

# Abstract

This dissertation has focused on examining organizational maturity in the context of integrating Generative Artificial Intelligence (GenAI) solutions into the New Product Development (NPD) process. The primary objective was to develop a prescriptive model that enables enterprises to assess and enhance the integration of GenAI into product development. The study employed a Design Science Research (DSR) approach, combining an in-depth literature review, expert interviews, and case studies. Based on a review of existing maturity models and an analysis of the specific applications of GenAI in NPD, an integrated model – CLIMB2-OLIMP – was developed. This model was validated through expert interviews and an analysis of real-world implementation scenarios. The findings revealed that organizations exhibit varying levels of maturity in NPD, while the integration of GenAI remains in its early stages. The main barriers identified include low data quality, lack of employee competencies, and inconsistent processes. The CLIMB2-OLIMP model facilitates the diagnosis of an organization's maturity level and provides prescriptive recommendations for development pathways.

This dissertation contributes to management science by extending maturity research methodologies to areas related to emerging technologies with high transformational potential. It achieves this by developing an integrated maturity model that assesses both NPD processes and the organization's maturity for GenAI adoption. Unlike previous models, CLIMB2-OLIMP includes a prescriptive component, leveraging Large Language Models (LLMs) not only to evaluate an organization's current state but also propose specific improvement steps.

The developed model serves as a practical tool for product managers, supporting strategic decision-making regarding AI implementation in innovation processes. At the same time, the study highlights certain limitations, such as the limited number of case studies and the dynamic nature of technological advancements, which signal the need for further research on the adaptation and optimization of maturity models in the context of GenAI. Additionally, longitudinal studies are recommended to assess the long-term impact of Generative AI adoption on organizational innovation and efficiency.

**Keywords:** New Product Development; Generative Artificial Intelligence; Maturity models; Design Science Research approach; Case studies