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Dissertation Title: From Micro-Mechanisms to Efficiency: Research & Development and Innovation in a Related Diversification Context

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Abstract or Public Summary: This thesis is motivated by the increasing importance and challenges of managing and monitoring Research & Development and Innovation (RDI) in related-diversified organizations, where the complexity of internal RDI collaborative projects demands tailored approaches to coordination and integration. The research focuses on understanding how collaboration dynamics unfold within related-diversified contexts, conceptualized through micro-mechanisms of decision-making, leadership, and actor mobilization, and the influence of contextual attributes such as relatedness, complementarity, complexity, and decomposability. The main goal of the thesis is to explore how RDI operates in related-diversified contexts, focusing on identifying effective approaches for its management and measurement. The research work is divided into three interconnected parts. The first study provides an in-depth analysis of internal collaboration in RDI projects, focusing on how micro-mechanisms operate across project phases (inception, development, and conclusion) and how the direction of the idea (top-down or bottom-up) shapes collaboration. The study highlights the critical role of the corporate level in moderating and facilitating collaboration, exploring how cross-unit collaboration paths influence the outputs of RDI. In the second study, the focus shifts to RDI collaboration networks, particularly examining how the organization's RDI network reflects the architecture of individual projects, as suggested by the mirroring hypothesis. While most projects mirrored the broader organizational network, strategic exceptions demonstrated the flexibility of collaboration approaches in achieving specific goals. This study provides insights on how cross-unit collaboration align with RDI project interdependencies. The third study evaluates the innovation efficiency of BUs within the organization using a 2-step Data Envelopment Analysis (DEA), performing also a stepwise regression. The findings reveal how contextual factors influence innovation outcomes, with complexity and relatedness emerging as drivers of efficiency, while excessive decomposability negatively affects performance due to fragmentation and coordination costs. This thesis contributes to the literature on internal collaboration dynamics, RDI networks,

and innovation management by advancing the theoretical understanding of collaboration dynamics, refining the mirroring hypothesis, and extending assumptions about modularity and decomposition. It also provides practical insights for managers, emphasizing the importance of balancing centralized and decentralized strategies, tailoring collaboration practices to contextual attributes, and fostering synergy across BUs to optimize RDI outcomes.

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