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UNVEILING THE NEXUS: PROFESSIONAL COMMITMENT, WELL-BEING, AND TECHNOLOGY ADOPTION AMONG ECONOMICS EDUCATORS

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Abstract

This study investigates the relationship between teachers' professional commitment, well-being, and their adoption of technology in educational settings, focusing on economics educators in Indonesia. As digital integration becomes increasingly essential in teaching, understanding the internal factors that shape educators' readiness to use technology is crucial. Using Structural Equation Modeling (SEM) with Partial Least Squares (PLS), the study analyzes questionnaire data from 207 respondents to examine both direct and indirect effects amhttps://doi.org/10.15294/jeec.v14i2.38317ong the key variables. The findings show that teacher well-being significantly enhances professional commitment, which in turn positively influences technology adoption. Additionally, self-development and pedagogical competence contribute meaningfully to teachers' willingness to integrate technological tools into their instructional practices. These results extend the application of the Unified Theory of Acceptance and Use of Technology (UTAUT-1) by demonstrating how psychological and professional factors shape technology acceptance in educational contexts. Overall, the study provides important insights for improving teacher training programs, strengthening institutional support, and promoting effective digital integration in economics education. By emphasizing the interconnected roles of well-being, commitment, and competence, the research highlights pathways for enhancing pedagogical innovation and supporting sustainable educational development.

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INTRODUCTION

The effective integration of technology in education largely depends on educators' preparedness to utilize digital tools efficiently. Teacher readiness includes their ability to effectively use devices like smartphones, laptops, and applicable applications (Suryaningsih & Purnomo, 2023). Cultivating educators capable of effectively integrating technology with creative teaching approaches is crucial for maximizing the benefits of technology in educational environments (Harefa, Pebriani, Rukiyanto, & Sabur, 2023). Nonetheless, in spite of the clear advantages, educators frequently face obstacles when integrating technology for teaching purposes. Research by (Bennett & Bennett, 2003) found that the main barrier to technology adoption among educators is not insufficient resources or funding, but their readiness to accept technology and acknowledge its advantages. Additionally, Butler and Sellbom (2002) highlighted the essential importance of trust in technology as a factor influencing teachers' adoption choices. Other elements, including comfort with technology, perceived difficulty, and the time needed for extra training, also affect teachers' readiness to incorporate new technological resources.

The Unified Theory of Acceptance and Use of Technology (UTAUT-1) offers a fundamental theoretical basis for exploring technology adoption. UTAUT-1 combines aspects from multiple previous models to provide a thorough framework for grasping technology adoption. It has been successful in clarifying users' motivations to embrace information technology (Venkatesh et al., 2012).

Recent improvements to UTAUT have broadened its reach to encompass ideas pertaining to user behavior in technology acceptance, emphasizing behavioral intentions and external elements like performance expectations, effort expectations, and social influence (Hwang & Lee, 2018). The essence of UTAUT theory focuses on users' intentions to use technology, shaped by personal factors. This study will examine technology adoption through the lens of educators, especially teachers, who have a crucial influence on the educational process.

In education, teachers are the main users of technology, particularly during the learning process. As stated by (Mouza, 2014), effective technology integration by educators is linked to better student learning results, higher motivation, improved social interaction, and increased self-confidence in students. Educators utilize technology as a teaching tool to enhance the standard of education (Wardoyo & Nuris, 2023). For teachers to use technology successfully in their instruction, they need professional development and support from administration. Teacher professionalism continues to be a significant issue in education (Wardoyo et al., 2017).

Teacher well-being is closely connected to professional development; when educators experience fulfillment and satisfaction in their roles, they are more inclined to effectively incorporate technology into their instruction. On the other hand, when educators face stress or unease in their roles, integrating technology into the educational process turns into a major difficulty. Administrative support is vital in enabling teachers to access technology, simplifying its integration into their teaching methods. Bakker &

Oerlemans (2012) state that teacher well-being encompasses both positive aspects (like work engagement, job satisfaction, and workplace happiness) and negative aspects (such as workaholism and burnout). Additional studies are required to investigate the impact of teacher well-being on the adoption of technology in education.

The welfare of teachers is a pressing issue in Indonesia's educational system (Dara et al., 2021). Poor welfare conditions adversely affect teachers' performance, motivation for service, and endeavors to improve professionalism (Tilaar, 2007). From a financial standpoint, welfare concerns encompass insufficient wages and certification benefits. For example, the monthly pay for honorary teachers varies from IDR 150,000 to IDR 700,000, which is significantly lower than the regional minimum wage (UMR) (Hasanah & Zainuddin, 2024). Nevertheless, teacher welfare involves more than merely financial considerations; it also involves the workplace conditions and organizational atmosphere, which can influence teachers' readiness to collaborate with their peers.

Inadequate income commonly results in stress and negatively affects teacher performance (Hendrawan et al., 2018). Additionally, insufficient school facilities worsen difficulties within the work environment. Educators often experience feelings of insecurity and discomfort while carrying out their responsibilities, as classrooms are typically dirty, inadequately lit, and missing necessary tools. Disruptive noise from students additionally impairs their capacity to work efficiently (Nugraha, 2020).
Teacher well-being is essential for facilitating an efficient teaching and learning experience (Hasanah & Zainuddin, 2024). Sufficient welfare can improve teacher performance and cultivate a sense of duty regarding their profession. Teachers with a strong sense of duty are more likely to demonstrate commitment and dedication.

Professional dedication is a key principle for all individuals in the teaching field. Commitment is a personal devotion to performing tasks with significant responsibility, attention, and loyalty (Jannah, 2019). Dedicated educators aim to remain faithful and follow school regulations. As a result, when schools require changes in technology implementation and usage, teachers are more inclined to follow those directives. Research shows that teacher commitment is essential for effectively implementing e-learning (San-Martín et al., 2020). E-learning has demonstrated significant effectiveness in enhancing the quality of education (Wardoyo, 2016).

Educators with a strong professional dedication connect their efforts with the school's vision and mission, shifting from traditional teaching approaches to incorporating technology. These teachers not only embrace modern learning tools but also proactively enhance their tech skills and understanding. A teacher who utilizes technology proficiently shows an openness to learning and creativity, thus improving the educational experience through personal growth and ongoing skill advancement.

Self-development encompasses substantial transformative processes, which include shifts in values and identity at individual, group, or professional levels, facilitated by psychological and pedagogical methods (Wardani et al., 2024). For educators, self-improvement involves modifying their instructional approach during the educational journey. A study by (Su et al., 2018) revealed that Taiwanese educators who underwent

specialized training for professional growth, aided by school resources, showed improved self-awareness and a greater capacity to acquire technological knowledge. As education changes, educators need to be able to implement different strategies or models that promote interaction among students and teachers, enhance student engagement, and foster interaction with the wider environment (Nadiminsyah.,2024). This emphasizes that self-improvement is an essential element in teachers' preparedness to utilize technology. From an educational perspective, self-improvement also promotes creativity in the learning experience (Mirzagitova & Akhmetov, 2015).

The development of teaching methods is characterized by the establishment of interactive classroom settings. Educators with pedagogical expertise create engaging and interactive learning opportunities, skillfully oversee the teaching process, support students, and inspire a passion for learning (Wahyudi et al., 2024). In contemporary education, there is a move away from conventional approaches, backed by research in Ghana indicating that educators are utilizing platforms like YouTube to enhance their teaching abilities (Glover & Stewart, 2024). Likewise, additional studies show that educators employ blogs to enhance their professional growth (Luehmann & Tinelli, 2008). Therefore, the utilization of online applications is essential for teacher self-improvement.

Dedicated educators are usually enthusiastic about shifting from conventional teaching techniques to technology-driven strategies. This dedication stems from their sense of duty to their profession and commitment to reaching educational objectives. Study by Hartinah et al. (2023) emphasizes this, revealing that teaching methods play a crucial role in improving teacher effectiveness. Dedicated educators continually look for chances to enhance their teaching abilities. Leijen et al. (2024) state that these educators aim to cultivate student excitement in the classroom by consistently improving their teaching methods. Their dedication to refining their techniques demonstrates their awareness of the significance of their position as educators and their commitment to their career. As a result, a strong connection exists between teacher pedagogy and professional dedication.

Aside from pedagogy, self-improvement for teachers is heavily associated with professional dedication. Personal growth typically entails significant shifts in teaching techniques and methods, often embracing innovative technologies and strategies to enhance effectiveness. This ongoing self-enhancement highlights educators' dedication to their field and their readiness to adjust to swiftly changing teaching models. Educators concentrate on broadening their understanding to enrich the learning experience via contemporary instructional techniques, which seek to boost teaching effectiveness (Murwaningsih & Fauziah, 2023). Educators who participate in self-improvement activities, like attending training sessions and becoming part of professional teacher communities (MGMP), show their dedication to their profession (Izzati, 2024). Since pedagogy and self-improvement greatly affect teacher commitment, schools should focus on enhancing that commitment to boost overall performance and reach school objectives.

An essential aspect of this is guaranteeing teacher job satisfaction, which is vital for teacher well-being. This viewpoint is backed by (Sucitra et al., 2024), who highlight the significance of job satisfaction in enhancing teacher dedication and the overall effectiveness of schools. Based on this comprehension, this study will explore the embrace of technology by secondary school educators by evaluating the internal elements that affect technology uptake. These elements encompass teacher wellness, dedication, personal growth, and instructional methods.

A study conducted by the Center for Educational and Cultural Technology and Information Data shows that merely 40% of teachers in Indonesia are presently employing information and communication technology (ICT) in their teaching methods. The other 60% demonstrate lower proficiency in utilizing technology in this digital age (Kemendikbud, 2020). The low rate of adoption can be linked to various factors noted in earlier studies (Astini, 2019). Digital proficiency among educators in Indonesia is still limited, particularly among the 30% of teachers over 45 years of age who are nearing retirement. Secondly, there is a lack of content related to educational technology. Finally, the absence of facilities and infrastructure in different areas increasingly obstructs technology adoption. Consequently, additional investigation into the use of technology is crucial to adequately tackle these issues. This study seeks to examine the adoption of technology by secondary school teachers in Riau Province, Indonesia, concentrating on teachers from both public and private institutions. A survey carried out by Sani, Abdullah, (2022) in Riau province showed that e-learning applications like WhatsApp are extensively used by both public and private high school teachers, achieving a 100% adoption rate. Nonetheless, the adoption of apps such as Quizizz and YouTube is considerably less among public secondary school educators compared to private school teachers (Aisyah et al., 2021). Although WhatsApp is preferred for its intuitive design, tools such as Quizizz and YouTube are not fully utilized by teachers in public schools.

Taking into account the disparity in technology adoption by teachers in Riau Province, this study seeks to determine the factors that affect the adoption of technology by Economics teachers in State High Schools within the area. Based on Law Number 14 of 2005, teachers and lecturers are professional educators whose main duties are to educate, teach, train, guide, direct, and assess students from early childhood through formal education, as stipulated in Law Number 14 of 2005. Conversely, economics is characterized as the study or practice of human endeavors to satisfy the varied and evolving needs of existence by utilizing available resources through activities related to production, consumption, and distribution, encompassing all human initiatives directed at fulfilling life's necessities (Jumiati et al., 2022). In the meantime, economic education comprises organized and methodical efforts, via a learning process, to prepare students to make economically sound, altruistic, and ethical choices grounded in extensive knowledge, economic perspectives, abilities, and consciousness. This encompasses the advancement and safeguarding of Indonesian economic principles grounded in the Pancasila ideology, which seeks to attain national wealth and well-being (Wahyono, 2022).

Economic education focuses on enhancing methods to promote national economic beliefs and shape individuals' economic actions (Wahyono et al., 2021). Consequently, economics educators should possess a comprehensive understanding of economics and modify their teaching techniques to reflect contemporary trends. Due to the swift advancement of education, economics instructors must now incorporate technology into their teaching methods. This integration is essential for promoting economic thought, allowing students to tackle economic issues effectively and efficiently fulfill life's necessities. This study seeks to assess how much internal factors among economics teachers affect technology adoption

METHODS

This study employs an explanatory research design with a quantitative approach. Explanatory research aims to elucidate the causal relationships between variables by testing specific hypotheses (Sugeng, 2022). A five-point Likert scale was utilized for the questionnaire, where a score of 5 represents the most positive response, indicating strong agreement, and a score of 1 represents the most negative response, indicating strong disagreement.

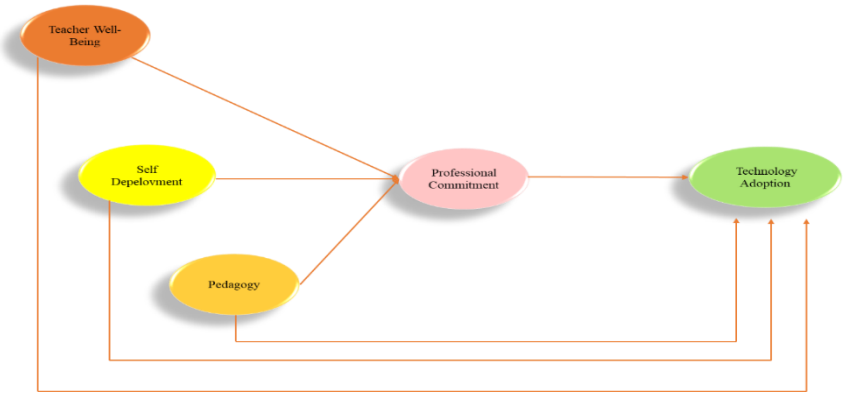

Figure 1. Research Design

Figure 1 illustrates the framework of this research, which examines the influence of teacher well-being, self-development, and pedagogical competence on technology adoption. Teacher professional commitment is closely linked to well-being, enhancing performance through technology adoption. Committed teachers can facilitate teaching practices and self-development by enhancing their pedagogical skills. This research aims to analyze the relationships between these variables to address the proposed hypotheses.

RESULT AND DISCUSSION

Following the standardization of questionnaire data from 207 observations, we present the data summary in Table 1. The teachers' perceptions of the technology adoption phases vary distinctly for each phase.

Table 1. Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Technology Adoption	207	42.00	138.00	83.8647	18.21770
Teachers-commitment	207	45.00	135.00	95.2899	17.95174
Teacher well-being	207	41.00	137.00	100.2512	18.20953
Self -development	207	43.00	149.00	105.2657	18.75550
Teacher Pedagogy	207	23.00	105.00	69.0725	16.58955
Valid N (listwise)	207				

Based on Table 1, the descriptive statistics of the questionnaire instrument indicate that the Technology Adoption variable, based on a sample size of 207 respondents, ranges from a minimum value of 42.00 to a maximum of 138.00. The average score for Technology Adoption among respondents is 83.8647, reflecting a generally positive reception of this variable. Additionally, the standard deviation of 18.21770 indicates variability above the mean, suggesting diverse perceptions regarding Technology Adoption.

Regarding the Teacher Commitment variable, with the same sample size of 207, values range from a minimum of 45.00 to a maximum of 135.00. The average score is 95.2899, indicating a predominantly positive perception of Teacher Commitment among respondents. Similarly, the standard deviation of 17.95174 highlights variability above the mean, reflecting varied perceptions of Teacher Commitment. For the Teacher Welfare variable, the sample size of 207 respondents shows values ranging from a minimum of 41.00 to a maximum of 137.00. The average score is 100.2512, indicating a generally positive reception of Teacher Welfare. The standard deviation of 18.20953 also suggests variability above the mean, indicating diverse perceptions regarding Teacher Welfare.

Regarding the Teacher Personal Development variable, based on the same sample size of 207 respondents, values range from a minimum of 43.00 to a maximum of 149.00. The average score is 105.2657, indicating a positive perception of Teacher Personal Development among respondents. The standard deviation of 18.75550 reflects variability above the mean, indicating diverse perceptions regarding Teacher Personal Development. Finally, for the Teacher Pedagogy variable, with a sample size of 207 respondents, values range from a minimum of 23.00 to a maximum of 105.00. The average score is 69.0725, indicating a generally positive perception of Teacher Pedagogy among respondents. The standard deviation of 16.58955 suggests variability above the mean, indicating diverse perceptions regarding Teacher Pedagogy.

Table 2. Cross Loading

	Teacher well-being	Self-Development	Teacher pedagogy	Professional commitment	Technology Adoption
X1.1	0,842				
X1.2	0,777				

	Teacher well-being	Self-Development	Teacher pedagogy	Professional commitment	Technology Adoption
X1.3	0,800				
X1.4	0,828				
X1.5	0,722				
X1.6	0,718				
X1.7	0,738				
X1.8	0,755				
X1.11	0,726				
X1.12					
X2.1		0,693			
X2.2		0,772			
X2.3		0,710			
X2.4		0,802			
X2.5		0,766			
X2.6		0,728			
X2.7		0,767			
X2.8		0,738			
X2.9		0,719			
X2.10		0,671			
X2.15		0,720			
X3.1			0,824		
X3.2			0,815		
X3.3			0,740		
X3.4			0,849		
X3.5			0,884		
X3.6			0,861		
Z.1				0,817	
Z.2				0,861	
Z.3				0,750	
Z.4				0,778	
Z.5				0,865	
Y.1					0,673
Y.2					0,787
Y.3					0,683
Y.5					0,690
Y.6					0,696

Based on the information in Table 2 regarding cross-loading values, it is evident that the indicators measuring variables X1, X2, X3, Z, and Y produce significant cross-loading scores. This significance indicates that the measurement indicators for these variables are valid. In summary, the cross-loading score is crucial for validating the indicators used for each variable. A significant score means that the indicator is more strongly correlated with its respective construct than with other constructs in the model. This strong correlation demonstrates that these indicators accurately represent the variables they are intended to measure.

In this context, the variables in question—X1 (Teacher Well-Being), X2 (Teacher Self-Development), X3 (Teacher Pedagogy), Z (Professional Commitment), and Y (Technology Adoption)—are robust. This robustness confirms that the indicators used for these variables not only measure the intended construct but are also distinct from

indicators of other constructs. Therefore, a significant cross-loading score confirms the validity of the measurement indicators for these variables.

This validation is essential to ensure the reliability and accuracy of data analysis. With valid measurement indicators, subsequent analyses and interpretations derived from these variables can be considered credible and trustworthy. Hence, the indicators for X1, X2, X3, Z, and Y are confirmed to be valid, supporting the integrity of the overall measurement model.

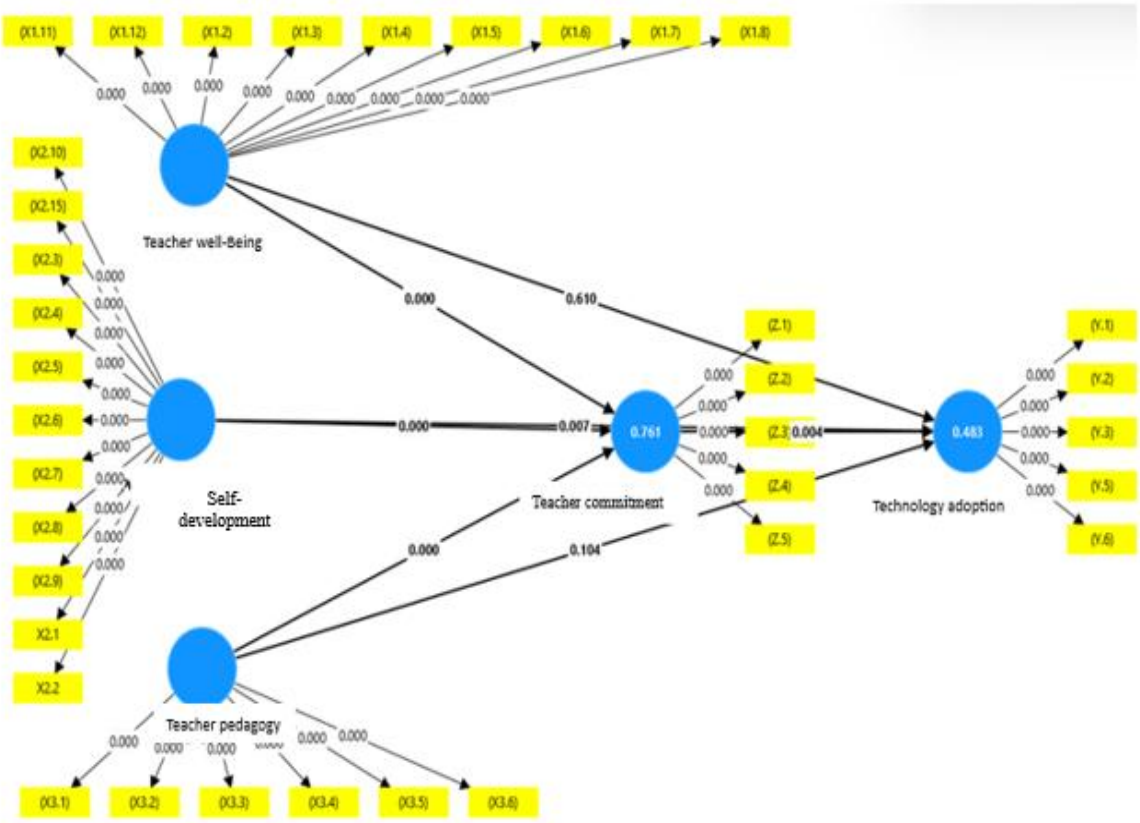

Figure 2. Inner Weight

Table 3. Direct and Indirect Effects

	Direct Effect		Indirect effect	
	Coefficient	Sig	Coefficient	Sig
Teacher well-Being -> Technology adoption	0,510		0,610	
Teacher well-Being -> Teacher commitment	8,208		0,000	
Teacher commitment -> Technology adoption	2,848		0,004	
Teacher Pedagogy -> Technology adoption	1,628		0,104	
Teacher Pedagogy -> Teacher commitment	5,188		0,000	
Self-Development -> Technology adoption	2,701		0,007	
Self-Development -> Teacher commitment	4,141		0,000	

Teacher well-Being -> Technology adoption	2,827	0,005
Self-Development -> Technology adoption	2,304	0,021
Teacher Pedagogy -> Technology adoption	2,332	0,020

The structural model results show seven direct influence paths. Of these, five meet the criteria for acceptance ($p < 0.05$), while two do not. The strongest direct effect emerges from teacher well-being to teacher commitment (coefficient = 8.208; $p = 0.000$), indicating that higher levels of well-being — including psychological comfort, job satisfaction, and emotional stability — are strongly associated with greater professional commitment (Yusoff & Halim, 2024). Similarly, self-development (coefficient = 4.141; $p = 0.000$) and pedagogical competence (coefficient = 5.188; $p = 0.000$) also positively influence teacher commitment, demonstrating that continuous professional growth and strong instructional skills reinforce teachers' dedication (Ajani, 2024; Tondeur et al., 2024).

Regarding direct effects on technology adoption, self-development shows a significant positive effect (coefficient = 2.701; $p = 0.007$), as does teacher commitment (coefficient = 2.848; $p = 0.004$). However, direct paths from teacher well-being to technology adoption (coefficient = 0.510; $p = 0.610$) and from pedagogical competence to technology adoption (coefficient = 1.628; $p = 0.104$) are non-significant. These results suggest that while well-being and pedagogical competence are important, they do not by themselves guarantee technology use — motivation and internal commitment seem to play a stronger role (Ajani, 2024; Sosa-Alonso et al., 2025).

The indirect effect analysis underscores the central mediating role of professional commitment. Teacher well-being displays a significant indirect influence on technology adoption through commitment (coefficient = 2.827; $p = 0.005$). This suggests that well-being helps strengthen commitment, which in turn drives teachers to adopt digital tools. Teachers who experience strong well-being — marked by satisfaction, support, and emotional stability — tend to feel more responsible and motivated to fulfill their professional duties, including the integration of technology (Stan, 2022; Tong et al., 2025).

Self-development also exerts a significant indirect effect on technology adoption via teacher commitment (coefficient = 2.304; $p = 0.021$). This means that when teachers engage in continuous learning — such as attending training, participating in workshops, or enhancing technological competencies — these efforts cultivate higher professional commitment, which in turn increases their willingness to implement technology in the classroom (Boonmoh et al, 2021; Ajani, 2024). Thus, self-development enhances technology adoption not only by improving teachers' skills but also by strengthening their dedication to educational improvement.

Finally, teacher pedagogy similarly influences technology adoption indirectly through commitment (coefficient = 2.332; $p = 0.020$). Teachers with strong pedagogical competence are more committed to delivering high-quality instruction, which motivates them to incorporate technology as a means of enriching the learning process (Tong et al.,

2025; Ajani, 2024). Although pedagogy alone does not directly trigger technology adoption, it enhances teachers' professional commitment, which acts as the decisive factor pushing them toward digital integration.

The direct and indirect findings reveal that professional commitment serves as the central psychological bridge linking well-being, self-development, and pedagogical ability to technology adoption. Internal motivations — shaped by positive well-being, continuous growth, and instructional competence — play a crucial role in determining teachers' openness to technological innovation. Therefore, strengthening teacher well-being, providing structured professional development opportunities, and enhancing pedagogical competence collectively contribute to fostering stronger professional commitment, which ultimately drives technology adoption in educational settings (Ajani, 2024; Tong et al., 2025; Stan, 2022)

CONCLUSION

This study demonstrates that technology adoption among economics educators is influenced by a set of interconnected internal factors, with professional commitment serving as a critical mediating link. Teacher well-being, self-development, and pedagogical competence each contribute indirectly to technology adoption by strengthening teachers' dedication to their profession. When teachers feel supported, continuously develop their skills, and possess strong instructional capabilities, they become more willing and motivated to integrate digital tools into their teaching practices. These findings emphasize the importance of promoting holistic teacher development to foster effective technology use and enhance the overall quality of learning experiences.

Despite its contributions, this research is constrained by several limitations. The reliance on self-reported data may introduce subjective bias, and the focus on economics teachers within a single region limits the generalizability of the findings. Additionally, the cross-sectional design prevents the examination of long-term causal relationships. Future research should consider expanding the sample across different subjects and regions, employing longitudinal or mixed methods approaches, and incorporating external organizational variables such as leadership support, digital infrastructure, and policy implementation. Exploring how emerging technologies—such as AI-assisted learning tools—interact with teacher commitment and professional growth will further enrich the understanding of technology adoption in educational contexts and guide more effective strategies for digital transformation in schools.

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