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Identifying Factors Affecting the Implementation and Establishment of Knowledge Management in Digital Universities

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Abstract

As digital universities leverage new technologies to disseminate knowledge across their organizations, they must identify the factors critical to effective knowledge management implementation. This study aimed to develop a paradigm model of the factors influencing the implementation and institutionalization of knowledge management in digital universities. A qualitative research design employing the systematic grounded theory approach of Strauss and Corbin was adopted. Eighteen experts in higher education, digital transformation, and knowledge management were selected through purposive and snowball sampling. Data were collected through semi-structured interviews, and sampling continued until theoretical saturation was achieved. Data analysis followed the three-stage coding process of open, axial, and selective coding. The findings identified knowledge-oriented transformation in digital universities as the core category and revealed five interrelated dimensions of the paradigm model. Causal conditions included organizational infrastructure, knowledge management processes, a future-oriented organizational perspective, and adaptive organizational structures. Contextual conditions comprised institutional capabilities, digital transformation readiness, and alignment with global developments. Intervening conditions included human resource competencies, organizational climate, information technology limitations, organizational policies, and leadership practices. Strategic actions involved professional development, incentive systems, knowledge-sharing culture, career development pathways, financial support, and monitoring and evaluation mechanisms. These strategies resulted in both individual outcomes, such as enhanced knowledge competencies, and organizational outcomes, including improved innovation, institutional learning, and organizational effectiveness. The proposed paradigm model provides a comprehensive framework for understanding the institutionalization of knowledge management in digital universities and offers practical guidance for policymakers, university leaders, and higher education practitioners seeking to strengthen knowledge-driven transformation in the digital era.

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Extended Abstract

Introduction

The rapid expansion of digital technologies has fundamentally transformed the structure, governance, and educational practices of higher education institutions. Universities are increasingly expected to operate as knowledge-intensive organizations capable of generating, managing, disseminating, and applying knowledge efficiently within highly dynamic digital environments. Consequently, knowledge management (KM) has become a strategic capability that enables universities to improve organizational learning, enhance innovation, support evidence-based decision-making, and strengthen institutional competitiveness. Digital universities, characterized by extensive use of information technologies and digital infrastructures, require integrated knowledge management systems that facilitate knowledge creation, sharing, storage, and application across all organizational levels. Despite growing attention to digital transformation, many universities continue to encounter difficulties in institutionalizing knowledge management because implementation depends on multiple organizational, technological, managerial, and cultural factors. Previous studies have often examined isolated dimensions of knowledge management without providing a comprehensive explanation of the interactions among these factors. Therefore, developing an integrated conceptual model capable of explaining how knowledge management becomes institutionalized within digital universities represents an important theoretical and practical challenge. Accordingly, this study aimed to develop a paradigm model explaining the factors influencing the implementation and institutionalization of knowledge management in digital universities.

Method

This study employed a qualitative research design using the systematic grounded theory approach developed by Strauss and Corbin. This methodology was selected because it facilitates the development of explanatory models grounded in participants' experiences while identifying the relationships among conditions, actions, interactions, and consequences. Participants consisted of experts in higher education management, digital transformation, and knowledge management who possessed substantial professional and academic experience relevant to the research topic. Participants were selected through purposive and snowball sampling to ensure access to individuals with rich and diverse perspectives. Data collection continued until theoretical saturation was achieved, resulting in eighteen participants. Data were collected through semi-structured interviews designed to explore participants' perceptions of organizational, technological, managerial, and environmental factors influencing knowledge management implementation. Interview transcripts were analyzed following Strauss and Corbin's systematic coding procedures. Open coding was first employed to identify key concepts and generate initial categories. During axial coding, relationships among categories were examined and organized according to the paradigm model. Finally, selective coding integrated all categories around a central phenomenon, resulting in the development of a comprehensive explanatory model of knowledge management implementation in digital universities. To ensure trustworthiness, credibility was enhanced through prolonged engagement with the data and continuous comparison of emerging categories. Member checking, peer review, and systematic documentation of coding decisions further strengthened the rigor and reliability of the analytical process.

Results

Analysis of interview data identified knowledge-oriented transformation in digital universities as the central phenomenon explaining the implementation and institutionalization of knowledge

management. Around this central category, five major dimensions of the paradigm model emerged. Causal conditions comprised organizational infrastructure, systematic knowledge management processes, future-oriented organizational thinking, ecosystem awareness, and flexible organizational structures that create favorable conditions for knowledge management implementation. Contextual conditions included organizational capabilities, institutional readiness for digital transformation, adaptability to technological developments, and alignment with global higher education trends. These contextual factors influenced the capacity of universities to successfully adopt knowledge management practices. Intervening conditions reflected factors that either facilitated or constrained implementation. These included human resource competencies, organizational climate, technological limitations, institutional policies, leadership practices, and governance mechanisms that shaped organizational responses to digital transformation. Strategic actions involved developing professional competencies, implementing incentive systems, cultivating organizational cultures that encourage knowledge sharing, establishing appropriate career development pathways, allocating adequate financial resources, and designing effective monitoring and evaluation systems to sustain knowledge management initiatives. These strategies generated two broad categories of outcomes. Individual outcomes included improved knowledge competencies, greater professional learning, enhanced collaboration, and increased motivation among university personnel. Organizational outcomes comprised stronger organizational learning, increased innovation, improved decision-making, greater institutional adaptability, and enhanced effectiveness in responding to digital transformation.

Discussion and Conclusion

The findings demonstrate that successful knowledge management in digital universities extends beyond technological infrastructure and depends upon the interaction of organizational, managerial, cultural, and human factors. The proposed paradigm model illustrates that sustainable knowledge-oriented transformation requires coherent alignment among causal conditions, contextual environments, intervening factors, strategic organizational actions, and institutional outcomes. Unlike many previous studies that primarily emphasize technological solutions, this study highlights the importance of organizational leadership, knowledge-sharing culture, strategic planning, human resource development, and institutional governance as fundamental determinants of successful knowledge management implementation. These findings support a systemic perspective in which digital transformation and knowledge management are mutually reinforcing organizational processes. The paradigm model developed in this study contributes theoretically by providing an integrated explanation of knowledge management institutionalization within digital universities and contributes practically by offering a comprehensive framework for university leaders, policymakers, and higher education managers. The model can guide strategic planning, organizational reform, leadership development, and policy formulation aimed at strengthening knowledge-driven transformation and enhancing universities' capacity to operate effectively in increasingly digital and knowledge-intensive environments.

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