THE JOURNAL OF RESEARCH REVIEW

P-ISSN: 3006-2632	E-ISSN: 3006-2640
Vol. 2. No. 03 (July-Sept) 2025	Page 19-32

Development and Validation of University Students' Knowledge Management Practices Scale (KMPS)

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Abstract: *Developing and validating a scale to evaluate university students' knowledge management (KM) practices was the aim of this study. Three hundred undergraduate and graduate students selected through simple random sampling were surveying on a 30 items scale from a public and private sector university. Ten important KM practices dimensions were found using exploratory factor analysis. These included ten factors Encourage knowledge sharing, Promote a learning culture, Foster innovation, Create and maintain up to date knowledge, Conduct regular knowledge audits, Continuously improve knowledge management workflows, Implementing knowledge management tools, Providing training and support, Communicate impotence of knowledge management and follow the latest knowledge management trends with three items in each factor. Analyses of validity and reliability verified the scale's consistency and psychometric soundness. The finished product provides a trustworthy device for assessing knowledge management practices in scholarly settings.*

Keywords: Knowledge management practices, exploratory factor analysis, regular knowledge audits and latest knowledge management trends

Introduction

Every institution wants its students to work together academically; the finest knowledge is created by the best knowledge that is managed using knowledge management strategies. According to Yi, (2009) created a tool to evaluate information sharing, highlighting the role that motivation, self-efficacy, and trust play in promoting knowledge exchange. This scale is frequently used in organizational and educational settings and has been validated. A hybrid knowledge management paradigm was put forth by Yeh, Yeh, and Chen (2012) with the intention of fostering the creativity of college students. Their research emphasized the need of collaborative learning environments and the shift from knowledge sharing to knowledge creation. Arpaci, Al-Emran, and Al-Sharafi (2020) investigated how engineering students' acceptance of MOOCs was impacted by knowledge management strategies. Their cross-cultural investigation confirmed the link between technology adoption and knowledge exchange.

A green knowledge management scale was presented by Yu, Abbas, Álvarez-Otero, and Cherian (2022), emphasizing environmental sustainability in knowledge activities. This scale provides a fresh viewpoint on sustainable knowledge sharing and was thoroughly validated.

Conchado, Carot, and Bas (2015) created and verified a competency-based knowledge management scale that highlights critical abilities for efficient knowledge exchange. In order to gauge user satisfaction with knowledge management systems, Ong and Lai (2007) developed a scale that underwent rigorous testing for validity and reliability in technologically advanced settings.

Hoon Song et al. (2011) developed a scale to measure organizational knowledge creation practices providing a thorough framework and also created an instrument to gauge the efficacy of systematic procedures. Another scale namely "Knowledge Sharing Behavior Scale" focusing on organizational and motivational elements that might influence knowledge sharing was developed by Ramayah et al. (2014). Agariya and Singh (2012) developed an e-learning quality scale to evaluate the efficacy of technology enabled learning system in the Indian educational context. Kim et al. (2019) investigated distributed knowledge sharing by dissecting organizational awareness through the development of a scale to gauge awareness and its influence on knowledge practices. Hinkin (1995) provided a fundamental assessment of scale development procedures in organizational studies and also offered recommendations for further study. Another scale to highlight learning environments' dependability was created and verified by Tella (2011) which was named as Blackboard course management system scale. Tikoria and Agariya (2017) emphasizing student involvement and technology integration, developed an information communication technology enabled classroom effectiveness scale for higher education. To highlight the significance of technology attitudes in knowledge sharing, Fang et al. (2006) developed an Internet Information Management Attitude Scale specifically for primary school teachers.

In order to investigate the relationship between principals' leadership and teacher-to-teacher knowledge sharing in Iranian schools, Zeinabadi and Abbasian (2024) developed a multi-dimensional scale, emphasizing the importance that leadership plays in promoting collaboration. In order to address issues in virtual environments, Li, Frethey-Bentham, Juric, and Brodie (2023) developed a negative actor engagement scale for online knowledge-sharing platforms. The Knowledge Sharing Behaviour Scale was psychometrically assessed in academic settings by Asghar and Naveed (2021), with an emphasis on its suitability for use in higher education. Lin, Hung, and Chen (2009) looked into what influences people to share knowledge. creating a scale that emphasizes community involvement, reciprocity, and trust in professional online networks.

The conceptual underpinnings and research questions of knowledge management (KM) and KM systems were covered by Alavi and Leidner (2001), who emphasized the significance of these systems in organizational contexts. Rewards do not necessarily have a positive effect on knowledge sharing behaviors, according to research by Bock and Kim (2002) on attitudes towards knowledge sharing. Bock et al. (2005) also looked at organizational climate, social-psychological dynamics, and extrinsic motivators as factors that affect knowledge sharing intentions.

Cabrera and Cabrera (2005) looked into how organizational culture and leadership play a part in knowledge sharing through people management methods. A cohesive model for information sharing behaviors was put forth by Chennamaneni et al. (2012), who took into account a variety of theoretical viewpoints and empirical data. Chow and Chan (2008) concentrated on how social networks, trust, and common objectives might improve knowledge sharing in businesses.

Darroch (2003) advanced the field's comprehension of knowledge management procedures by creating a tool for evaluating knowledge management behaviors and practices. Donate and de Pablo (2015) studied how knowledge-oriented leadership affects innovation and knowledge management practices by highlighting the role of leadership in creating a culture of knowledge sharing. Hsu et al. (2007) investigated the Knowledge sharing behavior in virtual communities by connecting knowledge sharing to outcome expectations, self-efficacy, and trust.

Heisig (2009) conducted a comparative study of 160 KM frameworks to standardize knowledge management processes worldwide. Concentrating on Finnish firms, Inkinen et al. (2015) measured the relationship between Knowledge Management practices and innovation performance. Kankanhalli et al. (2015) examined Knowledge contribution to electronic repositories emphasizing the importance of organizational culture and incentives in promoting knowledge sharing. Lee and Choi (2003) studied knowledge sharing procedures and enables by connecting them with organizational success. Lin (2007)

concentrated on the connection between KM and company innovation capacity, highlighted the function of knowledge management in promotion of innovation. Masa'deh et al. (2018) argued that knowledge management practices foster innovation within organizations and highlighted the importance of knowledge management practices in fostering innovation.

In their 2011 survey, Mills and Smith examined knowledge management techniques in UK higher education, offering perspectives on the application of KM in higher education. The idea of the knowledge-creating corporation was first presented by Nonaka and Takeuchi (1995), and it highlights the dynamic processes by which businesses produce and use knowledge. In their thorough analysis of the literature on information sharing, Wang and Noe (2010) offered suggestions for future lines of inquiry. Lastly, Yi (2009) helped quantify knowledge management methods by creating and validating a scale to gauge information sharing behavior.

Table 1 Summary of previous scales of knowledge management practices

Researcher / Year	Instrument Name	No. of Items	Domains	Scale Level	Sample	Validity Measures	Reliability Measures
Chennamaneni et al., 2012	Knowledge Sharing Behavior Scale	20	Sharing behavior, motivation, organizational culture	5-point Likert	University students (n=300)	Content, construct	Cronbach's alpha = 0.85
Yi, 2009	Knowledge Sharing Measure	15	Sharing behavior, trust, self-efficacy	5-point Likert	University students (n=250)	Construct, discriminant	Cronbach's alpha = 0.82
Bock et al., 2005	Behavioral Intention for Knowledge Sharing	18	Intention, motivation, organizational climate	7-point Likert	Corporate employees (n=400)	Construct, predictive	Cronbach's alpha = 0.88
Lin, 2007	Knowledge Sharing and Innovation Capability Scale	25	Innovation, sharing processes	5-point Likert	University students (n=200)	Content, criterion	Cronbach's alpha = 0.87
Hsu et al., 2007	Virtual Communities Knowledge Sharing Scale	22	Trust, self-efficacy, community engagement	7-point Likert	Virtual community members (n=150)	Construct, discriminant	Cronbach's alpha = 0.84
Chow & Chan, 2008	Social Network Knowledge Sharing Scale	18	Social trust, shared goals	5-point Likert	Corporate teams (n=180)	Content, construct	Cronbach's alpha = 0.83
Cabrera & Cabrera, 2005	Knowledge Sharing Through People Management Scale	20	People management, trust, motivation	5-point Likert	Corporate employees (n=350)	Criterion, construct	Cronbach's alpha = 0.86
Wang & Noe, 2010	Knowledge Sharing Review Framework	15	Motivation, organizational support	Thematic review	Review-based	Review synthesis	N/A
Nonaka & Takeuchi, 1995	Knowledge Creation Model	10	Knowledge creation, sharing	Conceptual model	Conceptual model	Conceptual validity	N/A
Gold et al., 2001	Knowledge Management Organizational Capabilities Scale	30	Organizational enablers, processes	5-point Likert	Corporate employees (n=300)	Construct, criterion	Cronbach's alpha = 0.89

Methodology

A collection of knowledge management practices Using a 30-item measure, 300 university students at three different levels BS, MPhil and PhD participated in the pilot study. To identify the elements of

university students' knowledge management methods, exploratory factor analysis was employed. Scale took part in a pilot study. The university students voluntarily participated in the survey. Graduate and under graduate university students (PhD, MPhil, and BS) participated in the pilot study. All of the participants were between the ages of 20 and 40 years on average. All ethical guidelines were followed prior to the scale's distribution (Heisig, 2009).The researcher employed a four step approach to develop the KMP Scale (KMPS) (Heisig, 2009): examined existing tools and pertinent literature on knowledge management practices; developed preliminary KMPS constructs and items derived from the pertinent studies; established the KMPS's content and face validity based on expert opinions and The KMPS was translated into Urdu by a panel of experts and the translation quality was guaranteed for the KMPS administered in the participants' native tongue. The literature review gives the researcher the foundation and aids in the development of the instrument's constructs for measuring.

Knowledge management practices Encourage knowledge sharing (EKS), Promote a learning culture (PLC), Foster innovation (FI), Create and maintain up to date knowledge (CMK), Conduct regular knowledge audits (IKA), Continuously improve knowledge management workflows (CIKMW), Implementing knowledge management tools (IKMT), Providing training and support (PTS), Communicate impotence of knowledge management (CIKM) and follow the Latest knowledge management trends (FLKMT) were the ten components that composed the instrument, which had 30 Likert-type items. A 5-point Likert scale was used to collect the responses. "Strongly Agree" was given five, "Neutral" three, "Agree" four, "Strongly Disagree" one, and "Disagree" two. The students rated each proposition on a 5-point scale (Heisig, 2009).

“Encourage Knowledge Sharing”, the first factor stands for motivation and readiness of people to impart their expertise to colleagues and peers. The concept of Knowledge sharing behavior (Bock et al., 2005; Yi, 2009; Wang & Noe, 2010) and Knowledge sharing intention (Bock et al., 2005; as mentioned in Wang & Noe, 2010) were presented in the relevant studies. This categorization highlight the importance of organizational climate, trust, and intrinsic motivation in the promotion of knowledge sharing. The construct to measure the knowledge sharing encouragement was expanded to include three items. Second factor addresses the fostering an atmosphere that values lifelong learning. This construct includes knowledge creation (Nonaka & Takeuchi, 1995), learning environment (Cabrera & Cabrera, 2005; as mentioned in Lin, 2007), and organizational learning which were introduced in relevant studies (Lin, 2007). These studies highlight the importance of learning culture in fostering knowledge sharing and innovation. At the final stage, three items were included in the construct to evaluate the promotion of learning culture. The third factor describes the importance of knowledge management in fostering innovative behavior and creativity. This factor includes knowledge-oriented leadership (Donate & de Pablo, 2015; as mentioned in Darroch, 2003), innovation performance (Donate & de Pablo, 2015; Inkinen et al., 2015), and organizational innovation" (Darroch, 2003) introduced in relevant studies. These concepts highlight the interdependence of innovation, leadership and knowledge sharing techniques. The fourth factor was developed to evaluate innovation nurturing expanded to cover three items. The construct "knowledge relevance" demonstrate how crucial it is for organizations to keep their knowledge up to date and accurate (Heisig, 2009). Finally, the factor for evaluation of knowledge updating was expanded to cover three items. The fifth factor emphasizes the systematic evaluation of knowledge resources and the identification of knowledge gap. Factors like knowledge audit practices (Mills & Smith, 2011; as cited in Chennamaneni et al., 2012), knowledge-sharing behavior assessment (Hsu et al., 2007), and knowledge-sharing behavior models (Chennamaneni et al., 2012) were also introduced by relevant studies. These factors highlight the importance of conducting routine audits in order to match organizational objectives with knowledge resources. Finally, three items were included in the factor to evaluate knowledge audits.

The sixth factor describes the optimization of knowledge management procedures by refining processes. Factors like systematic knowledge management workflows (Alavi & Leidner, 2001),

knowledge management process enhancement (Lee & Choi, 2003; as mentioned in Wang & Noe, 2010), and workflow improvement for knowledge management (Darroch, 2003) were introduced in relevant studies. These factors emphasize the importance of iterative enhancements to maintain the efficacy and efficiency of knowledge processes. Lastly, the factor to evaluate the workflow improvement was expanded to cover three items. The seventh factor Implementing Knowledge Management Tools focuses on the use of technology and system to support information sharing and storage. The relevant literature introduced concepts like knowledge management system success (Alavi & Leidner, 2001), technological enablers of knowledge sharing (Lin, 2007; as quoted in Hsu et al., 2007), and IT-supported knowledge management (Heisig, 2009). According to these constructions, the use of tools improves the usability and accessibility of knowledge. Finally, three items were incorporated in the factor to evaluate the deployment of knowledge tools. The eighth factor reflects how education and support facilities makes knowledge management efficient. Constructs like support for knowledge sharing (Yi, 2009; as cited in Bock et al., 2005), training for knowledge sharing (Cabrera & Cabrera, 2005), and knowledge management education (Wang & Noe, 2010) were introduced in pertinent studies. Constructs such as support for knowledge sharing (Yi, 2009; as cited in Bock et al., 2005), training for knowledge sharing (Cabrera & Cabrera, 2005), and knowledge management education (Wang & Noe, 2010) were produced in relevant studies. These factors emphasize the importance of support and training in creating a culture of knowledge sharing. Finally, three items were included in this factor for the assessment of training and support practices. The nineth factor, Communicate Importance of Knowledge Management highlights the importance of knowledge management practices and the role of effective communication in highlighting them. Factors including Organizational knowledge-sharing climate (Chow & Chan, 2008; as mentioned in Wang & Noe, 2010), knowledge-sharing motivation communication (Bock et al., 2005), and importance of knowledge dissemination (Donate & de Pablo, 2015) were introduced in the mentioned studies. These theories claims that awareness in knowledge management are increased by effective communication. Three items were finalized and included in the factors to assess communication practices. The tenth factor, Follow the Latest Knowledge Management Trends, indicates the embrace of contemporary methods and advances in knowledge management. Relevant research produced concepts including emerging knowledge management frameworks (Heisig, 2009), trends in knowledge-sharing behavior (Hsu et al., 2007; Yi, 2009), and adoption of innovative knowledge practices (Darroch, 2003; as mentioned in Donate & de Pablo, 2015). These factors place strong emphasis on keeping up with trends in order to remain competitive, Finally, three items were included in the construct to evaluate adherence to trends.

A specialist with extensive experience translating instructional materials into Urdu created the tool. The researcher delivered a 30 items version of the KMP Scale (KMPS) and gathered data to improve the tool. Six Experts local and six from international universities in the fields of education, determined the instrument's content and face validity. University students were employed at a public university for this study. The construct validity of the KMPS was assessed using factor analysis through extensive literature review (Heisig, 2009). A researcher using exploratory factor analysis (EFA) discovers a theory (model) based on a collection of items that address a sizable number of latent constructs (Henson & Roberts, 2006; Tabachnick & Fidell, 2014; Thompson, 2004). Then, to confirm construct validity and confirm that the data collected for exploratory factor analysis was appropriate and that the relationships between items were sufficiently large for exploratory factor analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy test and Bartlett's Test of Sphericity were conducted. Key Elements the Knowledge Management Practices Scale's (KMPS) underlying structures were examined using Factor Analysis with Varimax Rotation. The dependability of Cronbach Alpha was evaluated. The tool's psychometric qualities were cross-validated using item discrimination power (Bai, 2011). As a measure of scale internal consistency, the Cronbach Alpha and composite reliability (CR) coefficients for the scale and its subscales were computed. The KMPS discriminant and convergent validity were then evaluated.

Results

The results of the study are as follows.

Table 2 KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.783
Bartlett's Test of Sphericity	Approx. Chi-Square	9558.268
	Df	435
	Sig.	.000

For factor analysis, Kaiser-Meyer-Olkin (KMO) Measure of sample adequacy, which is 0.783, indicates a high degree of sample adequacy. The Bartlett's Test of Sphericity chi-square result of 9558.268 is highly significant with 435 degrees of freedom and a significance level of 0.000. This suggests that the correlation matrix is not an identity matrix and that the data is appropriate for factor analysis.

According to the findings of Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) measure, the data were suitable for exploratory factor analysis. KMO value of 0.783 was higher than the generally recognized cutoff of 0.70 (Kaiser, 1974) which indicates sufficient sample adequacy. According to Hutcheson and Sofroniou (1999), a KMO score of 0.70 to 0.80 is regarded as "good" since it indicates that the correlation patterns are reasonably compact and that factor analysis would probably provide trustworthy factors. Moreover, Bartlett's Test of Sphericity was significant ($\chi^2 = 9558.268$, df = 435, p <.001), which indicates that there are enough correlations between the items to proceed with factor extraction and that the correlation matrix is not an identity matrix (Bartlett, 1950). These results validate the choice to investigate the underlying structure of university students' knowledge management methods and confirm the data's eligibility for factor analysis.

Cumulative Percentage of the Variance

Table 3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.846	19.486	19.486	5.846	19.486	19.486	2.865	9.549	9.549
2	3.321	11.069	30.556	3.321	11.069	30.556	2.853	9.510	19.059
3	3.076	10.253	40.809	3.076	10.253	40.809	2.849	9.496	28.555
4	2.830	9.434	50.243	2.830	9.434	50.243	2.840	9.467	38.021
5	2.757	9.189	59.432	2.757	9.189	59.432	2.732	9.106	47.128
6	2.317	7.722	67.155	2.317	7.722	67.155	2.705	9.016	56.144
7	2.005	6.683	73.837	2.005	6.683	73.837	2.688	8.960	65.104
8	1.835	6.116	79.953	1.835	6.116	79.953	2.683	8.942	74.046
9	1.650	5.501	85.455	1.650	5.501	85.455	2.536	8.454	82.500
10	1.469	4.896	90.351	1.469	4.896	90.351	2.355	7.851	90.351
11	.430	1.435	91.785						
12	.278	.928	92.714						
13	.252	.839	93.553						
14	.223	.742	94.295						
15	.198	.660	94.955						
16	.179	.597	95.552						
17	.166	.552	96.104						
18	.152	.508	96.612						
19	.136	.452	97.063						
20	.125	.416	97.479						
21	.110	.367	97.847						
22	.101	.336	98.183						
23	.086	.286	98.469						
24	.083	.276	98.745						
25	.078	.260	99.006						

26	.071	.236	99.242
27	.064	.213	99.455
28	.057	.190	99.645
29	.056	.187	99.832
30	.050	.168	100.000

The table presents the results of a factor analysis and shows the eigenvalues, variance explained, and cumulative variance for each component. The largest eigenvalue (5.846) is found in the first component, which makes up 19.49% of the total variance. At 19.49%, the cumulative variance comes next. The cumulative variance of the third component rises to 40.81%, with the second and third components contributing significantly as well, each of which accounts for over 10% of the variance. After the sixth component, the contributions decrease, and components 11 through 30 only make up a small percentage of the variation. The rotation sums of squared loadings, which represent the variation explained after rotation, show similar trends. The majority of the variance is explained by the first five components, whereas subsequent Components explain progressively less. Ninety-three percent of the variation can be explained by the tenth element.

Table 4 Factor Loading for KMPS

Rotated Component Matrix

	Component									
	1	2	3	4	5	6	7	8	9	10
CRK2	.976									
CRK1	.974									
CRK3	.968									
CIKM2		.972								
CIKM1		.970								
CIKM3		.966								
FI2			.972							
FI3			.970							
FI1			.965							
PTS1				.974						
PTS2				.971						
PTS3				.967						
CIK2					.919					
CIK1					.912					
CIK3					.892					
CMK1						.918				
CMK3						.898				
CMK2						.884				
PLC3							.921			
PLC2							.907			
PLC1							.891			
EKS2								.920		
EKS1								.898		
EKS3								.882		
IKMT3									.927	
IKMT1									.909	
IKT2									.898	
FLKMT3										.908
FLKMT2										.883
FLKMT1										.846

The component matrix shows the factor loadings for each item over ten components. Items with high loadings (over 0.9) demonstrate strong interactions with the first few components. As an example, Component 1's high loadings of CRK2, CRK1, and CRK3 suggest a close association with this factor. The same is true for Component 3, which is loaded by FI1, FI2, and FI3, whereas Component 2 is strongly loaded by CIKM2, CIKM1, and CIKM3. Lower loadings on later components indicate that items such as EKS1, EKS2, and EKS3 are linked to factors that explain less variance. FLKMT1, FLKMT2, and FLKMT3 all load the final component, with FLKMT1 loading the least and having the

least association with this factor.

Item-Total Correlations

The Pearson correlation between each item was used to quantify item-total correlations, and the overall scale varied from.721, indicating that all of the correlations were significant (see Table 4). All items measure consistently with the overall scale, according to the positive item-total correlations, suggesting a positive item discrimination power. All replies' means and standard deviations (SD) were computed for each item. Items that have a mean that is closer to 1 or 5 should be removed since they are deemed inappropriate.

Table 5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EKS1	110.67	79.000	.365	.	.715
EKS2	110.67	79.403	.356	.	.715
EKS3	110.62	78.544	.424	.	.712
PLC1	110.88	79.322	.356	.	.715
PLC2	111.01	79.263	.336	.	.716
PLC3	111.00	79.600	.310	.	.717
FI1	110.80	78.867	.228	.	.723
FI2	110.83	78.283	.237	.	.722
FI3	110.79	78.999	.202	.	.725
CMK1	110.54	78.195	.433	.	.711
CMK2	110.47	78.737	.408	.	.713
CMK3	110.57	78.066	.472	.	.710
CRK1	110.73	78.686	.229	.	.723
CRK2	110.72	78.600	.216	.	.724
CRK3	110.69	78.280	.240	.	.722
CIK1	110.80	79.060	.352	.	.715
CIK2	110.81	78.894	.351	.	.715
CIK3	110.78	78.820	.363	.	.714
IKMT1	110.45	82.682	.150	.	.726
IKT2	110.45	82.862	.130	.	.726
IKMT3	110.50	82.691	.141	.	.726
PTS1	110.72	78.623	.245	.	.721
PTS2	110.68	78.803	.229	.	.723
PTS3	110.64	78.145	.250	.	.721
CIKM1	110.70	80.582	.143	.	.729
CIKM2	110.71	80.926	.110	.	.732
CIKM3	110.67	80.480	.140	.	.729
FLKMT1	110.37	83.546	.080	.	.728
FLKMT2	110.43	83.586	.084	.	.728
FLKMT3	110.45	83.775	.054	.	.729

Each item in the table has comprehensive details, such as the scale mean and variance, the adjusted item-total correlation, and the Cronbach's alpha in the event that the item were removed. The majority of the items have a scale mean of roughly 110.5, while variances typically range from 78 to 84, suggesting comparable distributions. With values between 0.080 and 0.472, the corrected item-total correlations are modest to low. Certain elements (including FLKMT1, FLKMT2, and FLKMT3) may have weaker correlations with the entire scale, according to this. When items are eliminated, Cronbach's alpha values range from 0.710 to 0.732, suggesting that the scale's overall reliability is not much affected.

Table 6 Descriptive Statistics, Cronbach Alpha and Composite Reliability (CR)

Statements	Mean	SD
Encourage Knowledge Sharing	3.60	.933
1. I have an easy access to all knowledge sharing platforms.		
2. I often appreciated whenever I share my true knowledge.	3.79	.926
3. I like to receive feedback	3.99	.890
Promoting a Learning Culture	3.60	1.000
4. University provides me multiple learning opportunities		
5. I often take interest in peer learning groups	3.62	.952
6. I adopt continuous learning feedback for the contribution of learning culture	3.64	.865
Foster Innovation	3.74	.870
7. I gave innovative ideas for solving problems.		
8. University encourages me to take risk for the solution of the problem	3.35	1.028
9. University provides me resources for the completion of innovative projects.	3.18	1.078
Create and Maintain Up-to-Date Knowledge	3.61	.937
10. University provides me educational opportunities to ensure curriculum		
11. University provides opportunities for vocational courses	3.41	1.017
12. I update my knowledge by continuous self-assessment procedures	3.79	.838
Conduct Regular Knowledge Audits	3.36	1.025
13. My university regularly conduct audit to access student learning		
14. My university involve all the stakeholders for the assessment of knowledge	3.38	.970
15. My university develop action plans based on findings of knowledge audit to improve KM practices	3.43	.964
Continuous Improve Knowledge Management Workflows	3.60	.885
16. I regularly update and refine the process maps to ensure quality of my assignments		
17. I key performance metrics to monitor the success of the knowledge management workflows	3.53	.845
18. I actively seek and incorporate stakeholders' feedback to enhance my Knowledge Management workflows	3.50	.916
Implement Knowledge Management Tools	3.82	.846
19. I feel comfortable while using knowledge management tools		
20. I use different online learning platforms for academic purposes	3.95	.875
21. I set my knowledge management practices according to measurable trends	3.76	.776
Provision of Training and Support	3.63	.911
22. I participate in comprehensive knowledge management programs to polish my Knowledge Management skills		
23. I get guidance from online resources of the university	3.52	1.046
24. I seek help and guidance from peers to better my Knowledge Management skills	3.67	.896
Communication of Importance of Knowledge Management	3.64	.928
25. University plays a role for orientation of Knowledge Management for future research		
26. University conducts use technology to communicate importance of KM practices	3.55	.931
27. University attracts students through posters of knowledge management for successful journey	3.66	.950
Follow the Latest Knowledge Management Trends	3.52	.979
28. My university provides opportunities for monitoring Knowledge Management practices		
29. My university provides opportunities to collaborate with experts for better implementation of Knowledge Management practices	3.53	.984

30. I frequently engage in experiments for better Knowledge Management practices	3.59	.883

In general, moderate to high participation across 10 important parameters is revealed by the descriptive analysis of university students' knowledge management practices. The use of knowledge management tools, including online learning environments and quantifiable knowledge management trends, was most frequently mentioned by students, demonstrating their comfort level and consistent use in their academic routines. Students who acknowledged having access to sharing platforms, feeling valued for their work, and being receptive to criticism also gave knowledge sharing high ratings. Students' involvement in peer learning groups and ongoing learning feedback indicated that the development of a learning culture was most appropriated. Another highly rated area was participation in training and support activities, such as asking peers and internet resources for advice, indicating a cooperative and resource supported setting. Students noted that university employed technology, visual aids like posters, and orientations to raise awareness of knowledge management, indicating a modest level of recognition for the significance of communicating KM. Additionally, students showed a moderate level of agreement with topics pertaining to keeping current knowledge through self-assessment techniques and educational opportunities. Nonetheless, the mean scores in several regions were somewhat lower. In particular, the innovation fostering component showed that although students were open to contributing original ideas, they felt that there was insufficient institutional support and funding available for taking chances and completing creative projects. There is a need for increased visibility and student involvement in these institutional procedures, as seen by the more neutral opinions regarding regular knowledge audits and ongoing workflow improvement. Lastly, there remained space for improvement despite the moderate level of involvement with current knowledge management trends, which included experimentation and expert cooperation. Overall, the results indicate that although the student experience effectively incorporates the fundamentals of knowledge management, such as tool use, knowledge exchange, and learning assistance, additional focus might be required to improve areas like innovation, auditing procedures, and institutional follow-through.t.

Table 6 of the knowledge Management Practices Scale indicates that the first factor, which encourages information sharing, is made up of the first three statements, 1 through 3. With the highest mean score of M=3.99, or 79.8% of the maximum possible score, Statement 3 to I prefer to receive feedback had the greatest score. Next is Statement 2, which demonstrates a strong favorable response with a mean of M=3.79, or 75.8%, whenever I disclose my actual expertise. However, Statement 1 has the lowest mean score (M=3.60), reflecting 72.0% agreement that I have easy access to all information sharing sites. Despite being far worse than the other two assertions, this rating is nonetheless regarded as relatively favorable. Every statement's response displayed the mean score close to four.

Table7 Convergent Validity and Discriminative Validity

Factors	Mean	SD	EKS	PLC	FI	CMK	CRK	CIK	IKMT	PTS	CIKM	FLKMT
EKS	3.790	0.692	1									
PLC	3.622	0.712	.521**	1								
FI	3.423	0.746	.354**	.525**	1							
CMK	3.603	0.704	.398**	.500**	.599**	1						
CRK	3.391	0.837	.325**	.492**	.582**	.608**	1					
CIK	3.543	0.697	.367**	.494**	.492**	.544**	.535**	1				
IKMT	3.845	0.649	.457**	.434**	.343**	.400**	.274**	.467**	1			
PTS	3.607	0.724	.401**	.547**	.468**	.466**	.470**	.520**	.505**	1		
CIKM	3.618	0.765	.375**	.469**	.495**	.533**	.568**	.445**	.407**	.556**	1	
FLKMT	3.547	0.754	.346**	.535**	.561**	.551**	.604**	.521**	.440**	.562**	.641**	1

According to table Numerous noteworthy connections between the Knowledge Management Practices variables are revealed by the correlation matrix. Improvements in one factor are typically linked to

improvements in other factors, as seen by the majority of correlations being positive and statistically significant at the $p < 0.01$ level. (CIKM) and (FLKMT) have the strongest correlation ($r = 0.641$), indicating a strong interdependence in which the usage of facilitated tools improves collaborative knowledge practices. The strong positive connection ($r = 0.604$) between (CRK) and FLKMT further emphasizes the importance of tools in efficiently maintaining cognitive knowledge.

Table indicates that the features, such as Encourage Knowledge Sharing (EKS) with PLC ($r = 0.521$) and (PLC) with (FI) ($r = 0.525$), have moderate connections. These connections suggest important, if weak, relationships where process learning and functional integration enhance knowledge exchange strategies. Weaker but still significant associations, such (IKMT) with (CRK) ($r = 0.274$), suggest that further research may be necessary in some areas of the interaction between individual-level tools and knowledge retention.
Overall, the matrix demonstrates that components like CIKM, FLKMT, and PLC are essential for fostering effective knowledge management practices due to their consistently high correlations with other parameters. Conversely, less strong ties, such as those involving IKMT, could point to potential problem.

Conclusion

Based on the literature on "Knowledge Management Practices", The Knowledge Management Practices Scale (KMPS) was developed. The scale consists of thirty items, and its structure was assessed by applying exploratory factor analysis. The KMPS showed respectable internal consistency with a Cronbach's alpha of 0.751 and subscale alpha values ranging from 0.741 to 0.751. Average Variance Extracted (AVE) values between 0.641 and 0.690 supported convergent validity, and good mean correlations between the variables validated discriminant validity. These findings suggest that the KMPS is a relevant and reliable tool to evaluate university students' knowledge management practices. The structure of the scale also made it possible to identify components of both higher and lower order. Researchers and educational institutions can use KMPS as a useful instrument to assess the scope of knowledge management practices in higher education settings.

Implications

The scale should be used for both the academic and students' purpose simultaneously. The scale use for the assessment and evaluation of knowledge management purposes which enhance the student's synergy. By using this scale student's knowledge sharing activities points to a solid basis for both the self-directed learning and academic collaboration. Hence knowledge sharing activities creates the learning culture in the organization. By using this scale students become more proactive rather than stereo type attitude of students gives original ideas and aggressively seeking out criticism in order to promote personal development. The scale helps students for the using of advanced knowledge management methods for academic leaders and faculty.

The scale may be used even when students are using technologies and attending training, faculty still need to make a greater effort to encourage creativity, offer organized chances for taking risks, and encourage experimental learning. The scale used for the knowledge audit of students in the form assessment and evaluation held by the learning organization. Additionally, the scale used for enhancing the inclusion and transparency of procedures like workflow improvement. Making sure the students stay up to date with changing trends in knowledge management, faculty should also place a high priority on curriculum updates, expert engagement, and cooperative knowledge-sharing forums. Occasionally, moderate participation will be transformed into long-lasting, highly impactful knowledge practices with the support of a more intentional and inclusive institutional approach.

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