4: Structural Equation Modelling and Sobel Test Results

			Completely Standardized Estimate	t-value			
Control Paths							
Environmental Dynamism → Slack Resource Availability			.22**	4.13			
Firm Size (logged) → Slack Resource Availability			-.30**	-2.37			
Firm Size (logged) → Firm Performance			-.34**	-2.54			
Specified Paths							
Slack Resource Availability → Entrepreneurial Orientation			.48**	6.69			
Entrepreneurial Orientation → Firm Performance			.18**	2.45			
Firm Performance → Slack Resource Availability			.39**	6.55			
Mediation Paths							
Entrepreneurial Orientation → Networking Effectiveness			.51**	6.32			
Networking Effectiveness → Firm Performance			.13*	1.90			
Sobel Mediation Test Results	a	SE_a	b	SE_b	Z	c	Effect Ratio
Firm Performance	.51	.08	.13	.07	1.83 [†]	.18	.37 ^{††}
Squared Multiple Correlations for Structural Equations^{†††}							
Slack Resource Availability					.26		
Entrepreneurial Orientation					.30		
Networking Effectiveness					.28		
Firm Performance					.14		

** Significant at 0.01 level (critical *t*-value = 2.326).

* Significant at 0.05 level (critical *t*-value = 1.645).

a Unstandardized path coefficient from independent variable to the mediator variable.

SE_a Standard error of the relationship between the independent variable and the mediator variable.

b Unstandardized path coefficient from the mediator variable to the dependent variable.

SE_b Standard error of the relationship between the mediator variable and the dependent variable.

Z Sobel test statistic: $Z = ab/\sqrt{(a^2SE_b^2) + (b^2SE_a^2)}$

c Unstandardized path coefficient from independent variable to the dependent variable.

Effect Ratio = ab/c

[†] Significant at 0.05 level (critical Z-value = 1.645).

^{††} Value below 0.8 confirms partial mediation. Value above 0.8 confirms full mediation (when Z value is statistically significant)

^{†††} Amount of variance explained in the dependent variable.

H1 stated that slack resource availability would positively influence EO. As the results in show, slack resource availability is positively linked to EO ($\beta = .48, p < .01$), providing support for H1. H2 predicted that EO would also influence a SME's firm performance. This hypothesis is supported ($\beta = 0.18, p < .01$).

H3 stated that networking effectiveness acts as a mediator in the EO–firm performance relationship. For mediation to be present, the EO–networking effectiveness relationship should be direct, with networking effectiveness having a direct linkage to firm performance. We use a Sobel Test (one-tailed) to determine whether mediation exists and the extent of this mediation effect (full, partial, or none). For full mediation, the Sobel test Z-value must exceed 1.645 for 5% significance and the effect ratio should exceed 0.8; for partial mediation, the Sobel test Z-value must exceed 1.645 and the corresponding effect ratio be lower than 0.8 (Ndofor *et al.*, 2011). This mediation effect is supported (see Table 4) as the paths from EO to networking effectiveness, and then networking effectiveness to firm performance, are positive and significant ($Z = 1.83, p < .05$). The effect is determined to be *partial mediation* as the effect ratio is below 0.8 (.37) (Ndofor *et al.*, 2011).

For H4, we predicted a positive feedback loop from firm performance to available slack resources. As Table 4 shows, we find a significant and positive relationship between firm performance and slack resource availability ($\beta = .39, p < .01$), in support of H4. In addition, the paths in the final fully mediated model explained a high level of variance through the squared multiple correlation (SMC). The explained variances ranging from high to low were EO (SMC = 30%), networking effectiveness (SMC = 28%), slack resource availability (SMC = 26%), and firm performance (SMC = 14%).

5. DISCUSSION AND CONCLUSIONS

Our overarching motivation in this paper was to provide a resource-based explanation for the emergence of EO within firms and how those firms might then capitalise on those EO initiatives in performance terms. We contest that studies have so far failed to appreciate the resourcing difficulties associated with EO. Using the resource-based view and its recent revisions in relation to resource orchestration, we show how two previously under-examined but important constructs—available slack resources and networking effectiveness— theoretically and empirically capture the complexities and nuances of this relationship.

5.1 *Contributions to Theory and Practice*

We offer several contributions. First, Voss et al. (2008) reported that the presence of slack resources available to SMEs can encourage more explorative behaviour over and above the exploitation of the current and traditional product-services of the firm. We extend this to the notion of EO. The results show that the impact of available slack resources on EO is strong. This finding supports fundamental arguments by both Penrose (1959) and Cyert and March (1963) that slack resources provide scope to enable activities that would otherwise be sidelined in resource-scarce environments. Available slack resources allow SMEs to adapt to complex competitive landscapes by engaging in more complex activities. Findings in relation to how environmental dynamism might promote EO overlook its resourcing requirements. Interestingly, we found a positive relationship in our control analyses between environmental dynamism and slack resource availability indicating that the presence of EO is best understood by examining how firms maintain spare resources to fuel innovative, proactive, and risk-taking initiatives to compensate for the harm turbulent environments can do to

existing product-services. We therefore offer a novel contribution to theory on EO in terms of its antecedents from a resource-based perspective.

Second, our finding that EO positively contributes to performance is not a new one in and of itself, although there remains tension in the relationship owing to its nature as a ‘black box’. But, as we theorize EO from a resource-based view, we propose that our results contribute to the resource-based view by furthering our understanding of productive channels of resource orchestration. Specifically, EO is one means of resource orchestration that can generate performing enhancing results that are likely defensible against substitution and imitability.

Third, and in extending our modest second contribution, we offer a contribution that addresses a fundamental oversight in current explanations of resource orchestration as well as EO. An oversight in Voss et al.’s (2008) notion of slack resources encouraging explorative or entrepreneurial behaviour is its failure to consider what happens when resources are then absorbed as part of their orchestration through EO. Sirmon et al. (2011) also arguably did not sufficiently appreciate that the absorption of resources during an act of orchestration reduces the slack resource available to fuel subsequent conversion activities. That is, initiatives from EO might not translate into performance rewards without a further supply of resources to replenish those used during acts of EO. By including networking effectiveness as a mediating variable between EO and firm performance, we extend Walter et al.’s (2006) and Stam and Elfring’s (2008) investigations into how interorganisational and interpersonal networking influence the relationship between EO and firm performance. We offer a contribution to theory and knowledge on the dynamic interplay between a resource-based view of a firm and a relational view of the firm with respect to EO in this regard. Networking effectiveness enables access to external resources that provide further slack to the firm (e.g., by allowing it to redeploy its own resources) or by plugging resource gaps (e.g., needed to convert EO

outcomes into performance-improving initiatives) or by replenishing resources absorbed during EO activity.

Fourth, our finding that the firm performance–slack resource availability loop is a positive enabler of EO is noteworthy in that it moves various EO-linked relationships from linear to dynamic, in line with researchers' calls for extensions of EO (e.g., Covin *et al.*, 2006). Although measuring these relationships longitudinally might have proved similarly beneficial, our findings provide at least initial evidence not only on how EO is enhanced but also on how EO is preserved through strategic management of slack resources. This offers a contribution through the lens of strategic entrepreneurship about the need to further realise the interface between a firm's strategic management and its entrepreneurial initiatives.

For strategic decision-makers and entrepreneur managers, our findings speak to the positive role of available slack resources on EO and the necessity to develop a capability around networking effectiveness within SMEs. From a resource-based perspective, carefully managing the system of resource constraints within and around the firm by maintaining and making available slack internal resources and acquiring external networked resources enables the firm to not only enhance its EO, but capitalise on it and preserve it over time. Slack resources fuel EO which over time can become a resource orchestration capability in itself, and when allied to a networking effectiveness capability, can generate firm growth and returns to performance that are unlikely to be easily replicated by competitors. The results also provide some evidence of how firm performance can translate into available slack resources which can then be used to increase EO and thereby increase firm performance, effectively creating a positive feedback loop for the SME.

For managers, the simplicity of this argument belies the difficulties the firm will face in maintaining resource slack and ensuring that such slack resources are devoted to the activities underpinning EO. EO is resource intensive as we argue in this work. More resources

do not automatically lead to more EO necessarily as it competes for these resources. But sufficient slack ensures that the firm can transcend its focus on its present activities to explore new innovations and alternatives, as put forward by Voss et al. (2006). Moreover, the legitimacy of EO's call for those resources depends on it demonstrating its value in performance terms. We put forward that EO uses much of the body of slack resources a firm has such that its performance effects depend on the firm's wider ability to access networked resources, hence our evidence that the EO–performance relationship is mediated by networking effectiveness. If this triumvirate of conditions is insufficient in firm, the value and presence of EO may diminish as it fails to show its rewards despite absorbing many resources.

5.2 *Limitations and Future Research*

As with all empirical research of this type, our study has limitations. First, the use of cross-sectional data also constitutes an advantage of this research because the findings are broadly generalizable to the studied industries. However, it is also disadvantageous in that we can only make inferences about the causal relationships seemingly at play in our findings. A longitudinal study over time would be valuable to forming insights into how changes in resource based over time may shape or affect the EOP of SMEs and its ability to profit from it. However, following Ketchen et al. (2013) and Dalton and Aguinis (2013), we caution authors who may choose to use abstract proxies for these constructs as slack resources, EO, and performance in particular are not easy to discern with absolute confidence through such proxies. Nevertheless, and second, although Chandler and Hanks (1993) found that self-reported measures of owners and general managers of SMEs are highly correlated with archival data, the use of only one strategic key informant per firm (CEO or founder) – albeit being considered the “single most knowledgeable and valid information source” (Lechner *et al.*, 2006: 525) in SMEs, employing self-reported measures, might pose a limitation. The

respondents may possess skewed or inflated perspectives of the different model components, which cannot be triangulated with other respondents from the same SME or through objective data sources in this instance. Still, the results are consistent with our theorization which provides some comfort that errors in our empirical model are not present. Third, we only use growth-related measures as indicators of SME performance. Although growth is widely accepted as an important measure in SME research (see Carton and Hofer, 2006), future studies might want to account for a rounder measurement of performance. Fourth, the study took place in one country only, Germany, albeit the largest economy in Europe. Further research could replicate this study's design and hypothesised model in other countries to determine if the relationships discovered hold some cultural specificity.

5.3 Conclusion

In conclusion, our study answers the call by EO scholars (e.g., Covin *et al.*, 2006; Rauch *et al.*, 2009) to better understand how EO works theoretically and in practice. Evoking resourcing and resource orchestration arguments, we examined previously unreported relationships among EO, slack resource availability, networking effectiveness, and firm performance in SMEs. Turning our attention to the underlying theoretical framework – resource orchestration logic – which integrates resource, sourcing, management, and deployment, we suggest that our results provide an alternative way to conceptualise the emergence of EO in firms and its transformation into rewarding performance outcomes. By coupling EO with slack resource availability and networking effectiveness, we are now better equipped to appreciate the resources and capabilities required to deliver these strategies. Our framework provides an enriched perspective of how and when resources must be managed effectively and efficiently orchestrated to drive entrepreneurship that is achievable and sustainable within firms. As such, our results shed further light on how prudent use of slack

resources and networks contribute to increasing SME EO and performance, and should encourage other scholars to further research these phenomena.

REFERENCES

- Adler, P.S. and Kwon, S.W. (2002) 'Social capital: Prospects for a new concept', *Academy of Management Review*, Vol. 27, No. 1, pp.17-40.
- Aldrich, H. and Auster, E. (1986) 'Even dwarfs started small: Liabilities of size and age and their strategic implication', *Research in Organizational Behavior*, Vol. 8, No. 1, pp.65-198.
- Atuahene-Gima, K. and Ko, A. (2001) 'An Empirical Investigation of the Effect of Market Orientation and Entrepreneurship Orientation Alignment on Product Innovation', *Organization Science*, Vol. 12, No. 1, pp.54-74.
- Atuahene-Gima, K., Slater, S.F. and Olson, E.M. (2005) 'The contingent value of responsive and proactive market orientations for new product program performance', *Journal of Product Innovation Management*, Vol. 22, No. 6, pp.464-482.
- Bagozzi, R.P., Yi, Y. (1988) 'On the evaluation of structural equation models', *Journal of the Academy of Marketing Science*, Vol. 16, No. 1, pp.74-94.
- Barney, J. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, Vol. 17, No. 1, pp.99-120.
- Bateman, T.S. and Zeithaml, C.P. (1989) 'The psychological context of strategic decisions: A model and convergent experimental findings', *Strategic Management Journal*, Vol. 10, No. 1, pp.59-74.
- Björkman, I. and Kock, S. (1995) 'Social relationships and business networks: The case of western companies in China', *International Business Review*, Vol. 4, No. 4, pp.519-535.
- Bourgeois, L.J. (1981) 'On the measurement of organizational slack', *Academy of Management Review*, Vol. 6, No. 1, pp.29-39.
- Brislin, R.W. (1980) Translation and content analysis of oral and written materials, In Triandis, H.C. and Berry, J.W. (eds.), *Handbook of cross-cultural psychology*. Boston: Allyn and Bacon, 389-444.
- Buss, D.M. (1987) 'Selection, evocation, and manipulation', *Journal of Personality and Social Psychology*, Vol. 53, No. 6, pp.1214-1221.
- Carlson, D.S. and Kacmar, K.M. (2000) 'Work–family conflict in the organization: Do life role values make a difference?', *Journal of Management*, Vol. 26, No. 5, pp.1031-1054.
- Carton, R.B. and Hofer, C.W. (2006) *Measuring Organizational Performance - Metrics for Entrepreneurship and Strategic Management Research*, Cheltenham, Edward Elgar.
- Chandler, G.N. and Hanks, S.H. (1993) 'Measuring the performance of emerging businesses: A validation study', *Journal of Business Venturing*, Vol. 8, No. 5, pp.391-409.
- Chandy, R.K. and Tellis, G.J. (1998) 'Organizing for radical product innovation: the overlooked role of willingness to cannibalize', *Journal of Marketing Research*, Vol., No., pp.474-487.
- Chen, C.-N., Tzeng, L.-C., Ou, W.-M. and Chang, K.-T. (2007) 'The Relationship among Social Capital, Entrepreneurial Orientation, Organizational Resources and Entrepreneurial Performance for New Ventures ', *Contemporary Management Research*, Vol. 3, No. 3, pp.213-232.
- Cheng, J.L. and Kesner, I.F. (1997) 'Organizational slack and response to environmental shifts: The impact of resource allocation patterns', *Journal of Management*, Vol. 23, No. 1, pp.1-18.
- Chetty, S.K. and Wilson, H.I.M. (2003) 'Collaborating with competitors to acquire resources', *International Business Review*, Vol. 12, No. 1, pp.61-81.
- Covin, G.J. and Miller, D. (2013) 'International Entrepreneurial Orientation: Conceptual Considerations, Research Themes, Measurement Issues, and Future Research Directions', *Entrepreneurship: Theory & Practice*, Vol. 10, No., pp.1-34.

- Covin, J. and Slevin, D. (1989) 'Strategic management of small firms in hostile and benign environments', *Strategic Management Journal*, Vol. 10, No. 11, pp.75-87.
- Covin, J.G., Green, K.M. and Slevin, D.P. (2006) 'Strategic process effects on the entrepreneurial orientation-sales growth rate relationship', *Entrepreneurship: Theory & Practice*, Vol. 30, No. 1, pp.57-81.
- Covin, J.G. and Miles, M.P. (1999) 'Corporate entrepreneurship and the pursuit of competitive advantage', *Entrepreneurship Theory & Practice*, Vol. 23, No. 3, pp.47-63.
- Covin, J.G. and Slevin, D.P. (1991) 'A conceptual model of entrepreneurship as firm behaviour', *Entrepreneurship: Theory and Practice*, Vol. 16, No. 1, pp.7-24.
- Covin, J.G. and Wales, W.J. (2012) 'The measurement of entrepreneurial orientation', *Entrepreneurship Theory and Practice*, Vol. 36, No. 4, pp.677-702.
- Cyert, R.M. and March, J.G. (1963) *A behavioural theory of the firm*, Cambridge, MA, Blackwell.
- Dalton, D.R. and Aguinis, H. (2013) 'Measurement Malaise in Strategic Management Studies The Case of Corporate Governance Research', *Organizational Research Methods*, Vol. 16, No. 1, pp.88-99.
- Davidsson, P., Steffens, P. and Fitzsimmons, J. (2009) 'Growing profitable or growing from profits: Putting the horse in front of the cart?', *Journal of Business Venturing*, Vol. 24, No. 4, pp.388-406.
- de Brentani, U., Kleinschmidt, E.J. and Salomo, S. (2010) 'Success in global new product development: Impact of strategy and the behavioral environment of the firm', *Journal of Product Innovation Management*, Vol. 27, No. 2, pp.143-160.
- Eggers, F., Kraus, S., Hughes, M., Laraway, S. and Snyckerski, S. (2013) 'Implications of customer and entrepreneurial orientations for SME growth', *Management Decision*, Vol. 51, No. 3, pp.524-546.
- Fornell, C. and Larcker, D.F. (1981) 'Evaluation structural equation models with unobservable variables and measurement error', *Journal of Marketing Research*, Vol. 18, No. 1, pp.39-50.
- Galbraith, J.K. (1973) *Designing complex organizations*, Reading, MA, Addison-Wesley.
- Gatignon, H. and Xuereb, J.-M. (1997) 'Strategic orientation of the firm and new product performance', *Journal of Marketing Research*, Vol., No., pp.77-90.
- George, B.A. and Marino, L.D. (2011) 'The Epistemology of Entrepreneurial Orientation: Conceptual Formation, Modeling, and Operationalization', *Entrepreneurship Theory and Practice*, Vol. 35, No. 5, pp.989-1024.
- George, G. (2005) 'Slack resources and the performance of privately held firms', *Academy of Management Journal*, Vol. 48, No. 5, pp.661-676.
- Gerbing, D.W. and Anderson, J.C. (1992) 'Monte Carlo evaluations of goodness of fit indices for structural equation models', *Sociological Methods & Research*, Vol. 21, No. 2, pp.132-160.
- Grant, R.M. (1991) 'The resource-based theory of competitive advantage: implications for strategy formulation', *California Management Review*, Vol. 33, No. 3, pp.114-135.
- Gronum, S., Verreynne, M.L. and Kastle, T. (2012) 'The role of networks in small and medium-sized enterprise innovation and firm performance', *Journal of Small Business Management*, Vol. 50, No. 2, pp.257-282.
- Harms, R., Reschke, C.H., Kraus, S. and Fink, M. (2010) 'Antecedents to Innovation and Growth: Analyzing the Impact of Entrepreneurial Orientation and Goal-oriented Management', *International Journal of Technology Management*, Vol. 52, No. 1/2, pp.135-152.
- Hills, G.E. and Hultman, C. (2006) *Marketing Perspectives*. In Dennis Jr., W.J. (editor, *NFIB National Small Business Poll*: NFIB Research Foundation.

- Hite, J.M. and Hesterly, W.S. (2001) 'The evolution of firm networks: From emergence to early growth of the firm', *Strategic Management Journal*, Vol. 22, No. 3, pp.275-286.
- Hornsby, J.S., Kuratko, D.F. and Zahra, S.A. (2002) 'Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale', *Journal of Business Venturing*, Vol. 17, No. 3, pp.253-274.
- Hughes, M., Hughes, P. and Morgan, R.E. (2007) 'Exploitative learning and entrepreneurial orientation alignment in emerging young firms: Implications for market and response performance', *British Journal of Management*, Vol. 18, No. 4, pp.359-375.
- Hughes, M., Ireland, R.D. and Morgan, R.E. (2007) 'Stimulating dynamic value: Social capital and business incubation as a pathway to competitive success', *Long Range Planning*, Vol. 40, No. 2, pp.154-177.
- Ireland, R.D., Covin, J.G. and Kuratko, D.F. (2009) 'Conceptualizing Corporate Entrepreneurship Strategy', *Entrepreneurship: Theory & Practice*, Vol. 33, No. 1, pp.19-46.
- Kanuk, L. and Berenson, C. (1975) 'Mail surveys and response rates:A literature review', *Journal of Marketing Research*, Vol. 12, No. 4, pp.440-453.
- Kemelgor, B.H. (2002) 'A comparative analysis of corporate entrepreneurial orientation between selected firms in the Netherlands and the USA', *Entrepreneurship & Regional Development*, Vol. 14, No. 1, pp.67-87.
- Ketchen, D.J., Ireland, R.D. and Baker, L.T. (2013) 'The Use of Archival Proxies in Strategic Management Studies Castles Made of Sand?', *Organizational Research Methods*, Vol. 16, No. 1, pp.32-42.
- Kraus, S., Rigtering, C., Hughes, M. and Hosman, V. (2012) 'Entrepreneurial orientation and the business performance of SMEs: a quantitative study from the Netherlands', *Review of Managerial Science*, Vol. 6, No. 2, pp.161-182.
- Kreiser, P.M. (2011) 'Entrepreneurial Orientation and Organizational Learning: The Impact of Network Range and Network Closure. ', *Entrepreneurship: Theory & Practice*, Vol. 35, No. 5, pp.1025-1050.
- Kreiser, P.M. and Davis, J. (2010) 'Entrepreneurial Orientation and Firm Performance: The Unique Impact of Innovativeness, Proactiveness, and Risk-taking', *Journal of Small Business & Entrepreneurship*, Vol. 23, No. 1, pp.39-51.
- Kumar, N., Stern, L.W. and Anderson, J.C. (1993) 'Conducting interorganizational research using key informants', *Academy of Management Journal*, Vol. 36, No. 6, pp.1633-1651.
- Lechner, C., Dowling, M. and Welpe, I. (2006) 'Firm networks and firm development: the role of the relational mix', *Journal of Business Venturing*, Vol. 21, No. 4, pp.514-540.
- Lumpkin, G.T. and Dess, G.G. (1996) 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, Vol. 21, No. 1, pp.135-172.
- Lumpkin, G.T. and Dess, G.G. (2001) 'Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle', *Journal of Business Venturing*, Vol. 16, No. 5, pp.429-451.
- March, J.G. and Simon, H.A. (1958) *Organizations*, New York, John Wiley & Sons.
- Marino, L.D., Lohrke, F.T., Hill, J.S., Weaver, K.M. and Tambunan, T. (2008) 'Environmental shocks and SME alliance formation intentions in an emerging economy: evidence from the Asian financial crisis in Indonesia', *Entrepreneurship Theory and Practice*, Vol. 32, No. 1, pp.157-183.
- Miller, D. (1983) 'The correlates of entrepreneurship in three types of firms', *Management Science*, Vol. 29, No. 7, pp.770-791.
- Miller, D. (2011) 'Miller (1983) Revisited: A Reflection on EO Research and Some Suggestions for the Future', *Entrepreneurship Theory and Practice*, Vol. 35, No. 5, pp.873-894.

- Narver, J.C., Slater, S.F. and MacLachlan, D.L. (2004) 'Responsive and proactive market orientation and new-product success', *Journal of Product Innovation Management*, Vol. 21, No. 5, pp.334-347.
- Ndofor, H.A., Sirmon, D.G. and He, X. (2011) 'Firm resources, competitive actions and performance: investigating a mediated model with evidence from the in-vitro diagnostics industry', *Strategic Management Journal*, Vol. 32, No. 6, pp.640-657.
- Newbert, S.L. (2007) 'Empirical research on the resource-based view of the firm: an assesment and suggestions for future research', *Strategic Management Journal*, Vol. 28, No., pp.121-146.
- Newby, R., Watson, J. and Woodliff, D. (2003) 'SME survey methodology: Response rates, data quality, and cost effectiveness ', *Entrepreneurship: Theory & Practice*, Vol. 28, No. 2, pp.163-172.
- O'Donnell, A., Gilmore, A., Cummins, D. and Carson, D. (2001) 'The network construct in entrepreneurship research: A review and critique', *Management Decision*, Vol. 39, No. 9, pp.749-760.
- Penrose, E. (1959) *The theory of the growth of the firm*, New York, John Wiley.
- Pfeffer, J. and Salancik, G.R. (1978) *The external control of organizations: A resource dependence perspective*, New York, Harper and Row.
- Pitelis, C.N. (2007) 'A Behavioral Resource-Based View of the Firm: The Synergy of Cyert and March (1963) and Penrose (1959). ', *Organization Science*, Vol. 18, No. 3, pp.478-490.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003) 'Common method biases in behavioral research: A critical review of the literature and recommended remedies', *Journal of Applied Psychology*, Vol. 88, No. 5, pp.879-903.
- Podsakoff, P.M. and Organ, D.W. (1986) 'Self-reports in organizational research: Problems and prospects', *Journal of Management*, Vol. 12, No. 4, pp.531-544.
- Rauch, A., Wiklund, J., Lumpkin, G. and Frese, M. (2009) 'Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future', *Entrepreneurship: Theory & Practice*, Vol. 33, No. 3, pp.761-787.
- Rigtering, J.C., Kraus, S., Eggers, F. and Jensen, S.H. (2014) 'A comparative analysis of the entrepreneurial orientation/growth relationship in service firms and manufacturing firms', *The Service Industries Journal*, Vol. 34, No. 4, pp.275-294.
- Sharfman, M.P., Wolf, G., Chase, R.B. and Tansik, D.A. (1988) 'Antecedents of organizational slack', *Academy of Management Review*, Vol. 13, No. 4, pp.601-614.
- Sine, W.D., Mitsuhashi, H. and Kirsch, D.A. (2006) 'Revisiting Burns and Stalker: Formal structure and new venture performance in emerging economic sectors', *Academy of Management Journal*, Vol. 49, No. 1, pp.121-132.
- Sirmon, D.G. and Hitt, M.A. (2003) 'Managing Resources: Linking Unique Resources, Management, and Wealth Creation in Family Firms', *Entrepreneurship Theory and Practice*, Vol. 27, No. 4, pp.339-358.
- Sirmon, D.G., Hitt, M.A., Ireland, R.D. and Gilbert, B.A. (2011) 'Resource Orchestration to Create Competitive Advantage: Breadth, Depth, and Life Cycle Effects', *Journal of Management*, Vol. 37, No. 5, pp.1390-1412.
- Stam, W. and Elfring, T. (2008) 'Entrepreneurial orientation and new venture performance: The moderating role of intra- and extraindustry social capital', *Academy of Management Journal*, Vol. 51, No. 1, pp.97-111.
- Thompson, J.D. (1967) *Organizations in action*, New York, McGraw-Hill.
- Voss, G.B., Sirdeshmukh, D. and Voss, Z.G. (2008) 'The effects of slack resources and environmental threat on product exploration and exploitation', *Academy of Management Journal*, Vol. 51, No. 1, pp.147-164.

- Walter, A., Auer, M. and Ritter, T. (2006) 'The impact of network capabilities and entrepreneurial orientation on university spin-off performance', *Journal of Business Venturing*, Vol. 21, No. 4, pp.541-567.
- Wiklund, J. (1999) 'The sustainability of the entrepreneurial orientation-performance relationship', *Entrepreneurship Theory and Practice*, Vol. 24, No. 1, pp.37-48.
- Wiklund, J. and Shepherd, D. (2005) 'Entrepreneurial Orientation and Small Business Performance: A Configuration Approach', *Journal of Business Venturing*, Vol. 20, No. 1, pp.71-91.
- Zahra, S.A., Filatotchev, I. and Wright, M. (2009) 'How do threshold firms sustain corporate entrepreneurship? The role of boards and absorptive capacity', *Journal of Business Venturing*, Vol. 24, No. 3, pp.248-260.