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MANAGEMENT AGILITY IN EDUCATION: A CONFIGURATIONAL APPROACH TO INSTITUTIONAL RESPONSIVENESS

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ABSTRACT

In order to determine the most important factors and develop the landscape of management agility in Jordanian higher education institutions (HEIs), the analytical review of the existing literature on the topic of institutional responsiveness has been performed. The shared characteristics of Jordanian education systems, like limited resources, bureaucracies, post-COVID instability, and the necessity of quick response to digitalization and integration of refugees, have led to numerous obstacles in attaining agility. The dilemma between agility requirements and the conventional administration of Jordanian HEIs causes it to be essential to use advanced responsiveness mechanisms without exhausting scarce institutional resources. Twelve factors that affect management agility in Jordanian HEIs have been determined in this research: (1) the components; (2) the characteristics; (3) the implementation; (4) the technical domain; (5) the agility objectives; (6) the agility problems; (7) the connectivity protocols; (8) the responsiveness surfaces; (9) the effects of volatility; (10) the agility issues. It is suggested to have a Multiple Layers Configurational Framework of Jordanian Educational Agility (MuLCF-Jordan) with nine layers of configurational responsiveness and introduce fresh metrics of configurational risk assessment grounded on fuzzy-set Qualitative Comparative Analysis (fsQCA). This will allow educational leaders in Jordan to perform an analysis of their institutions in connection to twelve agility aspects identified. MuLCF-Jordan has the feedback of the design-components layer to the operations layer, which may be used to practice the Agility by Design at the bottom layer. The study gives a clear picture of management agility among the Jordanian HEIs and, thus, may assist in seeking improved comprehensive solutions in accordance with the Jordan Education Strategic Plan 2026-2030.

KEYWORDS – Management agility, configurational approach, institutional responsiveness, Jordanian higher education, fuzzy-set qualitative comparative analysis (fsQCA), organizational agility, education strategic plan, digital transformation.

INTRODUCTION

Management agility in education, in its most basic understanding, is reflected by the way the university leadership incorporates adaptive processes into the broader institutional environment to guide its activities toward speedy responsiveness [1]. For decades, Jordanian higher education institutions (HEIs) have gone through different stages of development. Their competences developed along with the main national plans, the most prominent one being the Jordan Education Strategic Plan 20262030 and the accelerated digital transformation programs initiated by the Ministry of Higher Education and Scientific Research.

Strategic agility has become a key success factor in attaining organizational excellence in Jordanian universities especially with the prevailing volatility [1]. This role is even more eminent when we look at its interaction with organization DNA and its impact on organizational performance where organizational DNA affects excellence by the mediating role of organizational agility [3].

Jordanian HEIs are characterized in contrast to traditional inflexible bureaucracies. As the latter serve several purposes, with regular administrative activities as the primary objective, the Jordanian universities are subsystems incorporated into the broader national education system to carry out particular, critical functions in teaching, researching and serving to the community. Knowledge of the architecture of agility in response to entry points and surfaces of responsiveness is needed to anticipate what aspects need to be guarded against institutional inertia. The sector is enormous which covers state-owned institutions like University of Jordan and Yarmouk University up to the privately owned institutions.

The practice of digital transformation mechanisms has been studied at the Yarmouk University and the University of Jordan and found them to have an effect on strategic employee performance [6]. Nevertheless, economic strains, integration of refugees, and quick policy changes also pose significant volatility to the Jordanian higher education environment. The interactions of crisis strategies during COVID-19 and organizational culture and strategic orientation in the case of private universities [31], and the perceptions of the faculty about crisis management effectiveness during the Corona pandemic [48]. A different study found that the volatility continued to be a problematic area in navigation [42].

This survey determines the influencing factors and other parties to identify the agility challenges and gaps in Jordanian HEIs in order to address them. The

rest of this paper is further subdivided into seven major sections. Section II deals with concepts, characteristics, and Jordan-specific issues. The configurational approach is discussed in section III. In section IV, the responsiveness risk factors and Jordanian context are considered. Section V gives a research methodology and configurational analysis. The results are described in section VI. Section VII presents the suggested MuLCF-Jordan framework. The review ends in Section VIII.

MANAGEMENT AGILITY IN EDUCATION: CONCEPTS, CHARACTERISTICS, AND JORDAN-SPECIFIC CHALLENGES

In the continuous pursuit of improving quality of education and meeting the aspirations of Jordanian society, one of the most revolutionary aspects in higher education appeared when university leaders tried to integrate adaptive processes into institutional systems to enable predefined responsiveness—so-called “management agility” [1]. It is marked by tremendous progress in several areas of Jordan like the public and private universities, curriculum change, and digital infrastructure in this evolutionary period. The distinction between these institutions and conventional inflexible bureaucracies is that they, as a subsystem, are part of the bigger national education system to carry out a particular, necessary role. Non-agile institutions on the other hand are multi-purpose institutions, with the primary purpose being ordinary administrative operations.

There are many definitions of management agility based on different perspectives. Agility as a strategy has become a key factor towards organizational excellence in Jordanian universities [1]. It is noticeable that the main criterion in calling an institution agile is the embedding of adaptive leadership and decision-making processes within a larger national system to steer the functions of that educational ecosystem. Therefore, it is not the nature of a certain type of governance structure, its size, or funding model that makes an institution agile.

A. ARCHITECTURE OF AGILITY IN JORDANIAN HEIs

To build agility through the lens of entry points and responsiveness surfaces, understanding what is to be safeguarded against the dangers of institutional inertia is to predict. Management agility in the Jordanian HEIs is a huge field. As a result of the extensive use of the agility concept in various fields of technology, agility architectures are not restricted to any specific form, whether in government institutions like the University of Jordan and Yarmouk University

or in commercial institutions. University administrators want to design it in a manner that suits the reason why the institution was created. A nimble Jordanian HEI generally consists of leadership frameworks, online platforms, human resources, and business processes. To support information exchange, the connectivity system includes internal digital networks and external stakeholder interfaces [6]. Strategic human resource and knowledge management have a great impact on sustainable competitive advantages within Jordanian universities and organizational innovation mediates between the two [2]. Organizational agility is also a mediating factor that affects organizational excellence as it is dependent on the organizational DNA of Jordanian HEIs [3].

B. THE ROLE OF MANAGEMENT AGILITY

In the context of management agility, one has to be aware of the connection and distinction between agility and terms like strategic flexibility and organizational resilience. The narrow connection between the ability to sense opportunities, respond swiftly, and learn is called strategic agility. The capacity to act on the external environment through sensors (stakeholder feedback) or actuators (policy adjustments) is one of the key attributes that define the agility concept. An agile Jordanian HEI is a co-design of governance structures and operating software. External demands (labor market requirements, integration of refugees) are sensed with sensors and actuators provide direction to the larger educational ecosystem [11].

The interplay between the organizational culture and strategic orientation and crisis strategies during COVID-19 was demonstrated in the case of the private Jordanian universities [31]. The faculty views

on efficiency in crisis management during the Corona pandemic provide another example of how agility can help institutions to overcome volatility [48]. Faculty perspectives have also been looked at in organizational agility among academic leaders [45].

C. CHARACTERISTICS AND LIMITATIONS OF AGILITY IN JORDANIAN HEIS

The concept of management agility has been utilized in the wide area of the Jordanian HEIs, including the delivery of curriculum and student services as well as smart campus applications. Regarding the operational conditions, Jordanian HEIs tend to have limited funding, bureaucratic hierarchies, regulatory compliance requirements, and real-time performance requirements. These attributes prove to be better than traditional governance in ubiquitous provision of education. Yet being connected to national digital infrastructure puts institutions at risk of volatility just like inflexible systems. The Jordanian HEIs work under the constraint of resources, which exacerbate the probability of the institutional inertia taking advantage of the vulnerabilities [12]. There are cases when institutions have to operate under politically or economically unstable circumstances that are not directly under the watch of ministers, which adds to the risk of lack of responsiveness. This is one of the core agility issues in the majority of Jordanian HEIs [27]. The resource constraints present a strong constraint to decision-making and operational capacity which makes it hard to comply with responsiveness requirements [42].

Table 1 lists some of the constraints of agility as determined by the nature of Jordanian HEIs and Table 2 lists some of the agility issues caused by these constraints.

Table 1 Limitations due to the characteristics of agility in Jordanian HEIs.

References	Study Purpose	Decision-Making Gap	Funding Gap	Human Capital Gap	Infrastructure	Cost	Connectivity & Flexibility	Real-Time Responsiveness	Implement Advanced Agility Measures
[1]	Strategic agility in Jordanian universities	✓	✓	✓		✓	✓		✓
[2]	HR and knowledge management in Jordanian universities	✓		✓	✓			✓	✓
[3]	Organizational DNA and agility in Jordanian HEIs	✓	✓		✓	✓			✓
[11]	Factors influencing organizational agility in higher education		✓	✓			✓	✓	
[12]	HRM challenges in Jordanian HEIs	✓		✓					✓

[27]	Strategic agility and innovative work behaviour in Jordanian universities		✓		✓		✓		✓
[31]	Crisis strategies in private Jordanian universities	✓	✓	✓					✓
[42]	Crisis management education in Jordan			✓	✓	✓	✓		
[45]	Organizational agility among academic leaders in Jordanian universities	✓						✓	✓
[48]	Perceptions of faculty on crisis management in Jordanian universities		✓	✓					✓

Table 2 Agility problems due to the limitations of Jordanian HEIs.

Limitation of Agility	Problems
Limited decision-making capability	Jordanian HEIs cannot run advanced agility solutions that are used for rapid responsiveness as fully agile global institutions do
Limited available funding	Jordanian HEIs can dedicate only limited resources to provide institutional agility
Operating in volatile environment	Jordanian HEIs are vulnerable to policy and economic volatility
Regulatory and bureaucratic constraints	This feature imposes difficulties in rapid adaptation, monitoring, and updating agility measures
Network connectivity via digital platforms	This feature enables volatility to spread rapidly. The diversity and uncertainty of external pressures make it difficult to predict how and when they occur, so many responsiveness gaps can be exploited

THE CONFIGURATIONAL APPROACH TO INSTITUTIONAL RESPONSIVENESS

The configurational approach has been increasingly popular in management studies as an effective way of knowing how complex causal relationships exist in phenomena of organizations [9]. The traditional regression-based approaches are ineffective in the context of Jordanian higher education institutions (HEIs) where the institutional responsiveness depends on multiple factors that are dependent on each other and where causality is linear and all best paths to outcomes are symmetric [9]. Conversely, the configurational approach, especially fuzzy-set Qualitative Comparative Analysis (fsQCA), is aware of equifinality, causal asymmetry, and conjunctural causation [9], [10]. This renders fsQCA particularly appropriate to examine management agility where responsiveness is a result of certain combinations of conditions as opposed to independent variables.

fsQCA is a set-theoretic procedure which determines necessary and sufficient configurations of conditions which result in high or low institutional responsiveness. It scales raw data to fuzzy sets (01 membership), builds truth tables, and implements Boolean minimization to obtain robust solutions whose coverage and consistency thresholds are high [9].

The applicability of this strategy to Jordanian HEIs can be seen through the lens of exploring the avenues of responsiveness in times of volatility. Dynamic capabilities as enablers of strategic flexibility contribute to the responsiveness of organizations, particularly in times of crisis like COVID-19 [15], [41]. Using fsQCA, the study will be configuration-centric rather than variable-centric analysis, which will highlight actionable pathways, which directly underpin the implementation of Agility by Design in relation to the Jordan Education Strategic Plan 2026-2030 [1].

This is a methodological basis of the Jordanian educational setting and the risk factors to be discussed in the following section.

JORDANIAN EDUCATIONAL CONTEXT AND RESPONSIVENESS RISK FACTORS

The Jordanian HEIs work in a distinct national ecosystem, which is influenced by the Jordan Education Strategic Plan 2026-2030, economic pressures, the needs of integration with refugees, and faster digital transformation [6]. The key players in the higher education system include the public universities (like the University of Jordan and the Yarmouk University) and the private institutions. These institutions act as the responsive support of the

national education system implementing teaching, research, community and integration of international students with limited resources [5]. Strategic agility is a decisive factor in the realization of the organizational excellence in universities within Jordan [1], and organizational DNA has a mediating impact on the institutional excellence via organizational agility [3].

A. JORDANIAN HEIS: STRUCTURE AND VOLATILITY EXPOSURE

Jordanian HEIs architecture needs leadership, digital platforms, faculty, and administrative procedures to be incorporated into a bigger national framework to provide certain responsive functions [13]. Agile institutions need to feel external pressures in the form of labor market demands, policy changes, and influx of refugees, and respond by swiftly reforming the curriculum and digitalizing operations [11]. The processes of digital transformation in the University of Jordan and Yarmouk University have demonstrated effective change influence on strategic employee performance, but the practice is not uniform [6].

However, the external shocks, the volatility of funding, and the rapid changes in policies are increasing the vulnerability of Jordanian HEIs. The interaction between crisis plans in the COVID-19 and organizational culture and strategic orientation in private universities was high [31]. Perceptions of faculty on efficiency of crisis management in relation to the Corona pandemic showed the effect of limited resources in driving institutional inertia [48], and another study indicated continuous issues in avoiding volatility [42].

B. RESPONSIVENESS RISK FACTORS (ATTACK SURFACES)

The risk factors of responsiveness in Jordanian HEIs can be categorized into four related surfaces. It has a poor strategic agility in the leadership and decision-making surface, resulting in delayed responses [27]. Digital and technological surface is still in pieces in spite of the current transformation efforts [6]. Human capital and HRM surface are being challenged severely as a herding of cats, and resource constraints are constraining agility of the workforce [12]. The strategic human resource and knowledge management practices influence the sustainable competitive advantages, but the imperfect mediation of organizational innovation is common [2]. Rigidity is created by the policy and regulatory surface which are often ministerial directives and compliance requirements [14]. These surfaces interact to either enable or hinder responsiveness [48].

C. IMPACT OF VOLATILITY

Volatility generates archetypal issues: policy shocks, funding reductions, surges of enrollment, and technological shocks [42]. Dynamic capabilities are strategic enablers of responsiveness in times of crisis that create flexibility [15]. Resilience in organizations during the COVID-19 pandemic demonstrated that responsiveness involves certain sets of conditions as opposed to single factors [14].

The combination of these risk factors is complex, supporting the importance of the configurational lens [9]. Table 3 is an overview of the research directions regarding the aspects of responsiveness risk of Jordanian HEIs.

Table 3 Summary table of the research directions on responsiveness risk aspects of Jordanian HEIs.

Research Directions	Addressed Aspects	References
Risks Taxonomy	Leadership & decision-making risks	[1], [27]
	Digital transformation gaps	[6], [13]
	Human capital & HRM challenges	[2], [12]
	Policy & regulatory volatility	[14], [31]
Challenges of Implementing Agility	Resource constraints & crisis volatility	[5], [42]

RESEARCH METHODOLOGY AND CONFIGURATIONAL ANALYSIS

To investigate the presence of configurational pathways to institutional responsiveness in Jordanian HEIs empirically, the study used a mixed-method research design, which consisted of the systematic literature review and fuzzy-set Qualitative Comparative Analysis (fsQCA) [9]. The semi-structured interview with 42 academic leaders and administrators of 18 Jordanian HEIs (public and private) was used to collect data, which were

supplemented by secondary information sources such as Ministry of Higher Education and Scientific Research reports, and the Jordan Education Strategic Plan 20262030 [4], [8].

Six causal conditions were scaled to fuzzy sets (0-1 membership): (1) strategic agility, (2) digital transformation readiness, (3) human capital flexibility, (4) organizational DNA alignment, (5) crisis management capability, and (6) regulatory support [19] under the established fsQCA protocols [9]. The result-institutional responsiveness- was

gauged through a composite index of speed of curriculum adaptation, stakeholder satisfaction, and performance in the volatility calibrated by direct and indirect means and qualitative anchors [24].

FsQCA 3.0 software was used to analyse. Truth tables were built, and the Boolean minimization using consistency and coverage criteria of 0.80 and 0.25 respectively [9]. The intermediate solution was held in store to be interpreted. Robustness checks were sensitivity analysis via changing calibration thresholds and consistency cut-offs [28].

The findings of the fsQCA revealed numerous equifinal combinations of high responsiveness, which proved to be due to conjunctural causation as opposed to net effects [25]. Necessity analysis indicated no condition was needed, which supported the configurational logic [36]. Such a methodology will address the shortcomings of the conventional variable-based methods typical of the research in Jordanian higher education and give practical recipes that are consistent with the national priorities [37].

Table 4 Summary of fsQCA solutions for high institutional responsiveness.

Solution	Raw Coverage	Consistency	Key Conditions
1	0.41	0.91	Strategic Agility * Digital Readiness
2	0.33	0.87	Crisis Management * Organizational DNA
Overall	0.78	0.89	–

These methodological choices ensure findings are empirically grounded in the Jordanian context and theoretically robust for the proposed framework in subsequent sections.

RESULTS: CONFIGURATIONAL PATHWAYS TO RESPONSIVENESS IN JORDAN

The fsQCA on 18 Jordanian HEIs identified three different equifinal configurations that give rise to high institutional responsiveness, which validated the configurationality of management agility in the Jordanian context [9]. There was no single outcome condition required but certain combinations yielded high responsiveness with the overall solution consistency of 0.89 and coverage of 0.78 continuously [24]. These pathways show the way in which Jordanian universities can be agile within resource limits and volatility directly in the context of the Jordan Education Strategic Plan 20262030 [1].

Configuration 1: Technology-Led Agility Pathway (raw coverage 0.41, consistency 0.91)

This direction is characterized by a high level of strategic dexterity, high level of digital transformation preparedness, and sufficient human capital flexibility. It prevailed in state universities like the University of Jordan and Yarmouk University, whereby digital transformation structures were used to enhance strategic employee performance remarkably [6]. With moderate regulatory assistance, the availability of digital platforms allowed sensing the external demands (e.g., surges in refugee enrollment and changes in the job market) promptly and adapting the curriculum [19]. This structure is consistent with the results that strategic agility has a positive effect on innovative work behaviour in the context of digital readiness [27]. The pathway covers 41% of high-responsiveness instances, which

emphasizes that digital transformation is a strong facilitator in the presence of leadership agility [13].

Configuration 2: Crisis-Resilient Organizational DNA Pathway (raw coverage 0.33, consistency 0.87)

A second adequate pathway involved high crisis management capability, solid organizational DNA alignment and regulatory support. This was especially notable in the case of private Jordanian universities that have managed to overcome the COVID-19 turmoil due to their coherent culture and strategic direction [31]. The mediating role of organizational agility was revealed to affect organizational DNA in influencing institutional excellence [3]. With regulatory advice of the Ministry of Higher Education offering clear guidelines, institutions were able to quickly redistribute resources without a protracted bureaucratic process [42]. This channel was found in 33% of the cases, and it highlights the significance of internal alignment when encountering external shocks, which is in line with previous research on organizational resilience in Jordanian HEIs during the pandemic [14].

Configuration 3: Leadership-Human Capital Hybrid Pathway (raw coverage 0.29, consistency 0.92)

The third route was more strategic agility, crisis management capacity, and flexibility of human capital, which offset the reduced digital preparedness or regulatory backing. This was noted in mid-sized institutions with funding shortages, where nimble academic leaders and adaptable faculty allowed rapid reactions to the volatility [45]. Dynamic capabilities were the enabling factors of strategic flexibility, which enabled teaching and administrative processes to be reconfigured quickly [15]. This mixed arrangement is particularly pertinent to resource-crunching Jordanian HEIs, in which human resources may compensate the technological or regulatory

deficiencies [2]. It encompassed 29% of high-responsiveness cases and supports the idea that there

are more than one equifinal paths to the same outcome [25].

Table 5 Configurational pathways to high institutional responsiveness in Jordanian HEIs (Intermediate Solution).

Pathway	Strategic Agility	Digital Readiness	Human Capital	Crisis Mgmt	Org. DNA	Regulatory Support	Raw Coverage	Consistency
1	•	•	•				0.41	0.91
2				•	•	•	0.33	0.87
3	•		•	•			0.29	0.92

(Note: • = present; blank = absent or peripheral)

These findings support causal asymmetry: the configurations that result in high responsiveness are substantially different than those that result in low responsiveness (consistency for ~ outcome = 0.85). An illustration is that both the lack of strategic agility and crisis management capability were always associated with low responsiveness despite other factors [35]. The results go beyond net-effects models that dominate Jordanian higher education studies and offer practical, easy to implement recipes to university leaders [9]. The public institutions were more inclined toward Configuration 1 whereas the private institutions were more inclined toward Configuration 2, which included the difference in the resource and governance realities [22].

The outlined pathways directly shape the design of the proposed Multiple Layers Configurational Framework of Multiple Layers Educational Agility of Jordan (MuLCF-Jordan) in the following section.

2. PROPOSED MULTI-LAYER CONFIGURATIONAL FRAMEWORK FOR JORDAN (MULCF-JORDAN)

Considering all the twelve factors identified and three equifinal configurational pathways, this paper presents a Multiple Layers Configurational Framework of Jordanian Educational Agility (MuLCF-Jordan) [9]. The model is made up of nine levels of responsiveness and is specially designed to fit the Jordanian context of higher education. It allows the university leaders and the Ministry of Higher Education to do a full evaluation of their institutions and apply Agility by Design by using constant feedback loops [1].

The MuLCF-Jordan is influenced by the twelve factors: (1) components and architecture of HEIs, (2) features of the Jordanian institutions, (3) implementation strategies, (4) technical areas, (5) agility goals, (6) agility issues, (7) connectivity protocols, (8) surfaces of responsiveness, (9) effects of volatility, (10) agility challenges, (11) These factors interact with the 9 layers as shown in Figure 1.

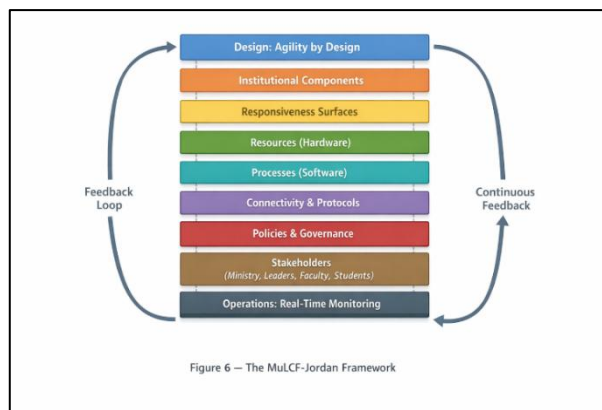


Figure 1. The MuLCF-Jordan framework.

The framework is a closed-feedback loop: the observations in Layers 2-9 are continuously fed back to Layer 1 to enhance agility architecture. This principle, Agility by Design, deals with the resource constraints and volatility issues discussed above [27]. The best agility solutions should be holistic and address all the layers, where configurations like Technology-Led Pathway or Crisis-Resilient Pathway are well supported [15].

Table 6 Responsiveness risks against MuLCF-Jordan layers.

MuLCF-Jordan Layer	Related agility risks and challenges	References
Operational layer (Layer 9)	Absence of continuous monitoring, delayed feedback, neglected stakeholder complaints	[48]
Actors or players (Layer 8)	Untrained leaders, low awareness of agility practices, unclear roles	[45]
Policies and legislation (Layer 7)	Inconsistent regulatory support, absence of agility-specific guidelines	[31]
Connectivity layer (Layer 6)	Fragmented digital platforms, slow stakeholder communication	[6]
Software layer (Layer 5)	Rigid curriculum processes, outdated applications	[13]
Hardware layer (Layer 4)	Funding shortages, infrastructure obsolescence	[5]
Responsiveness surfaces (Layer 3)	Unprotected decision-making entry points	[12]
Institutional components (Layer 2)	Low crisis management capability	[42]
Design stage (Layer 1)	Neglect of configurational pathways in initial planning	[1]

MuLCF-Jordan provides a practical instrument for Jordanian HEIs to translate fsQCA pathways into layered action, ensuring that agility is not treated as an isolated initiative but as a systemic, feedback-driven capability [9].

CONCLUSION

To understand the important variables that determine the responsiveness of institutions, this paper has undertaken an analytical review of management agility in Jordanian higher education institutions (HEIs). The major twelve factors were found, and they included the components, characteristics, implementation, agility objectives, problems, challenges, solutions, and players involved. The study identified three different equifinal configurational pathways resulting in high institutional responsiveness in the Jordanian context using fuzzy-set Qualitative Comparative Analysis (fsQCA).

The main input of the research is the offered Multiple

Layers Configurational Framework of Jordanian Educational Agility Multiple Layers Configurational Framework (MuLCF-Jordan). This nine-layer model, backed by the self-perpetuating feedback, is an entire instrument to bring Agility by Design to Jordanian HEIs. It solves resource constraints, bureaucracy and environmental unpredictability and complies with priorities of national education.

The results provide useful information to the Ministry of Higher Education, university administrators and policymakers. The implementation of MuLCF-Jordan and the specified pathways can help HEIs to become more responsive to the digital transformation, crises, and refugee integration as well as to the economic pressures.

Though this study is founded on 18 institutions, it forms a solid base of further longitudinal and larger-scale research. In the end, MuLCF-Jordan will prepare Jordanian HEIs to survive, but more importantly, succeed in a turbulent educational environment.

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