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It's in the Mix: How Firms Configure Resource Mobilization for New Product Success

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Abstract

This article aims to deepen the understanding about when and how the mobilization of resources through strong and weak ties in a focal firm's network can affect new product success. It addresses two significant gaps in the literature. While prior research has advanced the understanding of how factors around tie strength, resource mobilization, and environmental characteristics relate to new product development, it has yet to offer a more holistic understanding of the interconnected structures and the interplay among these factors. Furthermore, limited insights exist about how firms could utilize resource mobilization approaches in different environmental contexts to enhance new product success. Building on resource dependence theory, this article contributes to prior work by adopting configuration theoretical considerations and performing an empirical investigation to identify necessary and sufficient conditions for new product success. Based on data from a survey of 354 managers from manufacturing and services firms in the UK, the study conducts a configurational comparative study based on fuzzy-set Qualitative Comparative Analysis (fsQCA) to examine configurations of strong-tie and weak-tie resource mobilization approaches within particular environmental contexts for new product success. The findings reveal alternative, equifinal configurations for new product success, and add to the existing body of work by connecting the notions of network ties, resource mobilization, and context dependence, as well as by developing an integrative framework to explain the interplay of remote and proximate conditions for new product success. For management practice, this study offers guidance in describing and diagnosing business contexts that enhance new product success, and in identifying resource mobilization action repertoires to capitalize on these contexts.

Keywords: Resource mobilization; new product success; strong ties; weak ties; configuration theory; fsQCA

Practitioner Points

- Diagnosing a firm's environmental context is vital for understanding resource mobilization requirements for achieving new product success, which helps prime market sensing, analysis, and evaluation as part of an environmental audit.
- Resource mobilization approaches via strong and weak ties can be designed to enhance new product in particular environmental contexts.
- For firms operating in dynamic and non-stagnant environmental contexts, alternative options to configuring resource mobilization approaches for achieving new product success exist.
- To implement a context-independent approach, high levels of resource mobilization through both strong and weak ties are needed, with such a hybrid approach typically requiring considerable efforts.

Introduction

With firms operating in increasingly dynamic business environments in which requisite resources are dispersed and frequently changing, new product development and commercialization have become activities that transcend an individual firm's organizational boundaries (Chesbrough, 2003a; Snow et al., 2011). Firms in a variety of industries acquire and integrate resources from, or cooperate with, external partners to develop new or improve existing offerings. Such forms of collaboration can involve a wide range of external partners including suppliers, customers, competitors, universities, or independent experts (Brettel and Cleven, 2011), and have significant positive effects on innovation performance (Cheng and Huizingh, 2014). The network in which a firm is embedded, that is, "…the sum total of ties it has with others" (Gulati, 2007, p. 55), can provide valuable resources for innovation (e.g., Ahuja, 2000; Phelps, 2010; Shan et al., 1994).

In spite of the growing consensus that networks matter, several issues remain unresolved and provide the opportunity to advance a nuanced understanding of how firms can capitalize on their networks. One of these issues refers to the commercialization of new products. While previous research has focused on how network structures (e.g., Ahuja, 2000; Capaldo, 2007; Phelps, 2010), relationships (e.g., Michelfelder and Kratzer, 2013; Shan et al., 1994), and inputs provided by external actors (e.g., Emden et al., 2006; Lau et al., 2010; Song and Thieme, 2009) contribute to innovation and the development of new products, less

attention has been devoted to the role of networks and resource mobilization through network ties for new product commercialization. Prior work on success factors of new product commercialization has most commonly focused on product, process, strategic, organizational, and market environment factors, as well as combinations thereof, to explain new product success (e.g., Montoya-Weiss and Calantone, 1994; Mu and Di Benedetto, 2011). However, as part of multi-firm network organizations and community-based organizational designs (Fjeldstad et al., 2012; Snow et al., 2011), the commercialization of new products has increasingly become the domain of the interactions between organizations. Thus, an advanced understanding and a more holistic view of how firms can capitalize on networks and their ties with external partners to commercialize new products and achieve new product success is required (Aarikka-Stenroos and Sandberg, 2012).

The purpose of this research is to take a step in this direction by illuminating the complex causal patterns between firms' resource mobilization approaches, environmental contexts, and new product success. Resource mobilization is an organizational activity to access and activate resources embedded in network ties (Jack, 2005; Thornton et al., 2015). The ties that constitute a focal firm's network can vary in strength (Burt, 1992; Coleman, 1988; Granovetter, 1973). Accordingly, this research distinguishes between two distinct resource mobilization approaches: strong-tie and weak-tie resource mobilization. Environmental contexts are configurations of factors that constitute the wider playground for business activities (Levinthal, 1994). Firms perceive and interpret environmental contexts and in turn adjust their business activities to achieve competitiveness and enhance overall performance (Pfeffer and Salancik, 2003). Prior work reveals a large number of dimensions to describe environmental contexts and their dynamics (e.g., Achrol and Stern, 1988). The challenges posed by environmental dynamism, that is, the degree to which an environment can change in terms of structure and scope (e.g., Dess and Beard, 1984), are perhaps among

the most significant ones, as indicated by multiple studies on the topic (e.g., Jansen et al., 2006; Schilke, 2014; Wang and Li, 2008). Accordingly, this research aims to further the understanding of resource mobilization approaches considering both dynamic and stagnant environmental contexts and to examine implications that arise for new product success. New product success is defined as the successful commercialization of product improvements and new product developments (Gemünden et al., 1996). The research question of this study is: *How do firms configure resource mobilization to cope with particular environmental contexts and realize new product success?*

The theoretical framework to answer this research question builds on resource dependence theory (Drees and Heugens, 2013; Hillman et al., 2009; Pfeffer and Salancik, 2003) and configuration theory (Ketchen et al., 1993; Meyer et al., 1993). Resource dependence theory posits that firms' resources as well as their behaviors are at least partially contingent on the environment. An important element of business environments is represented by the organizational networks in which firms are embedded, which can serve as sources of resources for different purposes, such as innovation (e.g., Ahuja, 2000; Phelps, 2010; Shan et al., 1994). To gain access to resources embedded in networks, firms engage in activities that leverage network ties, and mobilize the required inputs through these ties. The way in which firms may implement these resource mobilization approaches, however, might differ contingent on factors residing in the wider business environment of the firm, especially the environmental dynamics. To better understand the interplay among these different factor groups, this study uses configuration theory, which contends that "organizational phenomena can best be understood by identifying distinct, internally consistent sets of firms and their relationships to the environment and to performance outcomes" (Ketchen et al., 1997, p. 224).

This research addresses two significant gaps in the literature. While prior research has advanced the understanding of how factors around tie strength, resource mobilization, and environmental characteristics relate to new product development, it has yet to offer a more holistic understanding of the interconnected structures and the interplay among these factors. Furthermore, limited insights exist about how firms could utilize resource mobilization approaches in different environmental contexts to enhance new product success (see Table 1 for an overview). Using a configurational approach, this study conducts a comparative case analysis to examine the complex causality (Fiss, 2011; Misangyi et al., 2017) that characterizes the interplay between resource mobilization approaches and environmental contexts to explain new product success. This study performs a fuzzy-set Qualitative Comparative Analysis (fsQCA; Ragin, 2008), which takes into account that an outcome of interest usually has multiple antecedents, that the multiple antecedents jointly produce an outcome, and that a specific antecedent can have differential and even opposite effects on an outcome, depending on how it combines with other antecedents to form a configuration (Greckhamer et al., 2008). As such, fsQCA is particularly well-suited for the analysis of complex causality and has received increased interest in management research (Misangyi et al., 2017). Using fsQCA, this study analyzes sufficiency and necessity (i.e., two fundamental aspects of causation; Fiss et al., 2013; Ragin, 2006) of conditions for new product success. While sufficiency means that a condition can bring about an outcome, necessity means that a condition is a prerequisite that must be met for an outcome to occur.

The contributions of this article are threefold. First, it demonstrates that resource mobilization through both strong and weak ties with at least moderate levels is necessary for new product success, and that complementarity effects among strong-tie and weak-tie resource mobilization approaches exist, thus confirming the insights obtained by prior studies on the topic (e.g., Capaldo, 2007; Michelfelder and Kratzer, 2013). Second, it offers new

insights into so-called contextual equifinality, that is, the existence of alternative configurations of organizational action repertoires within particular environmental contexts sufficient for an outcome of interest. Specifically, this research delineates configurations of resource mobilization approaches for dynamic environments, thus offering fine-grained insights into the mechanisms through which firms can cope with particular environmental settings. Such knowledge adds to and improves the understanding of network ties and the composition of tie portfolios for innovation performance (Capaldo, 2007; Michelfelder and Kratzer, 2013) by considering an activity perspective which extends beyond tie structures and considers environmental context (in)dependence. It guides managers to make tie-investment decisions *vis-à-vis* network partners and helps them design resource mobilization approaches to capitalize on network ties and achieve new product success. Third, based on these insights, this research offers a three-step approach about how managers can utilize the findings and choose an action repertoire for their innovation effort in different environmental contexts.

Conceptual Background

Resource Mobilization through Network Ties

Resource mobilization is a strategic practice for acquiring valuable resources through network ties in order to realize opportunities and/or mitigate risks (Aveni, 1978; Gulati, 2007; Thornton et al., 2013). *Network resources* are resources residing in the ties that a firm has with external partners, including suppliers, customers, research collaborators, etc. (Gulati, 2007). Access to heterogeneous network resources is considered as a source of competitive advantage as their inimitable uniqueness is derived from the totality and history of the interconnected network ties of a focal firm (Galaskiewicz and Zaheer, 1999; Sammarra and Biggiero, 2008). The network characteristics and the tie properties of a firm serve as intervening mechanisms between the firm and its environment and have been described as a

"vehicle" (Aveni, 1978, p. 186), "conduit" (Gulati, 1999, p. 401), or "locus" (Gnyawali and Madhavan, 2001, p. 432) through which a firm can affect the flow of resources to gain desired assets, information, or status (Zaefarian et al., 2011). Yet firms differ in their abilities to mobilize network resources from different forms of network ties (McEvily and Zaheer, 1999; Zaheer and Bell, 2005), which leads to performance differences and thus underlines the need to better understand the qualities and quantities of resource mobilization approaches to explain such heterogeneity.

The *quality of resource mobilization* approaches can be linked to issues around tie strength, which is defined as the "combination of the amount of time, the emotional intensity, the intimacy (mutual confiding) and the reciprocal services which characterize the tie" (Granovetter, 1973, p. 1361). The network ties of a firm can include different forms of ties that vary in strength and as such represent strong ties and/or weak ties (Jack, 2005). Strong ties facilitate resource mobilization as they build on mutual understanding and frequent interactions between network partners, which create the motivation for cooperation and joint problem solving, and the formation of shared norms (e.g., Uzzi and Gillespie, 2002; Wu, 2008). Weak ties have a relatively higher propensity to provide the channel for accessing non-redundant resources and information (Burt, 2000). As such, weak ties allow for exploration of business opportunities and novel configurations of resources, which contribute to superior performance (McEvily and Zaheer, 1999; Tiwana, 2008).

The combination of strong ties and weak ties in a firm's tie portfolio has been argued to produce complementarity effects (Michelfelder and Kratzer, 2013; Rowley et al., 2000): strong ties help firms to exploit the resources embedded in relationships with well-established partners, while weak ties provide the means for firms to explore novel resources that can be found in less established relationships. Converging evidence indicates that heterogeneous tie portfolios consisting of strong and weak ties enhance innovation performance, thus

underscoring the complementary nature of ties of different strength (e.g., Capaldo, 2007; Michelfelder and Kratzer, 2013; Rost, 2011; Tortoriello and Krackhardt, 2010). For example, Capaldo (2007) shows that a combination of strong-tie and weak-tie resource mobilization benefits a firm's innovation capability. In addition, Tomlinson (2010) demonstrates that resource mobilization through ties with different innovation partners improves firms' innovation performance. Finally, Michelfelder and Kratzer (2013) show in a study on R&D collaboration that the combination of strong and weak ties in a single R&D collaboration outperforms other collaboration structures.

Apart from different qualities of resource mobilization approaches based on the strength of ties, the *quantity of resource mobilization approaches*, that is, the extent to which these approaches are utilized by a firm, matters. The extent of resource mobilization refers to the amount of effort taken to activate network ties and realize the resource mobilization benefit (Gulati, 2007). It implies a distinction between a high level and a low level of resource mobilization, with a high level of resource mobilization reflecting major organizational efforts and intensive activities to access and acquire resources through existing network ties.

Research in the field of key account management (with key account relationships usually indicating strong ties) reveals that activity intensity increases management program effectiveness and in turn contributes to overall firm performance metrics (Workman et al., 2003). High levels of an activity, such as resource mobilization, can have several positive effects, including positive signaling (e.g., demonstration of relationship commitment), improved collaboration between network partners (e.g., enhanced communication), and increased innovativeness (e.g., through acquisition of valuable information and know-how). However, high levels of resource mobilization most likely come with increased costs and organizational and procedural challenges.

Resource Mobilization and Environmental Contexts

Besides resource mobilization, factors of the wider business environment influence network ties and organizational innovation. Firms' existing network ties serve as a conduit that help them cope with particular environmental contexts, thus reducing environmental uncertainty (Aveni, 1978; Eisingerich et al., 2010). While firms are often reliant on resources embedded in network ties for their innovation efforts, the way in which they can mobilize them is inevitably affected by the characteristics of the network as well as the wider environmental context (Tomlinson, 2010).

This research focuses on environmental dynamism, which has been shown to represent a key factor in the literature on networks (Choi et al., 2001; Eisingerich et al., 2010) and on innovation (Baron and Tang, 2011; Jansen et al., 2006). For instance, Kim et al. (2016) show that factors associated with environmental uncertainty, a concept closely related to environmental dynamism, influence the way in which resource mobilization approaches can transform into new product advantages and in turn new product-market performance. This study focuses on two important facets of environmental dynamism with regard to environmental changes in structure and scope. Specifically, technological turbulence (structure-related change) and industry growth (scope-related change) represent two important dimensions to characterize dynamic as well as stagnant environmental contexts (Achrol and Stern, 1988; Duncan, 1972; Padula, 2008). While technological turbulence refers to the extent with which technology changes in a given industry (Jaworski and Kohli, 1993), industry growth refers to the growth rate in total sales of a focal firm's principal industry (Slater and Narver, 1994).

Prior work indicates that strong ties help firms adapt to the demands of highly volatile and dynamic environment (Kraatz, 1998). Furthermore, strong and weak ties exhibit benefits for a firm's innovation efforts in different environmental contexts, with the former providing

benefits to exploit the existing technologies in situations of low environmental uncertainty, and the latter proving effective for exploring new opportunities in demanding environmental contexts (Rowley et al., 2000). In summary, while the literature underscores the importance of all three considerations (i.e., tie strength, resource mobilization, and environmental context; see Table 1), it suffers from fragmentation and requires integration. A lack of integration impedes insights into the interplay of relevant factors and prevents a necessary holistic understanding of the specific conditions under which firms' different resource mobilization approaches through network ties can pay off in bringing about new product success. This research gap is the departure point of this study.

Theory and Propositions

Two primary theories serve as the foundation of this research: Resource dependence theory (Drees and Heugens, 2013; Hillman et al., 2009; Pfeffer and Salancik, 2003) and configuration theory (Ketchen et al., 1993; Meyer et al., 1993). Resource dependence theory suggests that a focal firm's environment shapes the availability of resources and thus influences the firm's behaviors and its performance (Hillman et al., 2009). Drawing from resource dependence theory, the selection of conditions in this study includes strong-tie and weak-tie resource mobilization (at high and at low levels) and two environmental contexts (i.e., dynamic and stagnant contexts).

This research uses configuration theory to explain the interplay between the different forms of resource mobilization approaches (at high and low levels) as well as environmental contexts to achieve new product success. Configuration theory builds on a holistic synthesis as the dominant inquiry mode (Doty and Glick, 1994; Meyer et al., 1993) and understands firms as systems of interconnected elements (also called conditions) that tend to form configurations because the element interdependence makes them fall into patterns (Meyer et

al., 1993; Miller, 1996). Configurations can embrace multiple domains (Dess et al., 1993) and are constellations of conditions that commonly occur together and that are orchestrated or connected within a unifying theme (Meyer et al., 1993; Miller, 1996). Configuration theory aims to offer explanations about how order emerges from the interplay of multiple conditions, thereby considering reciprocal and nonlinear relationships between conditions as well as alternative routes to an outcome (Meyer et al., 1993). It is expected that only a few of all logically possible combinations of conditions enable organizations to accomplish strategic goals and thus achieve superior performance (Ketchen et al., 1993). Hence, configuration theory considers equifinality (Doty and Glick, 1994; Gresov and Drazin, 1997), which means that "a system can reach the same final state from different initial conditions and by a variety of different paths" (Katz and Kahn, 1978, p. 30).

The conceptual framework in Figure 1 uses a Venn diagram to symbolize the configurational perspective adopted in explaining new product success. It also echoes the tenets of resource dependence theory in that environmental contexts "hold the most influence over organizational actions and outcomes" (Hillman et al., 2009p. 1418).

An important source of firms' competitive advantage relates to their network of business relationships, which represent unique constellations of network resources (Gulati et al., 2000; McEvily and Zaheer, 1999). The concept of open innovation states that firms that seek and utilize available network resources through relationships with a wide range of business counterparts are more innovative and more likely to achieve a superior innovation performance (Chesbrough, 2003b). Mobilization of resources through strong and weak ties derives from firms' strategic intents and its performance-related implications are context-dependent (Rowley et al., 2000). Firms are likely to perform strong-tie and weak-tie resource mobilization at different intensity levels and combine the two approaches in different ways to maximize performance, depending on the environmental context in which they operate. This

reasoning is in line with the notion of organizational adaptation (Levinthal, 1994) that emphasizes the process by which firms make strategic and structural changes in response to the environment. Furthermore, it mirrors the idea that particular configurations of organizational and environmental factors may bring about superior performance (Ketchen et al., 1997).

The literature demonstrates that strong ties contribute to economic outcomes only up to a certain point; constraints emanating from highly embedded strong ties cause performance to deteriorate, for example, through preventing a firm from receiving critical but dispersed information about environmental changes (Uzzi, 1996). Firms benefit from capitalizing on the diversity of both strong and weak ties with their different qualities, as well as from deciding about appropriate activity levels for these ties in order to mobilize necessary external resources for enhancing the commercialization of their new products (Ruef, 2002). This implies that neglecting either strong-tie or weak-tie resource mobilization or deploying them only at low activity levels would hinder a firm's new product success. Thus, resource mobilization through both strong and weak ties and at least moderate levels is advocated.

Dynamic environments are characterized by less predictable and rapid changes (Dess and Beard, 1984; Duncan, 1972), implying that existing offerings become obsolete quickly, and product innovation as well as commercialization become more important for firm survival and success (Sørensen and Stuart, 2000). Prior work indicates that a dynamic environment improves innovation performance, as volatility enables firms to unlearn conventional practices and address emerging opportunities through reallocation and configuration of network resources (Eisingerich et al., 2010; Li and Atuahene-Gima, 2001). However, studies also indicate that frequent technological changes make existing resource mobilization practices no longer effective, as they need to be re-established frequently and

timely thus hampering organizational innovation (Rost, 2011). New rules and norms may be imposed on the firms operating in a dynamic environmental context (Choi et al., 2001).

To ensure new product success, firms' abilities to explore new resources, in particular through weak ties, is critical in a dynamic environmental context, in which frequent changes necessitate the mobilization of new information and assets (Rowley et al., 2000). In addition, in a dynamic environment firms need effective strong-tie resource mobilization to transfer knowledge, establish efficient operations, and solve problems (Hansen, 1999; Suarez, 2005) to adapt to and buffer environmental demands (Kraatz, 1998).

Stagnant environments are more predictable and stable, and show less frequent changes (Dess and Beard, 1984; Duncan, 1972). Under such circumstances firms are less motivated to innovate as it is less critical for survival compared to a dynamic environment, and they may instead focus more on achieving efficiency gains for existing products (Slater and Narver, 1994). In this instance, firms are able to address recurring problems through established routines with their long-standing business partners, which also provide a fertile ground for effective exploitation of existing technologies. For instance, firms focus on the improvement and variation of existing products by utilizing their strong ties (e.g., with long-term suppliers) to obtain materials and expertise for new product development activities (Tomlinson, 2010). However, sole reliance on strong ties in a stable environment could reduce a firm's survival rate, as the firm does not gain new information and resources to respond to and cope with (possible) turbulence (Uzzi, 1996). This notion is supported by prior work indicating that weak ties have positive effects on firm performance even in a stable environment (Rowley et al., 2000). Despite changes occurring infrequently, firms still need to be prepared for such possible changes by identifying opportunities and enhancing innovativeness, for example, through partnering with new business partners. In summary, based on this reasoning, this research puts forward four propositions as follows:

P_1: *At least moderate extents of weak-tie or strong-tie resource mobilization approaches are necessary for achieving new product success.*

P_2: *Isolated weak-tie or strong-tie resource mobilization approaches are insufficient for achieving new product success; the combination of strong-tie and weak-tie resource mobilization is sufficient for new product success.*

P_3: *Dynamic environments are sufficient for new product success, whereas stagnant environments are not.*

P_4: *The combination of high extents of strong-tie and weak-tie resource mobilization is sufficient for new product success, regardless of the environmental context in which firms operate.*

Research Design and Findings

Data Collection and Sample

A proprietary panel database (i.e., Lightspeed GMI) of managers working for a wide range of industries in the UK serves as the sampling frame. An online survey invitation was sent to a random sample of 6,715 potential respondents in 2013, which resulted in 1,379 eligible respondents, 413 out of which provided complete questionnaires. In line with prior work (e.g., Zobel, 2017), data quality was ensured by selecting only those key informants who showed good knowledgeability of the topic. This study captured respondent knowledgeability on a seven-point Likert-type rating scale and used only those respondents with self-rated business relationship knowledge of equal to or greater than four on this scale. In addition, an analysis of response times helped ensure data quality. Responses with a low response time were discarded as this can indicate pattern responses (Fricker et al., 2005). To this end, this study compared actual response times with the average response time obtained in a pre-test. Based on these procedures, 59 responses were eliminated. The final sample size is 354. Of

the firms in the sample, 68.4 % are service providers and 31.6 % are manufacturers, which is in line with the general UK private sector distribution (Rhodes, 2016). Table 2 gives an overview of the sample composition.

Construct Measures and Measurement Validation

This study used a standardized questionnaire measuring executives' perceptions of the concepts under investigation, as such perceptions guide managerial decisions and behaviors (Powell, 1996). All constructs were captured based on established scales (see Table 3). New product success were measured using two items from Gemünden et al. (1996), employing a seven-point Likert-type scale anchored at 1 (very unsuccessful) and 7 (very successful). For the measurement of strong-tie and weak-tie resource mobilization, this study used four-item scales for each construct, developed by Thornton et al. (2014). These items were shown on seven-point Likert-type scales anchored at 1 (completely disagree) and 7 (completely agree). Three items captured technological turbulence, using a seven-point Likert-type agreement scale anchored at 1 (completely disagree) and 7 (completely agree) (Jaworski and Kohli, 1993). Finally, a single-item measure captured industry growth on a seven-point Likert-type rating scale, with anchors of 1 (poor) and 7 (excellent) (Slater and Narver, 1994).

This study assessed reliability and validity of the construct measures following recommendations in the literature (Bagozzi et al., 1991; Gerbing and Anderson, 1988) and calculated multiple global and local indices to assess the fit of the measurement model with the empirical data. For the overall model fit, the results reveal satisfactory values for each of the indices (χ^2 = 144.34, df = 68, χ^2/df = 2.12; comparative fit index (CFI) = 0.98; Tucker-Lewis index (TLI) = 0.97; root mean squared error of approximation (RMSEA) = 0.06). In addition, inspection of local indices indicates that Cronbach's alpha ranges between 0.87 and 0.91, composite reliability ranges between 0.87 and 0.91, and average variance extracted

ranges between 0.63 and 0.84, thus meeting or exceeding standards established in the literature. Analysis of discriminant validity following the procedure as suggested by Fornell and Larcker (1981) shows that the average variance extracted for any construct is higher than the squared pairwise correlation with other constructs, which indicates satisfactory discriminant validity (see Tables 3 and 4).

Because all construct measures were obtained from the same respondents, this study performed additional checks for common method bias (Podsakoff et al., 2003; Podsakoff and Organ, 1986). Harman's single factor test reveals that no single factor emerges from the unrotated factor solution and that no first factor explains the majority of the variance in the variables. Furthermore, a χ^2-difference test based on confirmatory factor analysis indicates that the single-factor model, in which all items load on a single factor, fits the data significantly worse than the postulated multi-factor model, in which items load on their respective factors ($\Delta\chi^2 = 1010.34$, $\Delta df = 4$, $p \leq 0.001$). These results indicate that common method bias does not constitute an issue in this study.

Analysis and Findings

To examine the complex causal patterns among the conditions, that is, strong-tie and weak-tie resource mobilization, the environmental context, and new product success, this study used fsQCA. As a set-based configurational method, fsQCA builds upon the premise that relationships between conditions can best be understood in terms of set relations (Fiss, 2011; Ragin, 2008). FsQCA distinguishes between two types of set relations: superset and subset relations (Ragin, 2008). Analysis of superset relations provides insights into necessity, that is, whether an antecedent condition must be present for an outcome condition to occur, and analysis of subset relations provides insights into sufficiency, that is, whether an antecedent

condition (or a combination of multiple antecedent conditions) can bring about an outcome condition (Ragin, 2006).

To analyze these set relations, the conditions under investigation have to be represented as fuzzy sets. Each empirical case can then be evaluated in terms of its degree of membership in a fuzzy set, with fuzzy-set membership scores range from 0 to 1. Fuzzy-set membership scores reveal differences in kind and differences in degree for cases similar in kind. Differences in kind refer to whether or not a case shows a particular condition, whereas differences in degree refer to the extent to which a case shows/does not show a condition under investigation.

Following recommended approaches in the literature (Ragin, 2008; Schneider and Wagemann, 2012), this study calibrated all fuzzy sets by transforming the construct measures into fuzzy-set membership scores. Next, an analysis of necessity was performed to understand whether any of the antecedents represent a necessary condition for the focal outcome. Finally, this study performed analyses of sufficiency, which examined configurations of strong-tie and weak-tie resource mobilization within particular environmental contexts for new product success.

Calibration. Calibration involves the transformation of construct measures into fuzzy sets (Ragin, 2008). In order to structure the calibration, this study combined the multiple-item construct measures and employed the direct method of calibration by specifying three qualitative anchors (i.e., the threshold for full membership in the fuzzy set, the threshold for full non-membership in the fuzzy set, and the crossover point) (Ragin, 2008). This study used the fs/QCA software program to run the calibration (Ragin et al., 2006).

The outcome of interest in this study is new product success. This study set the threshold for full membership in the set of firms with new product success at value 6 (i.e., "successful" on a seven-point Likert-type scale) and the threshold for full non-membership in

this fuzzy set at value 2 ("unsuccessful"). The scale midpoint of 4 served as the crossover point. Thus, cases that achieved a value of 6 or higher were full members of the fuzzy set of firms with new product success, cases with a value between 4 and 6 were more in than out of the set, cases with a value between 2 and 4 were more out of than in the set, and cases with a value of 2 or smaller were fully out of the set.

The antecedent conditions in this study include environmental factors (i.e., industry growth and technological turbulence), and strong-tie and weak-tie resource mobilization. For the environmental factors, the same calibration rule was used as for the calibration of new product success. Two environmental context conditions were created, one reflecting a dynamic environment and another one reflecting a stagnant environment (which is used for robustness checks). For the dynamic environmental context, a macro-variable was created representing the intersection of the technological turbulence and industry growth sets. Both conditions are jointed through '•' (i.e., logical *and*). For the stagnant environment, another macro-variable was used representing the intersection of the negation sets of these two environmental factors. It is noteworthy that this macro-variable cannot be conceived as the negation set of the dynamic environmental context condition.

For strong-tie and weak-tie resource mobilization, two fuzzy sets were created for each of the concepts that denote high and low extents of these two resource mobilization approaches, following the approach outlined by Leischnig et al. (2018). The consideration of distinct extents of strong-tie and weak-tie resource mobilization enables a fine-grained analysis of explicit connections and allows for conclusions about what resource mobilization approaches are necessary and/or sufficient for new product success. Thus, this procedure provides a more comprehensive picture by delineating both quality-related (activity focus) and quantity-related (activity extent) characteristics of resource mobilization (for further details see Appendix A1). For high (extents of) strong-tie resource mobilization, this study

set the threshold for full membership in the fuzzy set at value 6 and the threshold for full non-membership in this fuzzy set at value 4 (i.e., the scale midpoint); the crossover point was set at value 5. For low (extents of) strong-tie resource mobilization, cases were coded as fully in the fuzzy set at value 2 and as fully out of this fuzzy set at value 4; here the crossover point was set at value 3. This study employed the same calibration rules to define the fuzzy sets of high (extents of) weak-tie resource mobilization (i.e., fully in = value 6, fully out = value 4, crossover point = value 5) and low (extents of) weak-tie resource mobilization (i.e., fully in = value 2, fully out = value 4, and crossover point = value 3). As calibration can produce fuzzy-set membership scores of 0.5 that exactly meet the crossover point and cause problems when determining a case's set membership (i.e., whether a case is more in or more out of a fuzzy set), a constant of 0.001 was added to all fuzzy-set membership scores below 1 (Fiss, 2011).

Necessity analysis. Prior to an analysis of configurations of antecedents sufficient for an outcome, the QCA literature recommends analysis of necessity to understand whether any of the antecedents under investigation constitutes a superset of the outcome (Schneider and Wagemann, 2012). Necessity implies that for each case, the fuzzy-set membership score of the outcome set is smaller than the fuzzy-set membership score of the antecedent set. Because this premise usually does not hold for all cases, prior work suggests the assessment of consistency scores. In an analysis of necessity, consistency refers to the degree to which the empirical cases that share an outcome condition agree in displaying an antecedent condition (Ragin, 2006). An antecedent condition is considered necessary (or 'almost always necessary') if the consistency score exceeds the threshold of 0.9 (e.g., Leischnig et al., 2015; Schneider et al., 2010), thus pointing to a consistent superset relationship.

To assess necessity, consistency scores were calculated for each of the antecedents (as well as their negations) and examined whether any of them are essential to account for new product success. In addition, this study analyzed coverage scores, which represent the ratio of

the antecedent conditions sets and the outcome set, thus indicating the relevance or trivialness of antecedent conditions (Goertz, 2006).

The results of the analysis of necessity show that two antecedents are necessary for new product success, because they achieve consistency scores higher than the threshold value of 0.9: the negations of both low strong-tie resource mobilization and low weak-tie resource mobilization (see Table 5). This finding implies that new product success requires at least moderate extents of strong-tie and weak-tie resource mobilization. In addition, inspection of the coverage scores of the two necessary conditions implies that these factors can be considered as nontrivial factors, because both necessary conditions have high coverage scores (i.e., 0.75 and above).

Sufficiency analysis. Next, two sufficiency analyses were performed to identify configurations of strong and weak-tie resource mobilization approaches that are sufficient for new product success within 1) a dynamic environmental context, and 2) a stagnant environmental context. For these analyses, two respective truth tables were created, which displayed all logically possible combinations of the five antecedent conditions (i.e., four conditions for resource mobilization approaches, and one of the two environmental contexts). This study then refined each truth table in line with threshold recommendations of the QCA literature (Greckhamer et al., 2013; Misangyi and Acharya, 2014; Ragin, 2008; Schneider and Wagemann, 2012). This study set the frequency threshold at 7, thus treating configurations with less than six observations as logical remainders. For consistency, this study identified all configurations with a minimum raw consistency score of 0.8 or above. Next, from those configurations any that had a proportional reduction in inconsistency (PRI) value of less than 0.8 was eliminated. PRI is sensitive to conditions (or configurations thereof) being a subset of the outcome set and the negation of the outcome set (Schneider and Wagemann, 2012). This

study used the break in raw consistency scores as the threshold consistency and reports also the corresponding PRI value in the results tables below. Table 6 indicates the simplified results, provides details of the analyses thresholds, and shows the configurations for new product success (see Appendix A2 for the extended results table). Table 7 summarizes the results of both the analysis of necessity and the analysis of sufficiency.

Configurations 1a and 1b show that in a dynamic business environment characterized by technological turbulence and industry growth, two approaches of resource mobilization represent sufficient configurations for new product success. These are 1) firms that have not low (i.e., at least moderate extents) of both strong-tie and weak-tie resource mobilization (configuration 1a), or 2) firms that have a high extent of strong-tie resource mobilization in combination with a not high (i.e., moderate or low) extent of weak-tie resource mobilization (configuration 1b). According to configuration 1c, firms that show high extents of both strong-tie and weak-tie resource mobilization achieve new product success irrespective of the environmental context in which they operate.

Configurations 2a and 2b obtained by the follow-up analysis reveal that in a non-stagnant business environment, firms that show a high extent of strong-tie resource mobilization in combination with a not high (i.e., moderate or low) extent of weak-tie resource mobilization (configuration 2a), or that have high strong-tie resource mobilization and not low (i.e., at least moderate) weak-tie resource mobilization achieve new product success (configuration 2b). These results add to the findings from the necessity analysis as they offer further support for the new product success-enhancing role of dynamic environmental contexts as well as provide additional insights into resource mobilization approaches within such contexts.

Test for model ambiguity. Recent research shows that configurational comparative studies can be subject to model ambiguity as a result of the minimization principles used by the Quine-McCluskey algorithm (Baumgartner and Thiem, 2017). Model ambiguity refers to a situation in which the causal model space for an outcome consists of more than one model. To assess the possible existence of model ambiguity, this study re-analyzed the data using QCApro, which uses the enhanced Quine-McCluskey algorithm (Thiem, 2018). The re-analysis of the data indicates that model ambiguity does not constitute an issue in this study, as the findings reveal one model for each of the analyses.

Discussion

Based on resource dependence theory and configuration theory, this research develops and probes propositions on how organizational and environmental factors work together to bring about new product success. More specifically, this article examines the interplay between firms' resource mobilization through different forms of network ties and environmental contexts to explain new product success, using a configurational approach.

Four configurations for new product success (i.e., 1a, 1b, 2a, and 2b) indicate resource mobilization approaches in combination with particular environmental contexts, with configuration 1c indicates one resource mobilization approach that is unrelated to the environmental contexts. In a dynamic environmental context, firms achieve new product success through two pathways: when they utilize the combination of at least moderate extents of both strong-tie and weak-tie resource mobilization (configuration 1a), or when they utilize the combination of a high extent of strong-tie resource mobilization and a moderate (not high) extent of weak-tie resource mobilization (configuration 1b). Moreover, firms can achieve new product success in a non-stagnant environmental context characterized by technological turbulence, industry growth, or the combination thereof, if they configure

resource mobilization approaches with an emphasis on high strong-tie resource mobilization in combination with not high (configuration 2a) or at least moderate levels of weak-tie resource mobilization (configuration 2b), with the latter approach showing a considerably higher empirical relevance as expressed by the coverage scores. Finally, the results reveal that firms with high extents of both strong-tie and weak-tie resource mobilization have new product success regardless of the environmental context in which they operate.

Overall, these findings support the propositions of this study. They indicate that dynamic and non-stagnant environmental contexts lead to new product success, whereas a stagnant environmental context does not produce the same effects (proposition 3). In addition, the findings reveal that only combinations of strong-tie and weak-tie resource mobilization are sufficient for new product success (proposition 2), and that for this outcome at least moderate extents of both weak-tie and strong-tie resource mobilization need to exist (proposition 1). The combination of high extents of strong-tie and weak-tie resource mobilization is a sufficient configuration for new product success irrespective of the environmental context (proposition 4).

These findings resonate with the idea that different forms of network ties provide different utilities to perform the tasks required for the innovation and commercialization process (Burt, 2000; Hansen, 1999). In addition, they reinforce the argument by Tiwana (2008) that no form of tie alone promotes knowledge integration in collaborations: the diverse expertise and skills mobilized through weak ties must be complemented by strong ties' ability to foster trusting and cooperative relationships in order to effectively utilize knowledge surrounding collaborations. The results show that context matters when it comes to what (strong vs. weak ties) and how much (high vs. low) resource mobilization is needed for new product success.

Theoretical Contributions

Resource dependence theory holds that firms are constrained by a network of interdependencies with other firms and take actions to manage such external interdependencies (Pfeffer and Salancik, 2003). This study adds to resource dependence theory and the innovation literature by demonstrating that remote conditions (i.e., environmental contexts) provide a frame in which proximate conditions (i.e., resource mobilization approaches) work and unfold performance implications (i.e., new product success).

This research offers detailed insights into how a firm's environmental context shapes its use of resource mobilization in quality (strong vs. weak ties) and quantity (high vs. low extents) in order to achieve new product success. These insights extend resource dependence theory as they point to *multiple simultaneous resource strategies* that firms use to reduce interdependencies and cope with environmental contingencies (Hillman et al., 2009). The findings of this study reveal two such strategies for a dynamic environmental context and two further strategies for a non-stagnant environmental context. In addition, they reveal that the combination of high extents of strong-tie and weak-tie resource mobilization contributes to new product success regardless of the environmental context in which a firm operates. These insights indicate *contextual equifinality*, that is, alternative combinations of proximate conditions within one remote environmental context are consistently sufficient to bring about the outcome of interest. Furthermore, the findings demonstrate partial *context (in)dependence*. This knowledge advances the field of research on network ties and innovation under environmental uncertainty (e.g., Kraatz, 1998; Rowley et al., 2000) and provides a more fine-grained explanation of leveraging resource mobilization approaches for new product success.

Finally, the integration of resource dependence and configuration theoretical perspectives contributes to current debates by providing vision for *complementarity effects* among resource mobilization approaches that differ in quality and quantity. Each of the configurations obtained by the analyses includes a combination of resource mobilization approaches, thus indicating reinforcing effects among these approaches in achieving new product success. These findings resemble those of prior studies that looked at the composition of tie portfolios and indicated superior performance for heterogeneous tie portfolios consisting of strong ties and weak ties (e.g., Capaldo, 2007; Michelfelder and Kratzer, 2013).

Managerial Implications

The findings of this research provide input for comparisons, managerial decision-making, and choice regarding appropriate approaches for the specific firm. In particular, the findings of this study suggest a three-step approach. First, companies need to ascertain in what environmental context they are operating. Second, they need to decide if they want to pursue a context-independent resource mobilization approach (e.g., because they expect their environmental context to show some volatility in the future). If they decide to implement a context-independent approach, high resource mobilization through both strong and weak ties should be their target. If they decide to pursue a context-dependent approach, the findings offer them alternative choices for dynamic environmental contexts. Third, an analysis of a firm's current tie portfolio can provide impetus for a gap analysis, which helps uncover discrepancies between the *status quo* and a firm's target tie portfolio composition. Such information would provide managerial guidance for network management and the implementation of new product success-enhancing resource mobilization approaches.

As such, these findings have three major implications for managers. First, the configurational analyses by environmental contexts help managers better understand the differential resource mobilization requirements for achieving new product success, which helps prime market sensing, analysis, and evaluation as part of an environmental audit. Second, the findings of the configurational analysis of resource mobilization through strong and weak ties within environmental contexts suggest that different action repertoires for new product success exist, thus providing managerial choice. Both context-dependent and context-independent configurations reflect pathways to achieve new product success. The context-independent configuration, however, includes high extents of both strong-tie and weak-tie resource mobilization, which implies that managers who wish to achieve such context independence need to invest considerable efforts in building such tie portfolios and be prepared to seize the opportunities arising from such hybrid approaches characterized by ambidexterity (Andriopoulos and Lewis, 2009; Lin et al., 2013).

Achieving context independence is costly and the associated investments need to be justified *vis-à-vis* less costly but more context-dependent options that do not require consistently high extents of resource mobilization approaches for all forms of ties. For firms constrained by context dependence, the results of the analysis indicate multiple particular configurations for specific environmental contexts, which imply design choices in regard to resource mobilization approaches (i.e., contextual equifinality). Furthermore, the results indicate that 'more is not always better', as indicated by the configurations sufficient for new product success in a non-stagnant environment. Third, this research shows that firms cannot achieve product success alone, i.e. without mobilizing resources through at least moderate extents of strong and weak ties. Managers must be cognizant of their dependence on other actors in their business network for their firm's success, and thus isolated firms cannot be successful innovators and commercializers.

Limitations and Future Research

Although the findings of this study offer novel insights into environmental contexts and resource mobilization approaches within these contexts for achieving new product success, further research is needed to improve the understanding of how firms should manage their networks to mobilize resources through network ties in order to enhance innovation and innovation performance.

One important avenue for further research pertains to a more detailed analysis of different forms of network ties. This study has distinguished between strong-tie and weak-tie resource mobilization, as network ties can differ in tie strength. Future studies could deepen this knowledge by looking at ties with different partners (customers, suppliers, competitors, universities, research institutions, etc.) and could further investigate other tie characteristics, such as tie content (Burt, 1997). For example, a follow-up question that derives from the findings of this study is what kind of content, such as exchanged assets, information, or status (Gnyawali and Madhavan, 2001), should characterize different forms of ties to capitalize on environmental contexts and achieve new product success. Future studies could thus advance the understanding of the interplay between network multiplexity (Dhanaraj and Parkhe, 2006; Kenis and Knoke, 2002) and environmental demands to achieve new product success.

A second avenue for future research involves the empirical examination of resource mobilization approaches at distinct points in time throughout the entire innovation and commercialization journey. Rather than focusing on new product success as an ultimate outcome, future studies might examine the configurations of resource mobilization for different phases of the innovation process. For example, another research question that derives from the findings is whether configurations of resource mobilization approaches will change when the focal outcome of interest is new product development instead of new product commercial success.

Finally, future work might improve the knowledge on how firms could capitalize on network ties by adopting an alternative logic of the interplay of proximate and remote conditions. For example, future studies might consider the resource-based view of the firm (e.g., Barney, 1991) and examine how proximate conditions (such as resource mobilization approaches) can influence remote conditions (such as environmental factors, for example firm interconnectedness). Such studies would allow for a comparison of theories and provide the basis for a better understanding of the complex causation characterizing the interplay between environmental and organizational factors and performance outcomes.

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Table 1 Key research on network ties and innovation

Article	Innovation Focus	Outcome(s)	Antecedents	Method	Consideration of		
					Tie strength	Resource mobilization	Environ-ment
Capaldo (2007)	– New product development	– Innovation capability	– Strong dyadic ties – Strong-tie network – Dual network	Case study	**Yes**	**Yes**	No
Tomlinson (2010)	– New product development/ commercialization	– Product innovation – Process innovation	Cooperation ties with – customers – suppliers – competitors	Survey	No	**Yes**	**Yes**
Tortoriello and Krackhardt (2010)	– New product development	– Number of patent applications	– Strong ties – Weak ties – Simmelian ties	Survey	**Yes**	No	No
Rost (2011)	– New product development	– Patent citations	– Tie strength – Ego-network closure – Structural holes	Survey	**Yes**	No	**Yes**
Michelfelder and Kratzer (2013)	– New product development/ commercialization	– Innovation exploration – Innovation exploitation	– Strong ties – Weak ties	Case study	**Yes**	No	No
This study	– New product commercialization	– New product performance	– Strong-tie resource mobilization – Weak-tie resource mobilization	Survey	**Yes**	**Yes**	**Yes**

Table 2 Firm and respondent profile

Firm profile	n	%	Respondent profile	n	%
Industry			*Job position*		
Services	242	68.4	CEO, single or joint-owner	83	23.4
Manufacturing	112	31.6	Managing director or other top-level director	100	28.3
			Middle/high level manager	158	44.6
Number of employees			Others	13	3.7
1-49	103	29.1			
50-249	98	27.7	*Job tenure (in years)*		
250-999	58	16.4	0-5	72	20.3
1,000 and above	95	26.8	6-10	126	35.6
			11-15	75	21.2
Years of establishment			16-20	32	9.0
0-10	114	32.2	21 and more	49	13.9
11-20	110	31.1			
21-30	54	15.3			
31-40	25	7.1			
41 and more	51	14.3			

Table 3 Information on construct measures

Construct measures	FL
Strong-tie resource mobilization (α = 0.89; CR = 0.89; AVE = 0.68)	
1 Matching our suppliers' capacity to the demands of our customers has been an important practice in our organization.	0.81
2 Our suppliers' ability is critical for us to satisfy our customers.	0.81
3 Having good relationships with both suppliers and customers has enabled us to adapt to changes in the market place.	0.82
4 Our customer-focused approach is communicated to suppliers, so that they are aware of how we serve our customers and can contribute to the success of delivering the offerings.	0.84
Weak-tie resource mobilization (α = 0.87; CR = 0.87; AVE = 0.63)	
1 We initiate relationships with new business partners to gain local knowledge in a new market.	0.79
2 We interact with the customers of our customers.	0.75
3 We work closely with influential parties who have relationships with our direct customers to stimulate demand.	0.82
4 Identifying our competitors' major customers helps us to getting to know the needs and requirements of potential customers.	0.82
Industry growth (α = n.a.; CR = n.a.; AVE = n.a.)	
1 Please evaluate the overall growth of your industry in the UK.	1
Technological turbulence (α = 0.91; CR = 0.91; AVE = 0.77)	
1 The technology in our industry is changing rapidly.	0.86
2 Technological changes provide big opportunities in our industry.	0.91
3 A large number of new product ideas have been made possible through technological breakthroughs in our industry.	0.86
New product success (α = 0.91; CR = 0.91; AVE = 0.84)	
1 How commercially successful have your product improvements been (i.e., improvements based on your existing products) in the last five years?	0.90
2 How commercially successful have your new product developments been (i.e., the success of the new products) in the last five years?	0.93

Notes: All factor loadings (FL) are significant at $p \leq 0.001$; α = Cronbach's alpha, CR = composite reliability; AVE = average variance extracted, n.a. = not applicable.

Table 4 Descriptive statistics and inter-construct correlations

	M	SD	1	2	3	4	6
1 Strong-tie resource mobilization	5.43	1.19	**0.68**				
2 Weak-tie resource mobilization	5.12	1.29	0.48	**0.63**			
3 Industry growth	5.18	1.29	0.12	0.19	–		
4 Technological turbulence	5.26	1.37	0.28	0.38	0.34	**0.77**	
5 New product success	5.00	1.24	0.32	0.28	0.12	0.26	**0.84**

Notes: AVE on the diagonal in bold, squared correlations below the diagonal; all correlations are significant at $p \leq 0.01$.

Table 5 Necessary conditions

Antecedent conditions	**Consistency**	**Coverage**
High strong-tie resource mobilization	0.82	0.88
Low strong-tie resource mobilization	0.04	0.56
High weak-tie resource mobilization	0.72	0.89
Low weak-tie resource mobilization	0.07	0.61
Industry growth	0.88	0.87
Technological turbulence	0.89	0.84
~High strong-tie resource mobilization	0.32	0.72
~Low strong-tie resource mobilization	**0.98**	0.75
~High weak-tie resource mobilization	0.41	0.72
~Low weak-tie resource mobilization	**0.96**	0.76
~Industry growth	0.28	0.78
~Technological turbulence	0.24	0.78
Dynamic environment (industry growth • technological turbulence)	0.80	0.92
Stagnant environment (~industry growth • ~technological turbulence)	0.38	0.76

Notes: ~ = logical *not*; • = logical *and*; necessity consistency threshold = 0.9.

Table 6 Simplified configurations of strong-tie and weak-tie resource mobilization within environmental contexts sufficient for new product success

No.	Environmental contexts[a]	Configurations of strong-tie and weak-tie resource mobilization	Consistency	Raw coverage	Unique coverage	Overall solution consistency	Overall solution coverage
1a	TT • IG •	~L-STRM • ~L-WTRM +	0.92	0.78	0.12		
1b	TT • IG •	H-STRM • ~H-WTRM +	0.96	0.24	0.01	0.90	0.86
1c		H-STRM • H-WTRM	0.93	0.66	0.07		
2a	~(~TT • ~IG) •	H-STRM • ~H-WTRM +	0.90	0.29	0.02	0.91	0.80
2b	~(~TT • ~IG) •	H-STRM • ~L-WTRM +	0.91	0.78	0.52		

Notes:

[a] Environmental contexts were entered a macro-variables into the analyses.

TT = technological turbulence, IG = industry growth.

STRM = strong-tie resource mobilization, WTRM = weak-tie resource mobilization, H = high, L = low.

Thresholds analysis 1: frequency = 7 (93% of the cases), consistency = 0.93, PRI consistency = 0.81.

Thresholds analysis 2: frequency = 7 (94% of the cases), consistency = 0.92, PRI consistency = 0.81.

• = logical *and*, ~ = logical *not*, + = logical *or*, intermediate solutions.

Table 6 represents the simplified results of the analysis. An extended version is available in Appendix A2.

Table 7 Summary of results from the analyses of necessity and sufficiency

Key findings from the analysis of necessity	
Finding 1	The negation of low strong-tie resource mobilization is a non-trivial necessary condition for achieving new product success, that is, at least moderate extents of resource mobilization through strong ties are a prerequisite for high new product success.
Finding 2	The negation of low weak-tie resource mobilization is a non-trivial necessary condition for achieving new product success, that is, at least moderate extents of resource mobilization through weak ties are a prerequisite for high new product success.
Key findings from the analysis of sufficiency	
Finding 3	Firms that operate in a dynamic environment (characterized by high technological turbulence and industry growth) have high new product success, if they: a) have at least moderate extents of both strong-tie and weak-tie resource mobilization or b) have a high extent of strong-tie resource mobilization in combination with a moderate or low extent of weak-tie resource mobilization.
Finding 4	Firms that employ both high extents of strong-tie and weak-tie research mobilization can achieve high new product success irrespective of the dynamism of the environmental context in which they operate.
Finding 5	Firms that operate in a non-stagnant environment (characterized by technological turbulence, or industry growth, or the combination of both) have high new product success, if they: a) have a high extent of strong-tie resource mobilization in combination with a moderate or low extent of weak-tie resource mobilization, or b) have a high strong-tie resource mobilization in combination with an at least moderate weak-tie resource mobilization.

Figure 1 Configurational framework of environment, resource mobilization, and new product success