

Quality Management and its Impact on Promoting Academics' Innovation in Malaysian Higher Education

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Abstract: This study seeks to identify key total quality management practices that influence innovative work behaviours among academics in Malaysian higher education institutions. Data were sourced from 568 academics in 14 Malaysian public and private universities that hold self-accreditation status. The variance-based partial least square-structural equation model was utilised for data analysis. The findings reveal that top management commitment, customer-centricity focus, effective core quality management practices in process management and quality control improvement are key total quality management practices that significantly influence the innovative work behaviour of academics. This research provides valuable insights for policymakers and university administrators to integrate the right components of total quality management practices to foster innovative work behaviours at higher education institutions. This research addresses the theoretical and empirical gaps in understanding the nexus of total quality management in Malaysian higher education from the academic behavioural perspective.

Keywords: Innovative Work Behaviour, Innovation, Malaysia Higher Education, Total Quality Management, University, PLS-SEM

1. Introduction

The integration of innovation and quality management within an organisational framework plays a pivotal role in determining the success and overall performance of the organisation. Within the sphere of Higher Education (HE), innovation manifests prominently through academic advancements in teaching, research, and scholarly contributions. These advancements are propelled by academics' intentional actions to forge and disseminate new knowledge, including the creation and implementation of novel concepts and methodologies in their work (Yanfang & Isa, 2024). Such innovative activities encompass not only the generation of unique solutions to challenges within their fields of study but also the pursuit of collaborations and the practical application of these innovations in their respective institutions. Consequently, a comprehensive analysis of the innovative behaviours of HE academics is of paramount importance. Understanding these behaviours enables institutions to leverage their faculty's

creativity, thereby enhancing educational quality, research output, and institutional achievements (Frank & Meyer, 2020).

The relationship between quality management (QM) and innovation has received ample attention in the business sector. However, within the higher education domain, such studies are markedly limited (Sciarelli et al., 2020; Aminbeidokhti et al., 2016). Comprehensive research and theoretical exploration concerning the causal effects of QM in higher education are yet to be fully realised (Newton, 2013). Additionally, there is a scarcity of studies addressing QM's impact from a behavioural perspective (Cheah, Cheng & Hen, 2023; Escrig-Tena et al., 2018). It is also noteworthy that existing research has been largely preoccupied with the identification of critical QM factors that are effective within the higher education sector (Psomas & Anthony, 2017; Asif, Khan & Ahmad, 2013; Bayraktar, Tatoglu & Zaim, 2008). However, there is a distinct lack of investigation into the nuanced interrelations and interactive effects between the inputs, contexts, and outcomes of implementing QM in higher education institutions (Mahajan et al., 2014; Leiber, Stensaker, & Harvey, 2015). Hence, the present study addresses these gaps by investigating the causal impact of Quality Management Practices (QMP) influence on academics' innovation behaviours within the context of Malaysian Higher Education Institutions (HEIs).

1.1 The development of Quality Management Framework in Malaysian Higher Education

The movement of Quality Management Practices (QMP) in Malaysian higher education institutions gained momentum in 1996 with the Ministry of Education's launch of the Customer Charter, marking a deliberate effort to unify Malaysian Higher Education Institutions (HEIs) under a unified national QM framework gradually. In the same year, a suite of crucial legislative actions was undertaken to institutionalise QMP within both public and private HEIs in Malaysia. These legislative actions comprised the New Education Act 1996, the Private Higher Educational Institutions Act 1996, the National Accreditation Board Act 1996, and the National Council on Higher Education Act 1996. Another notable milestone was reached in 2007 with the formation of the Malaysian Qualifications Agency (MQA) through the MQA Act 2007. This Act empowered the MQA to enforce the Malaysian Qualifications Framework (MQF), which is intended to serve as the cornerstone for the quality assurance of higher education and as a benchmark for the criteria and standards of national qualifications (COPPA, 2018). As a result, the MQA has become the central statutory authority tasked with overseeing, regulating, and accrediting quality assurance measures within all public and private HEIs in Malaysia (COPPA, 2018).

1.2 Academics' Innovation Work Behaviour (IWB)

IWB encompasses the behavioural dimensions of individual creativity employed in the conceptualisation, development, and actualisation of innovative results within an organisational context (Wu et al., 2020). Drawing on the framework proposed by De Jong and Den Hartog (2010), this research categorises academics' IWB into four distinct stages. The initial stage, termed idea exploration, evaluates the discretionary efforts of academics in identifying innovative means to augment existing work activities, techniques, or services. Subsequently, the idea generation stage scrutinises the academics' ability to initiate novel solutions or methodologies aimed at rectifying issues in an unconventional manner. The third stage, idea championing, assesses the academics' resoluteness in advocating and propelling their newly conceived ideas or methodologies, even in the face of dissent or scepticism. The final stage, implementation, gauges the efficacy with which academics actualise their innovation through the incorporation of these new ideas or methods into tangible work outcomes. Collectively, these stages encapsulate a sequence of progressive innovative actions (Jason et al., 2021) and encompass various innovative activities, in which individuals may engage in any combination at any given time (De Jong et al., 2010).

2. Theoretical framework and Hypotheses Development

This research utilises general systems theory, focusing on the interactionist perspective. This approach views Higher Education Institutions (HEIs) as complex systems where inputs, contexts, and outcomes interact dynamically, with outputs revitalising the system, thus promoting a cycle of continuous innovation and change (Jollands et al., 2023; Katz & Kahn, 1966; Mele, Pels & Polcse, 2010). Quality management practices (QMP) in HEIs, regarded as crucial inputs, encompass evaluations, self-assessment, ongoing development, process monitoring, and the application of corrective actions to boost overall organisational outcomes (Vaugh et al., 2022). These practices also include policies and strategies integral to institutional decision-making and strategic objectives.

This study, anchored in the systems interactionist paradigm (Lewin, 1951; Katz & Kahn, 1966), investigates how the key output of innovation work behaviour (IWB) among academics, is influenced by the QMP in HEIs. Academics with a high level of IWB are adept at responding to changes, fostering innovation, and significantly improving their performance (Afsar et al., 2018). Higher Education Institutions (HEIs) that implement effective QMP create environments that support such innovative outcomes, leading to enhanced performance. This approach sets the groundwork for exploring the following dimensions of quality management (QM) within HEIs:

Top Management Commitment (TMC)

TMC emphasises the significance of top management vision and leadership commitment, serving as one of the core principles of QM philosophy. In the context of HEIs, TMC encompasses top management's strategic direction and foresight vision. This dimension underscores the necessity for managerial support and leadership commitment to the QM learning process, ensuring that the QM vision is instilled in every member of the organisation (Bayraktar et al., 2008). Research conducted in HEIs has shown that top management leadership is essential for the successful implementation of QM (Sadeh & Garkaz, 2015) and can directly influence academics' job performance (Puruwita, Jamia & Aziz, 2022) and foster organisational innovation (Sahudin et al., 2023; Escrig-Tena et al., 2018; Sciarelli et al., 2020). As a result, this study hypothesises that:

H1: Top management commitment has a significant impact on academics' innovative work behaviour.

Education and Training (ET)

The ET dimension of QM pertains to the development of technical, interpersonal, and conceptual skills among employees, enabling them to effectively implement quality management practices within the organisation. According to Bayraktar et al. (2008), continuous quality education and training for academics are vital in ensuring they possess the relevant QM work-related skills needed to enhance their academic excellence. Consequently, it is essential to identify specific QM training needs for academics to customise appropriate training workshops and address any skill gaps. Since ET activities directly impact individual behaviour, this study hypothesises that:

H2: Education and training provided by HEIs have a significant impact on academics' innovative work behaviour.

Customer focus (CF)

Customer focus is critical for QM implementation, involving delivering superior services and products to satisfy customers' current and future needs (Deming, 1986). In higher education, students are the main customers, highlighting the importance of strong student-academic relationships for a student-centred educational quality (Bayraktar et al., 2008; Sciarelli et al.,

2020). Effective QM in universities requires mechanisms for student feedback collection and the establishment of platforms for external input to ensure industry-relevant curriculum. Supporting student clubs and activities is also essential. Given that academics' innovation efforts are critical for creating an environment that meets students' needs and expectations, this study hypothesised that:

H3: Customer focus practices adopted by HEIs have a significant impact on academics' innovative work behaviour.

Process management (PM)

PM emphasises standardising processes to ensure the reliability and conformity of work procedures, reducing errors and ambiguities (Escrig-Tena et al., 2018). In higher education, process management aims for the continual enhancement of methods, policies, and procedures governing academic administration, teaching, and research (Calvo-Mora et al., 2005). Key educational processes like student enrolments, course registration, and examination results are designed to be foolproof, ensuring perfection, while comprehensive statistical methods are employed to manage and improve these workflows (Bayraktar et al., 2008). Numerous studies indicate that Process Management (PM) enhances organisational innovation. For instance, Kim et al. (2012) assert that PM facilitates both technical and organisational innovation, whereas Sciarelli et al. (2020) suggest PM creates a learning platform encouraging creativity among academics in higher education. Consequently, this study proposes the following hypothesis:

H4: Process Management adopted by HEIs has a significant impact on academics' innovative work behaviour.

Quality Control Improvement (QCI)

QCI in HEIs encompasses the systematic procedures for collecting and analysing quality data, regular measurement of quality standards, and the evaluation of academics based on these metrics (Psomas & Antony, 2017; Asif et al., 2013). QCI may incorporate standard operating policies, detailed with process flowcharts and guidelines to ensure uniform quality activity execution at all levels within HEIs, from top management to frontline academics. Numerous studies have identified QCI as a critical factor in emphasising an organisation's focus on quality, influencing other quality management practices (Zheng et al., 2017; Escrig-Tena et al., 2018). Hence, this study hypothesises that:

H5: Quality control improvement practices adopted by HEIs have a significant impact on academics' innovative work behaviour.

Benchmarking (BM)

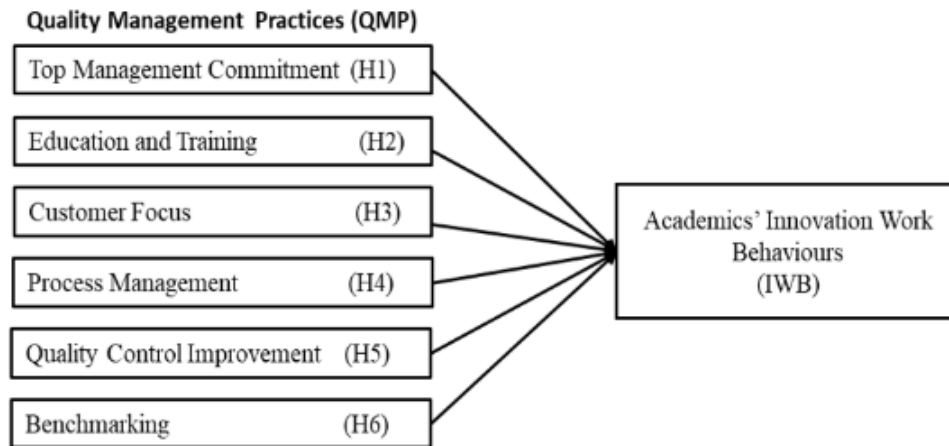
Benchmarking involves the study and collection of data on best practices, fostering continuous learning and organisational performance enhancement (Asif, 2015). In HEIs, benchmarking plays a crucial role in elevating teaching methods, curriculum development, graduate employability, industry partnerships, research activities, and global rankings, all contributing to academic excellence (Tasopoulou & Tsiotras, 2017; Asif, 2013). Moreover, benchmarking in educational settings can lead to advancements in operational processes, refinement of university strategies, and improvements in the evaluation of infrastructure (Padro & Sankey, 2018). Consequently, the following hypothesis is proposed:

H6: Benchmarking best practices adopted by HEIs have a significant impact on academics' innovative work behaviour.

Figure 1 illustrates the conceptual framework and all the hypotheses formulated for testing in this study.

Figure 1

Conceptual Framework



3. Research Methodology

This research adopted a cross-sectional study design. The data were collected from 14 public and private universities with self-accreditation statuses granted by the Malaysian Qualifications Agency (MQA) in Malaysia. The self-accrediting HEIs were selected for this study because the main criterion for the conferment of self-accreditation status by the MQA and the Ministry of Higher Education of Malaysia is that the institution must have a strong track record in implementing internal quality assurance systems. The data were collected via email surveys and the samples were selected using the stratified proportionate sampling method. This sampling method was administered to ensure that each university with self-accreditation status receives proper representation within the sample frame. A total of 586 complete questionnaires were returned and selected for statistical analysis.

The survey instrument utilised in this research was crafted through a rigorous review of existing literature and draws from validated scales. Academics' Innovative Work Behaviour (IWB) was assessed through a 10-item scale developed by De Jong and Den Hartog (2010). The inception of the QM components in this investigation drew upon practices suggested by Bayraktar et al. (2008) and Cheah et al. (2023). Each practice was then assessed in accordance with the Malaysian Qualifying Framework (MQF) to ensure congruence between the QM elements and their relevance per the MQF guidelines. This evaluation resulted in the identification of six distinct QM dimensions, comprising 21 items, to be integrated into this research. These dimensions include top management commitment, customer focus, process management, quality control improvement, benchmarking, and a pronounced focus on academic education and training by the university. Slight adjustments were made to the wording of items from both scales to better cater to the understanding of academics in Malaysian HEIs. The 21 items were appraised using a 5-point Likert scale, which spanned from 'strongly disagree' (1) to 'strongly agree' (5), with 'neutral' (3) representing the midpoint.

4. Data analysis and results

The analytical method employed for data examination is the Variance-based Partial Least Square-Structural Equation Model (PLS-SEM), a technique commonly accepted across various social science disciplines (Hair et al., 2022). The overview of the respondents' demographic and professional characteristics for this research is presented in Table 1.

Table 1

Characteristics of respondents

Characteristics	N=586	%
<i>Gender</i>		
Male	222	38.0
Female	364	62.0
<i>Age</i>		
40 and below	205	35.0
41 - 60	361	61.6
Above 60	20	3.4
<i>Academic position</i>		
Senior Professor	8	1.4
Professor	50	8.5
Associate Professor	126	21.5
Assistant Professor	245	41.8
Lecturer	150	25.6
Tutor/Teaching Assistant	7	1.2
<i>Length of employment</i>		
5 years and below	104	17.7
6 – 10 years	118	20.1
11 - 15 years	102	17.5
16 – 20 years	106	18.1
More than 20 years	156	26.6

4.1 Measurement Model Assessment

This study evaluates the validity of a reflective measurement model using four key metrics: indicator reliability, internal consistency, convergent validity, and discriminant validity (Hair et al., 2022). Indicator reliability is initially examined to confirm alignment with latent constructs, with factor loadings between 0.6 and 0.7 considered acceptable in social science. Internal consistency is assessed through Cronbach's Alpha (CA) and Composite Reliability (CR), with CA scores above 0.7 and CR values between 0.6 and 0.9 deemed satisfactory. Convergent validity is evaluated via Average Variance Extracted (AVE), requiring scores above 0.5. Discriminant validity is evaluated by employing the heterotrait-monotrait (HTMT) ratio of correlations criterion, which is derived from the confidence intervals for HTMT utilising 5,000 bootstrapping samples. Henseler et al. (2015) suggest a threshold of 0.90 for structural models that include conceptually similar constructs. The HTMT values are considered significant if the upper boundary of the 95% percentile bootstrap confidence interval (CI) (one-sided) falls below 0.90. The findings from the analysis are delineated in Table 2 and Table 3. Collectively, the results corroborate that the measurement model meets the requisite requirement for structural evaluation.

Table 2

Scales of items and results of measurement model assessment

Scales items	Factor Loadings	CR	CA	AVE
<u>Total Quality Management</u>				
Benchmarking (BM)		0.904	0.904	0.912
BM1	0.958			
BM2	0.952			
Process Management (PM)		0.880	0.840	0.666
PM1	0.896			
PM2	0.861			
PM3	0.914			
PM4	0.899			
Quality Control Improvement (QCI)		0.937	0.922	0.865
QCI1	0.902			
QCI2	0.903			
QCI3	0.849			
Customer Focus (CF)		0.884	0.883	0.740
CF1	0.897			
CF2	0.902			
CF3	0.919			
CF4	0.897			
Education and Training (ET)		0.949	0.931	0.878
ET1	0.914			
ET2	0.946			
ET3	0.950			
Top Management Commitment (TMC)		0.912	0.907	0.728
TMC1	0.826			
TMC2	0.857			
TMC3	0.857			
TMC4	0.864			
TMC5	0.863			
<u>Innovative Work Behaviours IWB)</u>		0.900	0.898	0.523
IWB1	0.706			
IWB2	0.692			
IWB3	0.618			
IWB4	0.674			
IWB5	0.681			
IWB6	0.752			
IWB7	0.761			
IWB8	0.765			
IWB9	0.753			
IWB10	0.693			

Table 3

Discriminant Validity using HTMT ratio of correlations

	BM	CF	ET	PM	QCI	TMC
BM						
CF	0.670 (0.59, 0.74)					
ET	0.580 (0.50, 0.65)	0.762 (0.71, 0.81)				
PM	0.803 (0.74, 0.86)	0.680 (0.60, 0.75)	0.568 (0.49, 0.64)			
QCI	0.836 (0.78, 0.87)	0.706 (0.63, 0.77)	0.587 (0.51, 0.66)	0.824 (0.79, 0.85)		
TMC	0.699 (0.62, 0.76)	0.817 (0.79, 0.84)	0.797 (0.75, 0.84)	0.699 (0.62, 0.76)	0.757 (0.68, 0.81)	
IWB	0.293 (0.22, 0.37)	0.359 (0.3, 0.42)	0.239 (0.17, 0.31)	0.321 (0.24, 0.40)	0.232 (0.16, 0.31)	0.345 (0.28, 0.41)

Note: The values within the brackets denote the lower and upper limits of the 95% confidence interval.

4.2 Structural Model Assessment

This study evaluates the structural model's robustness by measuring its explanatory power and predictive relevance for endogenous constructs using the coefficient of determination (R^2) and Stone-Geisser's Q^2 value, respectively. An R^2 value of at least 0.10 and a Q^2 value above zero indicate satisfactory predictive accuracy (Hair et al., 2022). Table 4 confirms the model meets these essential benchmarks for assessment.

The study engaged in testing six hypotheses to reveal the significance of relationships between the variables in question. For this purpose, direct path coefficients and their corresponding t-statistics were ascertained through the execution of a bootstrap resampling method, consisting of 5,000 iterations. As shown in Table 4, the findings indicate that there is a significant positive relationship between top management commitment (H1), customer focus (H3), and process management (H4) in relation to academics' innovative work behaviour. Conversely, a negative relationship was observed between quality control improvement (H6) and academics' innovative work behaviour. Relationships involving education and training (H2) and benchmarking (H5) were found to be statistically insignificant.

Table 4

Endogeneous constructs, path coefficients and summary of hypotheses testing

Endogenous construct		R²	Q²			
Innovative work behaviour (IWB)		0.155	0.072			

Hypotheses	Path coefficients	β	SD	t-values	P-values	Decision
H1	Top Management Commitment -> IWB	0.213	0.090	2.381	0.017	Accepted
H2	Education and training -> IWB	-0.086	0.060	1.426	0.154	Rejected
H3	Customer Focus -> IWB	0.173	0.074	2.345	0.019	Accepted
H4	Process Management -> IWB	0.247	0.069	3.582	0.000	Accepted
H5	Benchmarking -> IWB	0.129	0.069	1.877	0.061	Rejected
H6	Quality Control Improvement -> IWB	-0.281	0.086	3.276	0.001	Accepted

5. Discussion

The findings support the notion that organisational efforts to establish and improve QM factors, especially top management commitment and customer focus relate positively to academics' innovative work behaviours. The findings are consistent with the research findings from Lašáková et al. (2017). They indicated that good leadership support and collaboration with stakeholders (customers) are essential factors that foster educational innovation among academics. Camara and Pereira-Guzzo (2015) also concluded that positive social relationships in the working environment could foster innovation in HEIs. Process management is also found to have a significant and positive association with innovative work behaviour in line with Escrig-Tena et al. (2018) results indicated that process management is the key driver for innovation. As Zeng et al. (2015) explain, process management incorporates the utilisation of quality methods, which facilitate order and control. This, in turn, generates technical infrastructure support for innovation among academics (Kottmann et al., 2024).

There is a notable inverse relationship between Quality Control Improvement (QCI) and the innovative work behaviour of academics, suggesting that enhanced QCI can lead to linear thinking and discourage innovation beyond standard procedures. This focus on conformity can entrap employees in outdated methods, stifling progress and innovation (Song & Su, 2015; Escrig-Tena et al., 2018). This phenomenon is particularly pronounced in the Malaysian academic context where stringent benchmarks set by the MQA have shifted from encouraging "benchmarking with best practices" to enforcing "complete compliance with prescribed standards," freedom (COPPA, 2008; COPPA, 2018), thereby constraining academic creativity and innovation. Furthermore, the bureaucratic culture, characterised by excessive procedures and paperwork, exacerbates delays and workload, may further impede academic progress and innovation (Da Wan et al., 2015; World Bank, 2022).

The impact of benchmarking practices on the innovative behaviour of academics in Malaysian Higher Education Institutions (HEIs) is not significant. This may be due to the prevalent use of benchmarking primarily to meet programme compliance requirements, rather than to identify and adopt best practices that could enhance research or teaching quality which are critical to academic innovation. Additionally, this study reveals that the educational and training support provided by Malaysian HEIs does not foster innovative work behaviour among academics. This shortfall may be linked to the narrow scope of Quality Management training,

which focuses on guiding academics to comply with COPIA and COPPA guidelines rather than encouraging an understanding and integration of total quality management principles in their professional practices. This compliance-focused training model may impede creativity and innovation within academics by not fostering QM practices that encourage the culture of experimentation and the embrace of novel methodologies. Such practices are essential for developing a continuous improvement mindset, crucial for effective Quality Management in the business sector, yet may not fully translate to the distinct context of Higher Education (HE), where flexibility and creativity are paramount.

6. Implication and Conclusion

From theoretical and contextual perspectives, this research extends the scope of QM literature in the Malaysian higher education context by evaluating the impact of QM practices on academics' behavioural outcomes, employing the system interactionism theory as a guiding framework. The systems theory offers a valuable lens to investigate the complex relationships between individuals, organisations, and their environments, which is highly relevant in the context of higher education institutions (Sahney et al., 2004). System interactionism theory, as utilised in this study, offers a novel lens through which to understand how QM practices act as inputs, shaping the innovative behavioural and performance outputs of academics (Cheah et al., 2023). This research direction aligns with and extends the work of Leiber et al. (2015) and Stensaker et al. (2011), who highlighted a significant knowledge gap regarding empirical evaluation of the direct impact and effect mechanisms of QM practices in higher education settings. By building on these theoretical foundations, this study advances the theoretical and empirical understanding of the causal-impact relationship between QM practices, academic behaviour and innovation in higher education institutions.

On practical implications, the findings provide vital insights for policymakers, top management managers and practitioners to prioritise the right QM practices to enhance innovation in the HE arena by evaluating the critical QM practices that will positively or negatively impact academics' innovative work behaviours. Given that academics are recognised as the primary asset to drive innovation in HEI nowadays, and innovation has become such a crucial component contributing to national development, it is surprising that scholarly research focusing on the impact between QM and innovative behaviour focusing on academics in higher education institutions is so limited. The current findings may enhance the contribution of knowledge in this area. The finding of this study proves that top management commitment and proper process management are critical QM practices that enhance innovative work behaviour among Malaysian HE academics. Furthermore, priorities focusing on students as primary customers are also necessary to promote academic innovativeness in Malaysian HEIs.

Conversely, the findings in this study denote that the imposition of stringent quality control improvement (QCI) stipulations seems to substantially hinder the innovative work behaviours of academics. This observation brings to the fore an urgent need for a critical reassessment of QCI practices considering loosening the tightly knit regulations to allow room for flexibility and autonomy, thus encouraging academics to think out of the box and venture into uncharted territories without the constant apprehension of stringent repercussions. Considering this, it is indispensable for the Malaysian HEIs to foster a culture that strikes a harmonious balance between maintaining quality metrics and encouraging innovation mindset.

This study highlights the insignificance of the existing benchmarking initiatives and educational training support extended by Malaysian Higher Education Institutions (HEIs) in encouraging innovative work behaviour amongst the academic fraternity. From a managerial standpoint, this observation signals a pressing need for sweeping reforms in HEIs, suggesting a shift from compliance-driven benchmarking, as mandated by COPPA and COPIA, to also encompass a strategy incorporating strategic-orientation benchmarking. This enriched approach would enable HEIs to proactively seek out and apply the best practices adopted by other successful organisations to gain a competitive advantage. The primary objective of strategic benchmarking should target best practices that can help the institutions to inculcate a quality-centric culture that constantly promotes innovation in research and pedagogical practices.

Furthermore, QM training modules may be revised to transcend beyond the rigidity of COPIA and COPPA guidelines and place a stronger emphasis on understanding the foundational principle of total quality management. This would foster a deeper appreciation of the decentralised nature of total quality management, which fundamentally advocates for an organisation-wide initiative to integrate quality into every operation through continuous improvements and innovation (Deming, 1986). The goal of such training should be to foster a mindset that prioritises quality and innovation in every aspect of an academic's role and responsibilities within the institution. Consequently, the educational and training endeavours facilitated by the HEIs should develop to educate the academics about the spirit of organisational-wide continual improvement, motivating each academic to staunchly advocate for and maintain a high standard of quality in all their professional pursuits.

In conclusion, the majority of studies in the existing literature examining the link between QM practices and innovation have confined themselves to an organisational level of inquiry (e.g., Aminbeidokhti et al., 2016; Sciarelli et al., 2020), overlooking the imperative of delving into individual innovation from a behavioural vantage point. This study contributes to bridging this knowledge gap, underscoring the necessity to accord priority to academics' innovative behaviour, as this element is pivotal in steering organisational innovation within HEIs. Therefore, a profound understanding of the innovative work proclivities of HEI academics stands as an essential ingredient in elevating organisational innovation and achieving success. Moreover, the insights derived from this investigation might hold relevance for HEIs throughout the Asia domain, considering the uniformity in foundational values and principles that characterise total quality management practices in both commercial and pedagogical entities (Al Mohaimen et al., 2022).

7. Co-Author Contribution

The authors declare no conflicts of interest regarding this article. Author 1 conducted the literature review, collected and analysed the data, and wrote the manuscript. Authors 2 and 3 provided critical feedback on the data analysis and findings, and ensured the coherence and structure of the manuscript.

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