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The mid-career peak: Demographic determinants of knowledge generation in Philippine higher education institutions

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Abstract

This study examined the relationship between knowledge-generation practices and demographic characteristics among 123 employees (71 teaching, 52 non-teaching) at a Philippine state university, using stratified sampling. Validated questionnaires were used to gather information on gender, age, education level, and work experience. Mann-Whitney U and Kruskal-Wallis tests were used to analyze the data at the P = 0.05 significance level. The findings indicated that non-teaching employees were usually 47 to 57 years old, with bachelor's degrees and 11 to 20 years of experience, whereas teaching employees were mainly 36 to 46 years old, with master's degrees and more than 21 years of experience. There was no discernible difference in knowledge generation between teaching (Median = 4.00) and non-teaching employees (Median = 4.25), with P = 0.77 in the Mann-Whitney test. According to the Kruskal-Wallis test, younger employees (25–35 years old) scored higher in knowledge generation, and age approached significance (P = 0.07). Employees with 3–5 and 6–10 years of experience showed significantly higher levels of knowledge generation (P = 0.015), but no significant differences were found for education level (P = 0.51). The study concludes that, by developing knowledge management frameworks that enhance organizational effectiveness and sustainability, higher education institutions should develop focused strategies to improve knowledge generation across diverse workforces. The results support the development of experience-differentiated knowledge management techniques. Longitudinal patterns and cross-institutional comparisons should be investigated in future studies.

Keywords: *knowledge management, teaching employees, non-teaching employees, HEIs*

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1. Introduction

Recent research highlights the growing importance of knowledge management (KM) in academia, especially after the pandemic (Syihabuddin et al., 2025). For instance, digital transformation and resilience are now top priorities (Ahmad et al., 2022). Adaptive strategies are strongly encouraged in higher education institutions (HEIs) to keep up with changes in the digital landscape for both academic and administrative support services. However, empirical evidence showed that the effectiveness of KM in HEIs can be directly influenced by employee demographics (Homillano et al., 2025). These demographic factors may directly influence knowledge creation and integration processes. Institutional performance and continuous improvement depend on recognizing that demographic diversity can impact the implementation of KM.

Employee demographics have a significant effect on the outcomes of KM (Galgotia & Lakshmi, 2022). According to Santos et al. (2024) and Sahibzada et al. (2021), demographics play a crucial role in leadership and organizational culture that may affect the adoption of KM practices and learning initiatives. Building on the claim made by Nonaka and Takeuchi (1995) that explicit organizational systems and people's tacit knowledge interact to produce organizational knowledge, this study examines how demographic traits, especially work experience, either support or impede the creation of knowledge in higher education settings. In developing countries, there is limited evidence directly linking demographics to KM. The literature highlights the need to focus more on demographic factors that influence knowledge sharing (Fan & Beh, 2024; Heisig & Kannan, 2020, Kaba et al., 2025).

Current research and theoretical underpinnings of KM in organizational contexts were significantly influenced by various seminal works. For instance, the SECI (Socialization, Externalization, Combination, Internalization) model was presented by Nonaka and Takeuchi in 1995. Knowledge creation is viewed as an ongoing spiral process that involves the transformation of implicit knowledge into explicit knowledge. In HEIs, teaching and non-teaching personnel contribute various forms of knowledge; this model highlights that organizational knowledge is created through dynamic interactions among individuals, groups, and organizational contexts. In addition, Davenport and Prusak (1998) described KM as a methodical approach to searching, understanding, and applying knowledge to generate

value that necessitates awareness of both the organizational context and the human dimension.

This study argues that, alongside well-known factors affecting KM effectiveness, such as technological, cost, and cultural elements, demographic traits, especially work experience, are equally important in higher education. Research indicates that organizational culture significantly influences how demographic factors impact knowledge management (Biloslavo et al., 2011). Some organizations promote open cultures that involve knowledge sharing among younger employees. However, a high percentage of organizations still relied on traditional cultures that tend to depend more on the expertise of experienced staff (de Long & Fahey, 2000). Ultimately, the interaction between age, experience, and culture is a crucial factor in driving the success of institutional knowledge management (Wikström et al., 2018).

This study demonstrates that employee demographics are crucial for KM effectiveness in state universities in the Philippines. Implementing an effective digital administrative system may increase efficiency by 30% (Pujihastuti et al., 2025). The study argues that diversity in demographic factors directly supports technology adoption and institutional performance. Hence, the results provide important evidence for more than two-thirds of Philippine HEIs. They confirm that demographic diversity influences KM outcomes across the region.

This study has three goals regarding how demographics influence KM: a) examines how employee demographics, including gender, age, educational level, and years of experience, influence KM generation practices; b) evaluates whether KM generation practices differ significantly across these demographic groups; and c) compares KM generation practices between teaching and non-teaching staff. By clearly defining these groups, the study provides insights into their essential role in KM effectiveness and informs research and leadership priorities.

2. Literature review

2.1. Knowledge Management in Higher Education

The importance of demographic factors in shaping knowledge practices and institutional effectiveness has been increasingly highlighted in research on KM in higher

education (Homillano et al., 2025). Resilience and digital transformation have emerged as top concerns during the pandemic, which opens the growing importance of KM in HEIs that requires flexible approaches across academic and administrative support services (Ahmad et al., 2022). According to studies, employee demographics significantly influence KM outcomes (Homillano et al., 2025). They also influence organizational culture and leadership, which have an impact on the adoption of learning programs and KM techniques (Santos et al., 2024; Sahibzada et al., 2021). Scholars have noted a critical need to focus more on demographic factors that influence knowledge management; however, there is still little evidence directly connecting demographics to knowledge management in developing nations (Fan & Beh, 2024; Heisig & Kannan, 2020).

One particularly important area of research is the connection between work experience and KM techniques. According to Galgotia and Lakshmi (2022), organizational culture significantly influences how KM is impacted by demographic factors. For instance, longer tenure was associated with higher knowledge sharing, which underscores the importance of experience, and that non-academic employees 50 years of age and older were more likely to share knowledge than their younger counterparts (Kaba et al., 2025). Additionally, generational diversity in the workplace can promote innovation at the organizational level when effective knowledge-sharing procedures are put in place, with younger employees contributing their technological expertise and older employees sharing their accumulated wisdom (Sahibzada et al., 2021).

Although gender aspects of KM have drawn a lot of attention, research on the connection between gender and the efficacy of knowledge management is still inconclusive. In a systematic review, Heisig and Kannan (2020) found that although there is evidence that men occasionally contribute formal knowledge, women are more adept at collaborative sharing. Nevertheless, the patterns do not always hold true in different situations. Jones-Esan (2023) noted that despite gender parity in many institutions, global data shows persistent problems, such as women accounting for a higher percentage of research responsibilities and taking on a greater share of caregiving duties during COVID-19. Literature emphasizes how gender diversity can impact knowledge sharing within organizations, despite being inclusive. According to research, women are more likely to work together when sharing knowledge, whereas men are more likely to focus on creating knowledge on their own (Heisig & Kannan, 2020). Furthermore, some studies have shown that educational attainment is crucial to

knowledge creation. Although higher levels of education are associated with greater involvement in knowledge creation and sharing, relying too heavily on these may ignore the tacit knowledge and experience that many long-term employees possess (Galgotia & Lakshmi, 2022).

According to Jones-Esan (2023), KM in HEIs includes a variety of knowledge types, such as pedagogical innovation, administrative efficiency, student-support strategies, and community engagement, where organizational loyalty, experience, and innovation may take precedence over formal educational credentials. This viewpoint opposes credential-centric methods and upholds the idea that expertise is present in all people. This viewpoint is supported by Ibarra-Cisneros et al. (2023), who used a PLS-SEM analysis of 434 academics to show that the three main knowledge enablers, organizational culture, institutional incentives, and leadership, have a greater impact on the development of knowledge and intellectual capital than do formal educational credentials alone. Regardless of individual degree attainment, their results demonstrate that when these enabling conditions are successfully aligned, academic staff and the institution as a whole achieve better KM performance and innovation outcomes.

The idea that faculty members are the only ones who drive institutional knowledge creation has been challenged by the growing recognition of the role of non-teaching staff in KM. Both teaching and non-teaching staff are crucial to the creation of knowledge in higher education institutions (Faldesiani & Senen, 2024). Academic staff members provide scholarly information, while administrators provide procedural, technical, and institutional information. According to Paudel (2023), the advancement of operations and services for students depends on the collaboration between academic and administrative team members. Both groups contribute to innovations, such as the adoption of new technologies. When feedback is given and received across various organizational domains, this interdependence promotes KM effectiveness, with administrative skills improving academic performance. Gonzales (2024) validated this cross-functional perspective in the Philippine setting at Ifugao State University, where phronetic leadership frameworks created for both instructional staff and administrative council members showed that knowledge creation in state universities is a shared institutional responsibility that transcends positional hierarchies, with both academic and non-academic participants contributing indispensably to the institution's knowledge base.

Knowledge transfer and succession planning have become important issues, especially in light of the aging workforces in many higher education institutions. According to Hoque and Zheng (2024), if appropriate succession planning and knowledge transfer are not put in place, there will probably be a significant loss of knowledge during transitions to new leadership in higher education. While administrators in higher education generally view succession planning favorably, Shaik Villien (2023) found that most institutions lack formalized procedures for knowledge transfer when new leaders are appointed. This emphasizes how important it is to take proactive measures to protect knowledge before retirement.

KM practices in higher education settings are heavily influenced by organizational culture and motivational factors. Cabrera Nuñez et al. (2025) verified that aspects of organizational culture, specifically recognition, communication, and managerial leadership, have a major impact on KM processes, including the creation, transfer, storage, and application of knowledge in Colombian public educational institutions. Reward systems should focus on intrinsic rewards to complement the SECI cycle and enhance knowledge creation and sharing (Hatamleh, 2023). Sense of accomplishment and better supervision seem to be more effective than extrinsic rewards in terms of knowledge sharing. Santos et al. (2024) highlighted that the establishment of entrepreneurial culture necessitates strong leadership participation involving psychological safety, promoting genuine communication, insight sharing, and teamwork.

According to Khoa and Huynh (2023), KM system effectiveness, which includes knowledge acquisition, dissemination, and utilization, directly predicts higher levels of intrinsic motivation and job satisfaction among faculty through a study of 381 Vietnamese university employees. This highlights the fact that well-designed KM systems are themselves motivating tools. In addition, Kumari et al. (2023) also found that organizational culture and perceived collegiality were the most important antecedents of individual KM readiness among Indian HEI faculty, pointing out that genuine KM engagement across the workforce requires the cultivation of peer-level cultural factors and collegial trust, as top management support alone is insufficient to drive KM adoption. Hence, there is a need for concurrent consideration of cultural norms, structural incentives, and the intrinsic motivational architecture of knowledge work in order to achieve sustainable KM in HEIs. Budur et al. (2024) further supported this connection by showing that knowledge codification and

knowledge-sharing practices play a major role in the long-term sustainability of HEIs, with online training moderating the relationship between KM processes and institutional performance.

A growing priority for efficient knowledge management is intergenerational knowledge cooperation. McDonald et al. (2025) found that younger professionals (Millennials and Gen Z) are adaptable and creative problem-solvers and are equipped to use digital tools and collaborative platforms. However, technological skills do not always guarantee greater knowledge or wisdom, which is frequently developed through years of experience. According to Fasbender and Gerpott (2022), organizations can promote intergenerational knowledge sharing through mentorship, communities of practice, and cooperative projects that involve problem-solving to promote task interdependence and communication between different age groups. However, senior professionals share tacit knowledge through mentoring, consulting, and informal guidance.

2.2. Theoretical framework

The main theoretical framework for this investigation is Nonaka and Takeuchi's (1995) SECI (Socialization, Externalization, Combination, Internalization) model, which views knowledge creation as a continuous spiral process in which tacit knowledge is converted into explicit knowledge. This model states that knowledge conversion takes place through four interrelated processes: socialization, which is the sharing of tacit knowledge through experience; externalization, which is articulating tacit knowledge into explicit concepts; combination, which is the synthesis of explicit knowledge into new knowledge systems; and internalization, which is the embodiment of explicit knowledge into tacit knowledge through practice. Organizational knowledge comes from dynamic interactions among individuals and groups within an organization. This framework is especially pertinent in HEIs because it highlights how both teaching and non-teaching personnel contribute different types of knowledge.

Farnese et al. (2019), who created and verified the Knowledge Management SECI Processes Questionnaire (KMSP-Q) using two separate samples of 838 workers from various organizational sectors, have further demonstrated the SECI model's empirical validity. Their study confirmed the eight-dimensional structure of the SECI model and demonstrated that the four knowledge conversion modes are reliably measurable through standardized instruments,

providing psychometric grounding for the use of Likert-scale questionnaires in assessing knowledge generation practices, as employed in the present study. Gonzales (2025) created a SECI-based phronetic leadership model for the Department of Education in Northern Philippines, further confirming the model's suitability in Philippine educational institutions. This shows that the SECI framework can be used as a workable basis for institutionalizing KM in Philippine public educational settings.

Davenport and Prusak (1998) noted that KM provides a systematic framework for finding, understanding, and using knowledge to create value, as well as understanding organizational context and the human dimension to implement KM effectively. As KM encompasses cultural, structural, and human resource aspects, the provided theoretical perspective supports investigating demographic factors as crucial determinants of KM practices. These theoretical underpinnings demonstrate that the interaction between systematic organizational approaches influences knowledge creation in higher education institutions. The continued empirical relevance of this framework is supported by Ibarra-Cisneros et al. (2023), whose structural equation modeling study confirmed that organizational enablers, analogous to the cultural, structural, and human resource dimensions, remain the primary determinants of KM effectiveness in contemporary HEIs.

3. Methodology

3.1. Research Design

A cross-sectional survey method was used to examine the influence of gender, age, educational attainment, and years of work experience on employee engagement in knowledge generation. Through this strategy, the study captures knowledge, behaviors, and adaptations of teaching and non-teaching employees in knowledge generation. The study sought to provide significant results on employee engagement in knowledge generation and the influence of demographic factors on knowledge generation.

The cross-sectional method efficiently collects broad data within a limited timeframe, making it suitable for ongoing organizational changes. The researchers collected structured quantitative data on demographics and knowledge practices, using nonparametric statistical methods because of resource limitations and institutional changes.

3.2. Sample Participants

The study was conducted at an agricultural state university in the Philippines. The university offers a diverse academic program, especially in agriculture, and has diverse non-teaching staffing personnel. The non-teaching staff provide various administrative and technical support services, whereas the faculty play important roles across instruction, research, and extension. Such clearly defined roles create a suitable context for analyzing knowledge generation practices across distinct employee groups.

Stratified sampling was employed to select 123 employees, including 71 faculty members and 52 non-teaching staff. This method was chosen to ensure that involved groups were adequately represented. The sample obtained was based on the parametric assumptions required for the nonparametric tests typically used in organizational research. An adequate number of samples was gathered to facilitate meaningful comparisons between the faculty and non-teaching staff. In finalizing participant selection, several factors were considered, including statistical power, available resources, and ethical issues related to participation. All participants volunteered and adhered to the ethical guidelines for stratified analysis.

3.3. Data Collection Instruments

Before beginning the data collection, the researchers received official approval from the university administration and the necessary ethical clearance from the Institutional Review Board. Each respondent provided informed consent prior to the questionnaire being distributed. Over the course of eight weeks, data were gathered using a combination of online and personal distribution methods, depending on each department's accessibility. The research team directly collected completed questionnaires in order to ensure a high response rate and maintain data integrity.

A structured and validated research questionnaire, based on the study of Omerzel (2011), was utilized for data collection to gather demographic profiles, including gender, age, educational level, and years of experience, and assess KM behaviors related to knowledge generation. Validated tools assessed knowledge generation with a Likert scale (1-5 rating). The instrument demonstrated high internal consistency ($\alpha = 0.87$), which supports the reliability of our measurements. The approach is in line with that of Farnese et al. (2019) that psychometrically validated multi-item Likert instruments can accurately capture SECI-based knowledge generation constructs.

3.4. Statistical Analysis

Suitable methods for ordinal variables and non-normal distributions were employed in the study. Demographic profiles, including age, gender, educational level, and years of experience, served as independent variables and were analyzed and compared with the dependent variable, including KM generation practices. Nonparametric tests were used for Likert-scale data to maintain analytical rigor, and Minitab 17 was used as the statistical software for the identified tests. Throughout the analyses, the significance level was set at 0.05. Average ranks and Z-scores were used to reveal differences between groups.

The Mann-Whitney U Test compared KM generation scores among teaching and non-teaching groups. The researchers presented W statistics, medians, and 95% confidence intervals to highlight differences between groups. Larger W values indicated bigger differences in median scores. These clarified variations for subgroup analysis.

The Kruskal-Wallis H Test assessed knowledge generation based on gender, age, education, and years of employment. The researchers presented H statistics, degrees of freedom, and adjusted p-values to clarify group differences. These findings enhanced the understanding of demographic effects.

3.5. Ethical Considerations

The study adhered to all ethical guidelines. Participants provided informed consent. The researchers complied with the protocols of the local Institutional Review Board. To protect participant confidentiality, all personal identifying information was removed from the instruments prior to data encoding in compliance with the ethical guidelines approved by the local Institutional Review Board.

4. Findings and Discussion

4.1. Demographic Distribution of the Employees

Demographic analysis offers key insights into workforce composition, highlighting trends that may impact knowledge management and organizational growth. In terms of gender distribution, the female employee has shown a higher percentage among faculty and non-teaching personnel. Among the seventy-one faculty members, 69.01% were females, while males represented 30.99%. For the fifty-two non-teaching staff, females have a higher

percentage (67.31%) than males (32.69%). This higher prevalence of women reflects broader trends in HEIs in the Philippines as well as recent global research (Table 1).

Table 1

Gender distribution of teaching and non-teaching employees

Composition	Female		Male	
	f	%	f	%
Teaching	49	69.01	22	30.99
Non-Teaching	35	67.31	17	32.69
Total	**84**	**100%**	**39**	**100%**

Similarly, women constitute the majority of the teaching workforce in primary and secondary education according to the 2024 UNESCO Global Education Monitoring Report. Although female representation in organizational leadership roles decreases as educational levels advance (Jones-Esan, 2023), a strong presence of women is evident among faculty members, which a discipline-specific trend may influence.

Gender composition has significant implications for the implementation of KM in universities. Empirical evidence showed that women are often involved in knowledge sharing, whereas men tend to focus on individual knowledge creation (Heisig & Kannan, 2020). Nonetheless, for inclusive KM systems, it is crucial to surpass gender stereotypes and value contributions from every employee.

Table 2

Age bracket distribution of teaching and non-teaching employees

Composition	25-35 years		36-46 years		47-57 years		58 or older	
	f	%	f	%	f	%	f	%
Teaching	16	22.54	26	36.62	24	33.80	5	7.04
Non-Teaching	14	26.92	14	26.92	16	30.77	8	15.38
Total	**30**	**100%**	**40**	**100%**	**40**	**100%**	**13**	**100%**

As shown in Table 2, the age distribution in the teaching and non-teaching staff showed mixed outcomes. The 36-46 years age group (36.62%) had the highest percentage among faculty members, while the 47-57 years age group had the second-highest at 33.80%. Such results show that the faculty is comparatively young. In contrast, the 22-35 years age

group accounted for 22.54%, while those above 58 years old accounted for only 7.04%. In contrast, non-teaching staff had a more balanced age distribution, with the 47-57-year age group being the largest (30.77%). The 36-46-year-old group and 25-35-year-olds for 26.92%, and those aged 58 and above for 15.38%.

The demographics of the faculty greatly influence the knowledge management. Faculty members aged 25-35 are primarily young and bring new ideas, technological skills, and the latest research. Age-mid career faculty are aged 36-46; these faculty members are experienced and innovative. The senior faculty, on the other hand, report that the institution is well equipped to create and disseminate knowledge.

The profile of non-teaching staff tends to be older, suggesting greater institutional memory and better procedural skills. However, this also poses a challenge for succession planning. Hoque and Zheng (2024) observe that the loss of knowledge is likely to be substantial when a transition to new leadership occurs in higher education, unless proper succession planning and knowledge transfer are implemented. Moreover, Shaik Villien (2023) found that although higher education administrators' attitudes toward succession planning are usually positive, most institutions lack structured approaches to knowledge transfer when a new leader is appointed. This highlights the need for proactive efforts to preserve knowledge before retirement.

Sahibzada et al. (2021), on generational diversity in the workplace, found that an organization with diverse age groups can enhance innovation at the organizational level, provided effective knowledge-sharing practices are in place. The presence of various generational groups offers learning opportunities, with younger employees bringing their technological skills and older employees sharing their wisdom.

Table 3

Educational attainment of teaching and non-teaching employees

Composition	Bachelors		Masters		Doctorate		Diploma	
	f	%	f	%	f	%	f	%
Teaching	9	12.68	37	52.11	25	35.21	0	0.00
Non-Teaching	35	67.31	6	11.54	10	19.23	1	1.92
Total	**44**	**100%**	**43**	**100%**	**35**	**100%**	**1**	**100%**

As shown in Table 3, the teaching staff had good educational qualifications that matched their job requirements. Interestingly, the highest population of 52.11% had Master's degrees. PhD holders constituted 35.21%, and those with a Bachelor's degree qualified 12.68%. It is also necessary to add that no teaching staff claimed to possess only a diploma. The percentage of faculty members with Master's and PhD degrees is high, which proves the relevance of the accreditation requirements and the professional development intent in the Philippine higher education. The Commission on Higher Education (CHEd) mandates that faculty members possess at least a Master's degree in their field of specialization, and obtaining a PhD is becoming increasingly important for advancement in academic positions. The largest group of non-teaching staff holds a Bachelor's degree at 67.31%, followed by those with Doctorate degrees at 19.23%. The percentage with diplomas is only 1.92%, with 11.54% being with Masters.

The profile of the education indicates that the non-teaching staff are highly qualified in their area of education (not basic education), so they can make better contributions to the body of knowledge in the institution. Accordingly, higher educational attainment may influence employees' engagement in knowledge creation and sharing within an organization (Galgotia & Lakshmi, 2022). However, placing too much emphasis on this could lead to overlooking the tacit knowledge and experience of long-term employees.

Table 4

Years of work experience of teaching and non-teaching employees

Components	3 to 5 years		6 to 10 years		11 to 20 years		21 to 30 years		Above 30 years	
	f	%	f	%	f	%	f	%	f	%
Teaching	5	7.04	18	25.35	21	29.58	22	30.99	5	7.04
Non-Teaching	11	21.15	10	19.23	15	28.85	10	19.23	6	11.54
Total	**16**	**100%**	**28**	**100%**	**36**	**100%**	**32**	**100%**	**11**	**100%**

Table 4 shows the patterns of work experience, which indicated significant variations across workplace groups. The highest number of teaching staff fell within the 21-30 years (30.99%) and 11-20 years (29.58%) categories, with 6-10 years (25.35%), 3-5 years (7.04%), and above 30 years (7.04%) ranking third to fifth place, respectively. This dispersion implies a mature workforce well-experienced in the institution.

The pattern among the non-teaching employees was different in that the majority of the employees were in the category of 11-20 years of experience (28.85%), 6-10 years (19.23%), 21-30 years (19.23%), 3-5 years (21.15%), and over 30 years (11.54%). The fact that the number of senior non-teaching staff (with more than 30 years of service) exceeds the number of teaching staff indicates that tenure in administrative positions is longer.

The extensive work experience of the two types of employees acts as a valuable source of knowledge. The majority of employees with 10 to 30 years of experience at the university are familiar with the university, have good professional contacts, and have accumulated their competencies in their respective fields. Nevertheless, Jones-Esan (2023) argues that such institutions ought to put formal mechanisms for knowledge collection and transfer to sustain it as retirees leave the university.

4.2. Knowledge Generation

Comparison between teaching and non-teaching employees. As shown in Table 5, the median scores of knowledge creation (4.00 and 4.25) of teaching and non-teaching staff are almost identical and established using the Mann-Whitney U test as 4.00 and 4.25, respectively. No significant difference was found between the two groups (n_1-n_2 = -0.0000, 95% CI: 0.0001, 0.0001; P = .7682). In this way, both groups produce the knowledge on equal levels. Since knowledge creation has a comparable nature, it is worth exploring whether standardized initiatives would be effective in facilitating processes and improving efficiency. However, perceptions and practices regarding knowledge generation may still differ between teaching and non-teaching staff.

Table 5

Knowledge generation among teaching and non-teaching employees

N (Non-teaching)	N (Teaching)	Median (Non-teaching)	Median (Teaching)
52	71	4.2500	4.0000

***Legend**:* Point estimate for η_1 - η_2 is -0.0000; 95.0 Percent CI for η_1 - η_2 is (0.0001,0.0001); W = 3278.5; Test of $\eta_1 = \eta_2$ vs $\eta_1 \neq \eta_2$ is significant at 0.7822; The test is significant at 0.7682 (adjusted for ties)

The fact that knowledge is created similarly by both academic and administrative staff refutes the notion that faculty members create more knowledge than non-teaching staff. The administrative and technical staff have an important role in providing valuable support.

Hatamleh (2023) highlights that intrinsic factors, namely, a sense of achievement and more effective supervision, are more effective in terms of knowledge sharing than extrinsic rewards are. Because of this, the reward systems must be centered on intrinsic rewards. Moreover, the relationship between these factors and the SECI cycle shows their influence on knowledge sharing and creation. This finding is further corroborated by Khoa and Huynh (2023), who established in their study of Vietnamese HEI employees that knowledge dissemination and utilization, hallmarks of the SECI externalization and combination modes, are the most powerful predictors of intrinsic motivation among academic staff, suggesting that creating conditions for knowledge circulation between teaching and non-teaching staff can simultaneously enhance motivation and deepen knowledge generation across the institution.

These intrinsic rewards align with the SECI model (Nonaka & Takeuchi, 1995), which suggests that knowledge is created through four interrelated processes: socialization, externalization, combination, and internalization. By supporting every stage of this knowledge conversion cycle, the application of intrinsic motivation has the potential to improve current reward systems. Intrinsic motivation allows employees to authentically share their knowledge (socialization), communicate their ideas voluntarily (externalization), work together successfully to combine knowledge (combination), and absorb new practices thoroughly (internalization).

Faldesiani and Senen (2024) also argue that teaching and non-teaching personnel play an important role in knowledge production within higher education institutions. The administrators will give procedural, technical, and institutional information, and academic staff will contribute scholarly information. Interdependence and KM are encouraged as feedback is provided and received across these spheres. Administrative competencies facilitate academic initiatives, whereas educational understanding promotes administrative creativity. This collaboration results in improved learning outcomes for the students. Since no significant difference is found in knowledge creation between the groups, this study proposes including both groups in knowledge management to maximize institutional benefits. The results highlight that the current knowledge management appreciates the input of every employee.

It is important to recognize the expertise of teaching and non-teaching in contemporary KM, as both groups play a vital role in knowledge creation and innovation.

Paudel (2023) notes that the development of higher education relies on the working relationships among academic and administrative team members, which ultimately advance operations and services to students. Both academic and administrative staff contribute, resulting in innovations, including the incorporation of new technologies. Accordingly, to implement an entrepreneurial culture, it is essential to have effective leadership and involve middle managers (Santos et al., 2024). As an example, the Registrar may introduce AI-advising systems at the same time as faculty members remodel the curriculum. Collaboration is necessary in the process. Furthermore, fostering psychological safety encourages open communication, the sharing of insights, and joint innovation.

Knowledge generation by gender. The Mann-Whitney U test indicates no significant difference in knowledge generation between men and women (Table 6). Median scores were 4.5 for males and 4.0 for females, but this difference was not statistically significant (median difference 0, 95.1% CI: 0, 0.5001; W = 2605.0, P = .2284, adjusted for ties). Knowledge generation involves producing, sharing, and utilizing new insights within the department.

Table 6

Knowledge generation among teaching and non-teaching in terms of gender

Group	N	Median
Male Generation	39	4.5000
Female Generation	83	4.0000

***Legend**:* Point estimate for $\eta_1 - \eta_2$ is -0.0000; 95.1 Percent CI for $\eta_1 - \eta_2$ is (-0.0000,0.5001); W = 2605.0; Test of $\eta_1 = \eta_2$ vs $\eta_1 \neq \eta_2$ is significant at 0.2581; The test is significant at 0.2284 (adjusted for ties)

No significant difference was found in gender, although male median scores were higher than those of females. Both organizational structures and societal expectations shape gender differences in knowledge creation, wherein power dynamics need careful examination. Structures that promote participation also create barriers. Most importantly, consider whether gender differences may exist in decision-making, not only in collaboration. Heisig and Kannan (2020) show mixed results regarding gender and knowledge management. Men sometimes make formal knowledge contributions, while women often excel at collaborative sharing.

Minor gender differences may affect opportunities, such as the slightly higher male median score. At the same time, despite gender parity, global data shows that there are still problems, such as women accounting for a higher percentage of research and assuming a larger share of caregiving responsibilities during COVID-19 (Jones-Esan, 2023). The policies of the institution should encourage gender equity in knowledge creation, address all forms of inequality, unlock the potential of every employee, provide flexible working hours and family support, regularly review workloads, and encourage leaders to set the example. According to Galgotia and Lakshmi (2022), various views should be taken seriously. The work of a group can transform the department into an example, and everyone can influence future research, regardless of gender.

Knowledge generation across age brackets. The Kruskal-Wallis test was conducted to evaluate differences in knowledge generation across age groups, revealing insignificant results (Table 7). The youngest group (ages 25-35) had the highest median score of 5.000 and an average rank of 74.5 (Z = 2.32), while these values decreased gradually in the older adult groups. Knowledge scores gradually reduced in the older age groups. Ages 36-46 had a median of 4.000, a rank of 61.0, and Z = -0.10. The 47-57 age group also had a median of 4.000, a rank of 55.2, and a Z score of -1.35. The 58 and above group had a median of 4.000, a rank of 51.8, and a Z score of -1.04. The overall H statistic was 7.11 (DF = 3, P = .068, adjusted for ties). Although the p-value was only marginally significant and the effect size was small (0.03), this suggests limited practical importance. Even minor statistical differences could encourage organizations to promote knowledge sharing among different age groups.

Table 7

Knowledge generation among teaching and non-teaching in terms of age bracket

Age bracket	N	Median	Ave rank	Z
25-25 years old	30	5.000	74.5	2.32
36-46 years old	40	4.000	61.0	-0.10
47-57 years old	39	4.000	55.2	-1.35
58 and above	13	4.000	51.8	-1.04
Overall	**122**		**61.5**	

Legend*:* H = 6.27, DF = 3, P = 0.099; H = 7.11, DF = 3, P = 0.068 (adjusted for ties)

The results suggest that younger employees may produce more knowledge even though there is no significant difference in terms of age. This implies that they may be more familiar with current methods from their recent education and feel pressure to demonstrate their skills with visible results. Various studies on generational workplace differences provide context for observing age-related KM trends. According to McDonald et al. (2025), younger professionals are highly proficient in utilizing digital tools and collaborative platforms. Compared to senior employees, younger employees may excel at innovative problem-solving. Technological skills do not necessarily ensure greater knowledge or wisdom, as these qualities often develop through longer work experience.

Lower median for senior employees may be due to their different knowledge-sharing styles and more extensive engagement patterns. Mentoring, consulting, and informal guidance are among the ways senior professionals can share tacit knowledge that formal metrics may fail to measure. They are more selective in their contributions; that is, they do not make small but vital contributions. Through shadowing and storytelling, senior employees will be able to transform personal knowledge into organizational learning. To illustrate, mentoring discussions have a way of transforming personal experience into common sense and assist in charting invisible routes in passing the knowledge. Kaba et al. (2025) found that non-academic staff aged 50+ were more likely to share knowledge than their younger peers. A longer tenure was associated with greater knowledge sharing, underscoring the importance of experience.

The marginally significant finding ($P = .068$) emphasizes the importance of intergenerational knowledge sharing. This can be fostered in institutions by the use of communities of practice, mentoring, and collaborative projects. These are meant to encourage communication contact between the various age groups, and they can involve problems being solved together to encourage task dependence (Fasbender & Gerpott, 2022). Through such programs, the technological competencies of early-career employees are bridged with the experience of top executives, enhancing organizational performance. To measure program success, organizations are advised to monitor the participation and cross-age co-authored publications. Some of the goals include a 20% growth of collaborations over two years, which leaders should establish. Clearly defined objectives and ongoing monitoring help ensure investments yield measurable improvements and allow timely adjustments.

Knowledge generation across educational levels. Educational attainment among teaching and non-teaching personnel did not significantly influence knowledge generation (H = 2.33, DF = 3, P = .507, ties adjusted) using the Kruskal-Wallis test. The median scores were consistent across the different educational levels: Baccalaureate (4.000), Master's (4.000), PhD (4.000), and Diploma (5.000). Additionally, the average ranks showed only slight variation: Bachelor's (62.2), Master's (63.7), PhD (56.8), and Diploma (101.0).

Table 8

Knowledge generation among teaching and non-teaching in terms of educational levels

Education	N	Median	Ave rank	Z
Bachelors	43	4.000	62.2	0.16
Diploma	1	5.000	101.0	1.12
Masters	43	4.000	63.7	0.51
PhD	35	4.000	56.8	-0.93
Overall	**122**		**61.5**	

Legend*:* H = 2.05, DF = 3, P = 0.562; H = 2.33, DF = 3, P = 0.507 (adjusted for ties)

The interpretation of a diploma holder's high score is with caution due to its small sample size (n=1). The small sample size of diploma holders highlights a methodological limitation in the study: the absence of a defined variance means that outliers cannot be generalized. For other groups, the lack of significant differences suggests that formal education is not the primary driver of knowledge generation.

Although an employee's professional domain may be shaped by their educational background, knowledge-generation practices are not determined by it. The findings highlight the need for KM systems that value both formal and informal knowledge and show that expertise should be valued beyond credentials. Nonaka and Takeuchi (1995) claim that the SECI model shows that participation in the knowledge conversion process determines knowledge creation rather than formal credentials. Employees at all educational levels engage in socialization by discussing experiences with colleagues, externalization by documenting procedures and insights, combination by merging information from multiple sources, and internalization by applying recently learned information. Ibarra-Cisneros et al. (2023), whose study of 434 academics verified that the presence of leadership, cultural, and

incentive enablers is a stronger predictor of knowledge generation outcomes than individual staff members' educational backgrounds, provide empirical support for this claim.

This finding challenges the idea that advanced degrees always result in greater knowledge creation. Jones-Esan's (2023) study showed that KM in HEIs includes pedagogical innovation, administrative efficiency, student support, and community engagement across both academic and administrative sectors. In these areas, experience, innovation, and organizational loyalty may be valued more than formal qualifications. These are the practical design components: micro-repositories with teaching tips; workflow automation tools to streamline tasks; virtual advisory services for personalized guidance; and online platforms for community projects. Recognizing these areas enables institutions to develop systems that accommodate various knowledge practices and promote a broader recognition of expertise.

The findings highlight knowledge systems that value different types of expertise beyond just formal credentials. According to Paudel (2023), successful organizations see the worth of both theoretical knowledge from higher education and practical experience. Interdisciplinary and cross-functional platforms let institutions tap into the full range of employee skills, no matter their educational background.

Knowledge generation across years of experience. Significant differences were found in the Kruskal-Wallis test assessing knowledge generation among various work experience groups (H = 12.40, DF = 4, P = .015 after adjusting for ties). The only demographic component that had a major impact on knowledge-generation processes was this one.

Personnel with 6 to 10 years of experience showed the highest engagement in knowledge generation, with a median score of 5.000, an average rank of 76.0, and a Z-score of 2.47. Employees with three to five years of experience followed, scoring a median of 4.750, an average rank of 72.8, and a Z-score of 1.37. Individuals in the middle experience groups showed moderate engagement levels: those with 11 to 20 years of experience had a median score of 4.000, an average rank of 56.8, and a Z-score of -0.94, while those with 21 to 30 years of experience also had a median score of 4.000, an average rank of 54.0, and a Z-score of -1.40. The most senior group, consisting of individuals aged 30 and over, scored the lowest with a median score of 4.000, an average rank of 43.8, and a Z-score of -1.66.

Table 9

Knowledge generation among teaching and non-teaching in terms of years of experience

Years of experience	N	Median	Ave rank	Z
11 to 20 years	36	4.000	56.8	-0.94
21 to 30 years	32	4.000	54.0	-1.40
3 to 5 years	16	4.750	72.8	1.37
6 to 10 years	28	5.000	76.0	2.47
Above 30 years	10	4.000	43.8	-1.66
Overall	**122**	**4.000**	**61.5**	

***Legend**:* H = 10.93, DF = 4, P = 0.027; H = 12.40, DF = 4, P = 0.015 (adjusted for ties)

This curvilinear relationship between experience and knowledge generation presents essential insights. The highest level of engagement among workers with six to ten years of experience suggests that this stage is ideal for their careers because it incorporates several factors: (a) foundational expertise, after 6 to 10 years, employees have gained substantial domain knowledge and a strong understanding of the institution, enabling meaningful contributions to the overall body of knowledge; (b) career motivation, professionals in the middle of their careers frequently aim to build a professional reputation and progress in their careers, which encourages active knowledge creation and visibility; (c) technological proficiency, this group likely has solid technology skills gained through their education and early careers, enabling them to effectively use modern KM platforms; (d) energy and innovation, compared with very senior employees, this group may have greater energy for new initiatives and greater openness to innovative approaches; and (e) balanced perspective, they combine fresh perspectives with enough experience to contribute practical, implementable knowledge.

The lower engagement among the most experienced employees (over 30 years old) may reflect several factors. Senior staff members often transition into roles focused on organizational leadership, strategic advising, and mentoring, which involve different kinds of knowledge contributions that are not easily measured by formal output metrics. Furthermore, these employees might encounter knowledge fatigue or feel that their established expertise requires less frequent showcasing. This pattern also raises concerns about potential knowledge loss as senior employees approach retirement without systematically transferring their accumulated expertise. Sahibzada et al. (2021) emphasize that organizations must implement proactive knowledge capture strategies, such as documentation systems, mentoring programs, and exit interviews, to preserve institutional memory. In addition,

Baltazar et al. (2025) identify knowledge transfer as one of six strategic approaches to organizational succession, stressing the importance of collaborative projects, mentoring programs, and thorough documentation in maintaining institutional knowledge across generational shifts.

It is encouraging to note that employees with three to five years of experience also exhibit relatively high levels of engagement, indicating that institutional onboarding and culture effectively involve new hires in knowledge-based activities. Supporting and sustaining this early career engagement while facilitating progression into the peak engagement phase (6-10 years) should be a strategic priority. Kaba et al. (2025) found that non-academic staff aged 50 and above were more likely to share knowledge than younger colleagues, and those with longer tenure were more likely to do so, corroborating the importance of experience in KM engagement. Relatedly, Sahibzada et al. (2023) demonstrated that the degree of perceived collegiality, which naturally deepens as employees accumulate tenure and build institutional relationships, is the single strongest predictor of individual KM readiness in HEIs, providing a relational mechanism that explains why employees in the 6–10 year experience bracket, who have established collegial networks but retain career ambition, exhibit the highest knowledge generation engagement observed in this study.

For the 11-30 year experience range, where engagement declines somewhat, institutions might consider targeted interventions. These initiatives could include: a) Recognition Systems that recognize individuals' contributions to knowledge which may help maintain motivation; b) Leadership Opportunities that involve mid- to senior-level employees in the governance of knowledge management; c) Renewal Programs that offer sabbaticals, professional development, and initiatives aimed at re-engagement; d) Intergenerational Projects that facilitate structured collaborations between experienced employees and those in the early stages of their careers; and e) Flexible Contribution Models that provide diverse formats for knowledge sharing that accommodate different stages of a career.

4.3. Implications for Higher Education Institutions

The results of this study have several significant implications for how KM techniques are developed in higher education.

First, the absence of significant differences between teaching and non-teaching employees in knowledge generation validates the importance of inclusive KM strategies that engage all organizational members. The Mann-Whitney U test result (P = 0.77), which indicates that both teaching and non-teaching staff contribute to knowledge generation at statistically comparable levels, directly addresses the third objective of the study. According to Faldesiani and Senen (2024), effective KM in HEIs requires recognizing that crucial knowledge exists not only within academic ranks but throughout the entire organization. The conventional belief that faculty members are the main or dominant forces behind institutional knowledge production is called into question by this finding. Teaching personnel contribute scholarly research, pedagogical innovation, and discipline-specific expertise, while non-teaching staff members contribute institutional memory, procedural efficiency, and technical know-how. Each group contributes distinct yet complementary knowledge. These contributions come together to form an integrated knowledge ecosystem that keeps institutions effective. When combined, these contributions create an integrated knowledge ecosystem that maintains the efficacy of institutions. This means that HEIs should create platforms and recognition systems that capture and value administrative, technical, and support knowledge in addition to academic scholarship. KM strategies that prioritize faculty contributions while marginalizing administrative staff may overlook a substantial portion of the institution's collective knowledge capital.

Second, the significant effect of work experience, particularly the peak engagement during the 6-10 year career phase, suggests that institutions should implement experience-differentiated KM strategies. Early-career support programs can help sustain new employees' high engagement, while mid-career recognition and leadership opportunities can capitalize on the peak engagement period. For senior employees, institutions should develop knowledge legacy programs, mentoring frameworks, and flexible engagement models that respect their transition toward strategic advisory roles while capturing their invaluable institutional memory.

Third, the marginally significant age trend suggests value in fostering intergenerational knowledge collaboration. Establishing cross-generational project teams, communities of practice, and formal mentoring relationships can aid in bridging disparate organizational perspectives and knowledge forms. According to Paudel (2023), when

organizations effectively incorporate different knowledge types and generational perspectives, knowledge management effectiveness rises.

Fourth, the gender findings highlight the need for continued attention to gender equity in knowledge management, even though they do not reveal any significant differences. Institutions should keep an eye on how different demographics contribute to knowledge, make sure that everyone is fairly acknowledged, and deal with any subtle obstacles that may develop over time.

Finally, the educational level findings challenge credential-centric approaches to knowledge management. While educational qualifications remain important for role-specific requirements, they do not determine knowledge generation engagement. Institutions should develop competency-based KM frameworks that recognize diverse expertise forms and create pathways for knowledge contribution regardless of formal credentials. Ibarra-Cisneros et al. (2023) support this recommendation by demonstrating that organizational enablers, not individual credentials, are the primary levers of KM performance in HEIs.

Based on Davenport and Prusak's (1998) conceptualization of knowledge management as generating value through the methodical application of knowledge resources, organizations need to acknowledge that successful knowledge management encompasses cultural, structural, and human resource aspects in addition to technology implementation. The comparable contributions of teaching and non-teaching staff and the significant impact of work experience (6–10 years peak engagement) indicate that KM strategies should be customized to different career stages and organizational roles rather than using uniform approaches. Recent research by Cabrera Nuñez et al. (2025) in Colombian public educational institutions confirms that organizational culture dimensions, particularly recognition, communication, and managerial leadership, significantly influence KM processes, including knowledge creation, transfer, storage, and application. Extending this institutional perspective, Budur et al. (2024) demonstrated across private and public universities that knowledge codification, storage, and sharing practices are the critical drivers of long-term HEI sustainability, with online training serving as a key moderator.

5. Conclusion

This study offers important empirical insights into the KM practices and demographics of staff, revealing a workforce primarily female, highly qualified, and rich in

institutional knowledge. The knowledge creation practices were alike for both teaching and non-teaching staff, challenging the idea that only academic personnel drive institutional knowledge development.

The main finding revealed that substantial work experience significantly influences KM practices, with employees possessing 6-10 years of experience exhibiting the highest level of engagement. This suggests that career stage may be more influential than role type, gender, or education level in forecasting knowledge creation behaviors. These findings carry practical significance for creating KM strategies in higher education. Institutions ought to adopt experience-based approaches that encourage early-career involvement, utilize the peak productivity of mid-career staff, and systematically transfer senior-level expertise. Developing inclusive KM systems that acknowledge various knowledge types at all levels will enhance institutional effectiveness and long-term sustainability.

Future longitudinal studies tracking individuals across career stages would provide stronger evidence for causal relationships between experience and knowledge generation. Furthermore, future research should examine the specific KM processes (creation, sharing, storage, application) separately to identify whether demographic patterns vary across different KM dimensions. In addition to identifying particular obstacles and enablers at various career stages, qualitative research may offer a deeper comprehension of the mechanisms underlying the experience-engagement relationship. Building on SECI-based models previously shown in Philippine HEI contexts, extending this research to multiple institutions would improve generalizability and allow cross-institutional comparisons (Gonzales, 2025). Assessing the quality and impact of knowledge contributions, rather than just their frequency, would provide a more detailed understanding of knowledge management effectiveness. Finally, investigating organizational and cultural factors that influence the relationship between demographics and knowledge practices would aid in developing more context-aware KM strategies.

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AI Declaration

The author declares the use of Artificial Intelligence (AI) in writing this paper. In particular, the author used Claude Sonnet 4.6 in searching appropriate literature, summarizing key points and paraphrasing ideas and Grammarly in checking and proofreading of grammar. The author takes full responsibility in ensuring proper review and editing of content generated using AI.

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