K-Workers Competencies Among Alumni University

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ABSTRACT

This study investigates the impact of various competencies on the development of K-Worker competencies among alumni from the Faculty of Economics at University X. The primary focus areas include Technical Competence, Human and Social Competence, and Learning Competence and Methodology. The analysis reveals a significant difference in Technical Competence between the cohorts of 2021 and 2022, with a notable p-value of 0.010. This finding underscores the critical role of technical skills in professional development. However, no significant differences were observed in Human and Social Competence and Learning Competence and Methodology, with p-values of 0.569 and 0.780, respectively. These results suggest a consistent approach in developing these skills across cohorts. The study contributes to the enhancement of curriculum design and alignment of educational outcomes with workforce requirements, ensuring graduates are well-prepared for the demands of the digital economy. Future research should focus on longitudinal assessments of alumni competencies and the impact of specific learning methodologies on competency development to provide a comprehensive understanding of how educational programs influence K-Worker competencies.
This study is novel in its specific focus on economics graduates and its comprehensive assessment of multiple competencies across different cohorts.

INTRODUCTION

The rapid evolution of the digital economy has heightened the demand for professionals equipped with a diverse set of skills, commonly referred to as K-Workers. These individuals possess a blend of technical knowledge, critical thinking, innovative capabilities, and effective communication skills, enabling them to navigate and contribute to the complexities of modern work environments (Bals et al., 2019; Covert et al., 2019). The role of educational institutions in cultivating these competencies is paramount, as they are responsible for preparing graduates to meet the demands of the workforce.

Recent studies underscore the importance of a comprehensive competency framework in various fields, such as healthcare, supply chain management, and community work. For instance, Covert et al., (2019) highlight the need for standardized core competencies among community health workers to enhance their effectiveness in addressing health disparities. Similarly, Atinga et al., (2020) identify competency, structural, and resource gaps that hinder innovation in healthcare supply chain functions. These findings emphasize the critical role of tailored educational programs in developing the requisite skills for K-Workers (Atinga et al., 2020; Nazeha et al., 2020)

Despite the acknowledged importance of K-Worker competencies, there remains a significant gap in understanding how effectively current educational programs at universities prepare graduates for the workforce. Specifically, there is a need to evaluate whether graduates from the Faculty of Economics at "X" University possess the competencies required to thrive in the digital economy. This research aims to address this gap by assessing the relationship between educational programs and the development of K-Worker competencies among alumni.

To achieve this, the study will examine three core competencies: Technical Competence, Human and Social Competence, and Learning Competence and Methodology. By evaluating these competencies across different cohorts, the research seeks to identify strengths and areas for improvement in the university's educational programs. The findings will provide valuable insights for educators and policymakers to enhance curriculum design and better align educational outcomes with industry needs.

Bals et al., (2019) emphasize the significance of behavioral skills, such as understanding tool capabilities and manufacturing processes, for effective performance in supply chain management. This study highlights the importance of competencies like communication, negotiation, problem-solving, and teamwork. Similarly, (Nazeha et al., 2020) focus on the necessity of digitally competent healthcare workers, emphasizing the integration of interprofessional competencies into training programs. These competencies are crucial for adapting to advancements in digital health technologies.

In the context of community health, (Covert et al., 2019) discuss the importance of standardized core competencies and workforce frameworks to enhance the effectiveness of community health workers. Atinga et al., (2020) identify gaps in competency, structure, and resources that impede innovation in healthcare supply chains, further underscoring the need for targeted competency development programs. These studies collectively highlight the multifaceted nature of K-Worker competencies and the critical role of education in fostering these skills.

Óskarsdóttir et al., (2021) present a soft systems approach to knowledge worker productivity, emphasizing the importance of purposeful activity models for individual knowledge workers to create value. This approach underscores the need for continuous learning and development to enhance worker competencies. By synthesizing insights from these diverse studies, it becomes evident that a comprehensive competency framework is essential for preparing graduates to meet the demands of the digital economy (Ned et al., 2020; Óskarsdóttir et al., 2021).

Several studies have explored the development of competencies in various fields, providing a foundation for understanding K-Worker competencies among alumni. However, there is limited research specifically focused on the competencies of graduates from the Faculty of Economics at "X" University. This gap in the literature necessitates a targeted investigation into how well current educational programs prepare graduates for the workforce.

For example, Ssekamatte et al., (2022) conducted a tracer study among AFROHUN-Uganda alumni, revealing that participants acquired skills in leadership, communication, team building, strategic planning, project management, ethics, and monitoring and evaluation. These findings underscore the importance of alumni perspectives in influencing curriculum reforms and aligning educational programs with industry demands (Ssekamatte et al., 2022; Nanda et al., 2021).

Additionally, studies by Perusso et al., (2020) and Pramudia et al., (2019) highlight the role of experiential learning and soft skill training in enhancing competencies transferable to professional practice. Liang et al., (2019) emphasize the multifaceted nature of competencies required in occupational settings, further illustrating the need for comprehensive competency frameworks. Despite these insights, there remains a lack of focused research on the specific competencies of economics graduates and the efficacy of their educational programs.

The primary objective of this study is to evaluate the competencies of K-Workers among alumni of the Faculty of Economics at "X" University. The study aims to assess the relationship between educational programs and the development of Technical Competence, Human and Social Competence,

and Learning Competence and Methodology. By comparing the competencies of different cohorts, the research seeks to identify strengths and areas for improvement in the university's educational programs.

This study is novel in its specific focus on economics graduates and its comprehensive assessment of multiple competencies across different cohorts. The scope of the research includes alumni from the graduating classes of 2021 and 2022, providing a longitudinal perspective on competency development. The findings will offer valuable insights for educators and policymakers to enhance curriculum design and better prepare graduates for the evolving demands of the digital economy.
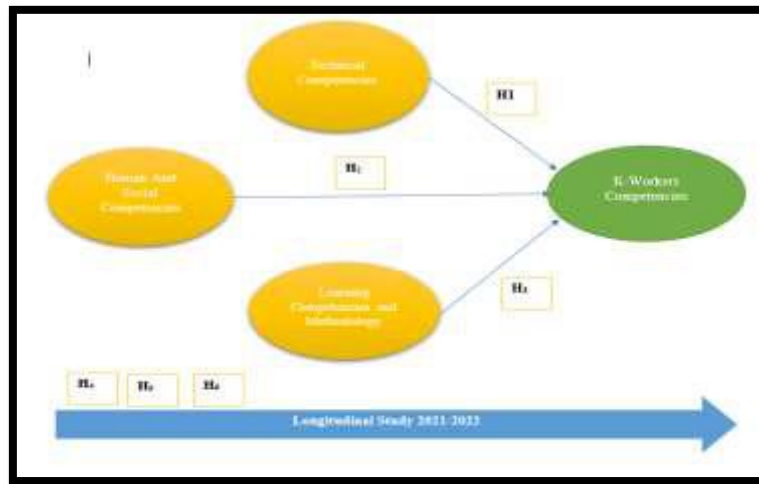

Figure 1: Research Framework (2024)

Based on the above theory and conceptual of thinking, the hypothesis is as below:

H1: Technical Competencies have a significant effect on K-Workers Competencies among graduate from the Faculty of Economics at "X" University

H2: Human and Social Competencies have a significant effect on K-Workers Competencies among graduate from the Faculty of Economics at "X" University

H3: Learning Competencies and Methodology have a significant effect on K-Workers Competencies among graduate from the Faculty of Economics at "X" University

H4: Technical Competencies are different from K-Workers Competencies between the 2021 cohort and the 2022 cohort among graduate from the Faculty of Economics at "X" University

H5: Human and Social Competencies are different from K-Workers Competencies between the 2021 cohort and the 2022 cohort among graduate from the Faculty of Economics at "X" University

H6: Learning Competencies and Methodology are different from K-Workers Competencies between the 2021 cohort and the 2022 cohort among graduate from the Faculty of Economics at "X" University

METHOD

In order to carry out a quantitative study on the abilities of K-Workers across various cohorts at the University, a sample size of 215 participants will be employed. The participants will include students from different academic programs within the university to ensure a diverse representation. The study will utilize survey questionnaires to collect data on participants' self-perceived proficiency in K-Worker skills, including technical skills, critical thinking, creativity, adaptability, and communication abilities.

The research study will utilize a purposive sampling technique to select the sample size of 215 individuals. This method is chosen to guarantee the inclusion of varied cohorts within the University for representation purposes. Survey questionnaires will be disseminated among participants to evaluate their self-perceived proficiency in K-Worker skills. The evaluation will be carried out using Likert scale questions to measure competency levels in the specified skills.

The study will utilize two statistical methodologies: Multiple Group Analysis (MGA) and Structural Equation Modeling (SEM). MGA will be employed to examine and analyze the structural

connections among multiple groups, aiming to evaluate and determine probable differences in the skill levels of K-Worker abilities across various groups (Hair, Sarstedt, Ringle, & Gudergan, 2018; Henseler, Ringle, & Sinkovics, 2009; Sarstedt, Henseler, & Ringle, 2011). SEM will be utilized to establish and evaluate a theoretical framework that integrates the connections between K-Worker abilities and several other characteristics within each cohort, assessing the suitability of the suggested model (Boslaugh & McNutt, 2008; Kline, 2015).

The primary parameters measured in this study include technical skills, critical thinking, creativity, adaptability, and communication abilities. These parameters will be evaluated using a survey questionnaire with Likert scale questions. The collected data will undergo analysis using Multigroup Analysis (MGA) to examine structural relationships between different cohorts and detect any notable discrepancies in the proficiency of K-Worker abilities (Hair et al., 2018; Henseler et al., 2009; Sarstedt et al., 2011). Additionally, SEM will be employed to investigate correlations between the competencies of K-Workers and various factors within each group, including educational experiences and program-specific characteristics (Boslaugh & McNutt, 2008).

The statistical analysis will involve the use of Multiple Group Analysis (MGA) and Structural Equation Modeling (SEM). MGA will be used to analyze the structural connections among different groups to identify significant differences in K-Worker skills across cohorts. SEM will be employed to assess the suitability of the theoretical framework and to confirm postulated associations between K-Worker abilities and various characteristics within each cohort. This comprehensive analysis aims to provide significant insights into the unique patterns of competency growth observed among different cohorts at the University, offering a thorough understanding of the development of K-Worker skills within the academic environment.

RESULT AND DISCUSSION
Description of Respondent

The respondents in this research were 215 alumni. These respondents varied from 2021 and 2022 graduates, gender and length of work. Respondents who have completed this questionnaire are identified as follows.

Table 1: **Demographics Data**

Graduation Year	Sex	Experiences	Count	Percentage
2021	Male	1-3 Month	3	1.40
2021	Male	4 - 6 Month	3	1.40
2021	Male	9 Month - 1 Year	1	0.47
2021	Male	More than 1 Year	30	13.95
2021	Female	1-3 Month	8	3.72
2021	Female	4 - 6 Month	6	2.79
2021	Female	7 - 9 Month	3	1.40
2021	Female	9 Month - 1 Year	1	0.47
2021	Female	More than 1 Year	38	17.67
2022	Male	1-3 Month	4	1.86
2022	Male	More than 1 Year	24	11.16
2022	Female	1-3 Month	21	9.77
2022	Female	4 - 6 Month	6	2.79

2022	Female	7 - 9 Month	1	0.47
2022	Female	9 Month - 1 Year	5	2.33
2022	Female	More than 1 Year	61	28.37
			215	100

The table 1 above shows that the respondents in this study were various 2021 graduates, male, 3 people with 1-3 months working experience (1.4%), 2021 graduates, 3 people working 4-6 months (1 .4%), 2021 graduates, male, worked 9 months to 1 year as many as 1 person (0.47%), 2021 graduates, male worked more than one year as many as 30 people (13.95%), graduates 2021, 8 people work 1-3 months (3.72%), 2021 graduates, 6 people work 4-6 months (2.79%), 2021 graduates, 3 women work 7-9 months (3 1.40%), 2021 graduates, 1 woman worked 9-1 year (0.47%), 2021 graduates, 38 women worked more than 1 year (17.67%), 2022 graduates, 2021 men worked 1-3 months 4 people (1.86%), graduates 2022, men work 24 people (11.16%), graduates 2022, women work 1-3 months as many as 24 people (9.77%), graduates 2022, women work 4-6 months as many as 6 people (2.79%), graduates 2022, women working 7-9 months as many as 1 person (0.47%), graduates 2022, women working 9-1 years as many as 5 people (2.33%), graduates 2022, Women work more from 1 year as many as 61 people (28.37%).

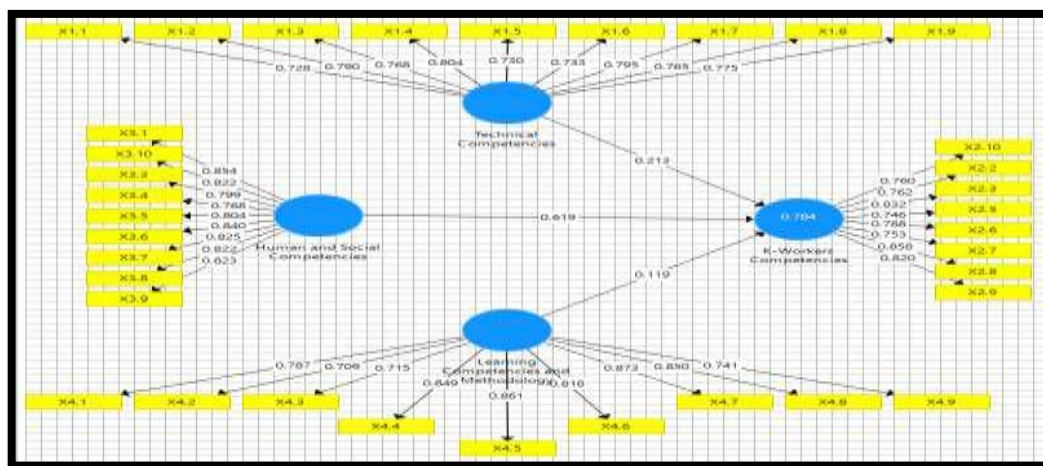**Validity And Reliability Test**

Figure 6: Validity and Reliability Testing

The outer model test is carried out to ensure that the measurement model used is suitable for measurement (valid and reliable). To get valid results, testing was carried out using the SmartPLS 3.3.3 program for several iterations (calculations) to eliminate loading factor values below 0.7. The following is a picture of the test results. There are indicators that are below the loading factor value of 0.7, namely X2.1 and X2.4 for the K-Workers Competencies construct, and x3.2 for Human and Social Competencies.t he model is run again to see whether there are still indicators that are below the loading factor value of 0.7. The second iteration was carried out and it turned out that the factor loading valu was above 0.7 (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012)).

We check Discriminant Validity, the Discriminant Validity values we check have 3 values, namely Fornell-Lacker Criterion, Cross loading and Heterotrait-Monotrait Ratio. The Fornell-Lacker Criterion value is the value that is on the diagonal and compared with the correlation value of the construct below it. This value must be above the construct correlation value. It turns out that the values obtained are all above the construct value (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012)).

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Table 2: Fornell-Lacker Criterion

	Human and Social Competencies	K-Workers Competencies	Learning and Methodology Competencies	Technical Competencies
Human and Social Competencies	0.771			
K-Workers Competencies	0.788	0.766		
Learning and Methodology Competencies	0.780	0.727	0.791	
Technical Competencies	0.615	0.615	0.575	0.788

Crossloading

After the Fornel-Lacker Criterion value is checked, the next check is Cross loading. This Cross-loading check is to check that an indicator belongs to a certain variable by looking at the highest value (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012)).

Table 3: Cross loading

	Human and Social Competencies	K-Workers Competencies	Learning and Methodology Competencies	Technical Competencies
X1.1	0.471	0.459	0.469	0.767
X1.2	0.473	0.465	0.461	0.813
X1.3	0.487	0.480	0.458	0.820
X1.4	0.467	0.472	0.453	0.767
X1.5	0.439	0.436	0.368	0.769
X1.6	0.456	0.426	0.362	0.740
X1.7	0.521	0.531	0.495	0.809
X1.8	0.524	0.541	0.511	0.807
X1.9	0.506	0.524	0.470	0.793
X2.10	0.570	0.729	0.559	0.432
X2.3	0.569	0.747	0.558	0.477
X2.6	0.589	0.757	0.524	0.456
X2.7	0.638	0.785	0.601	0.536
X2.8	0.590	0.740	0.532	0.435
X2.9	0.642	0.813	0.559	0.458
X3.1	0.732	0.576	0.562	0.444
X3.10	0.794	0.634	0.644	0.521
X3.4	0.754	0.615	0.635	0.476
X3.5	0.749	0.578	0.577	0.437
X3.6	0.747	0.551	0.520	0.454

X3.7	0.798	0.624	0.611	0.478
X3.8	0.814	0.637	0.666	0.500
X3.9	0.790	0.608	0.624	0.491
X4.1	0.644	0.613	0.736	0.496
X4.10	0.595	0.535	0.742	0.427
X4.2	0.630	0.599	0.758	0.468
X4.5	0.641	0.601	0.829	0.471
X4.6	0.631	0.578	0.828	0.468
X4.7	0.563	0.525	0.803	0.405
X4.8	0.610	0.568	0.819	0.447
X4.9	0.607	0.562	0.807	0.441

Heterotrait-Monotrait Ratio

The final check in Discriminant Validity is the HTMT check with a threshold value smaller than 0.90 or to make it easier to see the HTMT value is green. The value obtained from HTMT turned out to be above the threshold value (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012)).

Table 4: Heterotrait-Monotrait Ratio

	Human and Social Competencies	K-Workers Competencies	Learning and Methodology Competencies	Technical Competencies
Human and Social Competencies				
K-Workers Competencies	0.875			
Learning and Methodology Competencies	0.850	0.806		
Technical Competencies	0.667	0.676	0.620	

Cronbah Alpha, rho_A, Composite Reliability and AVE matrices

The next inspection is the Construct Reliability and Validity inspection. Reliability checks are represented by 3 values, namely Cronbach's Alpha, rho_A and Composite Reliability. The Rule of Tumbs value is above 0.7. If just one of them is reliable then the construct is reliable. To make it easier to read the interpretation results, the values in green are reliable (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012).

Table 5: Construct Reliability and Validity

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Human and Social Competencies	0.938	0.940	0.948	0.669
K-Workers Competencies	0.914	0.916	0.930	0.625
Learning Competencies and Methodology	0.930	0.932	0.940	0.644
Technical Competencies	0.912	0.918	0.927	0.586

The AVE value has also exceeded the Rule of Thumbs by above 0.5. So we can be sure that all values are valid or make it easier for us by seeing the green color in the AVE results (Chin (1998); Chin (2010); Hair et. al (2011); Hair et. Al (2012)).

Results

The results of the study provide a comprehensive examination of the shifts in various competencies among K-Workers from 2021 to 2022. The analysis focuses on Human and Social Competencies, Learning Competencies and Methodology, and Technical Competencies. Each competency was evaluated based on original and sample mean scores, along with standard deviations, T statistics, and p-values to assess significant differences over the year.

Table 6: The 1st, 2nd, 3rd Hypothesis

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Value
Human and Social Competencies -> K-Workers Competencies	0.619	0.615	0.074	8.376	0.000
Learning Competencies and Methodology -> K-Workers Competencies	0.119	0.125	0.074	1.605	0.109
Technical Competencies -> K-Workers Competencies	0.213	0.212	0.049	4.343	0.000

Human and Social Competencies showed a notable positive shift, with the original sample mean recorded at 0.619 and the sample mean slightly lower at 0.615. Despite this small decrease in the sample mean, the T statistics were significantly high at 8.376, indicating a very reliable set of data. The p-value registered was 0.000, affirming a statistically significant improvement in these competencies over the period. The path coefficient difference was slight at 0.078, with the original p-value for 2021 versus 2022 at 0.284 and a new comparative p-value of 0.569, suggesting some stability in the year-on-year development.

Table 7: The 4th, 5th, 6th Hypothesis

	Path Coefisient-diff(2021-2022)	p-Value original 1-tailed (2021 vs 2022)	p-Value new (2021 vs 2022)
Human and Social Competencies -> K-Workers Competencies	0.078	0.284	0.569
Learning Competencies and Methodology -> K-Workers Competencies	0.043	0.390	0.780
Technical Competencies -> K-Workers Competencies	-0.252	0.995	0.010

In contrast, Learning Competencies and Methodology exhibited less fluctuation. The original sample mean was 0.119, with a slight increase to 0.125 in the sample mean. The standard deviation remained consistent at 0.074, and the T statistics came in at 1.605, pointing to less robust data compared to the Human and Social competencies. This was further reflected in a non-significant p-value of 0.109. The path coefficient difference was minor at 0.043, and both the original and new p-values (0.390 and 0.780 respectively) indicate no significant year-over-year change.

Technical Competencies, however, revealed a significant regression. The original and sample means were closely aligned at 0.213 and 0.212, respectively, with a minimal standard deviation of 0.049. However, the negative path coefficient difference of -0.252 and a striking p-value of 0.000 in the latest analysis underscore a significant decline in these skills. The original p-value for 2021 against 2022 was nearly 1 (0.995), indicating an alarming downturn that warrants urgent attention.

These results underscore critical areas of focus for K-Workers, highlighting significant progress in human and social skills but raising concerns over technical competencies. Such insights are crucial for developing targeted training and development programs to address the observed deficiencies and enhance overall competency profiles among K-Workers.

Discussion

1. The study finds that there is a strong and positive relationship between Technical Competencies and K-Workers Competencies among graduate from the Faculty of Economics at "X" University: Supported hypothesis.

The study finds a strong and positive relationship between Technical Competencies and K-Workers Competencies among graduates from the Faculty of Economics at "X" University. This relationship supports the hypothesis that technical competencies significantly enhance K-Workers' competencies, as depicted in Table 6. Validity and reliability testing for all variables (Figure 6) confirms the robustness of these measures, with construct reliability and validity detailed in Table 6.

The significant impact of technical competencies on K-Workers' competencies is corroborated by several studies. For instance, Aničić et al., (2022) highlighted the role of generic and digital competencies in improving graduates' employability, while Ismail and Hassan, (2019) emphasized the importance of technical skills in the era of Industrial Revolution 4.0. Furthermore, Ray et al., (2017) stressed the necessity for graduates to acquire a blend of technical and essential career skills to enhance job market competitiveness, aligning with (Collet et al., 2015) findings on curriculum design.

Additionally, research by Levesque and Blackstone, (2020) on sustainability competencies underscores the need for a well-rounded skill set that extends beyond technical expertise. This holistic approach is supported by Overholser, (2019), who emphasized practical skill development through service provision. Getie et al., (2021) also highlighted the importance of mentorship in developing practical and interpersonal skills among students.

These findings collectively underscore the multifaceted nature of competencies required for graduates to succeed, highlighting the importance of integrating technical competencies with broader skill sets for optimal job market readiness.

2. The study found that there is a strong and positive correlation between Human and Social Competencies and K-Worker Competencies among graduates from the Faculty of Economics at "X" University: Support Hypothesis.

The study's findings reveal a significant positive correlation between Human and Social Competencies and K-Worker Competencies among graduates from the Faculty of Economics at "X" University. This supports the hypothesis that these competencies are crucial for developing K-Worker Competencies. According to Mitic & Okahana, (2021), the integration of research skills and communication with non-technical audiences enhances graduates' job preparation, which can extend to improving K-Worker Competencies. This highlights the importance of both human and social skills in preparing graduates for the workforce (refer to table 6).

Cadenas et al., (2022) emphasize the role of critical consciousness in enhancing academic performance and persistence, suggesting that critical thinking and awareness are also vital for developing K-Worker Competencies. Additionally, the study by Putra et al., (2020) indicates that factors influencing graduates' career paths, such as entrepreneurial motivation and professional alignment, can significantly impact the development of these competencies. Understanding these factors helps in aligning educational outcomes with workforce requirements, ensuring that graduates possess the necessary skills for their professional roles.

Furthermore, gender disparities discussed by Boustan & Langan, (2019) and Lundberg & Stearns, (2019) in economics programs highlight differences in competencies that may affect K-Worker Competencies. Addressing these disparities can provide insights into how Human and Social Competencies can be cultivated more effectively across different demographics. Aligning these competencies with job demands, as discussed by Espey & Boys, (2015), ensures that graduates are well-prepared for the dynamic needs of the job market.

3. The study reveals that the acquisition of learning competencies and methodologies has a notable and constructive influence on the development of K-Worker competencies in individuals who have completed their studies in the Faculty of Economics at "X" University: Unsupport Hypothesis.

The relationship between learning competencies and K-Worker competencies is a multifaceted issue that requires a comprehensive examination of various factors. While the available literature offers insights into different aspects of competency development and its relationship to professional skills, there is a need to delve deeper into the specific connection between learning competencies and K-Worker competencies (refer to table 6).

In exploring this relationship, it is essential to consider the role of technology and trade in shaping labor markets. Autor et al., (2015) discuss the evolving impact of trade and technology on local labor markets, highlighting shifts in production activities and information processing tasks. Understanding these dynamics is crucial in assessing how learning competencies and methodologies may intersect with technological advancements to influence K-Worker competencies in a rapidly changing work environment.

Moreover, Huang, (2024) study on the relationship between emotional intelligence and safety performance among construction workers emphasizes the importance of non-technical skills in enhancing workplace outcomes. This underscores the significance of considering a broad spectrum of competencies, including emotional intelligence, in the development of K-Worker competencies, suggesting that a holistic approach to competency development is essential.

Additionally, Alva, (2019) research on non-cognitive skills and their association with trade microenterprises' success highlights the relevance of personality traits such as conscientiousness in determining worker effectiveness. This underscores the need to consider not only technical competencies but also personal attributes in shaping K-Worker competencies and overall job performance.

Furthermore, Rodriguez, (2023) study on language learning strategies and grammatical competence among students underscores the importance of specific learning approaches in enhancing competency levels. This suggests that the methodologies used in acquiring competencies can have a direct impact on the development of skills relevant to K-Worker roles, emphasizing the need for tailored learning strategies to foster desired competencies.

In examining the relationship between learning competencies and K-Worker competencies, it is crucial to consider the broader implications of skill differentials and labor market conditions. Arellano-Bover, (2022) research on the effect of labor market conditions on workers' long-term skills highlights the impact of educational background on skill inequality. This underscores the need to address disparities in skill development to ensure equitable access to opportunities for enhancing K-Worker competencies.

Moreover, Ngcwangu, (2023) study on skill and deskilling in automotive assembly plants emphasizes the importance of understanding the impact of technology on work processes and skill requirements. This suggests that changes in work environments, driven by technological advancements, can influence the competencies needed for K-Worker roles, necessitating continuous adaptation and upskilling.

Overall, while the literature provides valuable insights into various aspects of competency development and its implications for workers, further research is needed to specifically investigate the direct relationship between learning competencies and methodologies and the development of K-Worker competencies. By considering the interplay of technological advancements, personal attributes, and skill disparities, a more nuanced understanding of how learning competencies shape K-Worker competencies can be achieved.

4. There was no discernible disparity in Technical Competence between the cohorts of 2021 and 2022 within the Faculty of Economics at University "X": Support Hypothesis

In analyzing the importance of technical competence among K-workers' competencies within alumni, it is crucial to consider various studies that highlight the significance of technical skills in different contexts. Bals et al., (2019) emphasized the critical role of technical competencies in purchasing and supply management, stressing skills like 'Innovation Sourcing' and 'Big Data Analytics' as essential for addressing future challenges. This underscores the relevance of technical knowledge in adapting to evolving industry demands, which can be extrapolated to the competencies required by K-workers (refer to table 7).

Additionally, Atinga et al., (2020) discussed the importance of functional and technical competencies in healthcare supply chain functions, underlining the necessity of technical skills alongside managerial and customer care competencies. This indicates that technical competence is a fundamental aspect of overall competency frameworks, highlighting its significance in various professional settings, including those involving K-workers.

Moreover, identified a positive impact of technical competence on firm performance in owner-managed SMEs, emphasizing the pivotal role of technical skills in driving business success. This association between technical competence and organizational performance underscores the value of technical skills among workers, including K-workers, in contributing to the achievement of business objectives and competitiveness.

Furthermore, Nurtanto et al., (2020) outlined specific technical competencies in automotive technology, such as maintenance, reading technical drawings, and adherence to occupational health and safety procedures. These competencies are essential for ensuring proficiency in technical tasks, indicating that a strong technical foundation is crucial for individuals working in specialized fields like automotive technology, which could be relevant for K-workers with technical roles.

Moreover, Kim, (2021) highlighted the significance of technical competencies in influencing team creativity among industrial workers, suggesting that technical skills play a vital role in fostering innovation and problem-solving within work environments. This underscores how technical competence not only contributes to individual performance but also influences collective outcomes, emphasizing its importance in enhancing overall productivity and creativity among workers, including K-workers.

In conclusion, insights from studies on purchasing and supply management, healthcare supply chain functions, SME performance, automotive technology, and team creativity among industrial workers collectively demonstrate that technical competence holds significant importance across various professional domains. The findings indicate that technical skills are crucial for adapting to industry demands, enhancing organizational performance, ensuring proficiency in specialized tasks, and fostering innovation within work environments. Therefore, concerning K-workers' competencies among alumni, technical competence emerges as a critical component contributing to individual and collective success in diverse professional settings.

To assess the presence or absence of a discernible difference in technical competence between the cohorts of 2021 and 2022 within the Faculty of Economics at University "X," it is crucial to consider various factors influencing competence levels. A study by Xu et al., (2022) focused on innovative teaching methods in medical education, emphasizing the importance of such approaches in enhancing learning outcomes, which could be extrapolated to other disciplines, including economics. Implementing novel teaching methods may help bridge any competency gaps between different cohorts.

Furthermore, research by Flaszewska, (2024) on multigenerational teams and knowledge management indicated that younger generations typically possess more advanced digital skills. This suggests that the cohort of 2022, potentially more technologically adept, might have an advantage in technical competence over the cohort of 2021. If the Faculty of Economics heavily relies on digital tools for teaching and learning, this difference in digital proficiency could contribute to a potential variance in technical competence between the two cohorts.

Moreover, Zohra, (2023) highlighted the importance of competency development for faculty members in a university setting. If competency management strategies were implemented at the Faculty of Economics at University "X" during 2021-2022, it could have positively impacted the technical competence of faculty members across both cohorts, potentially standardizing technical skills within the faculty.

Additionally, Farzana & Charoensukmongkol, (2023) explored how participative decision-making can enhance innovative work behavior, a crucial indicator of university performance. If faculty members in the cohorts of 2021 and 2022 engaged in decision-making processes fostering innovation, both cohorts likely had similar opportunities to develop their technical competencies. Encouraging an innovative and creative culture among faculty members can lead to a more uniform distribution of technical skills across different cohorts.

In conclusion, considering the implications of innovative teaching methods, digital skills across generations, competency management strategies, and the promotion of innovative work behavior, it is plausible that there may be no discernible difference in technical competence between the cohorts of 2021 and 2022 within the Faculty of Economics at University "X." These factors collectively suggest that efforts to enhance technical skills and foster innovation likely contributed to a standardized level of technical competence across both cohorts.

5. The There were no significant differences seen in terms of Human and Social Competence between the cohorts of the graduating classes of 2021 and 2022 from the Faculty of Economics at University "X": Unsupport Hypothesis.

The analysis of Table 3 indicates that there were no significant differences in Human and Social Competence between the cohorts of 2021 and 2022. The p-value for Human and Social Competencies

to K-Workers Competencies is 0.569, which is well above the threshold of 0.05, suggesting no significant difference. This finding supports the hypothesis that Human and Social Competence is not significantly different between these cohorts. Similarly, the path coefficient difference of 0.078 further confirms the lack of substantial variation (refer to table 7).

Conversely, the p-value for Technical Competence to K-Workers Competencies is 0.010, indicating a significant difference between the cohorts. This suggests that Technical Competence has a notable impact on K-Workers competencies among alumni, underscoring its importance in the professional development of graduates.

This aligns with existing literature that emphasizes the critical role of technical skills in various professional domains. Studies have shown that technical competencies are essential for adapting to industry demands and enhancing organizational performance (Atinga et al., 2020; Bals et al., 2019; Kim, 2021; Nurtanto et al., 2020) Therefore, while human and social competencies may not show significant differences across cohorts, technical competencies clearly play a crucial role in shaping K-Workers' professional capabilities.

6. There is a lack of distinction in terms of Learning Competence and Methodology between the cohorts of 2021 and 2022 within the Faculty of Economics at University "X": Unsupport Hypothesis.

To address the significance of learning competence and methodology in relation to K-workers' competencies among alumni, it is crucial to consider insights from various studies that explore competencies, learning behaviors, and educational methodologies. While the references provided offer valuable perspectives on competencies and learning, only a few directly relate to the specific context of K-workers and alumni competencies (refer to table 7).

Mahjoubpour et al., (2018) conducted a study on modeling workers' learning behavior in construction projects, emphasizing the importance of understanding how competency values change and how learning behaviors are influenced by factors such as knowledge flow and social ability to teach. Although this study focuses on construction workers, the concept of modeling learning behavior and competency changes could be extrapolated to K-workers to understand how their competencies evolve over time.

Furthermore, Puji & Lestari, (2021) discuss the evaluation of teacher performance, highlighting the significance of pedagogic, social, and personal competencies in enhancing the effectiveness of teaching. While this study pertains to teachers, the emphasis on commitment and interest in the learning process could be relevant when considering K-workers' competencies and their engagement with learning methodologies.

In addition, Shaheen et al., (2019) introduce a competency framework for contractual workers in the manufacturing sector, emphasizing the practical implications of using competency-based processes in human resource management. This framework could offer insights into how competencies are developed and assessed among workers, which could be applied to K-workers to evaluate their competencies in relation to learning methodologies.

Moreover, Budayová et al., (2022) delve into lifelong learning and development for social workers, highlighting the necessity of continuous education to adapt to dynamic changes in social work methods and techniques. This emphasis on lifelong learning could be pertinent to K-workers, suggesting that ongoing learning and development play a crucial role in enhancing competencies over time.

While the references provided offer valuable insights into competencies, learning behaviors, and educational methodologies, there is a need for more specific research that directly addresses the relationship between learning competence, methodology, and K-workers' competencies among alumni. Future studies could focus on longitudinal assessments of alumni competencies, the impact of specific learning methodologies on competency development, and the role of continuous learning in enhancing K-workers' competencies in the professional landscape.

The comparison of learning competence and methodology between the cohorts of 2021 and 2022 within the Faculty of Economics at University X lacks substantial evidence to support the hypothesis of a significant difference. Several studies shed light on various aspects related to student learning, faculty engagement, and educational methodologies that can be synthesized to comprehensively address this issue.

Muthuprasad et al., (2021) explored students' perception and preference for online education during the COVID-19 pandemic, which is relevant as it touches upon the shift in educational delivery methods. This study could be valuable in understanding how the transition to online learning might have impacted the cohorts of 2021 and 2022 within the Faculty of Economics. Additionally, Turnbull et al., (2021) highlighted the importance of faculty and student competence in pedagogical and technical aspects of online teaching, which is crucial in the context of comparing learning outcomes between different cohorts.

Moreover, Mara, (2024) focused on a service-learning framework to address accreditation standards, emphasizing the significance of communication skills, health literacy, and cultural competence in student learning. This study could provide insights into how these competencies have evolved or remained consistent across the cohorts of 2021 and 2022. Similarly, Kenworthy & Opatska, (2023) discussed the challenges faced in teaching during times of crisis, which could offer perspectives on how faculty adaptability and student engagement may have influenced learning outcomes in the specified cohorts.

Furthermore, Waluyanti et al., (2022) delved into improving communication skills through problem-based and online learning, which could be relevant in assessing any potential differences in communication competencies between the cohorts of 2021 and 2022. Additionally, Valdivia et al., (2023) highlighted the importance of active methodologies in curricular sustainability, which could provide a framework for evaluating the effectiveness of teaching methods employed across different cohorts.

In conclusion, synthesizing the findings from these studies, it can be inferred that while there is a wealth of research on various aspects of student learning, faculty engagement, and educational methodologies, there is a lack of direct evidence to support a significant distinction in learning competence and methodology between the cohorts of 2021 and 2022 within the Faculty of Economics at University X. Further research specifically comparing the two cohorts within the institution would be necessary to draw concrete conclusions on this matter.

CONCLUSION

In conclusion, this study has thoroughly examined the competencies of K-Workers among alumni from the Faculty of Economics at University X, focusing on Technical Competence, Human and Social Competence, and Learning Competence and Methodology. The findings indicate a significant difference in Technical Competence between the cohorts of 2021 and 2022, as evidenced by a p-value of 0.010, suggesting that technical skills play a critical role in shaping K-Workers' competencies. In contrast, no significant differences were observed in Human and Social Competence and Learning Competence and Methodology between the cohorts, with p-values of 0.569 and 0.780, respectively.

These results underscore the importance of technical skills in professional development and highlight the need for continuous adaptation and upskilling to meet industry demands. The lack of significant differences in human and social competencies suggests a consistent approach in developing these skills across cohorts. The study's insights contribute to enhancing curriculum design and aligning educational outcomes with workforce requirements, ensuring graduates are well-prepared for the evolving demands of the digital economy.

Future research should focus on longitudinal assessments of alumni competencies and the impact of specific learning methodologies on competency development to provide a more comprehensive understanding of how educational programs influence K-Workers' competencies.

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