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RISK MANAGEMENT AND RESISTANCE TO CHANGE IN HIGHER EDUCATION INSTITUTIONS OF OMAN

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ABSTRACT

Digitalisation, smart service systems, and changing managerial practices are transforming the organisational structures of institutions of higher learning. Nonetheless, these changes often provoke employee resistance, which may slow the institutional Change. The knowledge of the determinants of organizational Change and the causes of resistance to change has thus emerged as a critical concern for higher education institutions, especially for those still developing, such as those in Oman. This paper reviews the connections among Leadership, intelligent quality services, organizational practices, organizational change, and resistance to change in higher education institutions in Oman. The research design used in this study is quantitative, relying on survey data from 218 valid responses from academic and administrative employees of higher education institutions in Oman. Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to analyze the proposed research framework and to test the direct relationships among the constructs. The outcome illustrates significant effects on the Change of organizations by the Leadership ($\beta = 0.146$, $t = 3.644$, $p < 0.001$), smart quality services ($\beta = 0.279$, $t = 3.937$, $p < 0.001$), and organizational practices ($\beta = 0.429$, $t = 6.010$, $p < 0.001$) and attribute 56.1% of the Change to the three variables ($R2 = 0.561$ Smart quality services ($\beta = 0.300$, $t = 3.907$, $p < 0.001$) and organizational Change ($\beta = 0.367$, $t = 6.092$, $p < 0.001$) make significant contributions to the resistance to change ($R2 = 0.525$).

INTRODUCTION

Organizational change has also become a major need for institutional survival and sustainability performance. In contemporary organizations, risk foresight and adaptation to changing environmental, technological, and economic conditions are critical to maintaining institutional effectiveness. Well-managed change initiatives are associated with enhanced employee engagement, organizational commitment, interpersonal cooperation, and productivity. On the other hand, poorly executed change processes can cause uncertainty and a lack of confidence, ultimately leading to decreased organizational performance (Scott, 2014). There are also recent reports that poor risk identification and inefficient change management are often the causes of organizational initiative failure (Mudjisusatyo et al., 2024).

Change efforts in most companies do not succeed due to constraints in their strategies and a lack of alignment among leadership behaviour, organizational structures, and employees' willingness to change. Empirical research revealed that, to carry out organizational Change successfully, institutional reform should be supported by effective Leadership and coordinated managerial approaches (Al-Shamsi et al., 2024). On the same note, the adoption of smart service systems and digital platforms has become a significant factor in institutional change processes and organizational efficiency. Nevertheless, if such technological and management team changes are not properly managed, they can increase uncertainty and employee opposition (Al-Shamsi et al., 2024).

Employees are thus one of the key pillars of efficient organizational change. Previous organizational theories stressed that workers should not be viewed as passive recipients of managerial instructions, but as active contributors and modifiers of institutional change processes (Meyer & Rowan, 1977). Recent literature suggests that employee engagement, institutional culture, and communication practices are important factors that help minimise resistance to organisational

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change and support the successful implementation of new initiatives (Islam et al., 2020). Organizations can fail to derive the desired gains from technological innovation or managerial changes without successful employee engagement (Akhtar et al., 2016).

Although there is a body of literature on change management and innovation in business and industrial environments, tertiary institutions have not been thoroughly researched, despite their growing exposure to complex institutional changes (Scott, 2014). The governance structure is unique to academic institutions, and professional autonomy, institutional customs, and various stakeholders can increase organizational Change (Ahrens et al., 2017). The current research in the education industry highlights the need to understand how Leadership, organizational practices, and service quality systems affect institutional Change and employees' reactions to it. Moreover, the digital transformation and technological progress in higher education require novel managerial solutions to enhance institutions' adaptability and innovation.

In Oman, institutions of higher learning have experienced tremendous growth and change over the last two decades. Universities and colleges have been promoted by national development policies to enhance the quality of education, the productivity of research, and the competitiveness of the institutions. Such innovations have also enabled intelligent organisational administration systems and innovative solutions to enhance organisational efficiency. Nonetheless, these changes in institutions can also create uncertainty among employees and lead to resistance to organizational Change when reforms affect current practices and institutional routines.

Schools are very important in the development and creation of knowledge in the country. The Government of Oman has been actively involved in the development of higher education institutions since the onset of the twenty-first century to advance the quality of education, research, and entrepreneurial culture. These reforms are closely aligned with Oman Vision 2040, which focuses on economic growth driven by knowledge and the modernization of institutions. However, the global financial crisis of 2008, the regional financial cycles in 2014, and the COVID-19 pandemic reorganised institutions, prompting them to re-evaluate their strategies and maximise the opportunities available to them. Such changes have made reorganisation and planned organisational change more significant for sustaining institutional sustainability and resilience (Shannaq & Alabri, 2025).

With these developments, however, there have been few empirical studies in the interplay of the three variables of Leadership, smart quality service systems, and organizational practices on resistance to change in higher education institutions in Oman. This is an acceptable gap in scientific research, especially as it relates to the role of organizational change mechanisms in shaping employees' reactions to institutional Change.

To overcome this problem, the current research will employ a quantitative approach using survey data collected from workers at higher education institutions in Oman. Partial Least Squares Structural Equation Modelling (PLS-SEM) is used to analyse the relationships among Leadership, smart quality services, organisational practices, and Change, as well as resistance to Change.

This research will investigate the drivers of organisational change and analyse the effects of these determinants on employee resistance to change in institutions of higher learning in Oman.

The rest of this article is structured as follows. The literature review and theoretical framework are shown in the subsequent section. The next paragraph explains the research methodology and data analysis procedures. The presentation of empirical results and the discussion then follow. Lastly, the paper concludes with the study's key findings and recommendations for risk management and organizational Change in tertiary institutions of learning.

LITERATURE REVIEW

To analyse the variables that contribute to resistance to Change, we have adopted the Institutional Theory and the ADKAR model of organisational change. The Institutional Theory suggests that institutions are highly institutionalised within traditionalized environments characterised by rules, norms, and traditions (Scott, 2014; Mudjisusatyo et al., 2024). Institutional isomorphism reinforces resistance, as employees mirror peer behaviour rather than adopt or change (DiMaggio & Powell, 1983; Aksom & Vakulenko, 2024). This leads to reluctance on the part of employees from pressure to confirm institutional norms only and to avoid risk as far as possible (Selznick, 1957).

To analyze the variables responsible for employees' resistance to Change management in higher education in the Omani context, this study adopts the ADKAR Model. ADKAR's model (three-step model - relevance, elements and application) provides a methodical approach to study the factors affecting the process and procedures of Change in an organization and mitigating change resistance in higher education institutions. (Armenakis & Harris, 2009). According to Hiatt (2006), the ADKAR model is an effective tool to analyze Change. It indicates that strategy formulation helps Leadership visualize and adopt interventions suitable for employees and for organizational performance and growth (Mudjisusatyo et al., 2024). The ADKAR model suggests that STS managers need to identify activities and, for that, drive CEs employees to adopt or resist Change, enabling Leadership to make effective, context-specific decisions and to ensure a transition and growth. The model focuses on individual Change through training and awareness (Relevance), while targeting employees' Awareness, Desire, Knowledge, Ability, and Reinforcement (Elements), and applying the strategies accordingly. Research indicates that combining institutional perspectives with change management models like ADKAR can help address both systemic resistance and individual reluctance (Armenakis & Harris, 2009; Burnes, 2017).

Leadership

To ensure deep-rooted changes, proactive Leadership is a prerequisite for educational and research institutions to put them on a new trajectory of growth. This underscores the need for unbiased, transparent, and effective methods for recruiting, retaining, and promoting educational administrative positions, coupled with leadership skills, or for facilitating such training

programs. Applicants for leadership positions in Higher Education institutions must have a strong academic background and the ability to identify and address institutional challenges (Zu, 2023; Aksom & Vakulenko, 2024). His expertise should necessarily include "to facilitate the organization with developmental changes, to intervene for resistance to change and to handle the consequences of new and Change interventions (Palmer, Davies, & Viney, 2023). Further, individuals seeking elevation to higher education leadership positions must also possess empathy and effective communication skills. Thus, this study considers Leadership as a reconciling force that navigates employees' responses to organizational Change.

SMART Quality Services

SMART quality Service refers to a strategic approach to delivering high-quality services using the SMART framework an acronym that stands for "Self-learning, Motivation, Ability & skills, and Regenerative learning through Technology" oriented environment (Putra & Putro, 2019). It is a service system increasingly used to enhance employees' competencies to meet the rapid transformational needs through updated education and skills, improved technology, and newer methodologies (Erbaş, 2024). SMART services should ideally facilitate better educational services by enhancing digital platforms for teachers and students alike (Park & Jo, 2018). This process provides ongoing learning opportunities for teachers and students.

The idea of effective use of IT in the education sector is catching up. The IT bubble burst in the early 21st century, and technological advancements have paved the way for greater adoption of IT to facilitate SMART services in the education sector. The trends were further consolidated during the COVID era, which became an enabling factor as educational institutions had no option but to rely on online education. However, a sound theoretical background for SMART services is yet to evolve and is taking time (Shaikh et al., 2023; Wen & Mi, 2024). The study examines a SMART service approach as both a source of resistance and a means of mitigating employees' resistance to change through capacity and competence development.

Organizational Practice

Institutional Theory emphasises that stakeholders' strategies shape organisational practices, leading to the standardisation of strict rules and regulations (DiMaggio & Powell, 1983). The Theory holds good for educational institutions as well (Patergiannaki & Pollalis, 2023). Oman's educational institutions are no exception to this fundamental principle, as rules and regulations are highly standardized, while expectations for outcomes are high and urgent.

Systematic, gradual, planned change-related activities lead to smooth change management and organizational transition (Krishnaswamy et al., 2023). It is observed that modern society's expectations of higher education institutions are high regarding learning, skill enhancement, and the employment of their students. In contrast, institutions receiving public funding tend to be more accountable to funding agencies/government, with an increasing emphasis on research, patenting, and commercialization. As government-supported entities that adhere to state logic, institutions tend to be more responsive to the government and deliver value through high-quality research. However, academic autonomy and the intrinsic motivation of educational institutions remain the key drivers of organizational growt (Wen & Mi, 2024). To address multiple expectations across sectors, organisations must adhere to organisational practices while gradually changing their organisational culture, communication channels, and decision-making procedures (Al-Haddad & Kotnour, 2015). Thus, the present study selects organizational practices as a variable influencing employees' change resistance in educational institutions.

This work aims to investigate the factors that determine organizational Change and how it affects employee resistance to change in institutions of higher learning in Oman. In particular, the paper becomes research on the roles of Leadership, intelligent quality service systems, and organisational practices in determining organisational change processes and their impact on employees' resistance to institutional Change. The paper also considers the mediating role of organizational Change in explaining the relationship between managerial and technological factors and employees' resistance to Change. By applying empirical analysis of these relationships using Partial Least Squares Structural Equation Modelling (PLS-SEM), the research aims to offer greater insight into the interactions among transformational initiatives for organizational Change and digital service systems, and Leadership and managerial practices, in terms of resistance to change in the higher education sector. The following are the hypotheses of the study:

H_1: Leadership has a significant effect on Organisational Change.
H_2: Leadership has a significant effect on Resistance to Change
H_3: Smart Quality Service has a significant effect on Organisational Change.
H_4: Smart Quality Service has a significant effect on Resistance to Change
H_5: Organisational Practice has a significant effect on Organisational Change
H_6: Organisational Practice has a significant effect on Resistance to Change

Further, four more hypotheses have been tested to ensure better and more conclusive results of the study

H_7: Organisational Change has a significant effect on Resistance to Change
H_8: Organisational Change mediates the relationship between Leadership and Resistance to Change
H_9: Organisational Change mediates the relationship between Smart Quality Service and Resistance to Change
H_{10}: Organisational Change mediates the relationship between Organisational Practice and Resistance to Change?

MATERIALS AND METHODS

A survey was conducted using a self-administered questionnaire distributed to various university employees in academic and administrative positions. Questionnaires were administered both in person and via email, based on 'convenience sampling. Various educational institutions across Oman's governorates were invited to participate in this survey. The questionnaire consisted of five sections that gathered information on general demographics, Leadership, SMART quality service, organisationalorganisational practices, and organisationalorganisational Change. At the same time, the final sections address resistance to Change. A Likert scale was used to record responses in all sections except the first section.

A pilot study was conducted by administering questionnaires to 20 respondents from higher education institutions in the Governorate of Al Buraimi to ensure the objectivity and clarity of the questions and to address potential concerns. Through relevant tools, the instrument's reliability and consistency were tested. A total of 218 survey forms were found to be usable, sufficient to make a study (Field, 2009). In total, 100 forms were administered in person; 2 were later rejected due to inconsistent or incomplete data, while the remaining questionnaires were filled out online.

Outer Loading and Reliability

Indicator reliability was assessed through outer loadings for all reflective constructs as shown in the table below. The majority of the items in their respective constructs exhibit high loadings above the accepted threshold of 0.70 (Hair et al., 2006; Hair & Alamer, 2022). Organisational Practice (OP) shows consistently high factor loadings across all its indicators, ranging from 0.813 to 0.885 (LS1–LS4). Similarly, the Organisational Practice (OP) displays consistent high outer loadings ranging from 0.766 to 0.849, above the accepted threshold in all its indicators (OP1–OP5), confirming that the items satisfactorily reflect the concerned construct.

Organizational Change comprises five items, of which four display satisfactory loadings ranging from 0.743 to 0.848, while one item, OC5, shows a slightly lower loading of 0.667. Hair et al. (2006) and Hair and Alamer (2022) accept loadings between 0.40 and 0.70 when the construct shows satisfactory reliability, and AVE is above 0.50. In our case, OC satisfies these conditions, making the item OC5 relevant for capturing the concerned construct in our HEI study context.

Resistance to Change (RC) item loadings range from 0.719 to 0.854, indicating acceptable reliability for all indicators. Smart Quality Service (SOS) displays three strong indicators, SOS2–SOS4, with loadings ranging from 0.827 to 0.873, while SOS1 and SOS5 have loadings of 0.671 and 0.641, respectively, both slightly below the 0.70 threshold. These indicators were also retained because of acceptable composite reliability and AVEs above 0.50, indicating strong construct stability despite lower loadings for two items (Hair et al., 2006; Hair & Alamer 2022).

The outer loadings, as presented in Figure 1, indicate that the indicators represent their respective latent constructs, making it sound for structural model estimation.

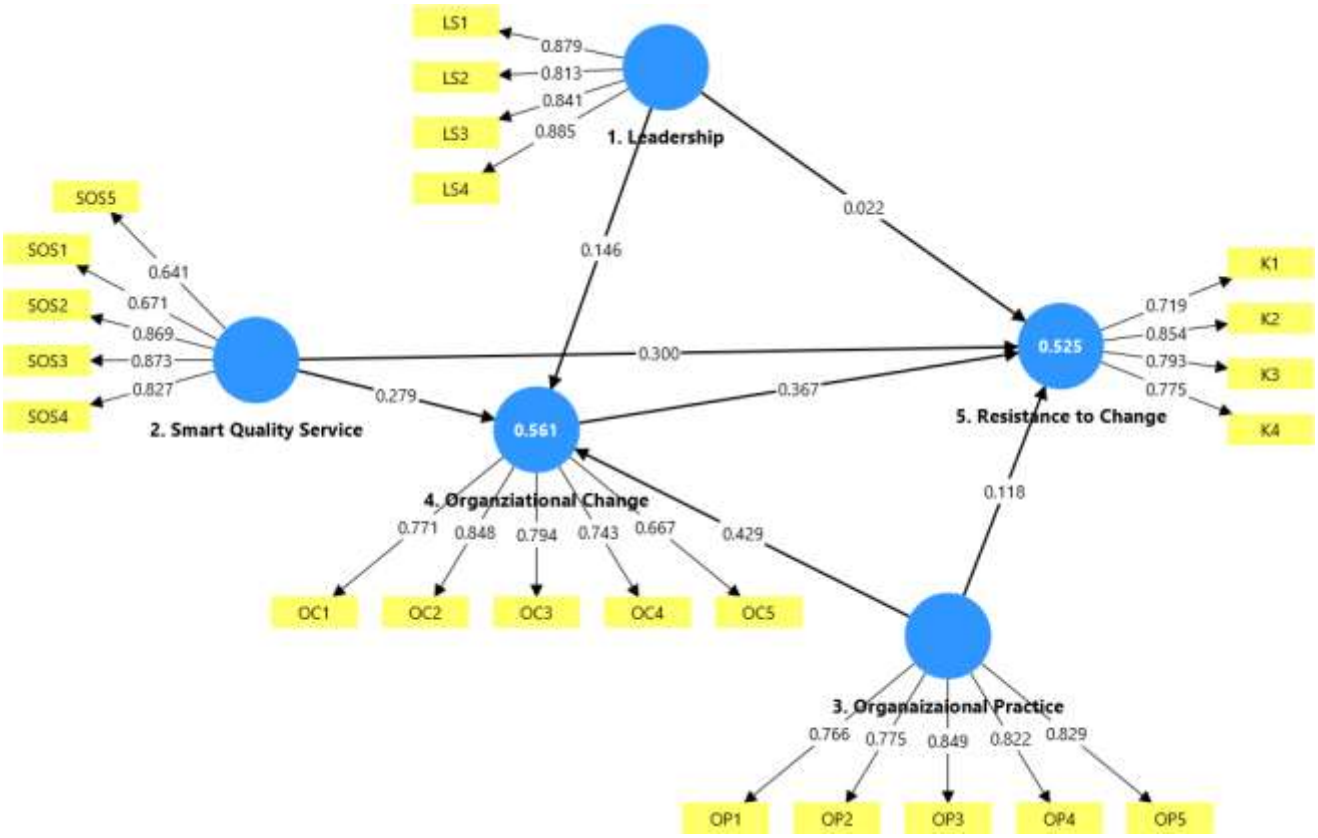

Figure 1. Factor Loading

Construct Reliability and Convergent Validity

Construct reliability and convergent validity were assessed via Cronbach's alpha, composite reliability and average variance extracted (AVE). All Cronbach's alpha values are above the minimum threshold of 0.70 (Hair et al., 2006; Hair & Alamer 2022), ranging from 0.794 for Resistance to Change to 0.877 for Leadership, indicating that the constructs are consistent and reliable.

Composite reliability was assessed using ρa (rho_a) and ρc (rho_c) measurements, where all values exceed the acceptable threshold of 0.70, with ρc (rho_c) ranging from 0.866 to 0.916, indicating strong internal coherence.

Convergent validity was assessed using Average Variance Extracted (AVE), with all constructs exceeding the accepted threshold of 0.50 (Fornell & Larcker, 1981; Hair & Alamer, 2022), ranging from 0.588 to 0.731. These values indicate that each construct explains more than 50% of the variance, confirming adequate representation.

Table 1 provides strong evidence of measurement quality across all constructs, indicating they are suitable for further analysis.

Table 1. Construct Reliability and Validity

Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
1. Leadership	0.877	0.887	0.916	0.731
2. Smart Quality Service	0.836	0.843	0.886	0.613
3. Organizational Practice	0.868	0.873	0.904	0.654
4. Organizational Change	0.822	0.828	0.876	0.588
5. Resistance to Change	0.794	0.798	0.866	0.619

Discriminant Validity (HTMT)

Discriminant validity results presented in Table 2 were examined using the Heterotrait-Monotrait Ration of Correlations (HTMT) as recommended by Henseler, Ringle and Sarstedt (2015) and Hair and Alamer (2022) the values in the table fall below the accepted threshold of 0.85, indicating satisfactory discriminant validity among constructs. However, the HTMT index between Smart Quality Service and Organisational Practice is 0.954, exceeding the acceptable threshold, indicating a strong empirical proximity between the two constructs. Such a value suggests that these constructs may be perceived as interrelated dimensions of broader organizational systems or processes. While the association between the two constructs is high, they represent different theoretical domains. Service is concerned with perceptions of tech-enabled service quality, where Practices is concerned with broader managerial routines within the organization. We retain both constructs, as they are sufficiently distinct and do not overlap fully.

Table 2. Discriminant validity (HTMT)

Items	1. Leadership	2. Smart Quality Service	3. Organizational Practice	4. Organizational Change	5. Resistance to Change
1. Leadership					
2. Smart Quality Service	0.490				
3. Organizational Practice	0.449	0.954			
4. Organizational Change	0.499	0.832	0.841		
5. Resistance to Change	0.408	0.800	0.750	0.820	

Discriminant Validity (Fornell-Larcker Criterion)

Discriminant validity results presented in Table 3 were further assessed by the Fornell-Larcker criterion, comparing the square root of the Average Variance Extracted (AVE) of each construct with its correlations with other constructs (Fornell & Larcker, 1981; Hair & Alamer, 2022). According to the square roots of the AVEs, which are greater than the inter-construct correlations, each construct correlates more strongly with its own indicators, indicating that the constructs are distinct enough. Leadership displays the highest value (square root of AVE) of 0.855, higher than all other correlations: Smart Quality Service (0.413), Organisational Practice (0.391), Organisational Change (0.429), and Resistance to Change (0.349). Smart Quality Service also meets the criteria, with an AVE of 0.783, higher than its correlations with the other variables. Organizational Practice has a value of 0.809, which is higher than its correlations with Organisational Change (0.713) and Resistance to Change (0.633). However, its value is marginally lower than its correlation with Smart Quality Service (0.814). This indicates a statistical association or even overlap between the two constructs. This close relationship is to be expected, since in real life, digital service systems are embedded in organizational routines, which manifest in this closeness. However, they belong to different conceptual domains and offer distinctive theoretical clarity, ensuring a reliable representation of the conceptual dimensions of organizational reality. Constructs were retained because of their theoretical distinctiveness, in line with recommendations that it can be tolerated when supported by theoretical justification, acceptable reliability, and satisfactory convergent validity (Hair et al., 2006; Hair & Alamer, 2022).

Fornell-Larcker results indicate that the measurement model's discriminant validity is adequate to proceed with further analysis.

Table 3. Discriminant Validity (Fornell-Larcker Criterion)

Items	1. Leadership	2. Smart Quality Service	3. Organizational Practice	4. Organizational Change	5. Resistance to Change
1. Leadership	0.855				
2. Smart Quality Service	0.413	0.783			
3. Organizational Practice	0.391	0.814	0.809		
4. Organizational Change	0.429	0.689	0.713	0.767	
5. Resistance to Change	0.349	0.658	0.633	0.667	0.787

Collinearity Assessment (VIF)

To assess potential collinearity among indicators, we evaluate the Variance Inflation Factors (VIFs) presented in Table 4. Multicollinearity becomes an issue when independent variables are strongly correlated to each other, thus affecting and distorting results. In PLS-SEM, values below 5 indicate a lack of multicollinearity, while values below 3 indicate a very low collinearity risk (Hair et al., 2006; Hair & Alamer, 2022). All VIF values fall within an acceptable range, well under the conservative threshold of 3, indicating the absence of collinearity problems.

Table 4. Collinearity Assessment (VIF)

Items	VIF
K1	1.374
K2	1.936
K3	1.848
K4	1.681
LS1	2.611
LS2	2.168
LS3	2.314
LS4	2.840
OC1	1.870
OC2	2.286
OC3	1.814
OC4	1.596
OC5	1.327
OP1	1.803
OP2	1.991
OP3	2.468
OP4	2.339
OP5	2.373
SOS1	1.633
SOS2	2.873
SOS3	2.883
SOS4	2.132
SOS5	1.380

Model Fit (R^2)

The R-squared coefficient indicates the degree of variance in the dependent construct explained by the predictor variable in the structural model. R-squared values range from 0 to 1, where values closer to 1 indicate higher levels of explanatory power. According to Hair et al. (2006) and Hair and Alamer (2022), R-squared values of 0.25 are considered weak, 0.50 moderate and 0.75 substantial. In our case, the model shows relatively strong explanatory power, indicating that the independent variables explain 56.1% of the variance in Organisational Change and 52.5% of the variance in Resistance to Change. Table 5 shows that the model has moderate to high predictive relevance.

Table 5. Model Fit (R^2)

Construct	R Square	R Square Adjusted
Organizational Change	0.561	0.555
Resistance to Change	0.525	0.518

RESULTS

The empirical findings of the study depend on analysis using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings include evaluating the structural model, testing the hypothesis, and analyzing the direct and indirect associations among the study's constructs. The results will provide statistical data on the relationships among Leadership, smart quality service, organizational practices, organizational change, and resistance to change across institutions of higher education in Oman.

Structural Model Assessment

The structural model was assessed to examine the relationships among constructs. Bootstrapping was applied to determine the significance of the coefficient paths following PLS-SEM procedures in line with Hair et al. (2006) and Hair and Alamer

(2022).

Figure 2 shows that Leadership, Smart Quality Service, and Organisational Practice significantly predict Organisational Change. Leadership has a positive and significant impact on Organisational Change (β = 0.146, t = 3.644, p < 0.001), underscoring its role in shaping institutional direction for Change.

Leadership to Resistance to Change has a positive but statistically non-significant relationship (β = 0.022, t = 0.502, p = 0.615), indicating that Leadership does not have a direct influence on employees' resistance to change.

Smart Quality has a positive and statistically significant impact on Resistance to Change (β = 0.300, t = 3.907, p < 0.001). This indicates that improvements in smart service systems and digital platforms are associated with higher levels of resistance. While smart systems are introduced to improve efficiency and performance, they can instil perceptions of uncertainty, fear of complexity, or even concerns about job roles and competencies.

Smart Quality Service shows a significant positive relationship with Organisational Change (β = 0.279, t = 3.937, p < 0.001), suggesting that enabling reliable tech service systems contributes to meaningful inOrganisationalansformatiohavenizational Practices display the strongest influence on Organisational Change (β = 0.429, t = 6.010, p < 0.001), indicating that significant managerial practices and processes are the main drivers oorganisationalnd succesOrganisationalional Change. Organisation, all Practices show a positive but statistically non-significant relationship with resistance to change (β = 0.118, t = 1.505, p = 0.132). This indicates that structured organizational routines, mechanisms, and processes do not determine, increase, or decrease employees' resistance to change.

Organisational Change has a positive and statistically significant impact on Resistance to Change (β = 0.367, t = 6.092, p < 0.001). This shows that when organizations change, initiatives increase, and employees' resistance to change also increases. In other words, changes in procedures or reforms seem to trigger stronger reactions from employees. This primarily suggests that the outcome is due to organizational transformation rather than a reaction to negative attitudes.

Direct hypothesis testing confirms that Leadership, Smart Quality of Service, and Organisational Practice significantly impact Organisational Change. In contrast, Resistance to Change is shaped by Organisational Change and Smart Quality of Service. The results provide strong support for the idea that organizational transformation initiatives generate resistance and should be managed carefully to avoid escalation and further resistance.

Indirect Mediating Effects

Leadership shows a significant mediating effect on Resistance to Change via Organisational Change (β = 0.054, t = 2.989, p = 0.00,3), indicating that Leadership influences resistance by shaping organizational Change, possibly through processes, rather than directly.

Smart Quality Services shows a significant indirect effect on Resistance to Change via Organisational Change (β = 0.488, p < 0.001), indicating that improvements or even changes in technology-enabled services influence their loyalty to organisational changes in organisational processes. In Practice, when the organisation improves or even changes smart systems and digital platforms, such initiatives increase the organisation's ability to initiate and sustain Change, which, in turn, triggers employees to change. Organisational Practice has a significant indirect effect on Resistance to Change via Organisational Change (β = 0.157, t = 4.030), indicating that organisational practices do not affect resistance directly through the design of organisational Change. Mediation results indicate that Organisational Change behaves as the key explanatory mechanism in the model. Leadership and Organisational Practice influence Resistance to Change only through their ability to shape and impact Organizational changes and processes. In contrast, Smart Quality Service directly and indirectly impacts Resistance to Change through Organisational Change. This indicates that managing Change is critical to controlling resistance to ensure smoother processes.

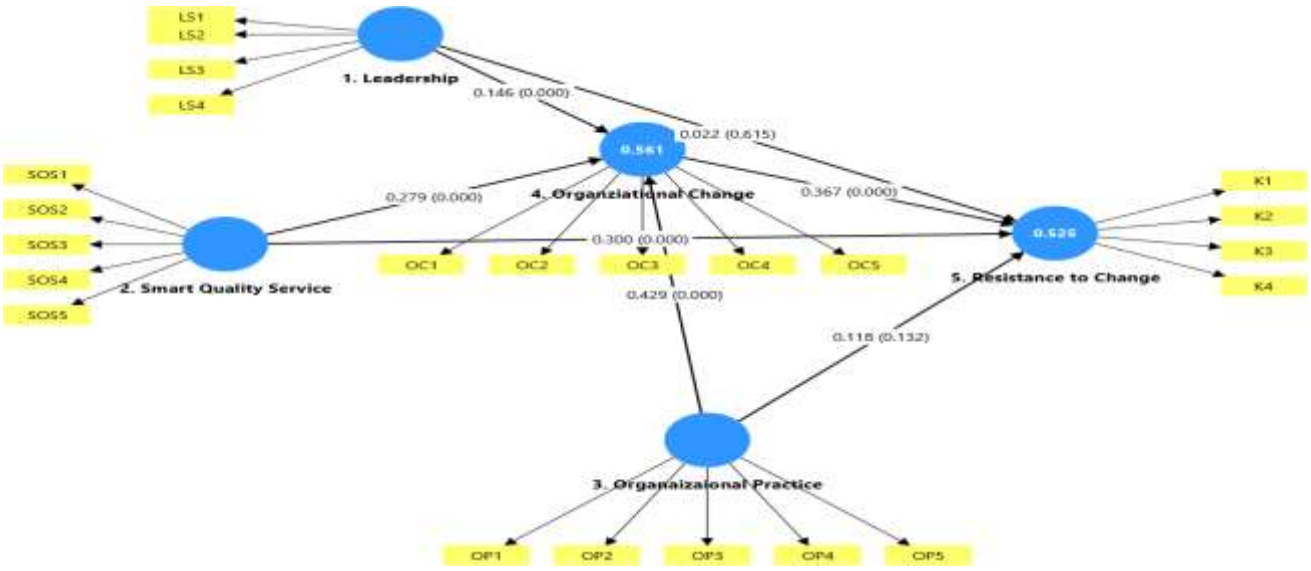

Figure 2. Bootstrapping

Table 6 shows the results of the direct hypothesis, and Table 7 shows the results of the indirect hypothesis.

Table 6. Direct Hypotheses

Items	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
1. Leadership -> 4. Organizational Change	0.146	0.148	0.040	3.644	0.000
1. Leadership -> 5. Resistance to Change	0.022	0.022	0.043	0.502	0.615
2. Smart Quality Service -> 4. Organizational Change	0.279	0.278	0.071	3.937	0.000
2. Smart Quality Service -> 5. Resistance to Change	0.300	0.301	0.077	3.907	0.000
3. Organizational Practice -> 4. Organizational Change	0.429	0.431	0.071	6.010	0.000
3. Organizational Practice -> 5. Resistance to Change	0.118	0.118	0.079	1.505	0.132
4. Organizational Change -> 5. Resistance to Change	0.367	0.368	0.060	6.092	0.000

Table 7. Indirect hypothesis

Items	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
1. Leadership -> 4. Organizational Change -> 5. Resistance to Change	0.054	0.055	0.018	2.989	0.003
2. Smart Quality Service -> 4. Organizational Change -> 5. Resistance to Change	0.103	0.102	0.029	3.488	0.000
3. Organizational Practice -> 4. Organizational Change -> 5. Resistance to Change	0.157	0.159	0.039	4.030	0.000

DISCUSSIONS

The findings of this paper provide empirical support for what determines organizational Change and employee resistance to change in institutions of higher education in Oman. The outcomes of the hypothesis testing indicate that H_1, H_3, H_4, H_5, H_7, H_8, H_9, and H_{10} are accepted, and that H_2, and H_6 is rejected. In particular, Leadership, smart quality service, and organizational Practice were identified as having a positive impact on organizational Change. In contrast, resistance to the Change was found to be strongly influenced by smart quality service and organizational Change. In addition, organizational Change mediates the correlation among Leadership, smart quality service, organizational Practice, and change resistance.

These results indicate that organisational practices are the best predictors of organisational change, followed by smart quality services and Leadership. This indicates that, as much as Leadership offers strategic direction, the institutional routines, administrative structures, and operational processes play the primary role in leading transformations within an organization. These findings resonate with Institutional Theory, which highlights that organizational responses to policy pressures and environmental demands are enacted through institutional structures and practices rather than solely through leaders (Scott, 2014). These results also align with the ADKAR change management model, which emphasises the importance of organisational preparedness, including the structure, to support successful transformation processes (Hiatt, 2006).

The findings also indicate that organizational Change is a major contributor to employee resistance, supporting H7. This observation is indicative of a fact in the study of organizational Change: institutional Change and process change create a sense of uncertainty among employees, which is usually followed by defensive or protectionist responses. Other related studies also show that employees may perceive Change as a threat to job security, skills, or even professionalism, thereby resisting change initiatives (Oreg, Vakola, & Armenakis, 2011).

A valuable implication of the study is the direct and indirect impacts of the constructs. There was no sharp, direct impact on resistance to change in Leadership and organizational Practice, leading to the exclusion of H2 and H6. Nevertheless, both constructs have a strong impact on resistance, albeit indirectly through organizational Change. This implies that Leadership and organisational practices influence employees' responses not directly, but through the design of the organisational change process, communication, and implementation patterns. That is, employee resistance is mainly a result of the experience of Change, not necessarily of Leadership or managerial Practice itself.

Conversely, the smart quality services exert both direct and indirect influences on resistance to Change, indicating that technological and digital service systems are among the critical factors in employee responses. Even though so-called smart service systems are designed to enhance the efficiency of institutions and the quality of services, employees might feel that these systems are complex and can disrupt usual work patterns and professional independence. Therefore, the implementation of digital transformation can lead to further resistance when employees believe it will add more work, make technologies less predictable, or introduce skills deficiencies that accompany new systems.

On the whole, the findings highlight organizational change as the primary explanatory variable in the model, through which the impact of Leadership, technological systems, and organizational practices on change resistance is mediated. The limitations of the findings emphasise the need to manage institutional transformation carefully in the higher education setting, where employees are likely to respond more strongly to organisational changes due to professional autonomy, institutional traditions, and governance structures.

CONCLUSIONS

This work aimed to examine the determinants of organizational Change and how it affects employees' resistance to change in institutions of higher learning in Oman. The research employed a quantitative method and Partial Least Squares Structural Equation Modelling (PLS-SEM) to explore how Leadership, smart quality service systems, and organizational practices have led to Organisational Change and resistance to institutional Change among employees. The findings indicate that all three variables, Leadership, smart quality services, and organizational practices, have a significant impact on organizational Change, among which organizational practices are found to be the best predictor. Moreover, smart quality services and organizational Change significantly influence change resistance. The results also indicate that organizational Change mediates the relationships among Leadership, organizational practices, and employees' ability to resist Change.

This research will be relevant to the existing literature by providing empirical evidence on the interplay among managerial structures, technological service systems, and institutional practices that affect resistance to change in institutions of higher learning. Unlike most past studies, which usually emphasise Leadership or organisational culture, this research emphasises the pivotal role of organisational Change as the channel through which managerial and technological variables affect employees' behavioural responses to institutional reforms. By so doing, the study contributes to knowledge of risk management and change dynamics in higher education, especially in emerging educational systems such as Oman's.

The implications of the findings are also important both in Theory and in management. Theoretically, the findings are consistent with institutional Theory and Change management frameworks, as they indicate that organizational change is influenced not only by leadership direction but also by institutional practices and service infrastructures embedded within the organization. Managerially, the results indicate that the institution should approach the implementation of smart service systems and organizational reforms with caution, as such efforts can unintentionally provoke employee resistance when perceived as complex or disruptive. Employees, therefore, require effective communication strategies, capacity-building programs, and targeted training to navigate institutional transformation and technological Change.

This research has some limitations despite its contributions. The study relies on survey data obtained from workers at institutions of higher education in Oman; hence, its generalizability to other fields or countries may be limited. Also, the cross-sectional data limit the ability to study changes in resistance to change over time as the organization changes.

Future studies can build on these results by examining longitudinal Changes in employee attitudes toward organizational transformation, especially regarding digital transformation programs and new smart service systems in higher education institutions. The additional alignment of organizational culture, employee trust, and technological preparedness could also be addressed, and further research could examine in greater depth the mechanisms of change resistance in complex institutional settings.

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