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ISSN: 2560-6018, eISSN: 2620-0104A Decision-Oriented Model of Innovative Work Behavior: The Roles of
Authentic Leadership, Psychological Capital, and Organizational CultureTapi Rondang Ni Bulan^{1*}, Fajar Pasaribu², Hafriz Rifki Hafas³, Ikbar Pratama⁴^{1,2} Universitas Harapan Medan, Medan, Indonesia.³ Universitas Muhammadiyah Sumatera Utara, Medan, Indonesia.⁴ Universitas Medan Area, Medan, Sumatera Utara, Indonesia.

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ABSTRACT

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Innovative work behavior (IWB) is essential for organizations operating in the rapidly evolving information technology (IT) sector, where continuous innovation is required to sustain competitiveness and organizational growth. This study examines the effects of authentic leadership (AL) and psychological capital (PC) on IWB among employees in the Indonesian IT industry. Drawing upon Social Exchange Theory, the study further investigates the mediating role of PC and the moderating role of organizational culture. A quantitative cross-sectional research design is employed, and data are collected from 285 employees working in various Indonesian IT organizations using a structured questionnaire. The data are analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that AL significantly enhances IWB and PC. PC also exerts a positive influence on IWB and mediates the relationship between AL and IWB. Furthermore, organizational culture positively moderates the relationship between PC and IWB but negatively moderates the relationship between AL and IWB. The study contributes to leadership and innovation literature by integrating leadership, psychological resources, and organizational context into a comprehensive framework. The findings provide valuable insights for organizations seeking to foster employee innovation in technology-intensive environments.

1. Introduction

The global information technology (IT) industry has undergone a dramatic shift in the competitive environment with the rapid speed of digital transformation, artificial intelligence tools, cloud computing, big data, and software innovation [1]. The digital economy is still growing rapidly in Indonesia as access to the internet is increasing [2]. The government is promoting digital transformation, and technology startups and digital platforms are emerging. In the dynamic context, innovation has become an essential organizational ability as organizations aim to stay competitive [3]. Innovation is not just about technical resources or organizational investments; however, it also

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depends significantly on employees' capacity and willingness to provide new ideas. Hence, the significance of innovative work behavior (IWB) to ensure organizational performance and competitiveness is vital in Indonesian IT field.

IWB are deliberate actions by employees to develop, share and execute new ideas, products, or methods that can enhance organizational effectiveness [4; 5]. Within a technologically oriented environment, workers are expected to develop new solutions, enhance current systems and learn about new technology [6]. Even though innovation is becoming increasingly important, Indonesian IT companies still experience difficulties in facilitating employees to show innovative behaviors. The competitive nature of the industry, fast-changing technologies, project pressures and organizational uncertainties can restrict employees' motivation and confidence to venture into new ideas. Thus, organizations have a challenge of developing employees that are consistently able to provide innovative solutions to improve the adaptability and market performance of the organization.

Leadership has been found to be among the most defining factors affecting employee innovation in previous studies [7-9]. Among diverse methods of leadership, authentic leadership (AL) has received significant attention [10], as it focuses on transparency, ethical behavior, self-awareness, and balanced decision making. Trust-based relationships with employees and environments promote openness, creativity, and the sharing of knowledge are created by authentic leaders [11]. However, in Indonesian IT organizations, where teamwork, collaboration, and continuous learning are considered as necessary, AL can be one of the key factors that stimulates the employees' IWB. Authentic leaders inspire employees to feel high importance, empowered, and satisfied to contribute creative ideas.

Employees' psychological resources are also crucial to their innovative ability, besides leadership [12]. The theory of psychological capital (PC), which is the combined effect of self-efficacy which is a state that helps employees rise to the challenges they encounter and reach their loftiest aspirations [13; 14]. High PC employees are likely to welcome uncertainty, persevere through challenges, and involve in innovative behaviors [14]. In the field of IT, where technological changes and intricate problem-solving tasks are frequently encountered, PC could serve as a valued personal asset that contributes to the effectiveness of employees in turning innovative concepts into tangible solutions.

While the relationship between PC, AL and IWB has gained more scholarly focus [15-17], certain gaps in research exist. First, preceding studies have grounded on these constructs in the manufacturing, healthcare, education and service sectors in general, and empirical evidence for the IT sector in Indonesia is limited. Results from other sectors might not be easily transferable to IT companies due to differences in companies in these two sectors. Second, the focus of earlier studies has been on the direct effect of leadership on IWBs [18-20], with less attention paid to the psychological processes that link leadership to employee innovation. In particular, the mediating effect of PC should be examined and how PC contributes to innovative behaviors in the environment of AL should be explored. Third, organizational culture has been shown to be a very important contextual factor that can impact innovation, but there has been very little research that examines how organizational culture can both enhance and diminish the influence of leadership as well as psychological resources on IWBs in a digital organization.

To fill these gaps, this research proposes and tests a holistic model that investigates the direct as well as indirect relationship between AL and IWB. In addition, the mediating role of PC between AL and IWB is explored. Besides, organizational culture is added as a moderate variable to study the effect of organizational culture on the connection between AL and PC and between PC and IWB. Theoretically, this study contributes to the field and is practically significant. This study advances

existing research on employee innovation by integrating AL, PC, and organizational culture into a unified theoretical framework that explains IWB. Additionally, it helps to fill the gaps in the literature on employee innovation in technology-intensive settings, especially in Indonesia. In practice, the conclusions offer deep insights for managers, technology leaders, and HR professionals aiming to improve innovation outcomes. Knowing the relationship between AL and PC with IWB can help organizations design leadership development programs, employee wellbeing programs, and employee innovation-supportive working cultures which can improve their competitive edge.

2. Theoretical Foundation

This study is grounded on Social Exchange Theory (SET) which assumes that people participate in exchanges with one another based on mutual trust, support and obligation [21; 22]. According to SET, positive attitudes and behaviors of employees towards the organization driven by their perception of favorable treatment by the organizational leaders is important. In the case of the Indonesian IT industry, authentic leaders exude transparency, ethical behavior, and balanced decision-making, as well as authentic care for employees, and thus create high-quality exchange relationships. Such positive relationships foster employees' psychological state, such as PC. Based on SET, the employee will likely respond to the organization's AL by demonstrating greater IWBs [23]. Moreover, PC is a significant psychological mechanism [24; 25] by which the AL is related to innovation outcomes. The theory also implies that the organizational culture influences the quality of social exchanges because on the willingness of employees to innovate new ideas. Hence, the direct, mediating and moderating relationships suggested in Figure 1 are well explained by the SET.

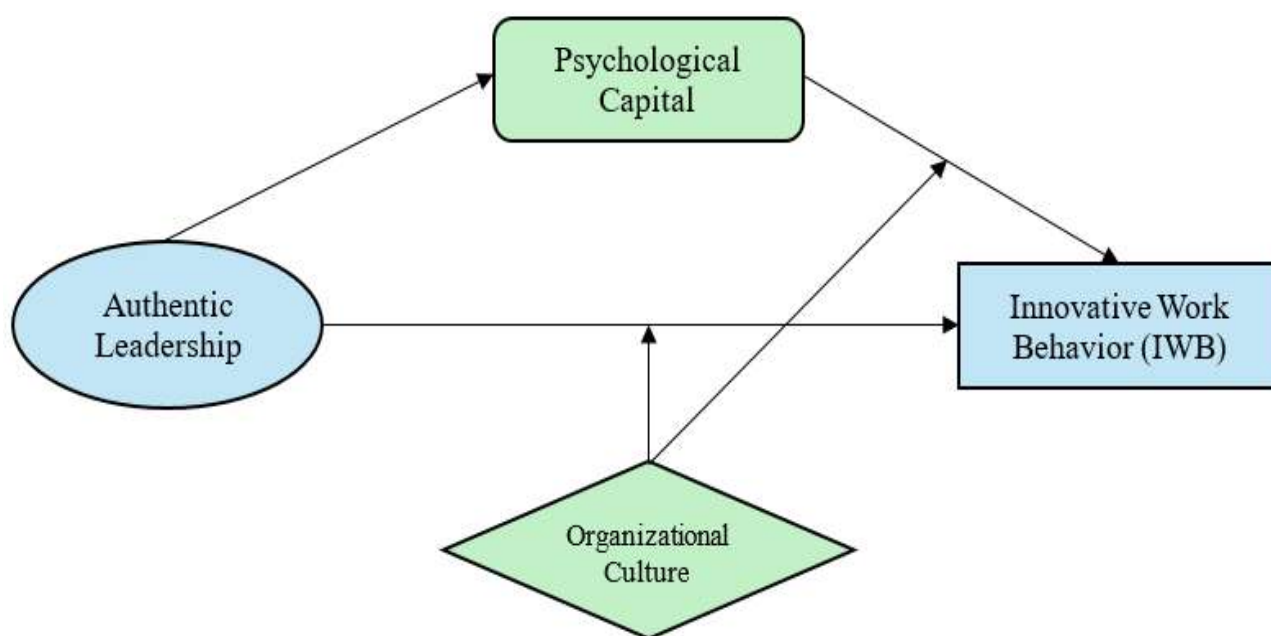


Fig.1: Framework of the study

3. Hypotheses Development

3.1 Authentic Leadership and Innovative Work Behavior (IWB)

AL is a form of leadership in which leaders demonstrate genuineness, ethical consistency, openness in interactions, and objective decision-making, enabling them to build trust, credibility, and meaningful relationships with employees [26]. Authentic leaders build trust relationships with

employees by living by their values and communicating freely [11; 15]. The modern IT industry in Indonesia often has to face challenges that are complex and require creativity and innovation [27]. Authentic leaders foster a work culture in which employees consider psychologically safe to share forward-thinking concepts and try out new ideas and approaches. These leaders foster trust and motivation in employees to practice discretionary behaviors that drive organization improvement in transparent interactions and ethical decision-making processes. Previous research has shown that employees implement new ideas when they trust their leaders as supportive [28-30]. Employees respond to positive leadership by giving innovative efforts that will benefit the organization [31]. Thus, it is hypothesized that AL will positively influence employees' IWB.

H1: AL positively influences IWB.

3.2 Authentic Leadership and Psychological Capital

PC is defined as having a positive mental attitude, which includes self-efficacy, flexibility, and confidence [32]. These psychological tools help workers stay motivated, confident, and determined in workplace challenges [33]. AL is a critical factor in building PC of employees through trust, support and personal growth. Authentic leaders offer constructive feedback, model integrity and inspire employees to acknowledge their strengths and potential [34; 35]. These behaviors foster employee confidence and belief in their capacity, optimism about future results, and effective recovery from failures. The IT sector in Indonesia is characterized by constant technological advancements and intense competition, which can lead to uncertainty and anxiety. Indonesian IT sector is notable for its pace of technological change and competitive environment, which can cause uncertainty and anxiety for employees. True leaders are positive role models who can encourage team members to become more resilient and maintain a positive attitude to difficult work environments. Previous studies indicate that supportive leadership attitudes make a substantial contribution to the formation of PC among employees [36-38]. Therefore, AL will be expected to have a positive influence on the employees' PC.

H2: AL positively influences PC.

3.3 Psychological Capital and Innovative Work Behavior (IWB)

PC is known as influential personal resource that influences employee behaviors [36]. High levels of self-efficacy and resilience are associated with employees being more likely to take on challenges, pursue high goals, and persevere through challenges. IWB is described as the creation, promotion and presentation of new ideas, processes, and solutions that lead to an organization's effectiveness [4; 39]. The nature of innovation activities creates uncertainty, risk and failure in the process; therefore, employees who are working on creative work must have psychological resources. People with high PC tend to be more confident in their problem-solving skills, have a positive outlook on the results of innovation, and bounce back more quickly from failed innovations. For the IT industry in Indonesia, where workers are required to adjust to new technologies and market demands continually, PC could be a major contributor in fostering innovative behavior. The relationship of PC with employee creativity and innovation has been reported as positive in past research [40]. Hence, the higher the PC of an employee, the greater should be his or her IWB.

H3: PC positively influences IWB.

3.4 Mediation Effect of Psychological capital

AL can directly encourage their IWB [41], but it can also work through their psychological

resources. Based on SET, positive leadership behaviors foster positive conditions at work which improve the employees' psychological wellbeing, which in turn affects their behaviors. Authentic leaders build trust, empowerment and support [16], which helps workers build self-efficacy. These psychological resources reinforce employees' desire to learn new things, to make calculated risks, and to continue the activities related to innovation. Accordingly, PC plays an important explanatory mechanism between AL and IWB. Working under authentic leaders is likely to enable employees to build their PC [16; 42], which will further equip and motivate them for innovative actions. In the Indonesian IT industry, where innovation is crucial to the organizational competitiveness, PC could be the bridge between the organizational leadership support and concrete results of innovation. The mediating role of PC in leadership performance relationships. Hence, the PC is hypothesized to mediate between AL and IWB.

H4: PC mediates the relationship between AL and IWB.

3.5 Moderation Effect of Organizational Culture

Organizational culture is selected as a moderating variable to examine the relationship between PC and IWB. An organization culture is the shared values, beliefs, norms and practices that guide employee behaviors and influence how work is carried out within an organization [43; 44]. In innovation-based industries, like the Indonesian IT sector, organizational culture is crucial in shaping the attitude of employees towards trying out new ideas and accepting changes. True leadership provides employees with trust, support and empowerment [45; 46], but it is the effectiveness of the leadership under certain circumstances that depends on the organizational context in which employees work. Favorable employee outcome is more likely to result from positive leadership behaviors, if they are accompanied by positive rewards in the form of a helpful environment that promotes collaboration, learning, and innovation. An innovation supportive organizational culture promotes open communication, knowledge sharing and risk taking [43; 44], which increases the positive effect of authentic leaders on employee IWB. Organizational values are conducive to innovation in leadership support when they are congruent with creativity and continuous improvement. In a rigidly structured, change-resistant organization, however, the positive effects of AL toward innovation can be diminished. Thus, organizational culture is expected to moderate the correlation between AL and IWB.

H5: Organizational culture positively moderates the relationship between AL and IWB.

There is also evidence that organizational culture can have an effect on the number of psychological resources employees can draw on to practice IWB [47]. PC is the higher level of confidence of employees that leads them to seek creative solutions and work through problems that come with innovation activities [48]. However sometimes, the key to creating new behaviors from these psychological assets is the organizational context. Positive work gives employees the chance to share their ideas, work with other teams and try new things. Employees can act on their confidence and resilience to drive innovative projects. However, a high PC culture that has too much control with change could actually be the environment that stifles employees from being creative [49]. As per the theory of social exchange, organizational norms that foster and reward innovation are more likely to help employees make psychological investments in innovative activities. For this reason, organizational culture is an important context variable which enhances the positive effects of PC on IWB. The supportive culture is expected to facilitate the maximum innovation [50] enhancing effect from employees' PC, especially in the Indonesian IT sector which requires high innovation and adaptability for competitiveness.

H6: Organizational culture positively moderates the relationship between PC and IWB.

4. Methodology

This study considered quantitative method to assess the relationships between AL, PC, organizational culture, and IWB in the IT Industry of Indonesia. A cross-sectional survey approach is used because it allows the study to collect data from many respondents at one time and allows analysis of hypothesized relationships between variables. The quantitative approach is well justified for testing theories and relationships using statistical analysis.

The target population is drawn from the Indonesia's IT organizations, such as software development organizations, information services, fintech companies, information systems organizations, technology consulting companies, and digital startup companies. Employees from these organizations frequently perform knowledge-based work and are expected to be able to provide innovative ideas and solutions to contribute to the competitiveness of the organization. The respondents are professionals who work in various functional areas including software engineering, project management, systems development, data analytics, cybersecurity, technical support, and digital operations. Only those employees were considered to have one year of experience.

To get adequate representation from different segments of the IT industry in Indonesia, this study uses stratified sampling technique. The organizations are sorted into strata by the type of business they operate, like software development, fintech, digital services, IT consulting or technology startups. People are then sampled proportionately from each stratum to enhance the representativeness of the sample and minimize sampling bias. In addition, Matthews [51] recommend that the minimum sample size of PLS-SEM is established by the complexity of the model and statistical power. The proposed model includes various direct, mediating, and moderating relationships, which must be estimated with a large sample. Additionally, "10-times rule" recommends a minimum sample size of 10 times. Because of the multiple direct and interaction effects for IWB, the required sample is significantly reduced from the final sample obtained. Following data screening and validation, 285 valid responses are maintained for analysis, which is more than is recommended and meets the minimum requirements for statistical power to test the hypotheses.

The data is gathered using a structured questionnaire, which was designed based on the validated scales. The survey instrument is sent via electronic channels such as online platforms, professional networking groups, company contacts and e-mail invitations to employees from IT companies in Indonesia. The respondents are instructed on the study aim, and their answers will endure confidentiality and anonymity before participation. There is no fee for participation and respondents are recommended that they can leave at any time. Data collection is carried out for three months' period. Questionnaires returned are thoroughly checked to see if they are incomplete, submitted multiple times or have inconsistencies. Any incomplete responses are discarded from the final data set. After the screening process, 285 valid responses were received.

A pilot study is carried out prior to the primary survey to measure the clarity, relevance and reliability of the measurement instrument. The pilot test is conducted on a preliminary sample of 30 employees of Indonesian IT organizations. Feedback is sought on wording of items, structure of the questionnaires, and clarity. Minor changes are made to clarify and make the text easier to read, depending on feedback received. The consequences of the pilot study demonstrated that all constructs have Cronbach's alpha values above the suggested limit of 0.70 and that the internal consistency is satisfactory. The results indicate the validity of the measurement scales and the appropriateness of the questionnaire to gather data on a large scale. Furthermore, to reduce the

potential for response bias, procedural changes like respondent anonymity, voluntary participation, and well-designed questionnaires are used.

This study adapted the scale items from previous studies. AL was measured through eight scale items adapted from Walumbwa et al. [26]. PC was assessed using four scale items adapted from Luthans et al. [32]. In addition, organizational culture was assessed by using four scale items adapted from Wang et al. [52]. Finally, IWB was considered by using six scale items adapted from Nicolescu and Rîpa [4]. All the scale items are shown in Table 1.

Table 1

Variable Measures

Variable	Items	
Authentic Leadership	1. "Management seeks feedback to improve interactions with others.	Walumbwa et al. [26]
	2. Management accurately describes how others view his or her capabilities.	
	3. Management says exactly what they mean.	
	4. Management is willing to admit mistakes when they are made.	
	5. Management demonstrates beliefs that are consistent with actions.	
	6. Management makes decisions based on his/her core beliefs.	
	7. Management solicits views that challenge his or her deeply held positions.	
	8. Management listens carefully to different points of view before coming to conclusions."	
Psychological Capital	1. "In my line of work, I believe I can help set goals/objectives.	Luthans et al. [32]
	2. I can think of many ways to achieve my current job goals.	
	3. I usually take the pressure at work calmly.	
	4. I always focus on the bright side of my work."	
Organizational Culture	1. "The teams collaborate functionally in the initiatives for innovation and transformation.	Wang et al. [52]
	2. There is a clear orientation to technology changes inside the organization's culture.	
	3. The culture of innovation and change takes part as a natural process within the organization.	
	4. The organization shares with the staff the digital strategy, taking into consideration their suggestions."	
Innovative Work Behavior (IWB)	1. "At my workplace, I create new ideas concerning solutions for difficult problems.	Nicolescu and Rîpa [4]
	2. At my workplace, I search for new working methods, new techniques, new instruments, and new solutions.	
	3. At my workplace, I generate original solutions for existing problems.	
	4. At my workplace, I can transform new ideas into useful applications.	
	5. At my workplace, I implement innovative ideas in the work environment.	
	6. At my workplace, I evaluate the utility of new ideas after implementing them."	

5. Data Analysis and Findings

Table 2 describes the statistics of the data. The findings show no missing value in all the measurement items. The mean responses are from 2.80 to 3.43, indicating moderate perceptions of respondents to AL, PC, organizational culture and IWB. The standard deviations are between 1.10 and 1.31, which are within an acceptable range of variability of responses among participants. In addition, the skewness values and kurtosis values are within the acceptable range of ± 2 , which indicates that the data is normally distributed. The descriptive statistics suggest that the data are suitable for other analysis using multivariate analysis and structural equation modeling.

Table 2

Data Statistics

Items	Missing	Mean	Median	Min	Max	SD	Kurtosis	Skewness
AL1	0	2.804	3	1	5	1.107	-0.715	0.192
AL2	0	3.147	3	1	5	1.273	-0.951	-0.228
AL3	0	3.161	3	1	5	1.312	-1.033	-0.235
AL4	0	3	3	1	5	1.3	-1.007	-0.01
AL5	0	2.996	3	1	5	1.247	-0.906	-0.048
AL6	0	2.986	3	1	5	1.265	-0.977	-0.089
AL7	0	3.354	3	1	5	1.255	-0.947	-0.287
AL8	0	3.407	3	1	5	1.266	-0.947	-0.301
PC1	0	3.4	4	1	5	1.314	-1.096	-0.303
PC2	0	3.432	4	1	5	1.298	-1.048	-0.318
PC3	0	3.291	3	1	5	1.312	-1.06	-0.186
PC4	0	3.035	3	1	5	1.169	-0.786	-0.135
OC1	0	3.119	3	1	5	1.179	-0.821	-0.22
OC2	0	3.088	3	1	5	1.252	-0.912	-0.177
OC3	0	3.067	3	1	5	1.231	-0.94	-0.162
OC4	0	3.091	3	1	5	1.273	-0.959	-0.234
IWB1	0	3.396	3	1	5	1.217	-0.817	-0.315
IWB2	0	3.319	3	1	5	1.256	-0.859	-0.312
IWB3	0	3.382	3	1	5	1.308	-1.036	-0.3
IWB4	0	3.281	3	1	5	1.264	-0.894	-0.237
IWB5	0	3.404	4	1	5	1.249	-0.929	-0.355
IWB6	0	3.025	3	1	5	1.165	-0.696	-0.075

The proposed model was analyzed using PLS-SEM in SmartPLS 3. The assessment included both measurement and structural models. Reliability and validity were assessed through factor loadings, Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and discriminant validity [53-56]. The assessment of structural model includes path coefficient, t-value, p-value, mediation effect and moderation effect [57]. PLS-SEM is chosen because of its capability to assess complex relationship simultaneously and robust under non-normal data situations.

Table 3

Reliability and Convergent Validity

Variable	Item	Loading	Alpha	CR	AVE
Authentic Leadership	AL2	0.827	0.929	0.943	0.702
	AL3	0.841			
	AL4	0.832			
	AL5	0.868			
	AL6	0.849			
	AL7	0.832			
	AL8	0.814			
	IWB1	0.884			
Innovative Work Behavior	IWB2	0.901	0.933	0.949	0.789
	IWB3	0.896			
	IWB4	0.874			
	IWB5	0.887			
	OC1	0.878			
Organizational Culture	OC2	0.921	0.927	0.948	0.82
	OC3	0.918			
	OC4	0.903			
	PC1	0.917			
Psychological Capital	PC2	0.913	0.908	0.936	0.785
	PC3	0.902			
	PC4	0.808			

Table 3 exhibits a high level of reliability and a substantial degree of convergent validity. All the factor loadings of the items retained lie above the recommended threshold value of 0.70 [51], ranging from 0.808 to 0.921. This means that the observed indicators are good representatives of their respective latent constructs. All alpha values obtained are above the minimum value of 0.70, indicating that the internal consistency reliability is good [58], ranging from 0.908 to 0.933. Likewise, the CR between 0.936 and 0.949 exceed the suggested cut-off point of 0.70 [59]. Moreover, the AVE scores range from 0.702 to 0.820, meeting the minimum threshold of 0.50, and signifying appropriate convergent validity. These results found that the use in this study has high reliability and validity to measure the authenticity of leadership, PC, organizational culture, and IWB. Table 4 presents the Fornell-Larcker results. The square root of AVE is higher than all other values which confirm discriminant validity.

Table 4

AVE Square Root

	AL	IWB	OC	PC
Authentic Leadership	0.838			
IWB	0.804	0.888		
Organizational Culture	0.782	0.75	0.905	
Psychological Capital	0.801	0.8	0.819	0.886

Table 5 and Figure 2 show the results of the structural model of the direct and moderation effects. The result shows that AL has a significant positive influence on IWB ($\beta = 0.380$, $t = 5.344$, $p < 0.001$) and that supports H1. Similarly, PC is significantly influenced by AL ($\beta = 0.861$, $t = 76.325$, and $p < 0.001$), thus supporting H2. As for IWB, the PC shows a significant positive effect ($\beta = 0.290$, $t = 3.544$, $p < 0.001$) which supports the H3.

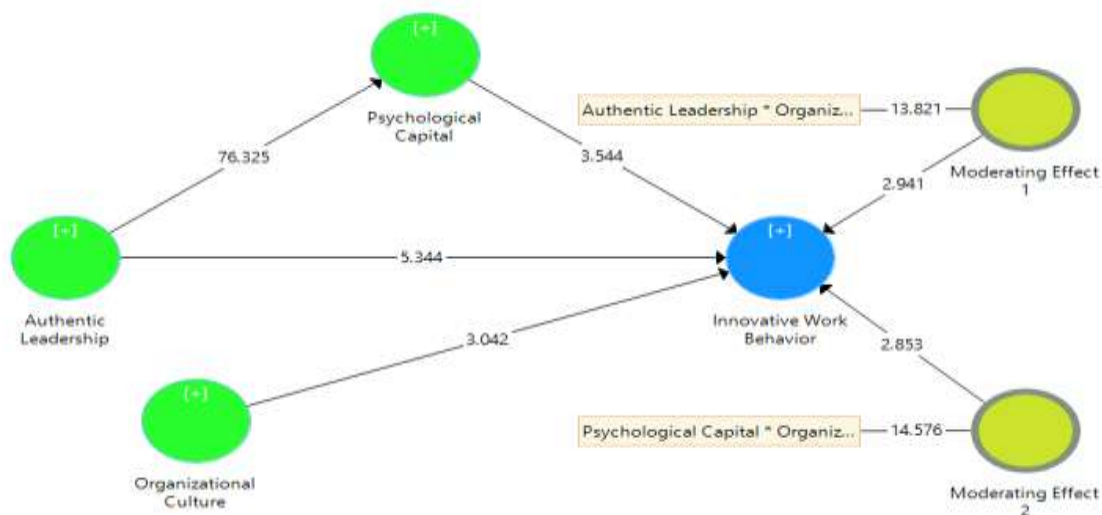


Fig.2: Path Analysis

Table 5

Results (Direct and Moderation Effect)

	β	Mean	STDEV	T Statistics	P Values	Decision
Authentic Leadership -> IWB	0.38	0.374	0.071	5.344	0	Supported
Authentic Leadership -> Psychological Capital	0.861	0.861	0.011	76.325	0	Supported
Moderating Effect 1 -> IWB	-0.213	-0.214	0.073	2.941	0.003	Not Supported
Moderating Effect 2 -> IWB	0.19	0.187	0.067	2.853	0.005	Supported
Psychological Capital -> IWB	0.29	0.295	0.082	3.544	0	Supported

Furthermore, as for the moderation effects, there is a significant negative coefficient ($\beta = -0.213$, $t = 2.941$, $p = 0.003$) between AL and organizational culture, which is inconsistent with the proposed relationship; thus, H5 is rejected. However, the interaction between PC and organizational culture has a positive effect on IWB ($\beta = 0.190$, $t = 2.853$, $p = 0.005$) which supports H6. As shown in Figure 3, at high levels of organizational culture, the relationship between PC and IWB becomes stronger.

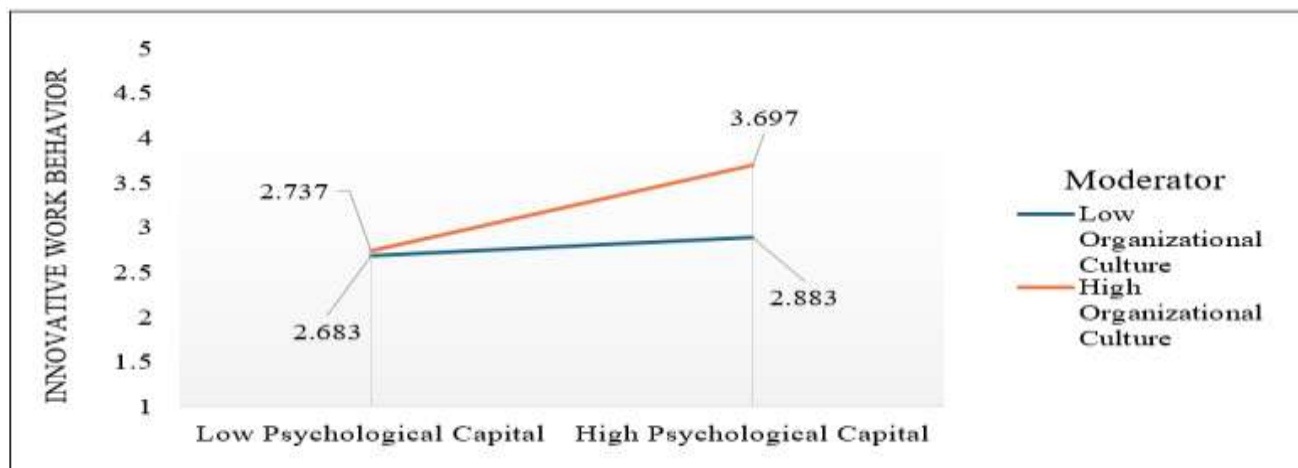


Fig.3: Psychological Capital* Organizational Culture -> Innovative Work Behavior

The mediation analysis results are shown in Table 5 and Figure 4. The indirect effect of AL on IWB through PC is positive and statistically significant ($\beta = 0.249$, $t = 3.513$, $p < 0.001$). The results suggest that AL helps to build employees' PC, which improves their IWB. The indirect effect is highly significant, thus indicating that PC is an important psychological mechanism relating leadership practices to innovation outcomes. Figure 4 also illustrates how employees' positive psychological states mediate the relationship between AL and IWB, in such a way that PC is an indirect factor between these variables.

Table 6

Results (Indirect Effect)

	β	Mean	STDEV	T Statistics	P Values	Decision
Authentic Leadership -> Psychological Capital -> IWB	0.249	0.254	0.071	3.513	0	Supported

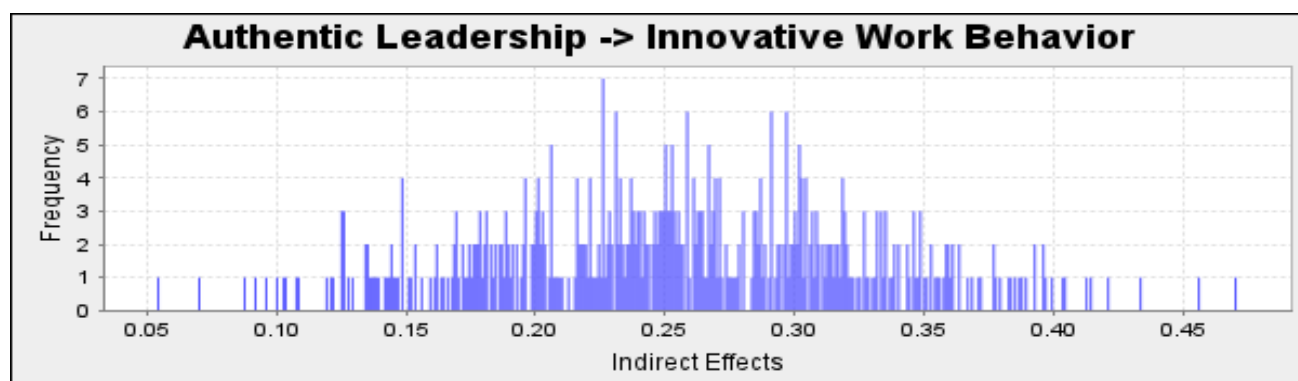


Fig.4: Authentic Leadership -> Psychological Capital -> Innovative Work Behavior

6. Discussion

The aim of this study is to analyze the relationship between AL, PC, organizational culture, and IWB in the IT industry in Indonesia. Based on SET, the study suggests that besides directly affecting IWB, AL has an indirect effect on it via PC and organizational culture is a contextual factor influencing

the relationship between AL and IWB. These results are very supportive of the framework proposed and are very informative about the drivers of employee innovation in technology intensive companies.

The results identified that AL has significant positive impact on IWB which supported H1. These findings imply that working with authentic leaders is more likely to result in the creation of innovative ideas, their promotion and execution within the organization. Within the IT industry in Indonesia, the nature of work could be challenging and subject to rapid change in market needs. It promotes leadership behaviors with transparency, honesty, and caring towards workers which create a favorable environment for innovation [15]. True leaders foster open communication and trust leading to promotion of creative ideas [60; 61]. These results are congruent with SET that suggests that a positive response by the leader to employee's treatment will be returned by the employee in the form of actions that will benefit the organization. This finding is also similar earlier research which has identified AL as an important antecedent of employee creativity as well as innovation [39; 62; 63]. Hence, AL becomes a crucial leadership style to promote IWB in technology-based organizations.

The results also indicate that AL positively influences PC which supported H2. This finding indicates that authentic leaders make a strong contribution to the employees' self-efficacy. The Indonesian IT industry has a lot of uncertainties, technology changes and pressure to perform, which forces employees to have strong psychological resources. Effective leaders assist employees to deal with these issues by offering support, constructive feedback, and encouragement [15; 64]. Employees build confidence in their skills and get positive expectations for work goals through regular and clear communication [65]. These findings validate the key principle of the SET that positive social exchanges between leaders and workers lead to positive psychological outcomes. Workers who feel that their leaders are trustworthy and supportive will more likely create positive psychological states. Thus, AL has a direct effect on employee behavior and enhances the way employees think and feel, which are important for their ability to perform and innovate new ideas. Similarly, preceding studies also emphasized the positive relationship between AL and PC [33; 42; 66].

The study also finds evidence of the positive relationship between PC and IWB, thus supporting H3. The findings of this study indicate that having more self-efficacy and optimism among their employees will increase their chances of engaging in innovation-related activities. PC empowers staff to tackle challenges with greater confidence and fosters resilience [67] enables them to think outside the box, thereby improving their ability to provide quality ideas. PC as a personal resource which is a valuable resource in IT organizations in Indonesia, where the need for innovation is imperative to sustain competitiveness for the organization. This result aligns with the prior studies in which the PC empowered employees through creative and innovative ideas [48; 49; 68]. The outcome also substantiates the idea that innovation is not just about organizational factors, but it also has a psychological dimension of employee's strength. Thus, building PC of the employees could be a very significant factor affecting the innovation process of the organization.

The mediation results support the hypothesis of PC as a mediator between AL and IWB (H4). These results provide greater insight into the influence of AL on innovation processes. AL not only influences IWB directly but also has an indirect impact on innovation by enhancing workers' psychological resources. Those working in an AL environment become more hopeful, optimistic, resilient and self-effective, and then more motivated to innovate new ideas [15; 39; 42]. The finding underscores the importance of PC as an intervening factor between leadership behaviors and employee innovation. Because it illustrates that leadership can influence psychological state of employees. The significant mediation effect then further highlights the value of PC as a mediator between the leadership practices and innovation outcomes in the Indonesian IT sector.

There is mixed evidence on the role of organizational culture as moderating factor. The results

reveal that H5 is not supported as organizational culture has a negative moderating effect on the relationship between AL and IWB. Although the interaction effect is statistically significant, the negative direction implies that a more powerful organizational culture has a negative impact on the positive outcome of AL on IWB. This finding may be attributed to the fact that certain Indonesian IT companies have relatively developed organizational cultures leading to the introduction of rigid norms and standardized procedures that restricts flexibility of the employees to act upon leadership encouragement. Though, even good leaders can struggle to shift their positive actions into positive innovative ideas [18], as people continue to be constrained by organizational norms and formalized processes. Furthermore, a strong culture can diminish the need for leadership influence because it gives stability to the behavioral norms and innovation processes in the organization, therefore, the impact of AL diminishes.

On the other hand, H6 is supported empirically, which shows that organizational culture positively moderates the relationship between PC and IWB. The results show that when employees have high PC in an organization that has an innovative culture, they are more likely to perform IWB. Opportunities for employees to effectively use their psychological assets are created through a culture that promotes collaboration, learning, experimentation, and the sharing of knowledge. These psychological resources can become innovative actions if they meet a creative and innovative organizational environment [69]. PC gives people the desire and ability to do innovative ideas [15; 48], and organizational culture provides better environment. These results are especially significant for Indonesian IT companies, where innovation is a constant necessity to meet the changing needs of customers and the advancements of technology.

7. Conclusion

Findings support the central premise of SET by demonstrating that positive leadership behaviors and supportive organizational conditions encourage employees to reciprocate through innovation-enhancing behaviors. AL has direct impacts on IWB and enhances PC, which is vital mediating variable explaining the relationship between leadership and employee innovation. Furthermore, the context of organizational culture is important contextual factor which influences the effectiveness of these relationships. The study highlights that employee innovation emerges from the interaction of leadership practices, psychological resources, and organizational environments rather than from any single factor in isolation. Consequently, this study empirically proves that AL and PC play a substantial role in employees' IWB in the IT industry in Indonesia. Organizational culture is shown to be an important moderator between PC and EWB. The results highlight the need to build true leadership practices, promote employees' psychological capability and foster innovation supporting cultures in technology-intensive organizations to improve IWB.

7.1 Theoretical Implications

The study has numerous critical theoretical contributions to the field of leadership, employee psychology and innovation literature. Consequently, the study further investigates and expands SET by showing that the involvement of PC between AL and IWB can be both direct as well as indirect. The outcomes specify that the positive leadership behaviors have been reciprocated by the employees to engage in innovation-oriented activities, which supports the exchange-based perspective in the IT sector in Indonesia. Secondly, the study also makes a worthy addition to the literature on AL by confirming that PC is a principal mechanism that explains the relationship between leadership and employee innovation. The result builds on previous research by shedding light on the psychological mechanisms that contribute to effective leadership. Third, this study also combines the role of leadership, individual psychological resources and organizational context. Integration offers a more holistic view of IWB than models based on single predictors. Lastly, the unexpected negative

moderating influence of organizational culture on the AL IWB relationship adds to the literature by indicating that the relationship between AL and IWB may not always be strengthened by organizational culture.

7.2 Practical Implications

The findings of this study provide valuable insights for managers and practitioners operating in the Indonesian IT sector. First, the development of leadership qualities in management and team leaders should be promoted. To build work environments that foster employee innovation, leadership development initiatives should focus on communicating openly, making ethical decisions, knowing yourself, and communicating effectively. Second, PC is an important construct, therefore, there is a need for organizations to carry out activities that will increase employees' PC. These psychological resources can be developed through coaching programs, mentoring activities, skill development workshops and employee well-being initiatives. Third, organizations need to understand that IWB can be attributed not just to technical skills but to also the psychological and social environment of the employees. Thus, the human resource policies should be directed towards building competence and psychological empowerment. Moreover, a positive moderating effect of organizational culture in the relationship between PC and IWB further underscores the need for fostering an organizational culture that enhances collaboration, experimentation, continuous learning, and knowledge sharing. This kind of culture allows employees to enhance psychological capabilities, leading to creative ideas.

8. Limitations and Future Directions for Academicians

This study has a few limitations and thus provides an opportunity for future research. The study is cross-sectional and this restricts the researcher from being able to determine the cause and effect of the variables. Longitudinal research and designs could be employed in future research to explore the dynamic changes in AL, PC and IWB over time. Secondly, the study only covers the employees of the IT sector in Indonesia which might restrict the generalization of the results. It would be beneficial for future researchers to be able to reproduce this model in other industries and other countries to determine its potential in various contexts within organizations. Finally, the study is self-reported and could have response bias and common method variance. Future studies could use multi-source data by gathering data from supervisors, peers and organizational records. Lastly, while organizational culture is included as a moderating variable, other contextual factors like organizational learning capability, innovation climate, readiness for digital transformation, and employee empowerment are not analyzed. These factors can be a focus of future research to develop a better understanding of the mechanisms of IWB.

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