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Exploring creative performance models in higher education: A case study of Indonesia

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ABSTRACT

This research aims to construct a creative performance model relevant to the Indonesian context, utilizing the Resource-Based View (RBV) theory. The model seeks to predict creative performance among Indonesian lecturers through entrepreneurial leadership, psychological capital, and knowledge sharing. A quantitative approach was used in a survey and a causal design to examine the relationships between variables. The study involved 35,954 lecturers with samples selected using proportional random sampling. Structural equation modelling (PLS-SEM) with Smart-PLS was used to analyze the data. The study successfully confirmed the influence of knowledge sharing, psychological capital, and entrepreneurial leadership on the creative performance of lecturers by testing seven hypotheses. Knowledge sharing was found to play a central role in enhancing creative performance. The research highlights the importance of a collaborative work environment that facilitates knowledge sharing, leverages lecturers' psychological capital, and is guided by entrepreneurial leadership to improve creative performance. The study suggests that universities should invest in creating environments that enable knowledge sharing, developing the psychological capital of lecturers, and promoting entrepreneurial leadership. These efforts can enhance the creative performance of lecturers and improve university competitiveness on a global scale.

Contribution/Originality: This research contributes to the creative performance of lecturers in higher education. How to design the measurement model theoretically and empirically? The findings strengthen the role of psychological capital, entrepreneurial leadership, and knowledge sharing in encouraging lecturers' creative performance.

1. INTRODUCTION

Global challenges require universities to conduct in-depth research on innovative teaching methods and organisational structures (Tierney & Lanford, 2016). In this context, the creative performance of lecturers is prominent as it has a direct impact on teaching, research, and the overall success of the institution (Wibowo, Gautama, Bandur, & Furinto, 2024). Universities and higher education institutions can support national and global development, which in turn advances important sectors in the country through faculty research (Andriani, Purwana, & Susita, 2020).

The academic duties of lecturers in Indonesia are complex, including researching, teaching, publishing articles, and community service known as the "Tridharma of Higher Education" (Permatasari, Purwana, & Akbar, 2020). Lecturers are also required to have achievements that include excellence in producing creative or innovative work

that is recognised at the regional, national or international level and to achieve performance above the standards set out in the Indonesian government regulations on lecturers. To achieve this, creativity must be developed to stimulate innovation, original ideas, action, creative thinking, and new teaching approaches (Suryaningrat, Askar, & Syahid, 2023).

The essence of creative performance in the tridharma of higher education can often be linked with the increasing of lecturers' careers, the quality of service, academic performance and in the end, can raise the ranking of Indonesian research globally. In addition, universities and higher education institutions in Indonesia can be the destinations of schools from abroad, resulting in increased foreign exchange, an increase in the economy, and the welfare of the Indonesian people being better and vice versa.

Amabile and Gryskiewicz (1989) explain that there are challenges in enhancing creativity, such as pressure of time, excessive negative criticism in evaluations, avoiding risks by doing what is usually done and the emergence of destructive competition due to political issues. Moreover, the challenges faced by lecturers in developing creative performance are often associated with the use of technology, job stress, the need for self-understanding, leadership, and collaborative skills (Yuhertiana, Izaak, Rahmawati, & Sucahyati, 2024).

The data from Scimago in 2022 indicated that Indonesia had ranked 39th worldwide and 9th out of 33 Asian countries. It remarks that the ranking of lecturers' research has not been maximised. Thus, it is worth questioning whether the lack of knowledge exchange between lecturers is the cause. Remember that collaborating with others to share ideas and gain new perspectives can boost creativity (Grund, Harbring, & Klinkenberg, 2025). Thus, it is essential to recognise that knowledge sharing is a prominent factor affecting creative performance (Carmeli, Gelbard, & Reiter-Palmon, 2013; Sharifirad, 2016). In the context of higher education, knowledge sharing is considered crucial to improve the effectiveness and competitiveness of institutions (Thi Chung & Thi Tram Anh, 2022).

Another problem related to creativity performance is that many Indonesian lecturers are not ready to report the results of the tridharma of higher education. It can be seen at the beginning of 2023, where there are changes in the regulation of functional position performance in Indonesia. There are lecturers who are not ready to report all of their performance from the start of their last academic promotion until 31 December 2022. Therefore, it is very important for lecturers to report performance on time, which is related to the personality of a lecturer. Based on human capital theory, it turns out that there is one aspect that is rarely researched by lecturers, known as psychological capital.

Creativity and innovation, risk-taking, and the ability to identify opportunities are entrepreneurial skills (Purwana & Widyastuti, 2017). The role model of a leader who is able to sustain innovation and adaptation in a high-speed and uncertain environment that requires entrepreneurial leadership (Surie & Ashley, 2008). Entrepreneurial leadership style focuses on innovation, risk-taking, and the ability to seize opportunities to achieve organisational targets while motivating group creativity and is needed especially in organisations that invest predominantly in scientific, technological, and research and development (R&D) efforts, controlling the innovation process (Norena-Chavez & Romani Torres, 2024). This is in accordance with what is required by the legal entity universities (PTN-BH) in Indonesia.

High psychological capital, as shown by previous research is associated with increased confidence in creativity, as well as good performance in terms of organisation, citizenship behaviour, individual performance, and innovation (Luthans, Avolio, Avey, & Norman, 2007; Slåtten, Lien, Horn, & Pedersen, 2019). Other studies have found a close link between entrepreneurial leadership styles and employee creativity levels (Mehmood, Jian, & Akram, 2020). In addition, knowledge sharing also promotes employee creative performance as evidenced by improving work efficiency and developing innovative behaviour (Goh, Jayaraman, Mostafiz, & Leow, 2020).

There are no comprehensive measurements for each variable and these three predictors were not involved together despite the relationships between variables being studied in the preliminary literature. This study

contributes to provide a reliable model for achieving performance goals and improving the competitiveness of Indonesian universities internationally. In addition, preliminary studies are still insufficient in the aspects of instruments, dimensions, and indicators of variable measurement. This study will provide a comprehensive measurement for improving creative lecture performance in Indonesian higher education.

2. LITERATURE REVIEW

2.1. Theoretical Background

The theory of resource-based view (RBV) is involved as the grand and underpinning theory for understanding the relationship between variables and models. According to Wernerfelt (1984) RBV is a unique corporate resource that can be the basis for competitive advantage. Resources that provide competitive advantage must meet certain criteria, i.e., be valuable, rare, difficult to imitate and not easily replaced (Przegalinska et al., 2025). The RBV emphasises that inter-organisational collaboration allows companies to access resources that they could not obtain on their own, thus enabling the common pool of resources that can create value for the organisation (Ozdemir, de Arroyabe, Sena, & Gupta, 2023). RBV enhances organisations to leverage their unique resources to drive innovation (Jyoti & Efpraxia, 2023).

In addition, the human capital theory was elaborated in this study. According to Barney (1991) human capital is closely related to the skills, abilities (competencies) and knowledge of individuals that can be used to create value in an organisation or company. According to Barney (1991) human capital is a decisive asset for an organization because the quality and ability of employees have a direct influence on the performance and competitiveness of the company. Barney (1991) also stated that investment in human capital development, such as training and education can provide a competitive advantage. This is because good human capital is difficult for competitors to replicate. Thus, raising skilled and knowledgeable employees can drive organisations to be more innovative, efficient, and better respond to market and technological changes.

A prior study noted that employee creativity is a key to innovation in organisations (Volery & Tarabashkina, 2021). Knowledge sharing is considered a motor for creativity-related collaborations (Hou, Su, Qi, Dong, & Jia, 2024). Psychological capital can be enhanced and utilised either for desirable attitudes, behaviours and performance or to enhance creativity (Sweetman, Luthans, Avey, & Luthans, 2011). Entrepreneurial leadership is considered an innovative leadership approach in facing the challenges and changes in the 21st century era (Mehmood et al., 2020). There is a relationship between the variables of knowledge sharing to creative performance, psychological capital to creative performance and entrepreneurial leadership to creative performance.

2.2. Creative Performance

In the workplace, creativity is seen as a basic need for self-actualization which in turn drives a culture of innovation and continuous improvement, creativity not only has a positive impact on individual performance, but also on the overall effectiveness and competitiveness of the organisation (Martini, Gorda, Gorda, Sari, & Antara, 2024). Creative performance is a process of generating new and useful ideas that can drive innovation in organisations by considering aspects of novelty, usefulness, and socio-historical context (Amabile & Pratt, 2016). Creative performance is a continuous cycle between information processing at the individual level and team collaboration where the ideas and resources contributed by each member undergo refinement and improvement (Muehlfeld, Loderer, Semrau, & Wilken, 2025).

Creative performance is described as an employee's capability to engender novel and advantageous ideas or solutions in an organisational context. Creative performance is not solely an individual trait but is significantly influenced by organisational climate, which includes employees' shared perceptions and attitudes regarding the environment (Goh et al., 2020). Creativity emerges as a product of various antecedent factors, such as motivation, cognitive style, and personality traits more than just a personal characteristic (Sun, Wang, & Jeyaraj, 2020).

Creative performance as a concept focuses on the ability to innovate and the subsequent application of those innovations to drive organisational success (Ximenes, Supartha, Manuati Dewi, & Sintaasih, 2019). Creative performance is characterized by the ability to deal with the alteration of circumstances and innovate regardless of the constraints faced (Sanda, Kilu, & Alacovska, 2024). Creative performance is essential because it drives the implementation of innovative ideas that impact development and maintain competitive advantage (Amabile, Conti, Coon, Lazenby, & Herron, 1996).

Hence, it can be concluded that the creative performance of lecturers is the ability to generate new ideas, works, procedures, or products that are original and beneficial to higher education in carrying out teaching, research, and community service tasks. This process involves complex interactions, innovative thinking and motivation, as well as risk-taking and adaptation to change. In higher education, lecturers' creative performance plays an important role as it affects the quality of teaching, research and institutional performance. In this study, creative performance is measured and adopted from Amabile and Pratt (2016) with three dimensions, including intrinsic motivation to discharge the task, skills in the task domain and processes pertinent to creativity (skills in creative thinking).

2.3. Psychological Capital

Psychological capital determines one's emotional intelligence, which enables individuals to develop innovation and creativity (Bado, Tahir, Thamrin Tahir, & Hasan, 2025). Organisations that want to grow and compete must prioritize creativity, which means prioritizing the understanding and analysis of psychological factors, not just external aspects such as leadership (Mehmood et al., 2020). Psychological capital is considered essential because it promotes the willingness to innovate by having higher enthusiasm, curiosity, exploration, willingness to think and accept new ideas (Sweetman et al., 2011). Furthermore, it can impact increasing interaction between employees that can build positive relationships and a supportive work environment, collaboration between teams can increase (Kawalya et al., 2019). Psychological capital can also improve employee performance, primarily in stressful situations such as a pandemic (Daraba, Wirawan, Salam, & Faisal, 2021).

A preliminary work noted that psychological capital can contribute both to individual performance and organisational success. Organisations that support the enhancement of psychological capital among their employees can create more productive work circumstances (Choi & Chang, 2023). High psychological capital tends to be more motivated and engaged at work when facing difficult targets (Kuroki & Shirinashihama, 2025). Psychological capital is an important component of human capital that plays a role in overcoming behavioural problems in organisations, improving adaptability to the environment, and increasing individual productivity and overall organisational effectiveness (Pradhan, Jena, & Bhattacharya, 2016). Therefore, psychological capital for lecturers is a positive psychological construct that is pivotal for lecturers in self-development and performance achievement, which serves to motivate them to achieve optimal performance in the tridharma of higher education.

In this study, psychological capital is measured using four dimensions adapted from Wu, Hutagalung, and Saad (2019) namely hope, optimism, resilience, and self-efficacy. These four elements are critical to effectively managing and overcoming challenges (Mahran & Elamer, 2025). The four dimensions of psychological capital can be measured, managed, and developed to improve work outcomes and contribute to creativity, innovation, and overall organisational performance (Setioningtyas, Fodor, & Dunay, 2024). In previous research, psychological capital directly contributes to increasing individual creativity and has the ability to engender new ideas and take the necessary risks in the innovation process (Brunetto, Saheli, Dick, & Nelson, 2022; Hu et al., 2023; Kawalya et al., 2019; Zhou et al., 2022).

Psychological capital can be more successful in adapting and interacting in multicultural environments, which further accelerates their work performance (Aminullah, Yusuf, Azizan, Salisu, & Bin Mansor, 2022). As well as being considered more able to overcome obstacles and adapt to difficult situations, which in turn can enhance performance (Kadiyono & Ashriyana Sulistiobudi, 2024). Psychological capital is recognised as a key factor that can

increase employee creativity and innovation (Setioningtyas et al., 2024). It can help understand and envisage idea generation and creative performance (Luthans et al., 2007). Psychological capital is proven to have a significant role in improving innovation performance as shown by previous studies (Brunetto et al., 2022; Judge & Bono, 2001; Tang, 2020).

Alves and Pinheiro (2022) added that individual psychological dimensions influence tacit knowledge sharing in a group or organization. A prior study also remarked that psychological capital has a robust link to knowledge sharing (Hu et al., 2023). Certain studies note that employees who possess psychological capital tend to maintain a positive mood and good working conditions which further contributes to the achievement of organisational goals (Chiu, Lin, Tsai, & Teh, 2018; Hu et al., 2023). In a psychologically safe environment, knowledge sharing is proven to increase employee creativity as shown by early studies (Hu et al., 2023; Wang, Liu, & Zhu, 2018; Zhou et al., 2022). Referring to the previous explanation, the following hypothesis is proposed.

H_1: Psychological capital has a positive effect on creative performance.

H_2: Psychological capital has a positive effect on knowledge sharing.

H_3: Knowledge sharing mediates psychological capital and creative performance.

2.4. Entrepreneurial Leadership

Entrepreneurial leadership successfully rebranded the university to be more innovative and dynamic (Civera & Meoli, 2024). According to him, effective leadership sets a clear strategic vision for the university, one that leads the university to improve public services and achieve organisational goals. Entrepreneurial leadership has the ability to orchestrate resources effectively by understanding resource allocation and organisational discipline to link entrepreneurship with strategic management (Yadav, Vyas, Kanchan, Ghosal, & yadav, 2024).

Entrepreneurial leadership has key characteristics that include being able to communicate a vision, developing and exploiting opportunities for competitive advantage, being responsive, being creative and proactive to the competitive environment and market changes and creating a climate of entrepreneurial behaviour in the organisation (Ximenes et al., 2019). This has an impact in the modern business context, to drive innovation and competitive advantage (Norena-Chavez & Romani Torres, 2024). Leaders' attention to employee welfare and open communication are key to creating an environment conducive to creativity (Bhattarai, Karki, Rai, & Budhathoki, 2024).

According to Renko, El Tarabishy, Carsrud, and Brännback (2015) entrepreneurial leadership style involves efforts to influence and direct organisational members in achieving organisational goals through the identification and utilization of business opportunities. It is also described as a leader who is innovative, aggressively experimenting, and skilled in transforming exciting opportunities (Ximenes et al., 2019). Creative performance is not solely influenced by individual traits but is significantly influenced by the supervisory style of leaders in the organisation (Bhattarai et al., 2024).

Hence, entrepreneurial leadership for lecturers is a strategic approach that integrates vision, innovation, influence, and participation of lecturers in achieving organisational goals. This type of leader not only focuses on results but also on the creative process that involves all members of the academic community. According to Hou et al. (2024) and Renko et al. (2015) this study used two dimensions, including effectively inspiring and enhancing the creative process.

The study by Mehmood et al. (2020) previously confirmed that entrepreneurial leadership has a positive effect on creativity demonstrated by employees. Newman, Round, Wang, and Mount (2020) explained that entrepreneurial leadership has creative ideas and innovative solutions to the system it faces. It also inspires risk-taking and fosters a conducive environment for innovation, knowledge, skills, passion for innovation, and individual intellectual agility that supports innovation behaviour. Entrepreneurial leadership inspires employees to drive creative tasks at work that involve recognizing and exploiting opportunities (Renko et al., 2015; Strobl, Bauer, &

Matzler, 2020). In addition, entrepreneurial leadership can provide innovation and creativity and encourage followers to engage in creativity.

Entrepreneurial leadership is a robust predictor for employee affective commitment and tacit knowledge sharing (Pu, Sang, Yang, Ji, & Tang, 2022). Knowledge sharing acts as a significant mediator in connecting entrepreneurial leadership with employee creativity (Mehmood et al., 2020). Knowledge is a prominent asset of any organisation. There is a robust relationship between entrepreneurial leadership and knowledge management processes (Hussain & Li, 2022). With good communication skills and strong team-building abilities, entrepreneurial leaders can motivate team members to collaborate in achieving greater goals (Harrison, Burnard, & Paul, 2018; Mehmood et al., 2020). Hence, the following hypotheses can be provided below:

H_5: Entrepreneurial leadership has a positive effect on knowledge sharing.

H_6: Entrepreneurial leadership has a positive effect on creative performance.

H_6: Knowledge sharing mediates entrepreneurial leadership and creative performance.

2.5. Knowledge Sharing

Higher education institutions require knowledge sharing to maintain competitive advantage, drive innovation and optimize their core competencies (Thi Chung & Thi Tram Anh, 2022). Within the academic environment, knowledge sharing has an impact on enhancing academic excellence, which requires teamwork in research, collaboration, and joint publication, which indicates the need to build trust among academics (Mutahar et al., 2022). Knowledge sharing has become essential and should be implemented in various higher education institutions given that digital technology has become an integral part of higher education and accelerated access to information.

Knowledge sharing is the behaviour between individuals in the organisation, facilitated by humble leaders (Fujii, 2025). Individuals can combine different ideas by sharing knowledge, which can lead to new and innovative solutions and promote organisational innovation efficiency and the likelihood of radical innovation (Hu et al., 2023; Mascitelli, 2000). The essence of knowledge sharing is the exchange of information and the construction of new knowledge through collaboration between individuals who have the roles of knowledge donating and knowledge collecting (De Vries, Van den Hooff, & De Ridder, 2006). Knowledge sharing can be defined as a mutual learning process between employees that aims to develop each other's potential, solve problems together, and improve performance quality (Yeboah, 2023).

According to Mutahar et al. (2022) knowledge sharing is a mutually beneficial and constructive process between individuals, arising from collaboration and the desire to share. He said that it has a positive impact on organisational value, creativity and performance, especially in higher education. If there is no trust in procedures, internal processes, and colleagues, knowledge will not be spread effectively (Mutahar et al., 2022). The organization's innovation capability is enhanced as the knowledge sharing process contributes to employee learning and upskilling (Arsanti, Rupidara, & Bondarouk, 2024).

Therefore, knowledge sharing for lecturers is crucial in the context of the academic community which is not only matter of involving the exchange of knowledge and information between lecturers but also of creating a collaborative environment that encourages creativity and innovation and the development of individual competencies in educational institutions. This study measures knowledge sharing based on two dimensions adapted from De Vries et al. (2006) and Dysvik, Buch, and Kuvaas (2015) namely the dimensions of knowledge donating and knowledge collecting.

Preliminary studies in the field of knowledge sharing indicate that both knowledge collecting and knowledge donating activities significantly improve creative performance (Dwi, 2021; Goh et al., 2020; Hou, Su, Qi, Wang, & Wang, 2021; Jiang et al., 2022; Tian, Peng, & Peng, 2021; Tønnessen, Dhir, & Flåten, 2021). Knowledge sharing is linked with employees' creative behaviour (Mehmood et al., 2020). Knowledge sharing builds new skills and knowledge and encourages innovation (Arsanti et al., 2024). Knowledge sharing can increase creativity because it

can learn from the knowledge and experience of others (Fujii, 2025). Therefore, the following hypothesis is formulated.

H_7: Knowledge sharing has a positive effect on creative performance.

3. METHODOLOGY

This research used quantitative methods to provide a model of the creative performance of lecturers in higher education. The main problem is how to improve the creative performance of PTN-BH lecturers in Indonesia. This makes researchers want to know more about the factors that influence it. The hypotheses formulated previously were analyzed using partial least squares-structural equation modeling (PLS-SEM). The usage of PLS-SEM has been acknowledged as helpful in estimating basic and complex connections (Hair, Risher, Sarstedt, & Ringle, 2019).

The total number of PTN-BH lecturers in Indonesia is 35,954, and they constitute the population in this study. In this study, the sample was taken using proportional random sampling. The consideration for this technique is that the entire population has characteristics that are considered homogeneous and the entire population has the same opportunity to be selected as the unit of analysis. The total sampling is determined following the suggestion of Hair et al. (2019) which is five times the number of indicators, resulting in a total sample of 215 lecturers. A survey method was used to measure four research variables namely psychological capital, entrepreneurial leadership, knowledge sharing, and creative performance.

Table 1. The instrument of the study.

Construct	Indicator	Item	Description	Source
Understanding what creative performance is, a process of generating new and useful ideas that can drive innovation in organisations, by considering aspects of novelty, usefulness, and socio-historical context (Amabile & Pratt, 2016).				
Creative performance	Intrinsic motivation to perform tasks	CP1	I feel very interested in the tridharma activities of higher education that I do.	Amabile and Pratt (2016)
		CP2	I do this tridharma task because I enjoy it and feel fulfilled.	
		CP3	I tend to seek challenges in my work, even if they are difficult.	
		CP4	I feel that this lecturer job encourages me to learn something new.	
		CP5	Satisfaction from the results of my work as a lecturer means more to me than external rewards.	
	Skills in the task domain	CP6	I have good technical skills in the tridharma of higher education.	
		CP7	I often improve my knowledge to do this job better.	
		CP8	I feel I have special talents that are relevant to this tridharma college task.	
		CP9	I feel confident in my ability to complete my work as a lecturer.	
		CP10	I continuously strive to improve my skills.	
	Processes relevant to creativity	CP11	I often think of multiple solutions to complex problems.	
		CP12	I feel I have a creative and innovative thinking style.	
		CP13	I like exploring new ideas and taking different perspectives.	
		CP14	I am not afraid to take complex risks in my lecturing work.	
		CP15	I usually remain persistent in the face of complex challenges and obstacles.	
Psychological capital is a part of the positive psychology possessed by each individual that is useful to help the individual can develop with self-efficacy, hope, optimism and resilience (Luthans et al., 2007).				
Psychological capital	Hope	PC1	Currently, I am vigorously pursuing my university's tridharma goals.	Luthans et al. (2007) and Wu et
		PC2	I believe there are many ways to overcome each	

Construct	Indicator	Item	Description	Source
			problem in my complex problem-solving endeavours.	al. (2019)
		PC3	I currently feel quite successful in solving complex problems in my tertiary programme.	
	Efficacy	PC4	I feel confident about my performance in meetings with college leaders.	
		PC5	I feel confident contributing to discussions during complex problem-solving processes within the college tridharma team.	
		PC6	I feel confident with communicating other people outside of my institution to deal with complex issues.	
	Resilience	PC7	I usually overcome difficulties in one way or another during my university's tridharma process.	
		PC8	I usually face complex and stressful problem situations calmly.	
		PC9	I can obtain this through difficult times of complex problem- solving in tridharma activities because I have experienced difficulties before.	
	Optimism	PC10	If there is a complex problem that interferes with my good work, then I will be interrupted or inhibited in my higher education activities.	
		PC11	I always see the positive side of the process of solving complex problems in my tertiary education.	
		PC12	I am optimistic about what will occur to me in the future in relation to the implementation of my tertiary activities.	
Entrepreneurial leadership involves efforts to influence and direct organisational members in achieving organisational goals through the identification and utilization of business opportunities (Renko et al., 2015).				
Entrepreneurial leadership	Effectively inspire	EL1	My supervisor often provides ideas on solving complex problems in the implementation of the tridharma activities of higher education.	Hou et al. (2024) and Renko et al. (2015)
		EL2	My supervisor often provides radical enhancement ideas for solving complex problems in the implementation of the tridharma activities of higher education.	
		EL3	My leader is a risk- taker.	
		EL4	My leader has creative solutions to complex problems in the implementation of the university's tridharma activities.	
		EL5	My leader shows passion for his/ her work.	
		EL6	My leader has a vision of the future of our colleagues.	
	Encourage the creative process	EL7	My leader challenges and encourages me to act more creatively and innovatively.	
		EL8	My leader challenges me to solve complex problems in the implementation of the tridharma activities of the college in my way.	
Knowledge sharing is the process of interchanging knowledge and jointly constructing new knowledge (De Vries et al., 2006).				
Knowledge sharing	Knowledge donating	KS1	When I learn something new, I tell my colleagues about it.	De Vries et al. (2006) and Dysvik et al. (2015)
		KS2	I share the information with my colleagues.	
		KS3	I think it is prominent for my colleagues to know what I am doing.	
		KS4	I regularly tell my colleagues what I am doing.	
	Knowledge collecting	KS5	When I require certain knowledge, I ask my colleagues about it.	
		KS6	My colleagues will tell me what I don't know.	
		KS7	I ask my colleagues about their abilities when I need to learn something.	
		KS8	My colleagues will teach me new ways of solving complex problems.	

Table 1 presents the instruments on the variables of creative performance, psychological capital, entrepreneurial leadership, and knowledge sharing. Indicators of creative performance variables are measured using 3 (three) dimensions, namely intrinsic motivation to perform tasks, skills in the task domain and processes relevant to creativity. Psychological capital variable indicators are measured using 4 (four) dimensions, namely hope, efficacy, resilience, and optimism. Entrepreneurial leadership variable indicators are measured using 2 (two) dimensions, namely effectively inspire and encourage the creative process. Knowledge sharing variable indicators are measured using 2 dimensions, namely knowledge donating and knowledge collecting.

Using Smart PLS software, the collected data were then analysed with the outer model (measurement model) and inner model (structural model). Validity and reliability, i.e., checking the analysis results, including convergent validity (e.g., Average Variance Extracted (AVE) value) and reliability (e.g., composite reliability and Cronbach's alpha) (Hair et al., 2019; Khan et al., 2019). Furthermore, test the relationship between variables (path coefficients), R^2 values, and significant analyses (t-test and p-values). To verify the goodness of fit of the model, the requirements for measuring Standardised Root Mean Square Residual (SRMR). The PLS model is declared to have met the criteria for the fit model test if the value of SRMR < 0.1 and the model is declared fit SRMR < 0.08 (Schermelleh-Engel, Moosbrugger, & Müller, 2003) and the Normal Fit Index (NFI) score range is 0 to 1 where the closer to 1 the better the model built with factor loading exceeding 0.7 (Hair Jr et al., 2021).

A new model to assess psychological capital (PC), entrepreneurial leadership (EL), and creative performance (CP) mediated by knowledge sharing (KS).

4. FINDINGS AND DISCUSSION

4.1. Respondents

Description of Psychological Capital (PC), Entrepreneurial Leadership (EL), and Creative Performance (CP) mediated by Knowledge Sharing (KS) in Higher Education

The composition of lecturer respondents in this study was almost balanced with 49.3% female and 50.7% male. The age of the lecturers who filled out the respondents was dominated by the age of 44 years to 59 years, which is included in Generation X. The academic positions of the lecturers dominated by the senior lecturer were 33.95%, the second order of associate profesor at 27.9% and the third order of professor were 21.86% and the remaining 16.28% was filled bylecturer . The working period of respondents is dominated by 16 to 25 years of work experience at 30.70%. The recapitulation of respondent information is summarised in Table 2.

Table 2. The demographic profile of respondents.

No./ Category	Characteristic	Frequency	Percentage
Gender	Female	106	49.3
	Male	109	50.7
Age	Under 27 years old (Generation Z)	1	0.47
	28 – 43 years old (Millennial)	86	40.00
	44 – 59 years old (Generation X)	98	45.58
	Above 60 years old (Baby Boomer)	30	13.95
Academic position	Lecturer	58	16.28
	Senior lecturer	157	33.95
	Associate professor	35	27.9
	Professor	73	21.86
Tenure	0 – 5 years	60	14.88
	6 – 15 years	47	25.12
	16 – 25 years	32	30.70
	26 – 35 years	54	21.40
	Above 36 years	66	7.91

4.2. Outer Model (Measurement Model)

SEM requires a process and a series of procedures in data processing (Hair, Ringle, & Sarstedt, 2013). Convergent validity testing is the first step in testing the measurement model. A loading factor value greater than 0.70 indicates that the variable meets the convergent validity criteria. From the measurement process, the creative performance variable has 15 indicators, the entrepreneurial leadership variable has 8 indicators, the knowledge sharing variable has 8 indicators, and the psychological capital variable has 12 indicators. All of these have met the criteria, namely the loading factor above 0.70 as presented in Table 3.

Table 3. Outer model results.

Item	Questionnaire	λ	α	CR	AVE
CP1	I feel very interested in the tridharma activities of higher education that I do.	0.809	0.958	0.959	0.630
CP2	I do this tridharma task because I enjoy it and feel fulfilled.	0.873			
CP3	I tend to seek challenges in my work, even if they are difficult.	0.842			
CP4	I feel that this lecturer job encourages me to learn something new.	0.758			
CP5	Satisfaction from the results of my work as a lecturer means more to me than external rewards.	0.794			
CP6	I have good technical skills in the tridharma of higher education.	0.805			
CP7	I often improve my knowledge to do this job better.	0.794			
CP8	I feel I have special talents that are relevant to this tridharma college task.	0.765			
CP9	I feel confident in my ability to complete my work as a lecturer.	0.817			
CP10	I continuously strive to improve my skills.	0.759			
CP11	I often think of multiple solutions to complex problems.	0.767			
CP12	I feel I have a creative and innovative thinking style.	0.820			
CP13	I like exploring new ideas and taking different perspectives.	0.776			
CP14	I am not afraid to take complex risks in my lecturing work.	0.758			
CP15	I usually remain persistent in the face of complex challenges and obstacles.	0.761			
EL1	My supervisor often provides ideas on solving complex problems in the implementation of the tridharma activities of higher education.	0.807	0.915	0.923	0.631
EL2	My supervisor often provides radical enhancement ideas for solving complex problems in the implementation of the tridharma activities of higher education.	0.717			
EL3	My leader is a risk- taker.	0.786			
EL4	My leader has creative solutions to complex problems in the implementation of the university's tridharma activities.	0.892			
EL5	My leader shows passion for his/her work.	0.786			
EL6	My leader has a vision of the future of our colleague.	0.829			
EL7	My leader challenges and encourages me to act creatively and innovatively.	0.838			
EL8	My leader challenges me to solve complex problems in the implementation of the Tridharma activities of the college in my way.	0.779			

Item	Questionnaire	λ	α	CR	AVE
KS1	When I learn something new, I tell my colleagues about it.	0.807	0.921	0.925	0.646
KS2	I share the information I have with my colleagues.	0.756			
KS3	I think it is prominent for my colleagues to know what I am doing.	0.781			
KS4	I regularly tell my colleagues what I am doing.	0.798			
KS5	When I require certain knowledge, I ask my colleagues about it.	0.764			
KS6	My colleagues will tell me what I don't know.	0.807			
KS7	I ask my colleagues about their abilities, when I require to learn something.	0.828			
KS8	My colleagues will teach me new ways of solving complex problems.	0.884			
PC1	Currently, I am vigorously pursuing my university's tridharma goals.	0.737	0.939	0.951	0.600
PC2	I believe there are many ways to overcome each problem in my complex problem-solving endeavours.	0.739			
PC3	I currently feel quite successful in solving complex problems in my tertiary programme.	0.753			
PC4	I feel confident about my performance in meetings with college leaders.	0.806			
PC5	I feel confident contributing to discussions during complex problem-solving processes within the college tridharma team.	0.806			
PC6	I feel confident communicating other people outside of my institution to deal with complex issues.	0.799			
PC7	I usually overcome difficulties in one way or another during my university's tridharma process.	0.810			
PC8	I usually face complex and stressful problem situations calmly.	0.724			
PC9	I can obtain this through difficult times of complex problem-solving in tridharma activities, because I have experienced difficulties before	0.757			
PC10	If there is a complex problem that interferes with my good work, then I will be interrupted/ inhibited in my higher education activities.	0.820			
PC11	I always see the positive side of the process of solving complex problems in my tertiary education.	0.762			
PC12	I am optimistic about what will occur to me in the future in relation to the implementation of my tertiary activities .	0.773			

Note: CP: Creative performance, EL: Entrepreneurial leadership, KS: Knowledge sharing, PC: Psychological capital.

The next step is testing discriminant validity using the Fornell-Larcker criterion. This criterion requires the square root of the Average Variance Extracted (AVE) value of each construct to be greater than the correlation between the constructs, to prove discriminant validity.

According to Table 4, the creative performance variable has an AVE root (0.794), greater than the correlation with entrepreneurial leadership (0.420) and greater than the correlation with knowledge sharing (0.606) and psychological capital (0.549). These results indicate that the discriminant validity of the creative performance variable is fulfilled. Likewise, with cross-loading, these four variables have higher numbers than the correlation.

Table 4. Discriminant validity.

Variables	Creative performance	Entrepreneurial leadership	Knowledge sharing	Psychological capital
Creative performance	0.794			
Entrepreneurial leadership	0.420	0.794		
Knowledge sharing	0.606	0.243	0.804	
Psychological capital	0.549	0.297	0.388	0.775

This research follows the suggestion of Hair et al. (2019) by using the Heterotrait-Monotrait Ratio (HTMT) approach to test discriminant validity as this method is more sensitive. Discriminant validity is considered fulfilled if the HTMT value is below 0.90. This research data shows that all variables fulfil this requirement (see Table 5).

Table 5. Ratio Heterotrait-Monotrait.

Variables	Heterotrait-monotrait ratio (HTMT)
EL <-> CP	0.444
KS <-> CP	0.641
KS <-> EL	0.263
PC <-> CP	0.560
PC <-> EL	0.310
PC <-> KS	0.401

Note: CP: Creative performance, EL: Entrepreneurial leadership, KS: Knowledge sharing, PC: Psychological capital.

4.3. Inner Model (Structural Model)

After the validity and reliability of the measurement model (outer model) are met, structural model testing (inner model) is carried out. The stages of testing the inner model include (1) collinearity test, (2) R-squared test, (3) F-squared test, and (4) predictive Q-squared test. The collinearity test is conducted to ensure that there is no collinearity between latent variables by looking at the VIF value. If the VIF value is less than 5.00 then there is no collinearity problem. Based on the statistical estimation, it is found that the constellation of variables estimated by the researcher does not have collinearity and can proceed to the next inner model analysis (see Table 6).

Table 6. Variance inflation factor.

Variables	Creative performance	Knowledge sharing
Entrepreneurial leadership	1.121	1.097
Knowledge sharing	1.203	
Psychological capital	1.241	1.097

Evaluation of model fit (goodness of fit) is the next process which involves the R-Square (R2) test. This test aims to measure the predictive power of endogenous latent variables in the research model (Hair et al., 2013). The R2 for creative performance value is 0.527, remarking that 5.27 percent of creative performance variance can be explained by entrepreneurial leadership, knowledge sharing, and psychological capital variables at a moderate level. While for R2 knowledge sharing is 0.168, showing that 1.68 per cent of the variance of knowledge sharing can be explained by the variables of psychological capital and entrepreneurial leadership at a weak level (see Figure 1).

To measure how much influence the independent variable has on the dependent variable, the F-Square (f2) test is used (Hair et al., 2013). The f2 value of entrepreneurial leadership on creative performance is 0.192, indicating a fairly large-sized effect. Knowledge sharing on creative performance is 0.324, showing a medium-size effect. The f2 value of psychological capital on creative performance is 0.171, remarking a medium-sized effect. Lastly, the f2 value of psychological capital on knowledge sharing of 0.181 shows a medium-sized effect and entrepreneurial leadership on knowledge sharing of 0.222 indicates a medium-size effect also.

Later, some criteria should be higher than their cut-off values. A construct is considered reliable if it meets the following criteria: Cronbach's alpha value above 0.70, composite reliability (CR) value above 0.70, and Average Variance Extracted (AVE) value above 0.50. The output in Table 7 shows the suitability of the model in this study based on the model proposed by the researcher. These results have met the criteria for testing Cronbach's alpha, CR, and AVE values of the model under study so that they meet the criteria for proposing a statistical model fit. Therefore, the measurement and structural models proposed and tested in this study can be considered good and fulfilled.

Table 7. Goodness of fit evaluation results.

Variables	Cronbach's alpha	CR	AVE
Creative performance	0.958	0.959	0.630
Entrepreneurial leadership	0.915	0.923	0.631
Knowledge sharing	0.921	0.925	0.646
Psychological capital	0.939	0.951	0.600

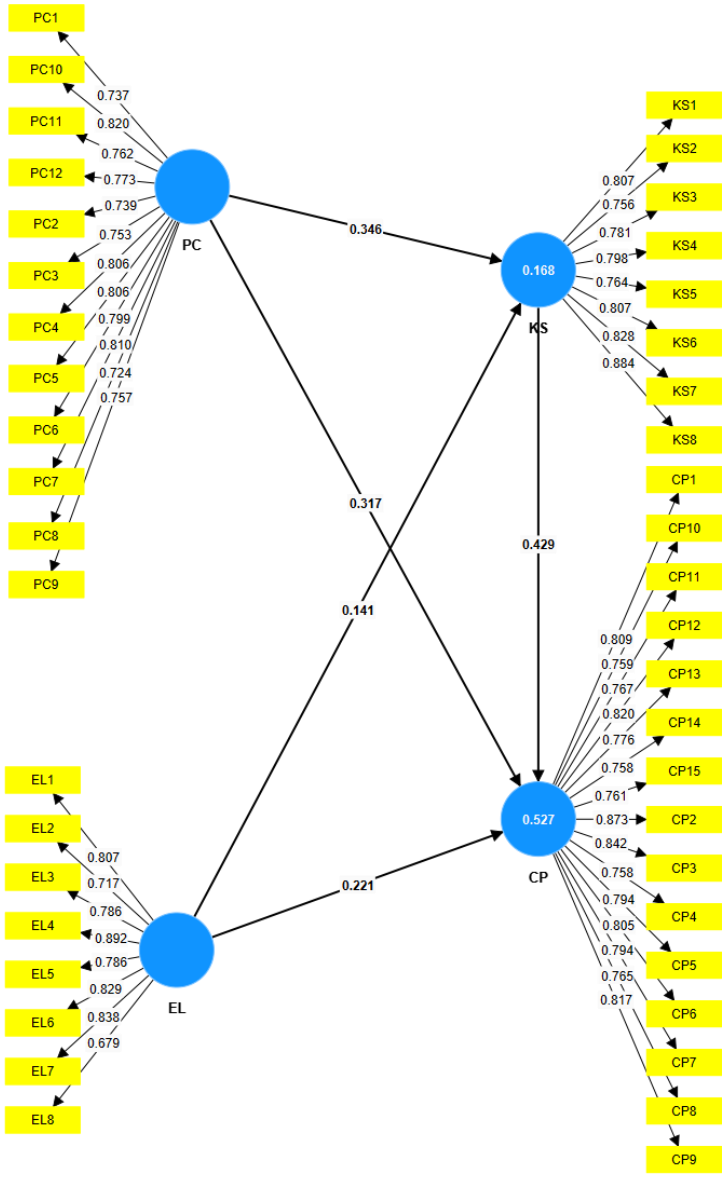

Figure 1. Results of SEM analysis.

Figure 1 illustrates the path coefficients, the relationship between the variables psychological capital, knowledge sharing, and entrepreneurial leadership has a positive effect on creative performance lecturers. Psychological capital has the greatest influence oncreative performance . The R-Square (R2) test value is also illustrated in Figure 1, creative performance (0.527) is moderate and knowledge sharing (0.168) is weak.

Table 8. Path coefficients.

Variables	Direct effect	Indirect effect	Total effect
Psychological capital (PC) → Creative performance (CP)	0.317	-	0.317
Psychological capital (PC) → Knowledge sharing (KS)	0.346	-	0.346
Entrepreneurial leadership (EL) → Knowledge sharing (KS)	0.141	-	0.141
Entrepreneurial leadership (EL) → Creative performance (CP)	0.221	-	0.221
Psychological capital (PC) → Knowledge sharing (KS) -> Creative performance (CP)	0.317	0.148	0.465
Entrepreneurial leadership (EL) → Knowledge sharing (KS) → Creative performance (CP)	0.221	0.061	0.282
Knowledge sharing (KS) → Creative performance (CP)	0.429	-	0.429

The output in Table 8 shows the psychological capital has a direct effect of 0.317 and an indirect effect of 0.148. so that it has a total effect of 0.465. Entrepreneurial leadership has a direct effect of 0.221 and an indirect effect of 0.061, thus having a total effect of 0.429. Knowledge sharing also has a direct influence on creative performance of 0.429. Psychological capital also has a direct effect on knowledge sharing of 0.346. Entrepreneurial leadership has a direct effect on knowledge sharing of 0.141. Based on the table above, it can be seen that the greatest direct effect is knowledge sharing (0.429) than psychological capital (0.317), and entrepreneurial leadership (0.221) and the greatest total effect is psychological capital (0.465), knowledge sharing (0.429), and entrepreneurial leadership(0.282).

4.4. Hypothesis Testing

The hypothesis testing is based on the PLS-SEM bootstrap method and considers the t-value > 1.96 with one end and p-value < 0 > 1.96. The results indicated that the p-value ranges from 0.000 to 0.034 (< 0.050). Data analysis shows that of the seven hypotheses proposed, the effect of knowledge sharing (KS) on creative performance (CP) has the highest t-value (9.273) indicating the strongest influence. In contrast, the effect of entrepreneurial leadership (EL) on knowledge sharing (KS) has the lowest t-value (2.076), indicating the weakest influence. As shown in Table 9, this study confirmed seven proposed hypotheses.

Table 9. Hypothesis testing.

Hypotheses	Variable relations	Original sample	Sample mean	Standard deviation	T-value	P-value	Decision
H1	PC → CP	0.465	0.468	0.053	8.738	0.000	Accepted
H2	PC → KS	0.346	0.351	0.060	5.751	0.000	Accepted
H3	EL → KS	0.141	0.142	0.068	2.076	0.038	Accepted
H4	EL → CP	0.282	0.285	0.051	5.576	0.000	Accepted
H5	PC →KS →CP	0.149	0.149	0.028	5.375	0.000	Accepted
H6	EL→ KS → CP	0.060	0.060	0.029	2.091	0.037	Accepted
H7	KS → CP	0.429	0.426	0.046	9.273	0.000	Accepted

Note. PC= Psychological capital, EL= Entrepreneurial leadership, KS= Knowledge sharing, CP= Creative performance.

This study examines how psychological capital, entrepreneurial leadership, and knowledge-sharing directly affect creative performance and indirectly through knowledge-sharing variable. The researchers proposed seven hypotheses, and the results of all hypotheses were accepted. The first hypothesis shows that psychological capital has a significant positive effect on creative performance. This finding strengthens previous research by Brunetto et al. (2022); Hu et al. (2023); Kawalya et al. (2019) and Zhou et al. (2022) suggesting that lecturers are advised to have psychological capital (efficiency, hope, optimism, and resilience). The results of the second hypothesis analysis also confirm that psychological capital has a significant positive effect on knowledge sharing practices, which is consistent with the findings of previous research by Hu et al. (2023). Based on this finding, it is predominant for lecturers to maintain positive working conditions and a good mood to enhance better knowledge sharing.

As the third hypothesis, this study found that entrepreneurial leadership has a significant positive impact on knowledge sharing practices. According to Pu et al. (2022) leaders in the higher education environment are expected to re-hone entrepreneurial leadership skills such as building a strong team, motivating their employees, and having a positive influence on their lecturers to further increase knowledge sharing. This study also found that entrepreneurial leadership significantly improves creative performance, supporting a prior study by Mehmood et al. (2020) to confirm this relationship.

This study also found that knowledge sharing mediates the relationship between psychological capital and creative performance, which is in line with previous studies by Hu et al. (2023) in which lecturers who are always ready to do knowledge sharing will support the creative performance of lecturers. The sixth finding indicates that knowledge sharing can also mediate entrepreneurial leadership and creative performance. As previously conducted by Mehmood et al. (2020) lecturers with the guidance of leaders in higher education and also encouraged by active activities in knowledge sharing will increase the creative performance of lecturers.

As a final finding, this study confirmed a direct positive relationship between knowledge sharing and lecturers' creative performance in line with the findings of several previous researchers (Arsanti et al., 2024; Dwi, 2021; Goh et al., 2020; Hou et al., 2021; Jiang et al., 2022; Mehmood et al., 2020; Tian et al., 2021; Tønnessen et al., 2021). The finding indicates that increasing the knowledge shared by lecturers will also enhance the creative performance of lecturers.

5. CONCLUSION

This study focused on investigating how knowledge sharing acts as a key mediator linking entrepreneurial leadership and psychological capital with lecturers' creative performance in Indonesia. This study found that creative performance is influenced by some predictors, such as knowledge sharing, entrepreneurial leadership, and psychological capital. In addition, knowledge sharing can successfully mediate these two predictors for creative performance. It leads to the conclusion that high creative performance can be achieved when lecturers share knowledge, have leaders who support innovation, and have good psychological capital such as optimism, hope, and resilience. The findings can be expected to be one of the solutions for improving the creative performance of lecturers in Indonesia in the implementation of the tridharma of higher education. This study makes an important implication in understanding and improving lecturers' creative performance through an approach based on psychological capital and entrepreneurial leadership.

However, this study notes limitations, including the limited sampling. This study only involved 215 lecturers from 21 PTN-BH in Indonesia, so the results may not fully reflect the condition of the entire lecturer population in Indonesia. Second, the quantitative approach used may not fully capture the complexity of factors affecting lecturers' creative performance, while further scholars can elaborate a mixed or fully qualitative approach to obtain a deeper finding. Although this study includes several important variables, it is possible that other factors that also influence lecturers' creative performance are not accounted for in this model. The limitations of this work can be used as recommendations for future scholars to elaborate more relevant predictors for creative performance.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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