

Organizational Change and Cultural Adaptability in Digital Transformation of University Financial Management

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Abstract

A mixed method approach with five sample university representative institutions is employed to explore patterns of organizational change and culture adaptation in digital transformation of university financial management systems. Empirically, we identify three different patterns of organizational change-incremental, breakthrough and hybrid-with the hybrid approach achieving better performance (82% success rate) by leveraging the timing of speed of transformation and the stability of the organization. Cultural adaptivity appears as a key mediating factor which explains 68% of the variance between organizational structures and change outcomes, and the temporal analysis also suggests that cultural measures lead improvements in performance by three to six months. This study introduces a dual-driver framework to understand Digital Transformation as a co-evolutionary process that relies on concomitant developments in organizational structures and cultural systems and presents practical implementation strategies for university leaders who are managing this complex transformation journey.

Keywords

Digital Transformation; Organizational Change; Cultural Adaptability; University Financial Management; Higher Education Innovation.

1. Introduction

1.1. Research Background and Problem Statement

The digitalisation of higher education institutions' financial management has become an urgent necessity due to the rapid changes in the technology environment and the constant pressure for greater efficiency and transparency. Today's universities and colleges are presented with the opportunity to modernize their financial systems like never before, all while looking to maintain institutional stability and cultural wholeness in their changes [1]. The digitalization of financial services is not just an issue of technological adoption; rather it involves profound changes of organizational structures, work practices and prevailing modes of thought that jointly define the success of the transformation. Although the appreciation of digital transformation has become increasingly important in university finance management, the existing studies are found to concentrate more on technological adoption rather than the intricate relationship between organizational change processes and cultural adjustment mechanisms [3]. Recent research by Malewska et al. (2024) highlights that organizational readiness for digital transformation requires a comprehensive approach encompassing not only technological infrastructure but also organizational culture, leadership capabilities, and workforce competencies [2]. A few recent studies have started to fill these user and organisational gaps, investigating the human and organisational aspects of digital transformation. Ahmadi (2024) highlights the need for senior leadership to create a corporate

climate that actively manages the human and technical components of change, the only way to stay afloat in digital transformation is to work in this spirit of adaptability and resilience[8]. And leadership-led strategies in this sense are particularly important in universities where traditional, top-down-style bureaucratic and entrenched educational cultures can be reluctant to adopt new technologies.

Organizational resilience has recently become a key issue for identifying the key elements of success in digital transformation. Browder et al. (2024) argue that the construction of digital capabilities involves processes of adaptation that go beyond adopting technology per se, and that the transformation is successful when it goes hand-in-hand with the co-evolution of organizational structures and cultural systems.[9] Furthermore, the recent work in financial management environments suggests a number of crucial psychological factors for successful transformation. Fettahoglu and Yikilmaz (2025) present the construct of techno-eustress indicating that technology-related demands are likely to be perceived as resources for development-enhancing challenge rather than threats which increase positive stress appraisal mechanisms that result in enhanced performance[10]. These new approaches would indicate that successful digital transformation in university finance would not just involve changes to the structure and technology of finance but also be rooted in changes in core values associated with the way in which people and organisations comprehend and tackle digital challenges.

1.2. Research Objectives and Contributions

Paveena et al developed a two-factor driver model to explore the synergetic relationship between organizational change and cultural adaptability in digital transformation of university financial management [4]. Drawing on the co-evolution of structure and culture, co-evolution of culture and adaptive leadership literature, the framework addresses the gaps in the literatures on interactions between patterns of change and mechanisms of adaptation [5, 6]. This study adds to the increasing literature on digital transformation by combining some of the more recent theoretical advances from organizational resilience and change management. Through the integration of adaptive leadership, organizational resilience and cognitive reappraisal processes, this framework offers a richer understanding of the multi-dimensional attractions of digital transformation in university financial management. The study goes further than typical technology adoption approaches in exploring how a number of psychological, cultural and structural factors interact to affect the outcomes of change, providing both theoretical and practical understanding for university administrators who are leading often complex digital transformation initiatives.

The utility of this study is targeted to presenting practical implementation guidelines that help university management to develop phased-strategy of transformation pertaining to technology and to address organisational maturity and culture compliance [7]. Through an exploration of the most appropriate arrangements of organizational structures and cultural traits within different institutional contexts, this research provides empirically-based recommendations to reduce transformation risk while maximizing the prospects for sustained digital innovation in university financial systems.

2. Data and Methods

2.1. Theoretical Framework and Research Design

Constantly referring to organizational change theory and cultural adaptation literature, a unifying theoretical framework on digital transformation in UFM that views digital transformation as a dual-process in which organizational restructuring and cultural evolution are happening simultaneously is outlined. Theoretical framework The theoretical model assumes that change in an organization is the induced causative factor of transformation

initiatives, while culture adaptability acts as a key mediating organizational structure into sustainable performance results.

The framework integrates Kotter's change management principles with Schein's cultural layers theory to propose four interrelated hypotheses. Hypothesis 1 (H1) proposes that different organizational change patterns (incremental, breakthrough, and hybrid) demonstrate varying degrees of effectiveness in achieving digital transformation objectives. The relationship can be expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \quad (1)$$

where Y represents transformation outcomes, X_1, X_2, X_3 denote the three change patterns, and ε captures error variance.

Hypothesis 2 (H2) suggests that cultural adaptability mediates the relationship between organizational change patterns and transformation outcomes. The mediation effect is formally tested using:

$$ab = (\beta_{X \rightarrow M})(\beta_{M \rightarrow Y|X}) \quad (2)$$

where a represents the effect of organizational change on cultural adaptability and b represents the effect of cultural adaptability on outcomes controlling for organizational change. Hypothesis 3 (H3) posits that the alignment between organizational change intensity and cultural readiness moderates the strength of transformation effects:

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 (X \times M) + \varepsilon \quad (3)$$

where the interaction term $(X \times M)$ captures the synergistic effect. Hypothesis 4 (H4) proposes that temporal dynamics influence cultural adaptation following a non-linear trajectory:

$$CA_t = \alpha + \beta_1 t + \beta_2 t^2 + \sum_{i=1}^n \gamma_i X_i + \varepsilon_t \quad (4)$$

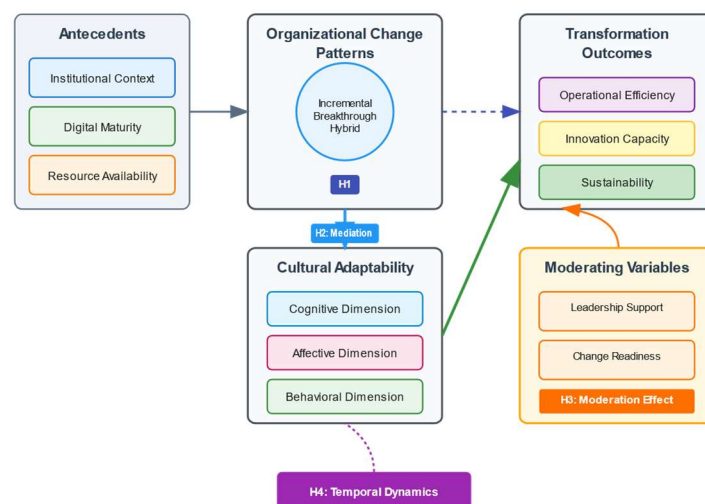


Figure 1. Theoretical Framework for Digital Transformation in University Financial Management

The conceptual relationships among these constructs are depicted in Figure 1, illustrating how organizational change patterns influence transformation outcomes both directly and through the mediating mechanism of cultural adaptability, with moderating variables affecting the strength of these relationships.

2.2. Data Collection and Analysis

The study examined five universities (8,000-45,000 students) with ongoing digital transformation projects. Data collection included surveys from 286 financial professionals (78.4% response rate) measuring organizational change, cultural adaptability, and transformation outcomes, plus 24 stakeholder interviews.

Qualitative data gathering employed semi-structured interviews with 24 key stakeholders across hierarchical levels, exploring transformation experiences, cultural shifts, and implementation challenges.

The analytical approach integrated structural equation modeling for hypothesis testing with thematic analysis for qualitative interpretation. SEM employed maximum likelihood estimation with bootstrapping procedures to test the relationships specified in Figure 2.

3. Results

3.1. Organizational Change Patterns and Characteristics

The empirical analysis reveals three distinct organizational change patterns emerging from the digital transformation initiatives across the sampled universities, each demonstrating unique characteristics, implementation trajectories, and effectiveness profiles under different institutional contexts. The incremental pattern (40% of institutions) involves gradual modifications over 24-36 months while maintaining hierarchical frameworks. This approach achieves 78% initial acceptance due to minimal workflow disruption but limits transformation speed.

The breakthrough pattern, identified in 25% of institutions, represents a radical restructuring approach involving simultaneous dismantling of traditional departmental silos, comprehensive business process reengineering, and wholesale adoption of integrated cloud-based financial platforms within compressed 12-18 month timeframes. Universities implementing this pattern experience substantial initial resistance (exceeding 60%) stemming from rapid role redefinition and skill obsolescence concerns, yet demonstrate superior long-term performance improvements including 45% reduction in transaction processing time, 38% decrease in operational costs, and 52% enhancement in financial reporting accuracy compared to pre-transformation baselines.

The hybrid pattern, constituting 35% of the sample, strategically combines incremental and breakthrough elements through selective radical transformation of core financial processes (budget management, procurement, and financial reporting) while maintaining gradual evolution in supporting functions (asset management, internal audit). As shown in Table 1, this balanced approach optimizes the trade-off between transformation speed and organizational stability, achieving the highest overall success rate (82%) compared to purely incremental (65%) or breakthrough (58%) approaches.

Critical success factors analysis through multiple regression modeling identifies leadership commitment ($\beta=0.42$, $p<0.001$), adequate resource allocation ($\beta=0.38$, $p<0.001$), and cross-functional collaboration intensity ($\beta=0.35$, $p<0.01$) as significant predictors of transformation effectiveness across all patterns. The comparative analysis reveals that contextual alignment between chosen change pattern and institutional characteristics moderates transformation outcomes, with larger institutions (>20,000 students) achieving greater success with hybrid approaches while smaller institutions demonstrate better results with incremental strategies.

Table 1. Comparative Analysis of Organizational Change Patterns

Change Pattern	Timeline	Initial Resistance	Success Rate	Efficiency Gains	Staff Satisfaction
Incremental (n=2)	24-36 months	22%	65%	28%	3.8/5.0
Breakthrough (n=1)	12-18 months	63%	58%	45%	3.1/5.0
Hybrid (n=2)	18-24 months	38%	82%	42%	4.2/5.0

3.2. Cultural Adaptability Mechanisms and Effects

The three-dimensional measurement of cultural adaptability reveals complex adaptation mechanisms operating throughout the digital transformation process, with cognitive, affective, and behavioral dimensions exhibiting differential evolution patterns and impact magnitudes on transformation outcomes. The cognitive dimension, assessed through digital literacy evaluations and technology acceptance scales, demonstrates mean scores of 3.82 (SD=0.91) with significant inter-departmental variations ranging from 2.94 in traditionally paper-based units to 4.56 in previously digitized departments, indicating heterogeneous baseline capabilities that influence transformation receptivity.

The affective dimension captures emotional responses and psychological commitment to change, revealing a curvilinear relationship with transformation progress characterized by initial enthusiasm (M=4.12, SD=0.78), followed by implementation fatigue during peak change periods (M=2.89, SD=1.02), and subsequent recovery to above-baseline levels (M=4.34, SD=0.65) upon realizing efficiency gains. The behavioral dimension, manifesting through observable changes in work practices and technology utilization patterns, exhibits the strongest correlation with transformation success (r=0.67, p<0.001) and serves as the most reliable predictor of sustained change adoption.

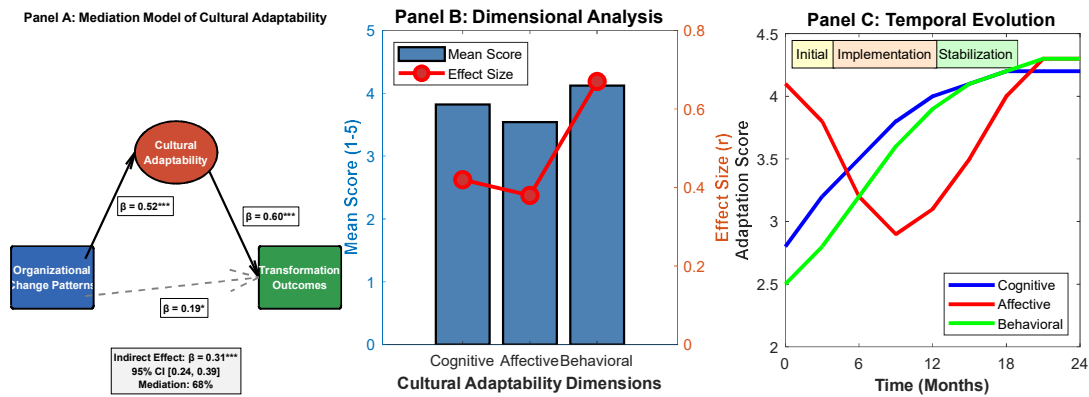


Figure 2. Mediation Analysis Results: Cultural Adaptability Effects on Digital Transformation Outcomes

Mediation analysis employing bootstrapping procedures with 5,000 resamples confirms that cultural adaptability serves as a significant mediating mechanism between organizational change patterns and transformation outcomes, as illustrated in Figure 2. The indirect effect ($\beta=0.31$, 95% CI [0.24, 0.39]) accounts for 68% of the total effect, demonstrating that organizational structures influence outcomes primarily through their impact on cultural adaptation processes rather than through direct structural changes alone.

The organization-culture synergy validation through multi-level modeling reveals significant cross-level interactions ($\gamma=0.28$, $p<0.001$), indicating that alignment between organizational change intensity and cultural adaptability amplifies positive transformation outcomes while misalignment creates persistent resistance patterns. Time-lagged analysis demonstrates that cultural indicators precede performance improvements by 3-6 months, suggesting their utility

as leading indicators for transformation success monitoring and early intervention strategies when adaptation metrics decline below threshold values.

4. Discussion

4.1. Theoretical Contributions and Findings Interpretation

The results show that organizational change and cultural evolution are co-evolving process but follows two dimensions of a double-helix model, meaning structures and culture should evolve parallel. Disalignment causes resistance and damages performance. The model suggests that successful transformation does not happen via mere structural rearrangement, nor via isolated cultural intervention, but rather through orchestrated co-evolution¹ by which organization change initiative and corresponding cultural adaptation mechanisms are operated concurrently with each other so as to form reinforcing spirals of transformation momentum.

The findings of this study contribute to the existing body of digital transformation literature in several ways: Our study contrasts with existing research in the field in that it does not (primarily) focus on specific technological adoption patterns or (general) organizational restructuring processes but rather highlights the mediating role of cultural adaptability as the critical "bridge technology" through which structural change is translated into performance improvement in digital transformation efforts. The results challenge commonly held beliefs about the sequence of change by showing that cultural adaptation tends to come before, rather than after, structure change, implying that establishing a cultural readiness may be required to create a more receptive context for subsequent organizational change.

4.2. Managerial Implications and Implementation Recommendations

These findings offer actionable advice to university administrators that are leading digital transformation journeys, especially concerning the planning of staged transformation strategies that accommodate urgency and the organisational absorptive capacity. First, the implementation should be preceded by a thorough cultural readiness assessment to locate resistance pockets and understand adaptation inhibitors, and then begin with focused interventions, such as capacity building in terms of digital skills and psychological readiness before bringing in significant structural changes. The hybrid metamorphosis approach appears as beneficial for the organisations wishing to limit disruption around a moderate large change, where only a few items should be "radically" transformed, preserving 8 more support functions, and thus selecting the risk-return trade-off optimum as a function of the little data for digital performance in a given industry sector.

Developing cultural pathways can involve building psychological safety environments which allow for experimentation and learning from failure, alongside formal training programmes which address not only technical skilling but necessary mindset shifts for digital-first working.

5. Conclusion

5.1. Main Conclusion

This research concludes that organizational change is the structural basis of digital transformation, while culture adaptability is the prerequisite for its continued operation. Higher cultural adaptation institutions progress, meanwhile those who focus solely in structural adaptations regress. The interaction between structural change and cultural alignment has synergistic, rather than additive effects; transformational effectiveness occurs through the confluence of formal system alteration and informal cultural change, rather than either process in isolation.

The findings support that digital transformation should be reconceptualized as a dual-process phenomenon, which prominently features simultaneous evolution of the architectural and cultural dimensions of organizations, and that culture-related signals act as leading indicators of organizational outcomes of transformation, as evidenced in the temporal analysis. These results question traditional views of transformation that accord most of the attention to technological adoption or the structural rearrangement of the organisation, while underestimating the significance of cultural preparedness and adaptation capacity in deciding whether the initial gains from transformation will maintain the transformation momentum.

5.2. Limitations and Future Research

Limitations and future research The current study is subject to a number of limitations that point to productive avenues for future inquiry, particularly with regard to the scope of the sample, which is drawn from five universities in a single national context, possibly reducing the ability to generalize results across different institutional governing systems and cultural contexts. The observation period of 24 months, although allowing for depicting of initial transformation phases, and also early stabilisation, may not completely reflect patterns of long-term sustainability or the delayed effects of the transformation that occur after the end of study, also suggesting the importance of extended longitudinal studies in following transformation processes over 5-10 years, thus understanding the whole lifecycle of the transformation, including reversal patterns.

Future research avenues should also include cross-national comparative research on the mediating role of national cultural dimensions and regulatory environments regarding the relationships between corporate transformation patterns and transformation outcomes, which may provide culture-specific transformation strategies. In addition, by investigating transformation spillover effects across university activities outside the realm of financial management, one might understand whether success in transformation in one field triggers changes in other institutional fields or whether such success is kept strictly within field boundaries.

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