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How top management team diversity affects innovativeness and performance via the strategic choice to focus on innovation fields

Katrin Talke[a,*], Sören Salomo[b], Katja Rost[c]

[a] University of Hamburg, Institute for Entrepreneurship and Innovation, Welckerstraße 8, 20354 Hamburg, Germany
[b] Technical University of Denmark, DTU Executive School of Business, Building 421, 2800 Copenhagen, Denmark
[c] University of Zurich, IOU Institute for Organization and Administrative Science, Universitätsstrasse 84, 8006 Zürich, Switzerland

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ABSTRACT

Past innovation research has largely neglected potential effects of corporate governance issues on strategic choices, and thereby on innovation management outcomes. The theory of upper echelon implies that strategic choices result from idiosyncrasies of top management teams (TMT). Building on this theory, we hypothesize that TMT diversity enhances firm performance by facilitating an innovation strategy that increases the firm's new product portfolio innovativeness. Our findings support the relevance of considering a corporate governance view for explaining innovation outcomes. Empirically, we can show that TMT diversity has a strong impact on the strategic choice of firms to focus on innovation fields. Such focus then drives new product portfolio innovativeness and firm performance. As corporate governance arrangements thus seem relevant in the context of innovation management, we can derive implications for both policy makers and innovation researchers.

1. Introduction

In today's economy, firms are challenged to continuously offer a portfolio of innovative products and services. Despite the key role of portfolio innovativeness for corporate performance, firms differ in their focus on building innovation capabilities and generating innovation outcomes. The continued presence of firm-level heterogeneity with respect to innovation strategy, however, remains a neglected topic in innovation research. Instead, the innovation literature largely focuses on project-level heterogeneity. Thereby, a large body of research from the strategy domain is neglected, which suggests that innovation outcomes result from corporate government issues. The theory of upper echelon, for instance, implies that innovation strategy results from idiosyncrasies of the top managers (Hambrick, 2007; Hambrick and Mason, 1984).

On the project level, innovation research has devoted a lot of attention to the relevance of top management involvement (Cooper and Kleinschmidt, 1995; Jarvenpaa and Ives, 1991; Montoya-Weiss and Calantone, 1994). Top management involvement is both analyzed in terms of the degree of attention devoted to the individual innovation project (Bonner, 2002) as well as with respect to the concrete project input due to top management support (Song and Parry, 1996). Empirical evidence largely supports the notion that top management involvement is an important driver of innovation project performance (Cooper and Kleinschmidt, 1995). Yet, this level of analysis does not acknowledge the fact that top managers are actors, whose main responsibilities are at the corporate level. Top managers determine the overall strategic direction of the firm, decide about the project portfolio composition, and assign resources across innovation projects. Hence, for the innovation literature, it is an important research contribution to employ a firm-level perspective for investigating the influence of top managers on innovation strategy and subsequent innovation outcomes.

In the strategy literature, the influence of top managers is most often related not to one individual person but rather to the entire top management team (TMT) (Hambrick, 2007; Hambrick and Mason, 1984). Top managers make decisions consistent with their cognitive frames, which are a function of their education, functional background, experience, and values (Smith et al., 1994). On this background, it is often argued that TMT composition may directly affect innovation strategy and resulting innovation outcomes (Bantel and Jackson, 1989; Hambrick, 2007; Hambrick and Mason, 1984). Prior strategy research, however, has focused on the direct relationship between TMT characteristics and firm performance. But the empirical support of such a direct link remains equivocal at best, as a recent meta-analysis by Certo et al. (2006) highlights. Based on this result, several scholars conclude that instead of investigating a simple, direct relationship between TMT characteristics and firm performance, variables that affect this relationship should be explored (e.g., Joshi and Roh, 2009; Reis et al.,

* Corresponding author. Tel.: +49 40 42838 8699; fax: +49 40 42838 8701.
E-mail address: katrin.talke@wiso.uni-hamburg.de (K. Talke).

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2007; van Knippenberg and Schippers, 2007). As of yet, however, little research attention has been devoted to such mediating processes (Hambrick, 2007), and those scholars who have (e.g., Knight et al., 1999; Li and Hambrick, 2005; Simons et al., 1999; Smith et al., 1994) were mainly interested in the influence of TMT diversity on the TMT's social behavior. Hence, empirical evidence for mediated relationships is still rare, particularly when it comes to mediated relationships that consider aspects of innovation strategy and innovation outcomes. Improving the understanding of the role of these aspects in such mediated relationships would thus be a valuable contribution for the innovation literature.

From a project perspective, innovation research may provide insight from a related topic. For cross-functional teams, vast evidence implies mainly positive effects on innovation outcome measures, like product innovativeness and product performance (Brown and Eisenhardt, 1995; Hoegl and Proserpio, 2004; Ittner and Larcker, 1997; Keller, 2001; Lovelace et al., 2001). It is found that diversity among innovation team members can have a positive impact on creativity, task reflexivity, and information sharing, which then leads to superior innovation outcomes (e.g., Dahlin et al., 2005). Still, the question whether these diversity findings can be transferred to TMTs, and hence, to the firm level, remains to be answered. Answering this question is of particular relevance as in many firms TMT diversity is rather limited (Daily et al., 2003; Gallen, 2009). If empirical evidence for the positive effect of team diversity for innovation outcome would also materialize for TMTs, this could have major implications for designing effective TMTs.

Building on these research gaps, this study contributes to the literature by putting the corporate governance view on innovation management to an empirical test. For firms with a dominant or single-product business, we investigate whether TMT diversity enhances firm performance by facilitating an innovation strategy that increases the firm's new product portfolio innovativeness. Thereby, we contribute to the innovation literature by employing a firm-level perspective for investigating the influence of team diversity on innovation strategy and subsequent innovation outcomes. In addition, also the strategy literature can benefit from our research. By investigating the mediating role of a firm's innovation strategy and its new product portfolio innovativeness, we bridge the gap between TMT characteristics and firm performance. The paper proceeds as follows: in the following section, we review the strategy literature, which suggests that TMT composition affects strategic choices and performance. We then discuss the relevance of considering the influence of TMT composition on innovation strategy, new product portfolio innovativeness, and firm performance and develop hypotheses for both direct and indirect relationships. Following the empirical assessment of these hypotheses, we discuss our findings and derive implications for both policy makers and innovation researchers.

2. Theoretical background and hypotheses

2.1. Upper echelon theory

In the strategy literature, a large research stream is focusing on the relationship between top management team (TMT) characteristics and firm performance (for an overview see Certo et al., 2006). This research is mostly based on the theory of upper echelon (Hambrick, 2007; Hambrick and Mason, 1984) and considers the dispositions of the most powerful actors within an organization to understand why firms perform the way they do. Demographic characteristics of top managers are used as a proxy of their cognitive frames by referring to bounded rationality. Experience, values, and personalities are reflected in executives' characteristics and affect their field of vision, selective perception, and interpretation (Hambrick, 2007; Smith et al., 1994).

Within this research stream, the concept of demographic diversity, i.e. the amount of dispersion among TMT members, has received a great deal of both conceptual and empirical attention (Certo et al., 2006). TMT diversity should be positively associated with firm performance via better strategic planning processes, and increased or improved innovation outcomes (Bantel, 1993a,b; Eisenhardt and Schoonhoven, 1990). TMTs face complex, uncertain situations and diversity may provide resources in the form of multiple perspectives that are not available in homogeneous TMTs. However, the empirical support of a direct link between a variety of TMT characteristics and firm outcomes remains equivocal at best and recent literature concludes that it is impossible to assume a pure, simple relationship between TMT diversity and firm performance without considering a series of variables that affect this relationship (Joshi and Roh, 2009; Reis et al., 2007; van Knippenberg and Schippers, 2007; Williams and O'Reilly, 1998).

Within the last years, TMT literature has increasingly investigated the role of moderators and mediators, which may affect the relationship between TMT diversity and firm performance. Fig. 1 gives an overview of the three most important developments.

First, it has been shown that the performance effects of diversity depend on certain moderators (Hambrick, 2007; Hambrick and Mason, 1984). For example, managerial characteristics will only drive strategy and performance if means-ends ambiguity exists (Eisenhardt, 1989), i.e. managerial discretion must be high (Bantel, 1993b; Hambrick and Finkelstein, 1987), if executives operate under pressure, i.e. executive job demands must be high (Hambrick et al., 2005a,b), if executives have considerable influence on firm outcomes (Miller and Droge, 1986), or if behavioral integration is high (Li and Hambrick, 2005; Lubatkin et al., 2006; Simons et al., 1999).

Second, empirical evidence indicates that different aspects of diversity may provoke different performance outcomes (Dahlin et al., 2005; Joshi and Roh, 2009; Simons et al., 1999). In many contexts, the performance effects of relations-oriented aspects of diversity (e.g., age, gender, and ethnicity) and task-oriented aspects of diversity (e.g., tenure, function, and education) work in opposite directions. While relations-oriented diversity tends to negatively affect performance due to stereotypic perceptions of dissimilar others, subgroup formation, and inter-group bias, task-oriented diversity rather seems to drive performance due to differences in information, knowledge, and perspectives (Williams and O'Reilly, 1998).

Third, it is suggested that the relationship between TMT diversity and performance is indirect instead of direct, and thus depends on mediating processes. TMT research, however, has not devoted much attention to investigating such mediating processes (Hambrick, 2007). Those scholars who have done so (Knight et al., 1999; Li and Hambrick, 2005; Simons et al., 1999; Smith et al., 1994) were mainly interested in how TMT diversity influences the TMT's social behavior, i.e. communication, decision-making, consensus, or conflict.[1] Hence, empirical support is lacking when it comes to the question how top managers' cognitive frames guide

[1] For example Smith et al. (1994) demonstrate that TMT characteristics are mostly indirectly related to firm performance trough social integration and communication processes. These TMT processes directly increase the ROI of firms. Simons et al. (1999) show that decision comprehensiveness, i.e. the extent to which a TMT weights multiple approaches against each other, examines the pros and cons of several possible courses of action, or uses multiple criteria for eliminating possible courses of action, positively mediates the effects of TMT diversity on profitability and sales growth. Finally, Li and Hambrick (2005) show that TMT diversity (more precisely factional faultline size) mainly indirectly reduces subsequent firm performance via emotional conflicts and behavioral disintegration.