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RESEARCH PAPER

A Structural Perspective of Market Orientation and its impact on Quality Assurance: A Study of Public and Private Universities in Pakistan

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ABSTRACT

This study examines the structural dimensions of Market Orientation (MO)—formalization, departmentalization, and centralization—and their impact on Innovation Capability (IC) and Quality Assurance (QA) in Pakistani higher education institutions (HEIs). Understanding the interplay between MO, IC, and QA is critical for enhancing institutional performance and aligning HEIs with global standards. Data were collected from 350 respondents, including 190 from private and 160 from public universities, using a structured questionnaire. Structural equation modeling (SEM) was applied to assess the direct and indirect relationships among the variables in PLS-SEM. The findings indicate that MO significantly influences IC and QA, with private universities demonstrating stronger mediating effects of IC due to their agile structures and competitive orientation. In contrast, public universities face bureaucratic challenges limiting innovation. The study recommends reducing centralization in public universities and promoting interdisciplinary collaboration while encouraging private universities to sustain their innovation-driven strategies. These insights support policymakers in pursuing structural reforms for sustainable development.

KEYWORDS Higher Education Institutions, Innovation Capability, Market Orientation, PLS-SEM, Quality Assurance

Introduction

Higher education institutions (HEIs) has an important role in societal development, fostering intellectual growth and innovation. The structural dimensions Market orientation (hereafter MO) (formalization, departmentalization, and centralization) significantly influence the performance and adaptability of HEIs, particularly in contexts like Pakistan, where systemic inefficiencies challenge institutional effectiveness (Akdere, 2011). Knowledge of these structural components of MO is important, as they influence innovation capacity and quality, which are major drivers of enhancing educational quality (Bakhsh et al., 2024). Formalization provides standardized practices and accountability but risks stifling creativity if overly rigid (Almasri, 2011). Similarly, departmentalization enables specialization but can create silos, hindering interdisciplinary collaboration essential for innovation (Alizadeh & Frizhendi, 2013). Centralization thus while achieving institutional goals reduce decentralization and student oriented aspects which are important in creating a vibrant academic environment (Kabeyi, 2019).

Innovation capability is therefore highly relevant to the general capacity of HEIs to respond to global education trends, and indeed societal demands. Where there is a strong innovative culture, it is easier to put in place relevant quality assurance measures

to support the institutions in the competitive educational market (Bakhsh et al., 2024). Solving these problems is all the more necessary in order to bring HEIs into compliance with international requirements and ensure sustainable development of the region (Alemu, 2018). The organizational structures and innovation, this study supports the existing literature on how the HEIs can move around or overcome the systemic barriers and become excellent and relevant in providing education (Bibi & Saeed Akhtar, 2020).

Therefore, this research underscores the effect of Structural Perspective of MO (formalization, departmentalization, and centralisation) in the improvement of institutional innovation capability and the quality assurance. It does so to provide relevant lessons for Pakistan to enhance institutional settings that favor innovation and quality (Kabeyi, 2019). Such insights are useful in improving efficiency and competitiveness on the foreign market of HEIs (Alemu, 2018).

The rationale for this study therefore lies in the identification of significant structural imperatives in the HEIs in Pakistan that hamper innovation and quality assurance. In the light of increasing competitiveness of HEIs and globalization of education, these institutions are supposed to deliver quality education in a situation where societal and Technological environment is clearly dynamic (Alemu, 2018). However, it is structure dimension of MO that is fraught with a number of challenges to the achievement of the above goals. This research will endeavour to identify how these structural dimensions influence innovation capability and use of quality assurance frameworks in Pakistani HEIs which undergo deep organisational lag and systematic suboptimal connections.

The issue here is the lack of knowledge regarding how organizational structures of Pakistani HEIs affect their capacity to innovate and guarantee quality education. Still, the reality in many of the Pakistani HEIs show that they are run by formal systems of bureaucratic structures and processes that were characteristic of post-industrial societies to reduce uncertainty and achieve predictability (Bakhsh et al., 2024). This results to poor institutional performance, little known to the international community, and the inability to foster socioeconomic development.

Literature Review

The historical analysis of the management concepts brings out useful information on how theoretical frameworks have influenced organizational practices in Pakistani universities. Max Weber, Frederick Taylor, and Henry Fayol built on Adam Smith's (1723–1790) basic concept of the division of labor as a way to increase productivity in order to create more elaborate theories of organizations (Kereto, 2021). These classical management principles that developed during the industrial revolution are still applicable in the hierarchical structures of the Pakistani universities today; these principles include administrative and bureaucratic organization (Chikere, 2015). Fayol's six functional areas of organization include administration, security, accounting and finance, commercial, and technical; these are reflected in the departmental structure of universities where activities are organized to be efficient under bureaucratic procedures (Hussein et al., 2019).

In Pakistani universities, practices like performance appraisals, annual work plans, and adherence to ISO standards reflect classical management's focus on maximizing output through formalization and target-setting. However, such mechanistic structures derived from strict control give consideration to the social and the

psychological well of being of the faculty and staff, and this demotivate the faculty and staff to work harder and be committed (Sridhar, 2014). By emphasizing the instrumental reasons for carrying out an action students are constantly encouraged to negotiate over their pay and working conditions, rather than focusing on the theoretical and practical objectives of education. However, it is understood that these limitations exist and therefore, Pakistani universities could benefit from adopting human centered approaches, faculty and staff health and enhancing innovation to reflect modern management practices (Sridhar, 2014; Hauque & Rehman, 2014).

Market Orientation (Structural Perspective) and Innovation Capability

Organizational structure is one of the major elements of framework for managing institutions. It defines priorities and decision making on the use of resources, management of work and creation and dissemination of innovations. In the light of this study about the Pakistani universities, these structural factors play a major role in innovation. According to Ali, Imran, and Khan (2021), the high level of formalization and departmentalization in learning institutions leads to the repression of innovation. While public universities are highly centralized having structural rigidity to meet central requirements, private universities are relatively decentralized and elastic to respond to the dynamic educational requirements (Usman, 2014).

Organizational structures of market orientation contain formal procedures that can guarantee control and stability. But when it is taken to the extreme it reduces the capacity for an institution to create new products and services. For instance, universities that have extremely autocratic structures might experience difficulties as regards transition to new approaches to teaching, or adoption of technologies into their systems (Murtaza & Hui, 2021). This relationship emphasizes the need for a proper structural point of view which encourages innovation while at the same time does not hinder efficiency. Another important factor indicating the need to support innovation capability is the idea of a flexible departmentalization, which enables cross-functional initiatives (Kereto, 2021).

Innovation capability can be defined as the capacity of an institution to create, acquire and utilize performing enhancement ideas, processes, systems etc. Khan et al. (2024) posited that for the promotion of innovation in HEIs, there should be a conducive organizational environment. The generative university is in a better position to respond to the global challenges in education and maintain competitiveness. This is especially important in the context of Pakistani institutions where many institutions are struggling with their resource limitations, and the management practices they employ are quite dated. This study of market orientation and innovation capability underlines the importance of the dynamic and flexible organizational structures. Therefore,

H1: There is a relation of Market Orientation (Structural Perspective) on Innovation Capability in Public and Private Universities in Pakistan.

Innovation Capability and Quality Assurance

Academic quality assurance in HEIs helps in ensuring that institutions of higher learning deliver quality programs, undertake quality research and deliver efficient and effective administrative services. This paper also underlines that innovation capability constitutes one of the most critical aspects within the improvement of these quality assurance mechanisms. According to Soomro, Mangi, and Shah (2021), learning and

innovation should be established as two significant predictors of organizational growth and enhanced institutional performance. Following the promotion of a culture that supports innovation, institutions will be more likely to obtain sustainable quality assurance results.

The self-reported data from the public universities in Pakistan reveal that the organizations suffer from rigid bureaucracy that hampers organizational learning and change. On the other hand, private universities with relatively flexible management structures can use the innovation capability with a view of improving the quality assurance measures (Khan & Afzal, 2011). ICT integration is one example of how innovation capability can directly enhance quality assurance.

Innovation capability also help in the implementation of customized quality assurance structures in the provision of quality education in line with the institutional and international standards. According to Akram and Yang (2021), the quality assurance in private universities of Pakistan is affected due to the poor implementation of educational policies. Universities can avoid these implementation challenges hence enhancing quality assurance mechanisms that are both efficient and sustainable, through promoting innovation. Therefore,

H2: There is a relation of Innovation Capability on Quality Assurance in Public and Private Universities in Pakistan.

Market Orientation (Structural Perspective) and Quality Assurance

The structural perspective of market orientation also has a direct effect on the assurance of quality in HEIs. First, the market-oriented structures such as the formalization, departmentalization and centralization give direction on how institutions conduct their quality assurance processes. Kereto (2021) explains that structures of the market orientation are critical for institutional management, including for accountability and coherence. In Pakistani universities, formalization in organizational structures is reflected in the practices of formal procedures like performance evaluation, accreditation through ISO, and requirements of rules and regulation (Usman, 2014). Although these practices promote accountability, they reduce the freedom required to address particular institutional problems.

Division of universities into separate departments is called 'departmentalization' and it is essential to Quality Assurance. According to Marbun et al. (2020), departmentalized structures allow institutions to concentrate on the specific functional area of curriculum development, research as well as students' services. Centralization ensures that proper standardization is achieved, but this comes hand in hand with limitations placed on the various faculties and staffs to contribute their innovative ideas as well as their effort towards quality assurance (Murtaza & Hui, 2021). Centralisation is another problem that exists in many Pakistani universities, even more so in public universities. These dynamics support the hypothesis that

H3: There is a relation of Market Orientation (Structural Perspective) on Quality Assurance in Public and Private Universities in Pakistan.

The Mediating Role of Innovation Capability

The study also reaffirms the strategic role of innovation capability in mediating the structural practices of market orientation and quality assurance with the institutional

objectives. Market-oriented structures whereby innovation is incorporated has found to be effective in the achievement of quality assurance results in universities. Institutional performance is regarded by Soomro et al. (2021) as being dependent on the strategic organizational practices like innovation and learning. Self-organization is especially important in the context of Pakistan where structural flexibility is commonly accompanied by structural instability that hampers innovation.

Thus, weak implementation of educational policies is another challenge that reveals the mediating role of innovation. According to Akram and Yang (2021), institutions cannot meet the policy implementation and quality assurance deficiencies without innovation. This dynamic supports

H4: Innovation Capability mediates the relation of Market Orientation (Structural Perspective) on Quality Assurance in Public and Private Universities in Pakistan.

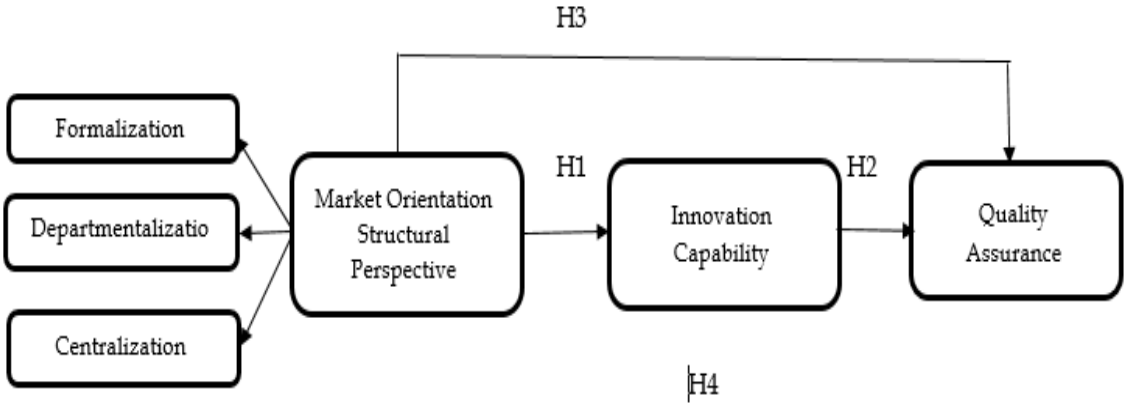

Figure 1 Conceptual Framework

Material and Methods

Data Collection and Sample Characteristics

The data was collected using the self-administered questionnaire. The target participants were from the public and private universities in Pakistan. These respondents were related to the quality assurance departments in their respective universities. Purposive sampling was used to collect the data. a total number of 400 respondents were selected from which 10 responses were excluded for the private universities while 40 responses were excluded from the public universities due to incomplete responses. A total number of 350 valid responses were used for the study. In public universities 88.7% males participated while 11.2% of females participated. While in private universities 80.5% of males participated and 19.5% of females' participated.

Measurement

This study employs validated scales adapted from established research to measure formalization, centralization, departmentalization, innovation orientation, and quality assurance within higher education institutions. The formalization scale, adapted from Jaworski and Kohli (1993), assesses the balance between employee autonomy and adherence to institutional rules, with items such as "In my institution, I feel that I am my own boss in most matters..." The centralization scale, from Kohli and Jaworski (1990), evaluates the concentration of decision-making authority through items like "Even small matters have to be referred to someone higher up for the final decision..." The

departmentalization scale, also derived from Kohli and Jaworski (1990), captures interdepartmental dynamics and collaboration challenges, featuring items such as "Protecting own departmental turf (boundary) is considered to be a way of life in the institution..." Innovation orientation, measured using Abou-Warda's (2014) scale, examines the institution's focus on fostering and adopting innovation, with items like "Our faculty continually emphasizes innovations in all aspects of our business..." Finally, the quality assurance scale, adapted from the (Batool & Qureshi, 2010), focuses on adherence to standards for academic quality and program evaluation. These comprehensive measures ensure the constructs are relevant and well-suited for assessing the hypothesized relationships in the study.

Results and Discussions

Table 1
Sample Demographics

Type of University	Male (n)	Female (n)	Total Respondents	Male (%)	Female (%)
Public Universities	142	18	160	88.75	11.25
Private Universities	153	37	190	80.53	19.47

In Table 1, the demographic analysis reveals a total of 350 respondents from public and private universities, with public institutions, where respondents from public universities consist of 88.75% male and 11.25% female while that from private universities contained 80.53% male and 19.47% female. The variation in responses indicates that institutional structures are not uniform, as are the perceptions; public universities display higher variation (87.68) than private universities (82.02). In *Figure 2* it point to a gender imbalance in since the proportion of males is higher than that of female. The mean score is the same as the median score, which tells us that there are no outliers in the data set, mode identifies the most frequent gender distribution patterns.

Structural equation modelling (SEM)

Structural equation modelling (SEM) is a statistical method for testing variable interrelationships (Hair et al. 2019). Structural equation modelling (SEM) is classified into numerous types, including CB-SEM, PLS-SEM, and V-SEM. In this research, PLS-SEM was applied for carry out the analysis. Alaiad and Zhou (2014) opine that PLS-SEM is a realistic and efficient statistical approach in the acceptability of the technology. This approach also enables the analysis of models that incorporate a number of constructs (Chin, 1998). In the covariance-based approaches, this method offers less constrain on the residual distributions and sample sizes as remarked by Chin (1998). Hair et al., (2019) reveal that in conducting the PLS-SEM, the Smart PLS 4 software was adopted.

Measurement Model

Tests of internal reliability consistency of the measurement model are presented in Table 2 using the Cronbach's alpha (α) and composite reliability. In all construct, the study composite reliability value exceeded the recommended threshold of 0.70 as recommended by Hair et al. (2019). Indicator dependability levels should be at least 0.5 and this result has been achieved as forecasted by Chin (1998). For the study, Cronbach's alpha coefficients were also acceptable since they should be 0.7 or higher (Nunnally, 1967). Convergent validity was also examined using the average variance extracted (AVE); all values were higher than 0.5, which is deemed adequate by Fornell and Larcker (1981).

Table 2
Loadings, Internal Consistency, CR and AVE

Construct	Item	Loadings (Private Universities)	Loading (Public Universities)	Cronbach Alpha (Private & Public Universities)
Market Orientation (Structural)	Centralization_1	0.835	0.987	(Private) 0.976
Private (CR = 0.977, AVE = 0.623)	Centralization_2	0.811	0.986	(Public) 0.999
Public (CR = 0.999, AVE = 0.971)	Centralization_3	0.820	0.986	
	Centralization_4	0.725	0.982	
	Centralization_5	0.782	0.984	
	Departmentalization_1	0.774	0.985	
	Departmentalization_2	0.813	0.983	
	Departmentalization_3	0.717	0.986	
	Departmentalization_4	0.794	0.985	
	Departmentalization_5	0.791	0.985	
	Departmentalization_6	0.794	0.984	
	Departmentalization_7	0.803	0.985	
	Departmentalization_8	0.779	0.985	
	Departmentalization_9	0.759	0.984	
	Departmentalization_10	0.773	0.986	
	Departmentalization_11	0.805	0.985	
	Departmentalization_12	0.805	0.986	
	Departmentalization_13	0.764	0.985	
	Departmentalization_14	0.769	0.985	
	Formalization_1	0.804	0.986	
	Formalization_2	0.792	0.985	
	Formalization_3	0.863	0.984	
	Formalization_4	0.877	0.984	
	Formalization_5	0.848	0.985	
	Formalization_6	0.860	0.985	
	Formalization_7	0.832	0.983	
Innovative Capability	Innovative_Capability_1	0.847	0.787	(Private) 0.959
Private (CR = 0.964, AVE = 0.730)	Innovative_Capability_2	0.859	0.793	(Public) 0.944
Public (CR = 0.952, AVE = 0.665)	Innovative_Capability_3	0.861	0.814	
	Innovative_Capability_4	0.866	0.825	
	Innovative_Capability_5	0.830	0.828	
	Innovative_Capability_6	0.847	0.843	
	Innovative_Capability_7	0.848	0.831	
	Innovative_Capability_8	0.837	0.801	
	Innovative_Capability_9	0.869	0.816	
	Innovative_Capability_10	0.838	0.812	
Quality Assurance	Quality_Assurance_1	0.858	0.799	(Private) 0.963
Private (CR = 0.968, AVE = 0.713)	Quality_Assurance_2	0.815	0.826	(Public) 0.967
Public (CR = 0.970, AVE = 0.644)	Quality_Assurance_3	0.836	0.797	
	Quality_Assurance_4	0.850	0.769	

Quality_Assurance_5	0.835	0.798
Quality_Assurance_6	0.861	0.814
Quality_Assurance_7	0.837	0.808
Quality_Assurance_8	0.835	0.818
Quality_Assurance_9	0.850	0.802
Quality_Assurance_10	0.834	0.812
Quality_Assurance_11	0.860	0.801
Quality_Assurance_12	0.836	0.793
Quality_Assurance_13	Deleted due to low loading	0.795
Quality_Assurance_14	Deleted due to low loading	0.812
Quality_Assurance_15	Deleted due to low loading	0.804
Quality_Assurance_16	Deleted due to low loading	0.797
Quality_Assurance_17	Deleted due to low loading	0.810
Quality_Assurance_18	Deleted due to low loading	0.780
Note(s): AVE, average variance extracted; CR, composite reliability		
Source(s): Created by authors		

The construct of market orientation was assessed through centralization, departmentalization, and formalization. Factor loadings for items in both private and public universities indicate strong reliability, exceeding the threshold of 0.70. Public universities exhibited slightly higher loadings across most items, reflecting greater structural clarity. Centralization and departmentalization showed consistently high loadings, with public universities demonstrating greater consistency (Cronbach's Alpha = 0.999) compared to private universities (Cronbach's Alpha = 0.976). Composite reliability and AVE also affirm the validity of the measures, with public universities achieving CR = 0.999 and AVE = 0.971, which is superior to private universities (CR = 0.977, AVE = 0.623). This suggests public universities maintain a more formalized and centralized structure, likely due to bureaucratic mandates and regulatory oversight.

Innovative capability was evaluated across ten items. The Cronbach's Alpha values for both private (0.959) and public (0.944) universities indicate high reliability. Private universities exhibit slightly higher CR (0.964) and AVE (0.730) compared to public universities (CR = 0.952, AVE = 0.665), suggesting a more robust innovative culture. Factor loadings range from 0.830 to 0.869 in private universities and 0.787 to 0.843 in public universities.

Quality assurance was assessed through 18 items, with several items removed due to low loadings in Private Universities. After refinement, factor loadings remained above the threshold in both sectors. Private universities demonstrate a slightly higher Cronbach's Alpha (0.963) compared to public universities (0.967), indicating strong internal consistency across institutions. CR values for private (0.968) and public (0.970) universities, along with AVE (0.713 for private and 0.644 for public), confirm robust

construct validity. Public universities have slightly lower AVE, suggesting a need for improved measurement of latent variables in quality assurance.

Table 3
Results of the structural model, effect size square (f2) and collinearity Statistics (VIF)

Relationship between Predictors (Public Universities)	Standard deviation	t-values	p values	f2	VIF level	Significant
Innovative_Capability_ -> Quality_Assurance_	0.038	19.742	0.00	4.778	2.132	Significant
Market Orientation (Structural) -> Innovative_Capability_	0.039	18.689	0.00	4.143	1.000	Significant
Market Orientation (Structural) -> Quality_Assurance_	0.045	4.214	0.00	1.810	2.132	Significant
Relationship between Predictors (Private Universities)	**Standard deviation**	**t-values**	**p values**	**f2**	**VIF level**	**Significant**
Innovative_Capability_ -> Quality_Assurance_	0.036	8.776	0.00	3.764	3.360	Significant
Market Orientation (Structural) -> Innovative_Capability_	0.02	39.938	0.00	5.729	1.000	Significant
Market Orientation (Structural) -> Quality_Assurance_	0.035	19.227	0.00	4.361	3.360	Significant

In Table 3. For public universities, the relationship between innovative capability and quality assurance is highly significant, as indicated by a t-value of 19.742 and a p-value of 0.00. The standard deviation is 0.038, and the effect size ($f^2 = 4.778$) is substantial, suggesting that innovative capability strongly influences quality assurance. A VIF of 2.132 indicates low multicollinearity, ensuring reliable results. The significant relationship underscores that innovative practices in public universities lead to improved quality assurance, likely because innovation enables universities to address emerging challenges and maintain academic standards. The structural aspect of market orientation strongly predicts innovative capability in public universities, with a t-value of 18.689 and a p-value of 0.00. The standard deviation is 0.039, while the effect size ($f^2 = 4.143$) and a VIF of 1.000 further support the model's robustness. This suggests that centralized governance and formalized structures in public universities foster innovative activities, possibly through better resource allocation and institutional support. The relationship between market orientation and quality assurance is also significant (t-value = 4.214, p-value = 0.00), with a standard deviation of 0.045. The effect size is relatively moderate ($f^2 = 1.810$), and a VIF of 2.132 confirms acceptable multicollinearity.

In private universities as shown in Table 3, innovative capability significantly predicts quality assurance, with a t-value of 8.776, a p-value of 0.00, and a standard deviation of 0.036. The effect size ($f^2 = 3.764$) is substantial, and a VIF of 3.360 indicates moderate multicollinearity. The significant relationship highlights the reliance of private universities on innovative practices to meet competitive demands, thereby improving their quality assurance mechanisms. Market orientation strongly influences innovative capability in private universities, as evidenced by a very high t-value of 39.938 and a p-value of 0.00. With a standard deviation of 0.02 and an effect size ($f^2 = 5.729$), this relationship is the strongest among all predictors. A VIF of 1.000 supports the absence of multicollinearity. This suggests that private universities' flexible structures and decentralized decision-making are key enablers of innovation. The relationship between market orientation and quality assurance is highly significant (t-value = 19.227, p-value = 0.00), with a standard deviation of 0.035 and an effect size ($f^2 = 4.361$). The VIF of 3.360 indicates moderate multicollinearity but remains within acceptable limits.

Table 4
Mediation Analysis

Universities	Total Effect	MO --> QA	Direct Effect	MO --> QA	Indirect Effect					
	Coefficient	p-value	Coefficient	p-value	Relationship	Coefficient	SD	p-value	t-value	QA [2.5%; 97.5%]
					MO --> IC --> QA					
Public Universities	34.946	0.000	22.433	0.000		4.214	0.045	0.000	12.513	0.669, 0.797
Private Universities	115.49	0.000	106.960	0.000		19.228	0.035	0.000	8.530	0.611, 0.750

Note(s): MO, Market orientation (Structural); SD, standard deviation; IC, Innovation Capability, QA, Quality Assurance

According to Hayes (2013), this study used a bootstrapping procedure to determine the mediating effect of market orientation using Smart PLS 4. In the context of the mediated regression analysis, the effect of MO on QA is examined with IC as a mediator. On the total effect of MO on QA in public universities, we get a coefficient of 34.946 and a p-value of 0.000. This implies that MO has a strong positive effect on QA in all the possible pathways – direct and indirect pathways are affected. The direct impact of MO on QA is also huge having a coefficient of 22.433 p-value of 0.000 meaning that MO on its own plays a role in enhancing QA. But the indirect effect of the relations through IC also provides an additional contribution to explain the variance in outcome. The indirect effect is 4.214, while the standard error is 0.045, $p < 0.000$, $t = 12.513$. The confidence interval for mediated relationship of QA is .669 to .797 which supports its significance as well as reliability.

In private universities there is therefore a much stronger mediation effect implying a very strong interactive process between MO, IC and QA. The impact of MO on QA is greater than that in public universities with a coefficient of 115.49 and p-value of 0.000. The coefficient of the direct effect is still substantial at 106.960; p-value equals 0.000, meaning that MO has a substantial direct impact on QA. The indirect effect is also significant with a coefficient of 19.228, SD = 0.035, $p < 0.000$, $t = 8.530$. The confidence interval for QA in private universities is lower as 0.611-0.750 and still it supports the strength of mediated relationship. This implies that private universities exploit the agility and competition to get the most out of MO on QA by means of IC.

Market Orientation (MO) consisting of the elements of formalization, departmentalization, and centralization of HEIs, we identify their impact on the innovation capacities in the field. Within the context of the Pakistan HEIs, where organizational systems are complex and frequently unproductive, formalization enables the development of clearer and more accountable procedures (Almasri, 2011). However, an extreme in this direction reduce the flexibility of the system, and hence the creativity and innovation. Departmentalization increases specialization that enhances domain knowledge within departments, but departmentalization can mean isolation that slows the cross-functional integration that is important for creativity (Alizadeh & Frizhendi, 2013). Perhaps while centralization is effective in centralizing decision making power to promote efficient decision making, it hinders participative governance which is key for an active living academic community (Kabeyi, 2019).

Centralized systems which are typical in public universities ensure conformity and stability and thus restrict innovative practice. On the other hand, private institutions are endowed with loosely coupled systems that allow for a faster implementation of change strategies. This gap provides the rationale for the involvement of MO structures

in defining the innovation capability where the hypothesis that MO has a significant effect on innovation capability in both the public and private universities is supported. These findings are in line with Bakhsh et al., (2024) who argued that both structural approaches of a balanced nature is vital in developing innovation among HEIs.

Innovation capability is thus an effective QA tool as institutions can only adapt to social and technological changes. In public universities, bureaucratic structures hinder the process of organizational learning and adaptability at operationalizing new QA measures (Almasri, 2011). Private universities are more competitive and market-oriented; therefore, their innovation culture is stronger, enabling them to build necessary QA frameworks according to the international level (Bakhsh et al., 2024).

The level of innovation determines the extent to which an institution can develop and implement the QA policies that are comparable to those of other countries in education. For instance, new approaches to curriculum development, faculty training, as well as students' activity contribute to QA improvement. The findings support Alemu (2018), who underlines the importance offing innovation capabilities in relation to QA to build HEIs sustainable development.

MO does so since it influences the formation of the institutional frameworks as well as the operational efficiency of QA. In formalization guarantee conformity to endorsed norms and values, and departmentalization encourage compatibility between academic programs and organizational objectives. Nonetheless, the lack of flexibility and centralized organizational culture typical for the Pakistani HEIs negatively influences their ability to provide quality education (Sridhar, 2014). The centralized system of management hampers the public universities to put into practice changing QA frameworks while private universities, having decentralized system, derive better QA results (Kabeyi, 2019).

Innovation capability would mediate the relationship between MO and QA and the result of the analysis provides support for this hypothesis. Concerning the impact of MO on QA through innovation capability, we established that it is significant but inhibited by bureaucratic red-tapism in public universities. Private universities provide a better example of mediation since their structure allows to incorporate MO with innovation-based QA measures much easier.

Conclusion

Market Orientation (MO) is an important factor in determining the Innovation Capability (IC) and Quality Assurance (QA) in Pakistani HEIs. According to the MO Approaches of formalization, departmentalization and centralization, there are significant implications to the enhancement of innovation and quality assurance in both public and private universities. The outcomes show that there is a stronger mediation impact of private universities for MO and QA because of their responsive structures and competitive market oriented strategies. On the other hand, the public universities which are under political control experience problems like bureaucratic, formalism, and inflexibility which limit the adoption of innovative QA frameworks. The study also supports the role of IC in mediating the structural aspects of MO to QA outcomes, especially concluding on the necessity of institutional changes for improving the adaptability of HEIs with regards to global educational standards.

Recommendations

Public universities should aim at de-bureaucratization by avoiding over centralization of decision making and encouraging people's participation. This would make the institution more innovation friendly and would allow the institution to respond better to the market. In addition, there should be more cross-functional working to reduce the virtuous departmentalization of ideas, which is crucial for more invention. Other enhancements that are required to build up both IC and QA systems include faculty training, curriculum development, and advanced technological investment.

For their part, private universities should keep on relying on their strategies that were informed by innovation to sustain their competitive edge. Structuring MOs to fit IC will help the institutions maintain flexibility and ability to implement QA measures that would conform to international standards. These universities should also continue to build on the highly mobile organizational structures by promoting more dynamic forms of curricular change, faculty professional growth, and student learning. Continuing with such strategies will assist private universities to continue being at the fore front in institutional performance and quality assurance.

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