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The Role of Ambidextrous Organizational Culture and Psychological Safety in Shaping Innovative Work Behavior Among IT Sector Employees

Marthin Romulus, Arum Etikariena*, Yusuf Hilmi
Universitas Indonesia, Depok, Indonesia
*arum.etikariena@ui.ac.id

Abstract

Despite ongoing digital transformation efforts, Indonesia still lags behind in global innovation rankings, raising questions about the organizational and psychological factors influencing individual innovation in the IT sector. This study examines the role of Ambidextrous Organizational Culture (AOC) and Psychological Safety (PS) in shaping Innovative Work Behavior (IWB) among IT employees in Indonesia. Grounded in the Interactionist Perspective on Creativity, the study uses a quantitative approach with an online survey of 144 IT professionals. Validated instruments were used to measure AOC, PS, and IWB, with data analyzed using linear regression and Hayes' PROCESS Model 4. The findings show that AOC significantly predicts IWB both directly ($\beta = 0.3973$, $p < 0.01$) and indirectly through PS (indirect $\beta = 0.2239$), indicating a significant partial mediation effect. These results highlight the importance of cultivating a dual-focused organizational culture and psychologically safe environments to stimulate employee innovation. Practically, organizations should integrate cultural and psychological enablers into their HR and innovation strategies to strengthen innovative work behavior in Indonesia's IT sector.

Keywords: Ambidextrous Organizational Culture; Innovative Work Behavior; IT Sector; Psychological Safety

Introduction

In the context of rapid digitalization, the Information Technology (IT) sector plays a central role in driving innovation-based economic growth. Several urban centers in Indonesia, such as Jakarta, Bandung, and Malang, have evolved into digital ecosystems that support start-ups and technology companies. According to mapping conducted by associations such as MIKTI (Masyarakat Industri Kreatif Teknologi Informasi Indonesia), these cities are among the most active in nurturing tech-driven entrepreneurship.

This development aligns with the national strategy Making Indonesia 4.0 roadmap launched by the Ministry of Industry of the Republic of Indonesia, which aims to integrate digital technology across priority sectors. However, despite these initiatives, Indonesia continues to lag in the global innovation landscape. According to the Global Innovation Index 2024 by the World Intellectual Property Organization (WIPO), Indonesia ranks 61st globally, behind regional peers such as Singapore and Malaysia. This gap raises pressing questions about the organizational and psychological enablers of innovation at the individual level within the IT workforce.

Amid these challenges, the concept of Innovative Work Behavior (IWB) has gained increased attention as a critical factor in sustaining organizational innovation. IWB is defined as the intentional behavior of employees aimed at generating, promoting, and realizing new ideas (Janssen, 2000). Its significance lies in its capacity to improve work

processes, develop novel products, and contribute to problem-solving (Scott and Bruce, 1994). Prior studies have shown that IWB correlates positively with organizational adaptability, job satisfaction, and employee engagement (Agarwal, 2014; Indrawati and Muljaningsih, 2022). Nonetheless, the contextual factors that drive or hinder IWB in Indonesia's IT sector remain under-investigated, especially from the perspective of organizational culture and psychological safety. The urgency of studying IWB in Indonesia's IT sector is further underscored by labor statistics.

Statistics from Indonesian Central Statistics Agency (BPS) indicate that innovation activity is more prevalent in private companies than in public institutions. This suggests that market-driven environments may offer more conducive climates for innovation. Yet, even in the private sector, sustained innovative behavior requires specific organizational and psychological conditions. Thus, there is a growing need to explore how certain cultural and environmental enablers can foster IWB in Indonesian organizations.

To address this research gap, the current study draws upon the Interactionist Perspective on Creativity Woodman, Sawyer and Griffin (1993) which emphasizes that creativity arises through the dynamic interaction between individuals and their environments. Creativity, as defined in this framework, is not merely an individual trait but is strongly influenced by contextual factors such as leadership style, organizational support, and team climate (Amabile et al., 2018). In this view, Innovative Work Behavior can be interpreted as a form of applied creativity that is shaped by both psychological and structural conditions. This perspective guides the current investigation by framing IWB as a function of the interplay between individual agency and organizational systems.

One such structural factor is Ambidextrous Organizational Culture (AOC), which refers to a culture that simultaneously fosters exploration of new opportunities and exploitation of existing resources (Lee, Seo, Jeung and Kim, 2019; Wang and Rafiq, 2014). AOC enables organizations to remain innovative while maintaining efficiency, a balance particularly critical in dynamic sectors like IT. AOC encourages both the freedom to experiment and the discipline to implement solutions. Previous research has shown that AOC positively influences not only innovation output but also employee performance and long-term organizational sustainability (Varandas, Fernandes and Veiga, 2024).

Psychological safety (PS), on the other hand, refers to the shared belief among team members that the work environment is safe for interpersonal risk-taking (Edmondson, 1999; Edmondson and Lei, 2014). It plays a mediating role by creating a psychological climate where employees feel comfortable expressing unconventional ideas without fear of ridicule or punishment (Frazier, Fainshmidt, Klinger, Pezeshkan and Vracheva, 2017). In the absence of psychological safety, even a highly supportive organizational culture may fail to produce desired innovation outcomes. Thus, PS is considered a critical enabler of the effective translation of cultural values into actual behaviors.

Recent empirical studies support the notion that AOC and PS are deeply interconnected. AOC can enhance PS by promoting openness, trust, and inclusion (Xu, Wang and Suntrayuth, 2022). Simultaneously, PS serves as a mechanism through which the values embedded in AOC, such as learning from failure and supporting divergent thinking, can materialize into innovative work behavior. Thus, the combination of AOC and PS creates a synergistic environment conducive to innovation. This synergy becomes especially important in high-pressure IT environments, where rapid change demands both flexibility and stability.

Moreover, existing literature highlights that psychological safety can act as a mediator between organizational context and innovation-related outcomes (Bunderson and Boumgarden, 2010; Carmeli, Reiter-Palmon and Ziv, 2010). In creative tasks, employees are more likely to take initiative and share ideas when they perceive the environment as non-threatening (Edmondson, 1999). Therefore, in this study, we hypothesize that psychological safety mediates the relationship between ambidextrous organizational culture and innovative work behavior. This aligns with prior evidence suggesting that without psychological safety, the benefits of AOC may not be fully realized. In line with these theoretical considerations, the hypotheses proposed in this study are as follows:

1. H1: Ambidextrous Organizational Culture (AOC) positively influences Innovative Work Behavior (IWB).
2. H2: Psychological Safety (PS) mediates the relationship between Ambidextrous Organizational Culture (AOC) and Innovative Work Behavior (IWB).

Method

This study employed a quantitative design using an online survey to examine the relationship between ambidextrous organizational culture, psychological safety, and innovative work behavior among workers in the Information Technology (IT) sector in Indonesia. A total of 144 participants who had worked for at least one year in their current organizations were selected using convenience sampling, which allows efficient participant recruitment but limits the generalizability of findings due to potential sampling bias. Data were collected using a structured questionnaire comprising 21 items measured on a 6-point Likert scale, adapted and pilot-tested in Indonesian. The instruments included the innovative work behavior scale (9 items Cronbach's $\alpha = 0.95$), psychological safety scale (5 items Cronbach's $\alpha = 0.77$ after revision), and ambidextrous organizational culture scale (7 items Cronbach's $\alpha = 0.91$). Pilot testing was conducted on 25 participants to assess construct validity and reliability, with item revisions made for psychological safety based on expert judgment. Data collection was conducted online via Google Forms, and 25 participants received a small incentive to increase response rates. Data were analyzed using R, including data cleaning, descriptive statistics, and reliability testing. Inferential analysis was conducted using Hayes' PROCESS Model 4 to assess the mediating role of psychological safety, involving both direct and indirect effect estimations. Two regression models were tested: Model 1 tested the direct effect of ambidextrous organizational culture on innovative work behavior without including the mediator, while Model 2 included psychological safety as a mediator.

Result and Discussion

1. Descriptive Analysis

This study involved 144 participants working in the IT sector. Most of the participants were female (77.08%), and the average age was 28 years ($M = 28.08$, $SD = 4.09$), with an age range of 18 to 40 years, indicating that most respondents were young and productive. A significant portion of participants had a high school education or equivalent (46.53%), while approximately one-third had completed higher education with a bachelor's degree or Diploma IV (33.33%). Most participants were based in Java (81.9%).

Table 1. Demographic Profile

Demographic Variable	Category	Participant	Percentage (%)
	N	144	
Gender	Male	33	22,92%
	Female	111	77,08%
Education Level	High School	67	46,53%
	Diploma I/II/III	24	16,67%
	Bachelor's Degree/Diploma IV	48	33,33%
	Master's Degree	5	3,47%
Working Location	Java Island	118	81,9%
	Sumatera Island	20	13,9%
	Sulawesi Island	3	2,1%
	Kalimantan Island	1	0,7%
	Bali and Nusa Tenggara Islands	2	1,4%
Age	Mean: 28 years Range: 18-40 years		

2. Correlation Test

Before conducting the Pearson correlation analysis, the normality assumption was assessed using skewness and kurtosis statistics. The skewness values ranged from -1.26 to -0.809, while kurtosis values were between 0.716 and 1.58. According to George and Mallery (2019) skewness and kurtosis values within the range of -2 to +2 indicate a distribution close to normal, fulfilling an important assumption for inferential statistical analyses like Pearson's correlation. This indicates that the data are normally distributed, ensuring that the variability in the analysis results is reliable and that the relationships identified can accurately represent the population. The results of the correlation test in Table 4 show a significant positive relationship between Ambidextrous Organizational Culture (AOC), Psychological Safety (PS), and Innovative Work Behavior (IWB). The correlation values range from r = 0.495 to r = 0.590 ($p < 0.001$), indicating a moderate and statistically significant relationship. With a well-distributed dataset, these findings provide a solid foundation for explaining the significant associations among ambidextrous organizational culture, psychological safety, and innovative work behavior.

Table 2. Correlation Test Result (Pearson's R)

		AOC	PS	IWB
1	AOC	-		
2	PS	0.590***	-	
3	IWB	0.528***	0.495***	-
4	Mean	38.6	47.2	24.8
5	Standard deviation	3.62	6.87	4.24
6	Skewness	-1.26	-1.22	-0.809
7	Kurtosis	1.58	1.55	0.716

Note. N = 144. * p < .05, ** p < .01, *** p < .001.

3. Hypotesis Testing

Based on the results of the linear regression analysis (see Table 3), in Model 1 (without the mediator), the regression coefficient for Ambidextrous Organizational Culture (AOC) is 0.66 with a p-value < .01, indicating a significant positive effect. The

correlation between AOC and Innovative Work Behavior (IWB) is 0.49, showing a moderate relationship, and the coefficient of determination (R^2) of 0.243 indicates that 24.3% of the variance in IWB can be explained by AOC

Table 3. Linear Regression Analysis Results

Predictor	b	95% CI	r	p	Fit	Difference
Model 1						
Intercept	2.94					
AOC	0.66**	[.13, .35]	.49**	< .01		
R^2					.243***	[0.13, 0.35]
Model 2						
Intercept	3.05					
AOC	0.43**	[.00, .14]	.49**	< .01		
PS	0.23**	[.00, .15]	.50**	< .01		
R^2					.317***	[0.19, 0.42]
ΔR^2					.074**	[0.00, 0.15]

In Model 2 (with the mediator), the regression coefficient for AOC on IWB decreases to 0.43 but remains significant ($p < .01$), suggesting that part of the effect of AOC on IWB is mediated by another variable. The inclusion of the mediator, Psychological Safety (PS), increases R^2 to 0.317, with a significant increase in $\Delta R^2 = 0.074$ ($p < .01$). This indicates that the effect of AOC on IWB remains significant even with the presence of the mediator, PS. This result provides evidence that psychological safety partially mediates the relationship between ambidextrous organizational culture and innovative work behavior.

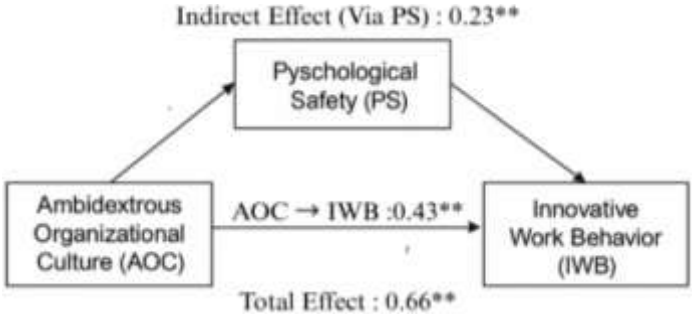

Figure 2. Mediation Model of Psychological Safety between Ambidextrous Organizational Culture and Innovative Work Behavior

Table 4. Hypothesis Testing

Effect	Effect Size	BootSE	95% CI
Total Effect	0.66	0.11	[0.44, 0.88]
Direct Effect	0.43	0.11	[0.21, 0.65]
Indirect Effect (via PS)	0.23	0.09	[0.06, 0.40]

The results of the analysis using Hayes Process Model 4 (see Table 4) align with the previous findings. According to the table, Ambidextrous Organizational Culture (AOC) has a significant effect on Innovative Work Behavior (IWB), both directly and indirectly through Psychological Safety (PS). The total effect of AOC on IWB is 0.66 with a p-value < .01, and a 95% Confidence Interval (CI) of [0.44, 0.88], indicating a significant positive effect. The direct effect of AOC on IWB is 0.43, also significant ($p < .01$) with a 95% CI of [0.21, 0.65]. On the other hand, the indirect effect of AOC on IWB through PS is 0.23, with a 95% CI of [0.06, 0.40], which is also significant.

This indirect effect indicates that PS acts as a mediator, strengthening the relationship between AOC and IWB. These findings support that, in addition to the direct effect of AOC on IWB, there is a significant indirect effect through PS. Therefore, based on the results of both analyses, it can be concluded that Hypothesis 1 (H1) and Hypothesis 2 (H2) are supported and accepted. This study highlights the significant role of Ambidextrous Organizational Culture (AOC) and Psychological Safety (PS) in promoting Innovative Work Behavior (IWB) among employees in the Information Technology (IT) sector.

The findings indicate that AOC directly influences IWB and that this effect is further strengthened by psychological safety as a mediator. These results underline the critical interaction between organizational culture and psychological safety in fostering innovation. Ambidextrous culture, characterized by a balance between exploration and exploitation, creates an environment that supports innovation while maintaining operational efficiency. Organizations with well-established AOC can adapt to rapid technological changes without compromising productivity (Lee et al., 2019; Wang and Rafiq, 2014).

This balance is particularly crucial in the IT sector, which demands quick responses to technological advancements to remain competitive (Muhammad, Ikram, Jafri and Naveed, 2021). Greater work autonomy, often present in ambidextrous cultures, enables employees to innovate and align creative solutions with job demands (Liu, Hu, Li, Wang and Lin, 2014). Furthermore, performance-based incentive systems, such as rewards for innovative contributions, motivate employees to develop new ideas. These findings align with Abstein and Spieth (2014) who found that effective knowledge utilization and transfer enhance IWB in technology companies.

The results also align with the Interactionist Perspective on Creativity, which views creativity as an interaction between individual abilities and environmental factors (Woodman et al., 1993). This perspective underscores the role of external factors, such as organizational culture, in shaping creativity and innovation. AOC provides the social context that supports creativity by balancing the freedom to experiment with the resources and challenges needed to develop innovative ideas. This balance allows employees to engage in both exploration of new concepts and exploitation of existing knowledge, fostering higher levels of creativity and innovation.

In urban settings, developed digital infrastructure and technology clusters significantly enhance employees' ability to engage in innovative work behaviors. These environments facilitate rapid idea exchange and collaboration, essential for innovation (Phalak, 2024; Shah, Zehri, Saraih, Abdelwahed and Soomro, 2024). Additionally, urban workplaces often promote diverse and multicultural workforces, fostering different perspectives and creative problem-solving approaches (Herring, 2009). This diversity has been shown to stimulate innovation by challenging conventional thinking and encouraging fresh ideas. The presence of incubators, accelerators, and coworking spaces in urban centers further supports the ambidextrous nature of IT organizations by encouraging both exploration and exploitation activities. The high concentration of technology firms in urban environments also amplifies the competitive pressure for continuous innovation, making AOC a crucial enabler of sustained organizational success.

Moreover, psychological safety plays a critical role in urban work environments, where competition and fast-paced work cultures may increase stress levels. Organizations that cultivate psychological safety allow employees to experiment with new ideas without fear of failure, making them more adaptable to the volatility of urban markets (Carmeli and Gittell, 2009; Edmondson, 1999). By fostering a workplace culture that balances

ambidextrous organizational capabilities (AOC) with psychological safety, urban-based IT firms can drive sustained innovation and maintain a competitive edge (O'Reilly and Tushman, 2013).

One of the notable findings of this study is the mediating role of psychological safety between AOC and IWB. Psychological safety refers to the shared belief that the workplace is safe for interpersonal risk-taking (Edmondson, 1999). This sense of security allows individuals to voice their ideas, share opinions, and experiment with new approaches without fear of negative consequences. While AOC provides an environment supportive of idea exploration, psychological safety ensures that employees feel comfortable sharing and acting on their ideas.

This mediation effect suggests that the presence of psychological safety amplifies the impact of AOC on IWB, reinforcing the idea that innovation thrives in environments where both structural support and a safe atmosphere for experimentation coexist. From the Interactionist Perspective on Creativity, psychological safety is a crucial external factor that influences how freely individuals experiment and share ideas. When employees perceive the workplace as safe, they are more likely to take creative risks and engage in innovative behaviors.

The mediation effect observed in this study indicates that psychological safety strengthens the positive relationship between AOC and IWB, demonstrating that without a psychologically safe environment, the full potential of AOC in fostering innovation may not be realized. In the IT sector, which often features flexible and lean organizational structures, the implementation of AOC and psychological safety is particularly feasible. Performance-based incentive systems and decentralized decision-making processes empower employees to experiment and innovate, increasing their contributions to organizational success (Edmondson, 1999; Liu et al., 2014).

These features not only foster psychological safety but also support the dual focus of exploration and exploitation inherent in AOC, creating a fertile ground for innovation. The urban IT landscape, characterized by its dynamic and fast-evolving nature, further underscores the importance of psychological safety as a mediator that ensures employees can fully leverage AOC to drive innovation. The interaction between AOC and PS creates an environment highly conducive to the development of creativity, which drives innovation. Organizations that successfully establish this dynamic are better positioned to adapt to rapid technological changes and maintain competitiveness in the global market. For the IT sector, where creativity and adaptability are critical, fostering both AOC and PS, especially in urban environments, remains essential for long-term success.

Conclusion

This study highlights the crucial role of Ambidextrous Organizational Culture (AOC) and Psychological Safety (PS) in fostering Innovative Work Behavior (IWB) in the IT sector, where AOC supports both idea exploration and resource exploitation, while PS encourages open communication and experimentation. Together, these factors enable proactive and adaptive innovation in a rapidly evolving industry. However, the use of convenience sampling and the focus on Indonesian IT professionals may limit the generalizability of the findings. Furthermore, this study did not examine other potential moderating or mediating variables that could influence IWB. Future research should consider using more representative samples, incorporating additional variables such as leadership style or organizational learning, and replicating the study in different cultural or sectoral contexts to enhance the robustness and applicability of the findings.

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