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To address the growing complexity of science and societal challenges, the knowledge offered by a single discipline is insufficient. Consequently, interdisciplinary research (IDR), which integrates multiple disciplines, is essential. Despite IDR's prominence, policies for its management are underdeveloped. This thesis aims to provide insights into managing IDR by identifying necessary researcher characteristics and environmental factors. Chapter 1 discusses current scientific research trends, the study's ultimate goal, and defines IDR.

Chapter 2 reviews previous IDR studies and conducts preliminary exploratory analysis to refine the thesis's research question. It highlights issues in IDR literature: the neglect of studies on individual characteristics, the scarcity of statistics-based approaches, the absence of motivation-related discussions, and the fragmented understanding of researcher characteristics. A cross-sectional survey was conducted to examine factors influencing individual IDR involvement. Researchers were categorized based on IDR priority, and a nonparametric variance analysis was performed. Findings indicate that researchers favoring IDR possess stronger relational skills and are more satisfied with resources from IDR institutions. These results, along with previous studies, informed the research framework, focusing on motivational, personality, and personnel mobility factors in promoting IDR.

Chapter 3 analyzes factors influencing IDR, emphasizing motivation and personality traits. A questionnaire survey of 228 researchers across various disciplines tested hypotheses through regression analysis, including interaction terms. The study reveals that intrinsic motivation positively impacts both IDR and transdisciplinary research (TDR), whereas extrinsic motivation primarily affects TDR. Personality traits significantly influence interdisciplinary and regional/societal collaboration. The analysis's validity was reviewed, followed by a discussion on IDR/TDR project management, highlighting the importance of aligning researchers' intrinsic motivation with IDR/TDR goals and effectively utilizing extrinsic motivation. The study concludes that motivation and team structure adjustments are crucial for collaboration quality.

Chapter 4 proposes a framework to address ambiguities and biases in interdisciplinarity, identifying individual and collective factors influencing researchers' interdisciplinary involvement. The IDR process was decomposed into integrative and collaborative interdisciplinarity, proposing a measurement framework considering metric biases. Quantitative analysis using beta regression on various datasets and qualitative analysis were performed, showing that decomposing interdisciplinarity allows for more precise measurement and acknowledging significant metric biases. The results support that intrinsic motivation and job mobility positively impact integrative interdisciplinarity.

Chapter 5 summarizes the thesis's key findings, discussing theoretical and practical contributions, limitations, and future research directions. Theoretically, it identifies factors affecting the under-

researched individual researcher layer within IDR and quantitatively measures integrative and collaborative interdisciplinarity. Practically, it offers a management framework for IDR projects, strategies for motivating researchers and promoting job mobility. Future research should include verifying interdisciplinarity-related factors through multiple case comparisons and developing metrics beyond bibliometrics and psychometrics.