Meta-Study on Barriers to Digital Transformation

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This comprehensive meta-study examines the complex landscape of digital transformation and highlights the diverse barriers that impede progress across industries. Through careful analysis of 106 academic articles, this study categorizes the prevailing barriers, thereby enabling organizations to understand the barriers hindering digital transformation and realize the full potential of digital innovation.

Introduction

In the rapidly evolving digital age, companies in various industries face major challenges in adapting to technological progress. This study is based on the urgent need to analyze these challenges and provide a detailed overview of the obstacles that hinder digital transformation efforts. The aim is to methodically categorize these barriers and provide a structured understanding that can help companies navigate their digital transformation journey more effectively.

Method

This thesis adopted a systematic approach based on the PRISMA framework and carefully examined literature from 2016 to 2023. The research included a comprehensive search of major databases, including Google Scholar, IEEE, Web of Science, and Science Direct. A carefully formulated search strategy was created for each database, incorporating specific keywords, Boolean operators, and filtering criteria to ensure the capture of highly relevant papers. The AI tool Elicit was crucial in identifying the barriers to digital transformation based on the selected papers. These barriers were then verified, put in an Excel spreadsheet, categorized, and quantitatively analyzed by frequency appearance and pattern recognition.

Results

The comprehensive research resulted in the identification of eight critical barriers to digital transformation. Financial Barriers were characterized by budgetary limitations and investment difficulties, which particularly affected SMEs. Management and Leadership Challenges highlighted the need for visionary leaders capable of strategically supporting digital initiatives. Technological challenges the most frequently cited barrier, included outdated infrastructure and the complexity of integrating new digital solutions. Legal and Regulatory Barriers encompassed compliance requirements that require careful management. The study also highlighted Cultural and Organizational Barriers, underscoring the need to cultivate and digitally enable organizational culture. The Missing Skill / Lack of Expertise Barrier highlights the urgent need for targeted training programs and targeted acquisition. Resistance to Change Barrier emerged as a psychological barrier and reflects the employee's apprehension towards new technologies and processes, which is often linked to fear of job losses. Finally, Data and Privacy Security Barriers emphasize the need to protect sensitive data from a growing landscape of cyber threats. These barriers have been quantitatively presented in Figure 1, which summarizes the frequency of each barrier derived from the analysis of the 106 academic articles.

Implications and Recommendations

Organizations are encouraged to cultivate a supportive culture and provide strong leadership to effectively manage digital transformation. Technological advances must be accompanied by an awareness of regulation to reduce compliance burdens. Adopting digital tools should be strategically planned, aligning with the organization's overall vision and goals. Using agile methods will not only refine processes but also improve the organization's ability to adapt to the rapidly evolving digital landscape.

Keywords

Digital Transformation, Digitalization, Industry 4.0, Barriers, Challenges, Hurdles, Organizational Barriers, Cultural Barriers, Missing Skills, SMEs

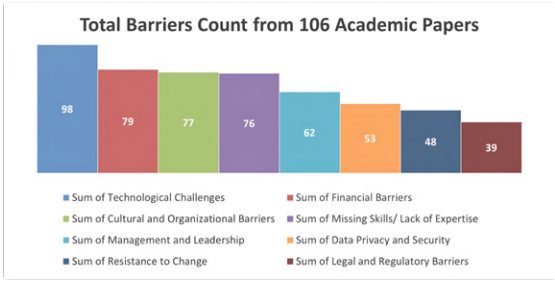

Figure 1: Frequency Distribution of Identified Barriers to Digital Transformation

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