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Using Knowledge Management Systems to Improve Decision-Making Quality: Evidence from Business Students in Higher Education

Latifa Alzahrani

Department of Management Information Systems

College of Business Administration

Taif University

Email: lszahrani@tu.edu.sa

ORCID iD: https://orcid.org/0000-0003-3182-0813

Saudi Arabia

ABSTRACT

Knowledge management systems (KMS) have gradually become pivotal to supporting information access, collaboration, and decision-making in higher education settings. Despite the widespread adoption of KMS by universities, students' use of them is not always optimal. Moreover, although several universities invest heavily in KMS, digital repositories, and knowledge-sharing platforms, limited empirical research investigates how specific KMS dimensions influence students' academic decision-making quality. This study investigates the relationships between system quality, knowledge quality, knowledge sharing, KMS usage, and decision-making quality among business students in a Saudi Arabian context. Using a quantitative survey of undergraduate and postgraduate business students (n= 376), the proposed conceptual framework was tested using partial least squares structural equation modeling. Findings show that system quality, knowledge quality, and knowledge sharing significantly enhance KMS usage, which in turn leads to improved decision-making quality. While knowledge quality and knowledge sharing show direct positive effects on decision-making quality, system quality also exerts both direct and indirect effects through KMS usage. The study contributes to the growing literature on knowledge management in higher education by demonstrating how KMS functionalities shape academic decision behaviors in digitally transforming universities. The findings extend KMS research by demonstrating that the benefits of digital knowledge environments are realized primarily through active usage and collaborative engagement.

KEYWORDS: knowledge management systems; higher education, system quality; knowledge quality; knowledge sharing; decision-making quality

I. Introduction

Over the past thirty years, rapid advancements in information and communication technologies have dramatically reshaped knowledge and its societal role, enabling the widespread and free flow of information [1] [2]. This transformation has not been uniform; varying sectoral contexts have resulted in diverse challenges during policy and practice changes [3]. Education, in particular, has experienced significant shifts, leading to the rise of new learning modalities such as e-learning, blended learning, and technology-enhanced education [4]. Tools like learning management systems (e.g., Canvas, Moodle, Blackboard), collaborative knowledge sharing (KS) platforms (e.g., Microsoft Teams, Google Workspace, Slack), and personal knowledge management tools (e.g., Notion, Evernote, Zotero, Mendeley) now play a central role in content sharing and course activity design [5]. A Knowledge Management System (KMS) integrates these functions, facilitating both explicit and tacit knowledge management across organizations [6]. KMS fosters knowledge sharing, collection, creation, and application, thereby enhancing institutional competitiveness [5]. In Saudi Arabian universities, KMS implementation aligns with national policy objectives, including the Saudi Vision 2030 program, which promotes educational equity for all students [7] [8]. However, achieving this vision involves considerable investment, not only in software licenses but also in training staff and students [7].

As higher education institutions embrace digital transformation in line with global innovation priorities, it is increasingly important to understand how KMS usage influences the quality of students' academic decisions [9] [8] [10]. KMS collect and manage educational and student data, transforming it into actionable information that supports decision-making quality (DMQ) by delivering real-time insights into academic activities [10]. DMQ is shaped by factors such as system quality (SQ), information quality, risk, uncertainty, and complexity [11] [12]. While prior research has explored KMS in terms of system use, perceived ease of use, user satisfaction, and perceived usefulness [13] [14], these perspectives offer limited insights into the full value of KMS [12]. Notably, the connection between KMS and DMQ has received little attention in higher education, even though students frequently depend on these systems [9]. DMQ encompasses students' capacity to make informed, accurate, timely, and effective academic decisions, such as choosing topics, solving problems, preparing assignments, and evaluating credible sources [5] [9].

Unlike commonly examined outcomes (e.g., academic performance, user satisfaction, perceived usefulness, etc.), DMQ attains the quality of the decision-making process itself rather than its outcomes [13] [14]. Academic performance signals the learning activities, but perceived usefulness signifies students' beliefs concerning technology usefulness [15]. In contrast, DMQ focuses on how efficiently students evaluate information that aids academic decisions [16] [17]. Due to this distinction, it provides a cognitive mechanism that leads to learning outcomes [17]. Business students rely on KMS due to the analytical characteristics of their coursework and the required efficient academic decision-making for different course activities [18]. These activities require frequent use of

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knowledge resources, making them more dependent on KMS compared to students in less decision-intensive disciplines [19]. As a result, examining business students provides a suitable context for understanding how KMS usage influences decision-making quality [18] [19]. This significant gap highlights the need to investigate how KMS influence meaningful behavioral outcomes in business students [1] [18] [19]. Existing studies have mainly focused on system usage, satisfaction, and perceived usefulness, providing limited evidence on how these systems influence students' decision-making processes. Therefore, in academic contexts, the role of KMS in shaping DMQ remains insufficiently understood.

This study introduces DMQ as a distinct outcome variable, shifting the focus from system-related perceptions to cognitive decision outcomes. Moreover, it develops a theoretically grounded framework based on the DeLone & McLean information systems success model that explains how SQ, knowledge quality (KQ), and KS influence DMQ through KMS usage. Additionally, it provides empirical evidence from the context of higher education, where students actively rely on KMS for academic decision-making.

For this, this study investigates the following research question (RQ):

RQ: How do knowledge, system, and social factors translate into improved decision-making quality in KMS among business students, and what role does system usage play in this process?

The rest of the paper is structured as follows: Section II illustrates the existing literature. In Section III, the proposed conceptual framework adopted in the study has been explained. Moreover, the methodology, including research design, data collection, and data analysis, has been illustrated in Section IV. Section V discusses the statistical results, followed by a discussion concerning implications and limitations in Section VI. Lastly, Section VII illustrates the conclusion with future directions.

II. Literature Review

A. KMS as Academic Knowledge Infrastructure

KMS functions as an academic knowledge infrastructure that shape how students access, interpret, and apply knowledge in learning tasks [9] [10]. Emran and Teo [20] pointed out that the success of KMS eventually relies on student use, and the benefits of these systems are minimized if students do not use them. Previous literature in developing countries and Saudi Arabia in particular pointed out that the key functionalities of KMS are still not widespread [7] [8]. Martins et al. [21] demonstrated that only some KMS functionalities are utilized, and students use KMS, in most cases, for information retrieval. Smith and Abouammoh [22] highlighted that one of the main challenges of LMSs in Saudi Arabian institutions is a lack of or inadequate training and support, software issues that disrupt classroom teaching, blocked websites, and infrastructure failure in the universities. In academic settings, previous studies' findings suggest that the value of KMS extends beyond access and satisfaction, influencing how students process information and make academic decisions. Therefore, understanding KMS efficiency requires examining not only whether students use these systems, but how such use contributes to the DMQ.

B. Decision-Making Quality in the Academic Context

Previous studies pointed out that students' decision-making relies on cognitive and contextual factors (e.g., problem-solving ability, self-regulation, or the ability to evaluate alternatives) [23] [15]. Ritter and Mostert et al. [23] stated that decision-making styles are associated with academic achievement, suggesting that the quality of decisions can shape learning outcomes. Similarly, Garcia and Pekrun [24] confirmed that cognitive, emotional, and contextual factors influence students' academic decisions. Reay [25] stated that the personal, academic, family, and socioeconomic dimensions influenced the choices of students. Moreover, Balkis [26] found a positive relationship between the intuitive decision-making style and the avoidance of procrastination. Research on student decision processes confirms that cognitive, emotional, and contextual factors influence how students make academic decisions [23] [15]. Previous studies showed that technology-aided decision-making helps to evaluate learning options and improves educational effectiveness in learning environments [27] [10]. However, prior studies have focused more on decision-making styles, academic performance, and technology adoption than on the quality of the decision process itself [24] [25] [26]. Academic performance reflects learning outcomes, but DMQ captures students' ability to evaluate information, compare alternatives, and make appropriate academic choices, which makes DMQ a distinct variable in technology-supported learning environments. This leaves an important gap in understanding how KMS shapes learning outcomes and the quality of students' academic decisions.

C. System Quality, Knowledge Quality, and Knowledge Sharing

SQ, KQ, and KS shape how effectively students interact with KMS and convert information into useful academic judgments. Previous studies highlighted that system characteristics are vital in shaping user engagement, as robust systems reduce effort and facilitate interaction [11] [12]. Researchers highlighted that in time-constrained learning environments, students usually manage complex tasks; technical conditions are crucial for facilitating interaction with KMS [16] [17]. KMS incorporate technological potentials to create environments in which knowledge can be accessible and interpretable by exchanging perspectives and co-constructing understanding [17]. These constructs shape how users interact with information for quality decision-making in integrated knowledge environments [28]. Results have proven that there is a positive relationship between KS and innovation at higher education institutions [29]. Previous studies have fundamentally concluded that KS improves the refinement of ideas within higher education institutions, supporting more effective knowledge use and better academic outcomes [29] [30] [31]. Therefore, SQ supports usability, KQ supports relevance and reliability, and KS supports the exchange and refinement of ideas. These factors could improve how students process information to make academic decisions.

D. Usage as the Behavioral Mechanism Linking KMS to Decision Quality

Usage serves as the behavioral mechanism through which system, knowledge, and social factors are translated into DMQ [32] [33]. The impact of system, knowledge, and social factors on academic outcomes is captured through patterns of system usage [34] [35]. Previous studies highlighted that KMS depends on interdependent processes of knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application [35] [36] [37]. Sahibzada et al. [36] argued that value emerges not from

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knowledge alone but from its application in decision-relevant contexts. Technology may help in this regard by incorporating knowledge within organizational processes. Likewise, Mustapha et al. [37] showed that technology facilitates knowledge integration and utilization by organizing and updating information for practical use. In academic contexts, where students must navigate complex information landscapes and make judgments under uncertainty, meaningful engagement with KMS is therefore critical [38]. It is through such engagement that students access, evaluate, and integrate knowledge, ultimately enhancing the quality of their academic decision-making [16]. In this context, usage could be a pathway that is not interpreted as an outcome of system characteristics. Therefore, without active use, even robust systems and information cannot influence DMQ. Accordingly, usage is expected to mediate the effects of SQ, KQ, and KS on DMQ.

III. Conceptual Framework

The conceptual framework proposes that DMQ is influenced by technical, knowledge-related, and social factors, with KMS usage acting as a key behavioral mechanism through which these factors are translated into cognitive outcomes. Fig. 1 illustrates the conceptual framework that has been based on DeLone & McLean's information systems success model [11], extended to incorporate the behavioral dimension of KS.

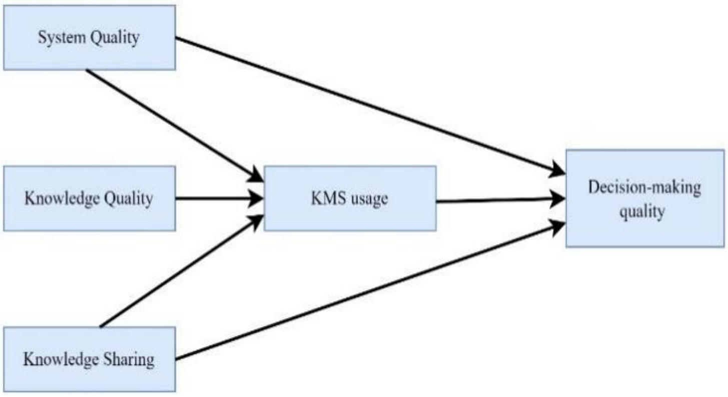

Figure 1: The proposed conceptual framework

A. Knowledge Quality

KQ is defined as the quality of explicit knowledge gained from online sources, focusing on its truthfulness, justification, usefulness, innovativeness, and applicability [11]. The quality of knowledge in the technological era is critical, as it may be untrustworthy, unjustified, or inapplicable [39]. Similarly, easier and faster access to information does not guarantee quality knowledge gain [40]. Therefore, in KMS, the content should consist of correct, innovative, and useful information for individual learning, and can be applied, modified, and expanded for various educational purposes, leading to high KQ [39] [40]. High-quality knowledge reduces uncertainty, enhances understanding, and supports effective cognitive processing in students [39]. High-quality knowledge improves the reliability and relevance of information available to students, which increases the likelihood that they will engage with the system as a trusted source for academic decision-making.

H1: KQ has no significant effect on KMS USE.

B. Knowledge Sharing

KS is described as the action of a person willingly contributing, exchanging, and collaborating on information within the platform [41]. It is an essential component of KMS that entails the sharing of knowledge, concepts, abilities, and suggestions between people on a digital platform [42]. Researchers pointed out that KS increases learning and supports richer decision-making in learning environments by exchanging resources and engaging in collaborative interactions [41] [42]. Accordingly, KS not only enriches the information available to students but also stimulates critical evaluation and reflection, thereby improving DMQ. Additionally, active participation in KS activities is expected to increase engagement with KMS, leading to higher system usage.

H2: KS has no significant effect on DMQ.

H3: KS has no significant effect on KMS USE.

C. System Quality

SQ refers to the desirable characteristics of an information system that include ease of use, system flexibility, reliability, intuitiveness, sophistication, flexibility, and response times [11]. Researchers argued that SQ is concerned with issues such as system bugs, user interface, ease of use, and sometimes even quality and maintenance of KMS [33] [43]. Robust systems reduce effort, improve usability, and facilitate interaction that increases system usage with efficient information, which could enhance DMQ. Students are more likely to engage with robust systems, increasing their exposure to relevant knowledge and supporting better academic decisions.

H4: SQ has no significant effect on DMQ.

H5: SQ has no significant effect on KMS USE.

D. KMS Usage

KMS USE is defined as an individual's intentional actions of using KMS for KS in long-term practice, which could include creating knowledge content, transferring knowledge to others, requesting knowledge from others, and two-way constructive discussion and communication through the KMS [11]. KMS USE is defined by the frequency, duration, and depth of interaction between the user and the system. In higher education, frequent KMS USE enables students to benefit from platform functionalities (e.g., accessing materials, retrieving knowledge, revising content, etc.) [44]. Accordingly, KMS USE is expected to directly influence DMQ and mediate the effects of knowledge-related and system-related factors. Moreover, only KMS characteristics and knowledge conditions do not guarantee improved decision-making; their effects are realized only when students actively engage with the KMS.

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Therefore, usage represents the behavioral pathway through which technological and knowledge-related factors aid better DMQ.

H6: KMS USE has no significant effect on DMQ.

H7: KMS USE does not mediate the relationship between KS and DMQ.

H8: KMS USE does not mediate the relationship between KQ and DMQ.

H9: KMS USE does not mediate the relationship between SQ and DMQ.

IV. Methodology

A. Research Design

This study utilized a quantitative, cross-sectional research design to examine how KMS influence the DMQ of business students in higher education. Survey approach plays an important role in understanding the higher education landscape to assess student outcomes [45]. However, declining survey participation rates threaten this source of vital information and its perceived utility [46]. In this study, we attained students' perceptions of KMS characteristics, knowledge-related behaviors, usage patterns, and decision-making outcomes.

B. Participants

This study involved a well-defined population of undergraduate and postgraduate business students in one of the largest universities in Saudi Arabia. These university students frequently use KMS (e.g., learning management systems, digital libraries, academic repositories, and discussion platforms) for various learning purposes. We employed a convenience sampling method that draws samples from that portion of the population which the researcher finds most accessible. This is a fast, cheap, and easily accessible data collection method that is conducted using an anonymous online questionnaire distributed through various sources (e.g., LMS, Social media platforms, institutional communication channels) through voluntary participation. The ethical approval for this study was acquired from the university research ethics committee. All participants were informed about the purpose of the study, and informed consent was obtained before data collection.

C. Instrument Development

The questionnaire used in this study was adapted from the conceptual model that covers the multidimensional factors of KMS in higher education (Table I). The questionnaire was designed to investigate the KMS characteristics, knowledge-related behaviors, usage patterns, and decision-making outcomes in higher education. During the research stages, the questionnaire was developed and revised by the experts. The demographic information of participants was also collected. Furthermore, a pilot study was conducted with a few students to resolve any ambiguity. After piloting, the questionnaire was revised, and, especially, its layout was improved and clarified. The students were asked to state their views on each statement on a five-point Likert scale from strongly disagree (1) to strongly disagree (5). The questionnaire includes items measuring SQ (perceived reliability, accessibility, responsiveness, and ease of use), KQ (accuracy, relevance, completeness, and timeliness of digital academic content), KS (extent of participating in online discussions, contributing materials, and collaborating with peers), USE (frequency, depth, and purpose of interacting with university KMS platforms), and DMQ (the perceived quality, accuracy, timeliness, and informed nature of academic decisions).

Table I: Student Questionnaire

Construct	Item	Item
System quality	SQ1	The university's knowledge management system is easy to use
	SQ2	The system is reliable and functions without technical problems
	SQ3	The system is accessible whenever I need it for my academic tasks
	SQ4	The system responds quickly when I use it
Knowledge quality	KQ1	The knowledge provided by the system is accurate
	KQ2	The information available in the system is relevant to my academic needs
	KQ3	The content in the system is complete and sufficient for my studies
	KQ4	The knowledge in the system is up to date
Knowledge sharing	KS1	I share academic materials with other students through the system
	KS2	I participate in discussions or forums within the system
	KS3	I exchange ideas and experiences with my peers through the system
	KS4	The system encourages collaboration among students
KMS usage	USE1	I frequently use the system for my academic activities
	USE2	I rely on the system when completing assignments and coursework
	USE3	I use the system to access academic resources regularly
	USE4	The system is an essential part of my learning process
Decision-making quality	DMQ1	The system helps me make informed academic decisions
	DMQ2	I make better academic choices when using the system
	DMQ3	The system improves the accuracy of my academic decisions
	DMQ4	Using the system helps me make decisions more efficiently

D. Data Analysis

In this study, the SmartPLS tool was used to perform Partial Least Squares Structural Equation Modeling (PLS-SEM) to investigate the study's theoretical framework. It analyzes both the measurement model (reliability and validity, including Cronbach's alpha, composite reliability, and Average Variance Extracted) and the structural model (relationships between constructs through path coefficients) [47]. The tool has the ability to estimate the hypothetical relationships among the underlying factors in a constructed model [48]. Also, it can estimate the strengths of factors within the

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theoretical model [47]. Remarkably, the SEM is well-known for its exclusive features of managing complex correlations among variables of the theoretical model [49].

V. Results

We collected data from 376 students, of which there were 162 male respondents, making up 43.1% of the total, and 214 female respondents, accounting for 56.9%. Regarding age distribution, 24 respondents (6.4%) were under 20 years of age. The age group of 20-40 years had the highest representation, with 288 respondents (76.6%), and the age group of 25-29 years comprised 19 respondents (5.1%), while the age group over 30 included 45 respondents (12.0%). Moreover, the data include 52 diploma students (13.8%), 271 bachelor's students (72.1%), and 53 master's students (14.1%). The demographic statistics are shown in Table II.

Table II: Demographic Statistics

Variable	Category	Frequency	Percentage (%)
Gender	Male	162	43.1
	Female	214	56.9
Age	Under 20	24	6.4
	20-24	288	76.6
	25-29	19	5.1
	30 and above	45	12
Education Level	Diploma	52	13.8
	Bachelor	271	72.1
	Master	53	14.1
Total respondents		376	100

A. Construct Reliability and Validity

Construct reliability and validity of the measurement model were evaluated based on composite reliability, convergent and discriminant validity [47]. Reliability refers to the extent to which an instrument measures items consistently [48]. Internal consistency has been used to test the reliability of measures. Cronbach's alpha measure has been employed in measuring internal consistency, which estimates the degree of homogeneity among items by calculating a reliability coefficient. Generally, if Cronbach's alpha exceeds 0.700, then there is sufficient homogeneity among items [47] [48]. Table III reveals that Cronbach's alpha values obtained for constructs used in the survey are all above 0.700. This means that items within each construct are homogeneous. On the other hand, composite reliability provides information regarding the extent to which constructs in the measurement model can be described by their corresponding items. If composite reliability is higher than 0.700, then constructs are adequately defined by their items (Table 3).

Fornell et al. [50] stated that AVE is the stronger measure of convergent validity. Convergent validity is considered adequate when the AVE is no less than 0.5, since the latent construct accounts for more than half of the variance of the items of this construct on average. All the constructs DMQ, KQ, KS, SQ, KMS, and USE demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0.802 to 0.883, consistently exceeding the 0.70 threshold. Construct reliability was further confirmed by composite reliability values, all of which surpassed 0.70. Additionally, the AVE for each construct ranged from 0.630 to 0.739. Since all AVE values exceeded the 0.50 benchmark, adequate convergent validity was established across the model. Notably, KS exhibited the highest overall reliability and validity indicators among the tested constructs. Collinearity was assessed using the variance inflation factor (VIF) to examine potential multicollinearity issues among the indicator variables. In PLS-SEM, VIF values below 5.0 are generally considered acceptable, while values below 3.3 indicate more conservative assurance that collinearity is not problematic [47]. All indicator-level VIF values are below the commonly accepted threshold of 5.0 and also below the more conservative threshold of 3.3. This confirms that multicollinearity is not a concern in the measurement model. The indicators contribute distinct information to their respective constructs without excessive overlap. Thus, the measurement model demonstrates good reliability and validity.

Table III: Construct Reliability and Convergent Validity of the Measurement Model

	Cronbach's alpha	Composite reliability	AVE	VIF Range
DMQ	0.802	0.871	0.630	1.435 - 2.314
KQ	0.813	0.875	0.638	1.398 - 2.246
KS	0.883	0.919	0.739	2.291 - 3.024
SQ	0.855	0.901	0.695	1.787 - 2.660
USE	0.859	0.905	0.703	1.730 - 2.424

Discriminant validity is the extent to which measures of distinct constructs are independent of each other [50]. Similarly, the construct explains more variation in its own indicators than in indicators of other constructs in the structural model [47].

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Discriminant validity has been established through the Fornell-Larcker and Heterotrait-monotrait ratio (HTMT). For all constructs in the model (Fornell-Larcker method), the square root of AVE is greater than the inter-construct correlations, as shown in Table IV. This indicates that each construct shares more variance with its own measurement indicators than with other constructs, confirming adequate discriminant validity of the measurement model. In addition, all HTMT values are below the recommended threshold of 0.85, indicating that the constructs are empirically distinct.

B. Structural Model Evaluation

Once the reliability and validity of the measurement model were confirmed, the structural model was evaluated. Fig. 2 presents the final structural model together with the path coefficient results. The structural model examines how SQ, KQ, and KS influence KMS USE and subsequently enhance DMQ among business students in higher education. Relationships reflect a technology-enabled knowledge framework in which system characteristics and knowledge processes translate into improved academic decision outcomes. The structural model indicates that KMS USE mediates the effects of SQ but not KQ on DMQ, while KS influences DQ both directly and indirectly.

Table IV: Discriminant Validity Assessment (Htmt + Fornell-Larcker)

	Fornell-Larcker					**HTMT**			
	DMQ	**KQ**	**KS**	**SQ**	**USE**	**DMQ**	**KQ**	**KS**	**SQ**
DMQ	0.793								
KQ	0.603	0.799				0.738			
KS	0.649	0.661	0.860			0.758	0.758		
SQ	0.624	0.699	0.682	0.834		0.723	0.824	0.781	
USE	0.684	0.552	0.632	0.601	0.839	0.813	0.632	0.718	0.681

This structure highlights that technological and informational factors must translate into active engagement to produce measurable improvements in decision outcomes. SQ, KQ, and KS jointly explain 46.0% of the variance in KMS USE. This indicates moderate explanatory power within behavioral research contexts. SQ, KS, and KMS USE explain 56.8% of the variance in DMQ. This reflects moderate to strong predictive capability and suggests substantial model relevance for academic decision outcomes. KS emerges as the strongest predictor of KMS USE, followed by SQ. KQ shows a smaller but statistically significant influence. KMS USE demonstrates the strongest effect on DMQ, indicating that actual engagement with the system plays the most influential role in improving academic decision outcomes. KS and SQ also contribute significantly.

The significance of each path was assessed using the standardized path coefficient (β), t-value, and p-value. The hypothesis for each relationship states that there is no significant effect between the constructs (β= 0). The structural relationships were evaluated using bootstrapping. Moreover, Table V presents the explanatory power and effect sizes of the structural model, showing that the model explains a moderate variance in KMS USE (R^2 = 0.460) and a moderate-to-strong variance in DMQ (R^2 =0.568). Effect size results indicate that KMS USE has the strongest impact on DMQ (medium effect), while other relationships exhibit small to small-to-medium effects.

Table V: Model Explanatory Power and Effect Size

Construct / Path	**R^2**	**Adjusted R^2**	**f^2**	**Interpretation**
USE	0.460	0.456	-	Moderate
DMQ	0.568	0.565	-	Moderate-Strong
USE → DMQ	-	-	0.198	Medium
KS → USE	-	-	0.120	Small-Medium
SQ → USE	-	-	0.054	Small
KQ → USE	-	-	0.034	Small
KS → DMQ	-	-	0.069	Small
SQ → DMQ	-	-	0.051	Small

The alternative hypothesis states that a significant relationship exists (β ≠ 0). KQ has a positive and statistically significant effect on KMS USE. Although the magnitude of the effect is relatively small, improvements in the accuracy, relevance, completeness, and timeliness of knowledge significantly increase KMS USE among students. KS has a positive and statistically significant effect on DMQ. Collaborative exchange and interaction within the system contribute meaningfully to improved academic decision outcomes. KS exerts a strong and significant positive influence on KMS USE. Among the predictors of KMS USE, KS represents the strongest determinant, indicating that social engagement is a major driver of system utilization. SQ has a positive and statistically significant effect on DMQ. Efficient, reliable, and responsive system performance directly enhances academic decision effectiveness. SQ significantly and positively influences KMS USE. Better technical performance encourages greater reliance on and integration of the system in academic tasks. KMS USE has a strong and statistically significant positive effect on DMQ. This represents the strongest direct predictor of DMQ in the model, indicating that active system engagement is the primary mechanism through which academic decisions are improved. Most hypotheses are accepted, except for the indirect effect of KQ on DMQ, which is not supported, as shown in Table VI. The results demonstrate that SQ, KQ, and KS significantly influence KMS

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USE, and that both KMS USE and KS directly enhance DMQ. The strongest structural effect in the model is the impact of KMS USE on DMQ, highlighting the central role of active engagement with the KMS in improving academic decision outcomes.

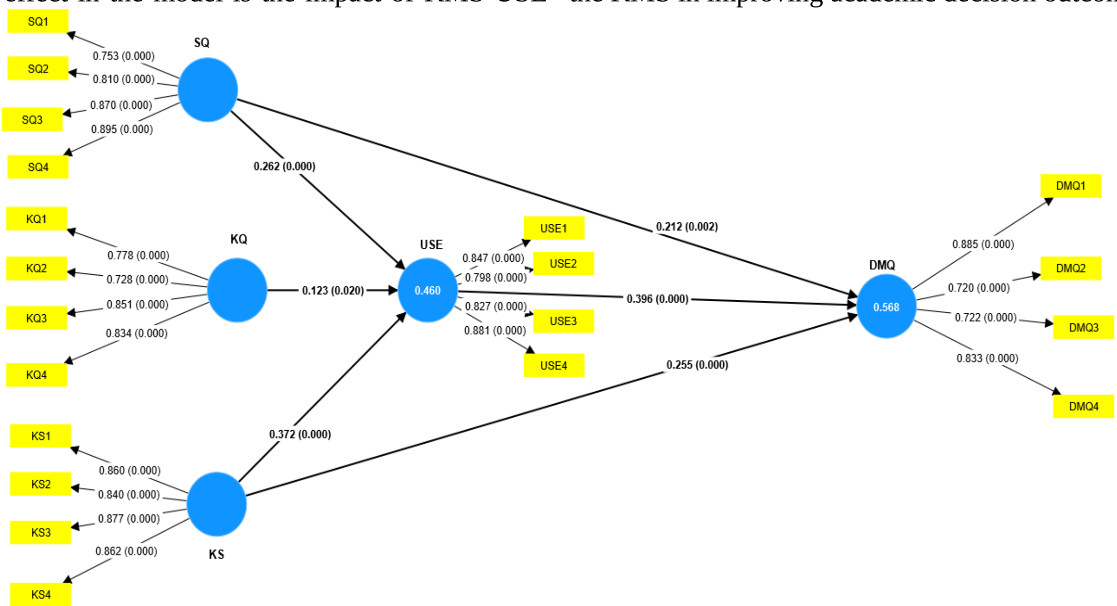

Figure 2: Final structural model with standardized path coefficients

Table VI: Hypothesis Testing Results of the Structural Model

Hypothesis	t-value	p-value	Effect type	Result	Conclusion
H1: KQ has no significant effect on KMS USE (KQ → USE).	2.334	0.020	Direct	Supported	KQ has a positive and statistically significant effect on KMS USE (β=0.123). Improvements in content accuracy, relevance, completeness, and timeliness increase system usage.
H2: KS has no significant effect on DMQ (KS → DMQ).	4.961	<0.001	Direct	Supported	KS has a positive and significant effect on DMQ (β = 0.255). Collaborative interaction enhances academic decision quality.
H3: KS has no significant effect on KMS USE (KS → USE).	3.672	<0.001	Direct	Supported	KS has a strong and significant positive effect on KMS USE (β = 0.372). Social engagement is the strongest driver of system usage.
H4: SQ has no significant effect on DMQ (SQ → DMQ).	4.858	<0.001	Direct	Supported	SQ has a positive and significant effect on DMQ (β = 0.212). Efficient and reliable system performance improves decision outcomes.
H5: SQ has no significant effect on KMS USE (SQ → USE).	4.146	<0.001	Direct	Supported	SQ has a positive and significant effect on KMS USE (β = 0.262). Technical performance encourages greater system engagement.
H6: KMS USE has no significant effect on DMQ (USE → DMQ).	3.073	0.002	Direct	Supported	KMS USE has a strong and statistically significant positive effect on DMQ (β = 0.396). Active usage is the primary determinant of improved academic DMQ.
H7: KMS USE does not mediate the relationship between KS and DMQ (KS → USE → DMQ).	3.334	0.001	Indirect	Partial mediation	A positive and statistically significant indirect effect exists (β = 0.147). KMS USE partially mediates the relationship, as both direct and indirect effects are significant.
H8: KMS USE does not mediate the relationship between KQ and DMQ (KQ → USE → DMQ).	1.883	0.060	Indirect	No mediation	The indirect effect (β = 0.049) is not statistically significant. There is no mediation effect, and KQ does not significantly influence DMQ either directly or indirectly.
H9: KMS USE does not mediate the relationship between SQ and DMQ (SQ → USE → DMQ).	3.200	0.001	Indirect	Partial mediation	A positive and statistically significant indirect effect exists (β = 0.104). KMS USE partially mediates the relationship, as both direct and indirect effects are significant.

The indirect effects were examined to determine whether KMS USE mediates the relationships between KS, KQ, SQ, and DMQ. The hypothesis for each indirect relationship states that there is no significant indirect (mediated) effect (β= 0). There is a positive and statistically significant indirect effect of KS on DMQ through KMS USE. This indicates that KS enhances KMS USE, which subsequently improves DMQ. Given that the direct effect of KS on DMQ is also significant, this mediation is partial. KMS USE serves as an important mechanism through which collaborative knowledge exchange strengthens academic decision-making. The indirect effect of KQ on DMQ through KMS USE is not statistically significant at the 5% level. Although KQ positively influences KMS USE, it does not have a significant direct effect on DMQ, and the combined mediated pathway is also not statistically significant. Therefore, mediation is not supported for this relationship. There is a positive and statistically significant indirect effect of SQ on DMQ through KMS USE. This indicates that improvements in system reliability, accessibility, and responsiveness increase system usage, which in

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turn enhances DMQ. Because the direct effect of SQ on DMQ is also significant, this represents partial mediation.

VI. Discussion

This study examines how KMS influences the DMQ of business students in higher education. The structural model examines how SQ, KQ, and KS influence KMS USE and subsequently enhance DMQ. The findings validate the central role of KMS in shaping students' academic decision-making processes. These findings are consistent with prior research emphasizing the importance of KMS in supporting decision-making processes in educational contexts [24] [26]. The conceptual model reflects a technology-enabled knowledge framework in which system characteristics and knowledge processes translate into improved academic decision outcomes.

The findings strongly support and confirm previous studies, which stated that DMQ is a result of technical, content-driven, and behavioral factors mediated by KMS USE [15] [16] [17]. The structural model highlights that KMS USE mediates the effects of SQ but not KQ on DMQ, while KS influences DMQ both directly and indirectly. This mediating role of system usage aligns with earlier studies which highlight that system use is the primary mechanism through which system and information quality translate into performance outcomes [35] [36] [37]. KS emerges as the strongest predictor of KMS USE, followed by SQ, while KQ shows a smaller but statistically significant influence. The direct effects show that KS and SQ significantly influence DMQ, whereas KQ does not have a significant direct effect on DMQ. The mediation results show that KMS USE strengthens the influence of KS and SQ on DMQ, while no significant indirect effect is found for KQ. These findings further reinforce earlier studies that emphasize the indirect pathways through which knowledge-related factors impact performance via system usage [38] [16]. These findings highlight that active engagement with KMS is the primary mechanism through which academic DMQ is improved.

A. Theoretical Implications

This study contributes to the literature by extending KMS research to student-based decision-making beyond traditional adoption and satisfaction outcomes. KMS success does not depend only on adoption but also on DMQ as a net behavioral outcome. It integrates technical (SQ) and knowledge-related (KQ, KS) factors in one unified model by showing that KMS USE is the key transformation instrument for decision-making outcomes. The study also provides empirical evidence from a higher education setting in a developing digital transformation environment, illustrating the contextual significance of KMS beyond organizational settings. The findings demonstrate that KMS USE as a key mediator that improves academic decision-making, but also suggest that KQ alone is inadequate without a behavioral foundation through system use.

B. Practical Implications

The findings imply that universities should advance in enhancing KMS stability, accessibility, and user interface that support effective interaction and facilitate user engagement. Moreover, faculty should encourage KS through collaborative digital activities to interchange ideas and enhance learning through interaction. Similarly, IT departments must ensure that content quality is continuously updated, relevant, and accurate to support informed academic decisions. Additionally, Students benefit when academic programs use KMS well to support decision-making capabilities.

C. Study Limitations

This study has a few limitations. First, the cross-sectional study design limits the ability to make causal inferences about the relationships among SQ, KQ, KS, KMS USE, and DMQ. Additionally, the data collected from students in one university may limit the generalizability of the findings. Moreover, the proposed conceptual framework focused on technical, knowledge-related, and behavioral constructs, while other key constructs (e.g., digital literacy, training, institutional support, or individual motivation) were not considered. Future studies could address these limitations by using longitudinal designs to examine how KMS USE and DMQ develop over time.

VII. Conclusion

This study demonstrates the importance of KMS in enhancing DMQ among business students. SQ, KQ, and KS significantly shape how frequently and effectively students use digital knowledge systems. SQ and KS also play important roles, both directly and indirectly, while KQ contributes more modestly to usage and does not have a significant direct or indirect effect on DMQ. Ultimately, active KMS USE improves the quality of students' academic decisions. The study contributes by shifting the focus of KMS research from adoption and satisfaction to DMQ as a meaningful outcome, and by demonstrating that usage is the key mechanism through which system and knowledge factors create value. This research contributes to the literature by extending KMS research to a student-based decision-making context, integrating technical and knowledge-related factors in one unified model, providing empirical evidence from a higher education setting in a developing digital transformation environment, and demonstrating KMS USE as a key mediator that improves academic decision-making. These results highlight the importance of viewing KMS as engagement-driven environments rather than purely technical systems. The findings support the growing role of knowledge management in digital higher education and provide actionable insights for improving KMS design, content, and collaborative features. Future studies could use multi-source data, longitudinal designs, or behavioral log data. To provide stronger causal evidence and a more robust understanding of how KMS usage influences DMQ over time.

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