

## The mediating effect of resilience on the relationship between perceived organizational support and innovative work behavior



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### ABSTRACT

In today's dynamic and competitive business landscape, innovation plays a pivotal role in driving organizational success. Central to this process is the concept of innovative work behavior (IWB), which holds significant importance in generating and implementing novel ideas, processes, and products. Extensive research has consistently underscored a positive association between innovation and IWB. Two key factors influencing IWB are perceived organizational support (POS) and resilience (RES). POS encompasses employees' perceptions of the organization's support and care, while RES reflects their capacity to adapt and recover in the face of challenges. This study delves into the interconnections among perceived organizational support, resilience, and IWB, with a specific focus on investigating the mediating role of resilience. To unravel these relationships, a comprehensive survey was conducted, involving 355 support staff members at Rajamangala University of Technology in Thailand. Utilizing the Process macro for SPSS, the gathered data was meticulously analyzed. The results shed light on positive correlations between perceived organizational support, resilience, and IWB. Furthermore, the study successfully highlights the significant mediating effect of resilience in the relationship between perceived organizational support and IWB. The contributions of this research are twofold: firstly, it emphasizes the pivotal role of resilience as a mediator among support staff within a university setting. Secondly, the findings underscore the importance of cultivating supportive and resilient work environments to foster and encourage IWB among employees. However, while this study provides valuable insights, it is essential to expand the scope of research in the future. Exploring various employee types and organizations would enhance the wider applicability of the conclusions drawn here. In conclusion, this investigation provides a deeper understanding of the intricate connections between perceived organizational support, resilience, and innovative work behavior. It underscores the importance of building supportive and resilient workplace cultures, which can serve as catalysts for driving innovation and organizational success.

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### 1. Introduction

In contemporary discourse, innovation stands prominently acknowledged as a paramount catalyst for organizational triumph, and at the core of this transformative process lies the pivotal construct of innovative work behavior (IWB). IWB denotes the vital willingness and aptitude of an employee to conceive and actualize groundbreaking ideas,

processes, and products that possess both novelty and utility, thereby contributing substantially to the organization's advancement. Through extensive research, an enduring and corroborated correlation between innovation and innovative work behavior has come to the fore. For example, a study by [Messmann et al. \(2022\)](#) found that innovation is positively related to employees' innovative work behavior. The study found that when employees perceive their organization as being innovative, they are more likely to engage in innovative work behavior themselves. IWB is a significant predictor of organizational success related to increased job satisfaction, job performance, and organizational commitment ([Scott and Bruce, 1994](#)). Therefore, organizations need to understand the factors that

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promote IWB among employees. IWB is crucial for organizations because it enables them to adapt to changes in the environment and gain a competitive advantage (West and Farr, 1990). IWB can be seen in various forms, such as developing new products, improving existing products, introducing new processes, and finding new ways to solve problems (De Jong and Den Hartog, 2007). Employees who exhibit IWB are more likely to have a positive impact on organizational performance and productivity (Shalley et al., 2004). Therefore, organizations need to promote a culture that encourages IWB among employees.

Perceived organizational support (POS) is positively related to innovative work behavior because it leads to increased motivation, job satisfaction, and a higher willingness to take risks and experiment with new ideas. Organizational support for creativity, such as providing training and resources, can also increase employees' innovative work behavior. POS is employees' perceptions of the extent to which the organization values their contributions and cares about their well-being (Eisenberger et al., 1986), and it has been found to be a significant predictor of IWB (Carmeli and Gittell, 2009). When employees recognize that their organization values and supports their efforts, they are more likely to engage in behaviors that benefit the organization, such as IWB. Furthermore, employees with high POS are more likely to experience positive emotions and job satisfaction, which can increase their motivation to engage in IWB (Eisenberger et al., 1997). Therefore, organizations need to create supportive work environments that value their employees' contributions and well-being to promote IWB.

Resilience (RES) is the singular variable that is intricately linked to innovative work behavior. Substantial research findings consistently demonstrate a favorable correlation between resilience and innovative work behavior. RES encompasses an individual's capacity to effectively adapt to and recuperate from various stressors and challenges (Luthans et al., 2007a). RES has been found to have a mediating influence on the relationship between POS and IWB (Carmeli and Gittell, 2009). When employees perceive high levels of POS, they experience a sense of belonging and social support, which can enhance their RES. This, in turn, can increase their motivation to engage in IWB. Furthermore, employees with high RES are more likely to persevere in the face of challenges and setbacks, which is essential for generating and implementing new ideas (Luthans et al., 2007b). Therefore, organizations need to promote supportive work environments that enhance employees' RES to stimulate IWB.

The social exchange theory (SET) proposes that social exchange is based on the exchange of resources and obligations between individuals in a relationship. In the context of the employee-employer relationship, social exchange can be defined as the exchange of tangible and intangible

resources between the employee and the organization. When employees recognize that their contributions are valued by the organization and that the organization cares about their well-being, they are more likely to reciprocate with positive behaviors, such as increased job performance and IWB. POS refers to an employee's belief that their organization values their contributions and cares about their well-being. POS has been linked to various positive outcomes, including increased job satisfaction, organizational commitment, and job performance (Eisenberger et al., 1986). Moreover, there is a growing body of literature that suggests POS is significantly related to IWB (Shin et al., 2017). The Social Exchange Theory proposes that the quality of the social exchange relationship between the employee and organization is critical to determining the employee's willingness to engage in IWB. When the employee perceives the organization's support as being of high quality, the employee is more likely to engage in IWB. This is because the quality of the social exchange relationship influences the employee's perceptions of the organization's credibility and legitimacy. When employees believe the organization is credible and legitimate, they are more willing to engage in IWB (Shin et al., 2017). Furthermore, the social exchange theory provides a useful framework for understanding the relationship between POS and IWB in the workplace. Employees who discern that their organization values their contributions and cares about their well-being are more likely to engage in IWB. The quality of the social exchange relationship between the employee and the organization is critical to determining the employee's willingness to engage in IWB. Therefore, fostering a supportive work environment that appreciates employees' contributions and cares about their well-being is essential for promoting IWB.

The social exchange theory posits that POS impacts IWB by virtue of resource exchange and reciprocal obligations within interpersonal relationships. Nevertheless, this perspective may not comprehensively elucidate the intricate dynamics inherent in the association between these constructs. The present scholars contest this theory's sufficiency by advancing the proposition that RES serves as a mediating variable in the nexus between POS and IWB. RES is posited to facilitate employees' capacity to navigate the challenges and uncertainties that accompany IWB, concurrently bolstering their proclivity for engaging in innovative endeavors. Antecedent research underscores RES as a substantive predictor of IWB (Wang and Hsieh, 2013; Tuncdogan et al., 2017). Moreover, Bakker and Demerouti (2014) proposed the Job Demands-Resources (JD-R) theory, which suggests that personal resources such as RES play a crucial role in aiding employees to cope with job demands and engage in IWB. The current study introduces a new perspective on the relationship between POS and IWB, and it could provide insights into how

organizations can foster supportive work environments that encourage employees to engage in IWB. Future research should explore the mediating effect of RES on the relationship between POS and IWB to better understand the underlying mechanisms that link these variables.

IWB is critical for organizations to remain competitive in today's business environment. POS is a significant predictor of IWB, and RES acts as a mediator in this relationship. Therefore, organizations need to create supportive work environments that appreciate the contributions made by employees and their well-being to promote IWB. Furthermore, organizations need to promote employees' RES to enhance their motivation and persistence to engage in IWB. By understanding and promoting these factors, organizations can create a culture that encourages employees to generate and implement new ideas, processes, and products that are novel and useful for the organization. This paper explores the relationship between POS and IWB as well as how RES acts as a mediator in this relationship.

## 2. Literature review

The SET is a theoretical framework used to explain how social exchange relationships between individuals and organizations influence behaviors and outcomes in the workplace (Blau, 1964). SET proposes that employees engage in a social exchange relationship with their organization, exchanging resources and obligations. When employees perceive that their organization values their contributions and cares about their well-being, they are more likely to reciprocate with positive behaviors, such as increased job performance and IWB. The concept of POS is a critical component of SET in the context of the employee-employer relationship. POS refers to an employee's belief that their organization values their contributions and cares about their well-being (Eisenberger et al., 1986). Numerous studies have demonstrated that POS is associated with various positive outcomes, including increased job satisfaction, organizational commitment, and job performance (Rhodes and Eisenberger, 2002). Therefore, understanding the factors that influence POS is essential for promoting positive outcomes in the workplace. In the proposed model of the relationship between POS and IWB, RES is introduced as a mediator. RES refers to an individual's ability to adapt and recover from adversity or challenging situations (Luthans et al., 2007b). RES has been linked to various positive outcomes, including increased job performance, job satisfaction, and organizational commitment (Tandogan and Ilhan, 2016). By introducing RES as a mediator, it can be easier to understand the underlying mechanisms that link POS to IWB. Understanding the relationships between POS, RES, and IWB is critical for organizations seeking to foster a supportive work environment that encourages innovation and positive outcomes in the workplace.

By applying SET to the proposed model, we can better understand the exchange relationship between the employee and the organization, and how this relationship can influence IWB. Therefore, SET provides a valuable theoretical framework for exploring the proposed model and its implications for organizational behavior and outcomes.

In conclusion, the SET is an essential framework for understanding the relationships between POS, RES, and IWB in the workplace. By exploring the exchange relationship between employees and organizations, it is possible to better comprehend how to foster a supportive work environment that encourages IWB and positive outcomes in the workplace. Therefore, SET provides a useful foundation for exploring the proposed model and its significance for organizational behavior and outcomes.

### 2.1. Innovation work behavior

For several decades, IWB has been a topic of interest for organizational researchers. IWB refers to employee behavior that involves generating and implementing novel and useful ideas in the workplace (Janssen, 2000). IWB is a crucial aspect of organizational success as it enables organizations to adapt to changing environments, improve productivity, and gain a competitive advantage (Scott and Bruce, 1994). Several studies have investigated the antecedents and outcomes of IWB. One antecedent that has received significant attention is POS. POS refers to the perceptions of employees concerning the extent to which their organizations appreciate their contributions and care about their well-being (Eisenberger et al., 1986). Studies have shown that POS is positively related to IWB (De Jong and Den Hartog, 2010; Zhu et al., 2018). For example, Zhu et al. (2018) found that employees who perceived higher levels of organizational support were more likely to engage in IWB.

Another factor that has been linked to IWB is job autonomy. Job autonomy refers to the extent to which employees have control over the tasks they perform and the methods they use to complete those tasks (Hackman and Oldham, 1976). Studies have shown that job autonomy is positively related to IWB (De Jong and Den Hartog, 2010; Shin and Zhou, 2007). For example, Shin and Zhou (2007) found that employees who had greater job autonomy were more likely to engage in IWB. Personality traits have also been linked to IWB. Specifically, studies have shown that individuals with higher levels of openness to experience are more likely to engage in IWB (Scott and Bruce, 1994; Shin and Zhou, 2007). Openness to experience refers to an individual's willingness to engage in new experiences and ideas (Costa and McCrae, 1992). In terms of outcomes, IWB has been linked to various positive outcomes, including increased job satisfaction (De Jong and Den Hartog, 2010), organizational commitment (De Jong and Den Hartog, 2010), and job performance (Shin

and Zhou, 2007). Moreover, IWB has been linked to organizational innovation and competitiveness (Scott and Bruce, 1994).

Measuring IWB is crucial for researchers and organizations seeking to promote a culture of innovation and improve organizational outcomes. Several measurement tools have been developed to assess IWB. In this literature review, the authors summarize some of the most commonly used IWB measurement tools and highlight relevant research that supports the validity and reliability of such tools. One commonly used tool to measure IWB is the IWB scale developed by Janssen (2004). The scale measures three dimensions of IWB including idea generation, idea promotion, and idea implementation. Several studies have demonstrated the validity and reliability of this scale (Zhou and George, 2001; Janssen, 2004). Another tool that has been used to measure IWB is the Creativity-Related Outcome Expectancy scale (CREO) developed by Tierney and Farmer (2002). This scale measures employees' expectations for the outcomes of their creative efforts. Several studies have demonstrated the validity and reliability of this scale (Tierney and Farmer, 2002; Janssen and Gao, 2015). The Idea Implementation Scale (IIS) developed by De Jong and Den Hartog (2010) is another commonly used tool to measure IWB. This scale measures the extent to which employees implement innovative ideas in the workplace. Several studies have demonstrated the validity and reliability of this scale (De Jong and Den Hartog, 2010; Shin and Zhou, 2007). The Situational Strength Inventory (SSI) developed by Smith and Kohn (2008) is a tool that measures the extent to which employees have the resources, support, and autonomy necessary to engage in IWB. Several studies have demonstrated the validity and reliability of this scale (Smith and Kohn, 2008; Tandogan and Ilhan, 2016). In conclusion, various measurement tools have been developed to assess IWB, including the IWB scale, the Creativity-Related Outcome Expectancy scale, the Idea Implementation Scale, and the Situational Strength Inventory. These tools have established their validity and reliability in various studies, making them useful for researchers and organizations seeking to measure IWB and promote a culture of innovation in the workplace.

In conclusion, previous research has identified several antecedents and outcomes of IWB, including POS, job autonomy, and personality traits. Understanding these factors is critical for organizations seeking to foster a culture of innovation and improve organizational outcomes.

## 2.2. Perceived organizational support

POS is a critical component of employee-employer relationships and it has been linked to various positive outcomes in the workplace. Several studies have investigated the antecedents and outcomes of POS. One antecedent of POS is transformational leadership. Transformational leaders inspire and motivate employees to think and

act beyond their self-interests for the good of the organization (Bass and Avolio, 1994). Studies have shown that transformational leadership is positively related to POS (Rhodes and Eisenberger, 2002). For example, Eisenberger et al. (2002) found that employees who perceived their supervisors to be transformational leaders reported higher levels of POS. Another antecedent of POS is job resources. Job resources refer to the physical, psychological, social, and organizational aspects of a job that are beneficial to an employee's well-being and work effectiveness (Bakker and Demerouti, 2014). Studies have shown that job resources are positively related to POS (Halbesleben et al., 2014; Shimazu et al., 2015). For example, Shimazu et al. (2015) found that employees who perceived high levels of access to job resources reported higher levels of POS.

In terms of outcomes, POS has been linked to various positive outcomes, including increased job satisfaction (Eisenberger et al., 2002), organizational commitment (Eisenberger et al., 1986), and job performance (Rhodes and Eisenberger, 2002). Moreover, POS has been linked to beneficial health-related outcomes, such as lower levels of burnout and stress (Halbesleben et al., 2014). In conclusion, previous research has identified several antecedents and outcomes of POS, including transformational leadership and job resources. Understanding these factors is critical for organizations seeking to foster supportive work environments that encourage positive outcomes in the workplace.

POS is a key construct in organizational research, and several measurement tools have been developed to assess POS. In this literature review, the authors summarize some of the most commonly used POS measurement tools and highlight relevant research that supports the validity and reliability of these tools. One widely used tool to measure POS is the POS scale developed by Eisenberger et al. (1986). This scale measures the perceptions of employees in terms of the extent to which their organizations value their contributions and care about their well-being. Several studies have demonstrated the validity and reliability of this scale (Eisenberger et al., 1986; Rhodes and Eisenberger, 2002). Another tool that has been used to measure POS is the Survey of Perceived Organizational Support (SPOS) developed by Shore et al. (2006). The scale measures employees' perceptions of the level of support they receive from their organizations. Several studies have demonstrated the validity and reliability of this scale (Allen et al., 2003). The Organizational Support Inventory (OSI) developed by Eisenberger et al. (2001) is another commonly used tool to measure POS. Similar to the SPOS, this scale measures the extent to which employees perceive support from their organizations. Several studies have demonstrated the validity and reliability of this scale (Rhodes and Eisenberger, 2002; Eisenberger et al., 2001). The Perceived Support for Innovation (PSI) scale developed by Scott and Bruce (1994) is a tool that measures employees' perceptions of the extent to which their organization supports innovation. The

validity and reliability of this scale have been verified by numerous studies (Scott and Bruce, 1994).

The relationship between POS and IWB has received considerable attention in the literature concerning the study of organizational support. This literature review summarizes some of the relevant research that has explored the relationship between POS and IWB. Several studies have suggested that POS is positively related to IWB. For example, Fan et al. (2022) found that POS was positively related to IWB among Chinese employees. Similarly, Wang (2022) found that POS was positively related to idea generation and implementation among Pakistani employees. Moreover, Carmeli et al. (2013) found that POS was positively related to innovative behavior among Israeli employees.

Other studies have explored the mediating mechanisms underlying the relationship between POS and IWB. For example, Eva et al. (2019) found that the relationship between POS and IWB was mediated by employees' intrinsic motivation. Similarly, Santosa et al. (2022) found that the relationship between POS and IWB was mediated by job satisfaction among employees. Some studies have also explored the moderating effects of individual-level and contextual factors on the relationship between POS and IWB. For instance, Akgunduz et al. (2018) found that proactive personalities among employees moderated the relationship between POS and IWB. Moreover, Musenze and Mayende (2023) found that organizational learning culture moderated the relationship between POS and IWB.

In summary, several studies have demonstrated a positive association between POS and IWB, and some studies have investigated the mediating and moderating mechanisms that underpin this relationship. An understanding of these mechanisms is crucial for organizations striving to cultivate a culture of innovation within their workforce. Based on the findings of previous research, the authors propose a hypothesis for this study.

Hypothesis 1: POS has a positive effect on IWB.

### 2.3. Resilience as a mediator

RES is a dynamic and multidimensional construct that has been the focus of significant research related to organizational literature. This literature review summarizes some of the key research studies that have explored the concept of RES and its effects on individuals as well as organizations. In organizational literature, the concept of RES has been suggested to mediate the relationship between various antecedents and outcomes. Several studies have examined the mediating role of RES in the relationship between stressors and outcomes. For example, Lin et al. (2020) found that RES mediated the relationship between job stress and job satisfaction among Chinese healthcare workers.

Similarly, Miao et al. (2013) found that RES mediated the relationship between perceived stress and work engagement among Chinese nurses. Other studies have explored the mediating role of RES in the relationship between antecedents and outcomes, such as job satisfaction and organizational commitment. For instance, Abualrub and Alghamdi (2012) found that RES mediated the relationship between job stressors and job satisfaction among Saudi Arabian nurses. Additionally, Jin et al. (2022) found that RES mediated the relationship between job stress and organizational commitment among Jordanian nurses.

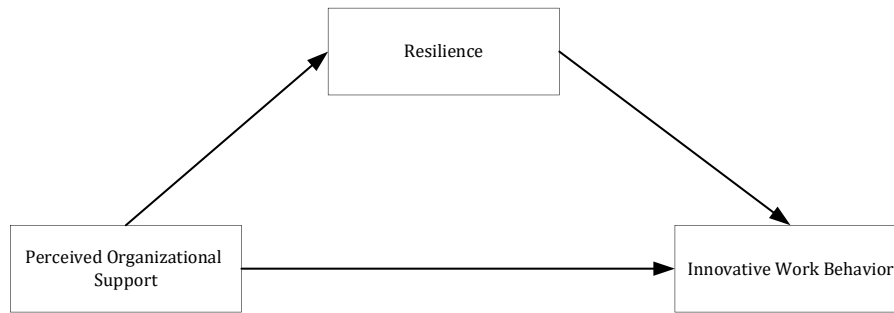
Various studies have explored the mediating role of RES in the relationship between antecedents and outcomes, including job performance and creativity. For example, Tulucu et al. (2022) found that RES mediated the relationship between stressors and job performance among support personnel at a Chinese university. Similarly, Javed et al. (2020) found that RES mediated the relationship between intrinsic motivation and IWB among employees in Pakistan. In conclusion, several studies have explored the mediating role of RES in the relationship between various antecedents and outcomes in the organizational literature. RES has been found to mediate the relationship between job stress, perceived stress, job stressors, intrinsic motivation, and outcomes as well as job satisfaction, work engagement, organizational commitment, job performance, and IWB. Based on the findings of previous research, the authors propose a second hypothesis for this study.

Hypothesis 2: RES mediates the relationship between POS and IWB.

The researchers formulated a conceptual framework for their study based on a literature review and prior research. This framework serves as a guide for the current research and is expected to inform the research question, hypotheses, methodology, and analysis. However, more elaboration on the framework is suggested to establish its relevance and potential contributions to the study (Fig. 1).

### 3. Methodology

The current study utilized a population and sample group comprised of 3,124 members of the support staff at Rajamangala University of Technology in the central region of Thailand. The sample size of 355 was determined using the formula of Yamane (1967) with a 95% confidence level. The research employed stratified sampling to ensure the representation of the entire population by comparing the proportion of support staff from each of the five faculties within Rajamangala University of Technology. Convenience sampling was then used to distribute questionnaires.



**Fig. 1:** Effect of POS on IWB through the mediating variables of RES

The research tool utilized for this study was a questionnaire divided into four sections, including a multiple-choice general information questionnaire with five questions, a questionnaire on POS adapted from Na-Nan and Wongsuwan (2020) based on the ideas of Rhodes and Eisenberger (2002), consisting of four domains and 15 questions, and a questionnaire on RES based on the ideas of Connor and Davidson (2003) with five domains and 25 questions, as well as a questionnaire on IWB based on the ideas of De Jong and Den Hartog (2010) with four domains and 10 questions. The content validity of the questionnaires was evaluated by three experts, and the content validity index was found to be greater than 0.50. The reliability of the questionnaires was assessed using Cronbach's alpha coefficient and yielded scores with high reliability, including a POS factor of 0.96, a psychological flexibility factor of 0.94, an IWB factor of 0.91, and an overall questionnaire reliability of 0.97.

In this research, the statistical analysis utilized a variety of descriptive statistics methods, including frequency distribution, percentage, mean, standard deviation, and inferential statistics. Additionally, the study employed both direct and indirect effects analysis using the Model 4 approach by Hayes (2013) and the PROCESS macro 3.1 software to assess the direct and indirect effects of the study variables. However, the manuscript would benefit from a more detailed description of the statistical analysis methods used in the research, including how the results were interpreted, and any potential limitations or alternative methods that could have been used for analysis. The authors tested the convergent validity of the scale using the concept by Fornell and Larcker (1981) and evaluated the construct validity of each factor in the model using confirmatory factor analysis. The factors were deemed to be valid based on the statistical values of congruence level, including Chi-square ( $\chi^2$ ), relative Chi-square ( $\chi^2/df$ ), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), standard root mean square residual (SRMR), and root mean square error of approximation (RMSEA) (Kline, 2023). Table 1 shows the construct validity values for each studied factor with standardized factor loading at a significance level of  $p < 0.05$ , indicating significant correlations among all questionnaire items under

the theoretical structure. To test the construct validity (Fornell and Larcker, 1981), the current study calculated the composite reliability (CR) and average variance extracted (AVE) scores for the final order of the scale and model structure. The composite reliability scores ranged from 0.917 to 0.965, exceeding the threshold of 0.7. However, the AVE scores ranged from 0.529 to 0.532, below the recommended criterion of  $AVE > 0.50$ .

#### 4. Results

Regarding the sample group, the majority of respondents were female (68.45%), with the minority being male (31.55%). In terms of age, most respondents were between 31 and 40 years old (35.21%), followed by those aged 41-50 years (27.89%), those less than 30 years old (22.25%), and those more than 51 years old (14.65%). The majority of respondents were single (56.06%), followed by those who were married (41.69%), and those who were divorced/widowed/separated (2.25%). Additionally, approximately two-thirds of the respondents possessed a bachelor's degree (75.21%), while the remaining respondents had a higher education degree. The majority of the sample group had more than 6 years of work experience (61.97%), followed by those with 3-6 years of experience (17.46%), those with 1-3 years of experience (15.21%), and those with less than 1 year of experience (5.36%). The manuscript could elaborate further on the demographic characteristics of the sample group and how they may have influenced the research findings.

As presented by the study results in Table 2, the mean values for POS, RES, and IWB are 3.769, 4.039, and 3.906, respectively, while their standard deviations are 0.637, 0.560, and 0.593, respectively. The intercorrelations show a significant positive relationship between POS and RES ( $r = .648$ ,  $p < .01$ ), POS and IWB ( $r = .670$ ,  $p < .01$ ), and RES and IWB ( $r = .662$ ,  $p < .01$ ). These findings suggest that higher levels of POS and RES are associated with higher levels of IWB. It is recommended that the authors further elaborate on the implications of these results and discuss any potential limitations of the study. As for the correlation analysis among the three variables, there were 6 pairs with correlation coefficients ranging from 0.648 to 0.670, indicating

moderate to high correlations. These correlations did not exhibit multicollinearity. [Tabachnick and Fidell \(2013\)](#) suggested that multicollinearity occurs when the correlation coefficient between any pair of

variables is 0.90 or higher. Therefore, the results of the correlation analysis were consistent with the initial statistical assumptions.

**Table 1:** Confirmatory factor analysis results for the test questions

Latent factors/questions	Factor loading	AVE and composite reliability
POS: $\chi^2 = 51.569$ , $df = 41$ , $p\text{-value} = 0.125$ , $\chi^2/df = 1.258$ , $GFI = 0.981$ , $AGFI = 0.944$ , $PGFI = 0.335$ , $RMR = 0.020$ , $RMSEA = 0.027$		
POS1	0.815	
POS 2	0.856	
POS 3	0.887	
POS 4	0.906	
POS 5	0.689	
POS 6	0.718	
POS 7	0.729	
POS 8	0.629	CR = 0.942
POS 9	0.546	AVE = 0.529
POS 10	0.589	
POS 11	0.567	
POS 12	0.680	
POS 13	0.755	
POS 14	0.729	
POS 15	0.703	
RES: $\chi^2 = 234.347$ , $df = 170$ , $p\text{-value} = 0.001$ , $\chi^2/df = 1.379$ , $GFI = 0.950$ , $AGFI = 0.9055$ , $PGFI = 0.497$ , $RMR = 0.017$ , $RMSEA = 0.033$		
RES1	0.672	
RES 2	0.698	
RES3	0.687	
RES4	0.707	
RES5	0.743	
RES6	0.672	
RES7	0.727	
RES8	0.694	
RES9	0.744	
RES10	0.771	
RES11	0.727	
RES12	0.663	CR = 0.965
RES13	0.672	AVE = 0.532
RES14	0.779	
RES15	0.776	
RES16	0.812	
RES17	0.803	
RES18	0.834	
RES19	0.836	
RES20	0.785	
RES21	0.651	
RES22	0.735	
RES23	0.789	
RES24	0.420	
RES25	0.728	
IWB: $\chi^2 = 23.186$ , $df = 17$ , $p\text{-value} = 0.143$ , $\chi^2/df = 1.364$ , $GFI = 0.987$ , $AGFI = 0.958$ , $PGFI = 0.305$ , $RMR = 0.013$ , $RMSEA = 0.032$		
IWB1	0.416	
IWB 2	0.713	
IWB 3	0.735	
IWB 4	0.735	
IWB 5	0.764	CR = 0.917
IWB 6	0.833	AVE = 0.530
IWB 7	0.790	
IWB 8	0.749	
IWB 9	0.724	
IWB 10	0.747	

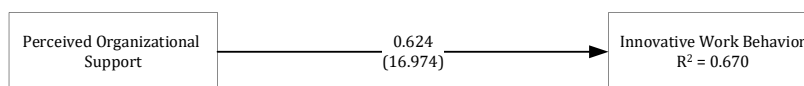
**Table 2:** Mean, standard deviation, and correlation coefficients among the study variables

	Mean	S.D.	POS	RES	IWB
POS	3.769	0.637	1.00		
RES	4.039	0.560	0.648***	1.00	
IWB	3.906	0.593	0.670***	0.662***	1.00

\*\*\*: Significance level at 0.001

Regarding the direct effects of POS on IWB, the results showed a path coefficient higher than 0.20 and statistical significance ( $|t| > 2.58$ ,  $p < 0.01$ ), indicating that POS significantly predicted the IWB of support staff at Rajamangala University of

Technology. The  $R^2$  value was found to be 0.670, indicating that the model explained a substantial proportion of the variance in IWB. However, there is a concern that the path coefficient and  $R^2$  value may be inflated by unmeasured variables that may have some indirect influence on the IWB of support staff at Rajamangala University of Technology. This issue requires further investigation to explore other factors that may affect the relationship between POS and IWB, as shown in [Fig. 2](#).



**Fig. 2:** Total effect of POF on EWA

After analyzing the model with the inclusion of the RES variable between POS and IWB of support staff at the Rajamangala University of Technology, it was found that the path coefficient between POS and IWB decreased by approximately 55.47%, from 0.624 to 0.387, while remaining statistically significant ( $|t| > 2.58$ ,  $p < 0.01$ ). The results indicate that POS has more influence on IWB than what is reflected by the model. This could be because RES acts as a mediator that transmits the influence of POS on the IWB of support staff at the Rajamangala University of Technology. Therefore, the perception of support from the organization helps support staff to exhibit IWB at a higher level. With good RES towards POS, the implementation of such behavior is expected to be more effective.

In this study, a resampling technique called bootstrap with replacement was used to test the mediation effect. The data were resampled with replacement 5,000 times from a sample size of  $n = 355$  units. Each resampled data set was analyzed by conducting a regression analysis with the mediator variable as the covariate. The output of the analysis yielded the direct and indirect effects of the independent variable on the dependent variable, as well as the standardized regression coefficient (path

coefficient) and the standard error (SE) of the path coefficient for each resampled data set. Two methods were then used to estimate the confidence interval (CI) of the indirect effect, including the bias-corrected and accelerated bootstrap method and the percentile bootstrap method. Table 3 shows the results for both methods. These analyses provide robust estimates of the indirect effect and its associated uncertainty.

Model 1 calculates the average of the product of path coefficients and the average of the SE, and then calculates the t-statistics and significance level. If  $|t| > 2.00$ , it indicates significance at the .05 level.

Model 2 takes the product of the path coefficients along the path entering and exiting the mediator, generates 5,000 random samples, and then sorts them from the lowest to the highest. It then checks whether the range of values between the 2.5th and 97.5th percentiles covers 0. If it does, it means that the product of the path coefficients is not significantly different from 0 at the 5% level of significance. The analysis of the indirect effect using Model 4 by Hayes (2013) PROCESS macro 3.1 in IBM SPSS Statistics version 24.0 for Windows shows the following results (Fig. 3).

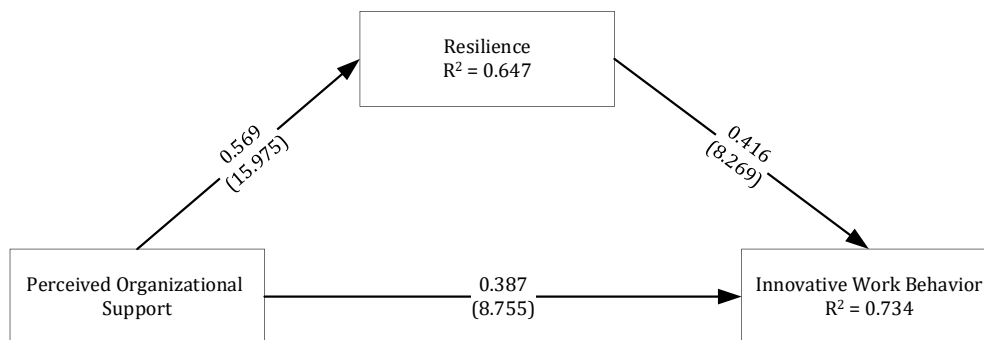


Fig. 3: Direct and indirect effects of POS on IWB through the mediating variables of RES

From Table 3, it was found that RES is a potential mediator variable that may link POS to IWB. The analysis revealed that when RES is increased between the POS and IWB, the path coefficient decreases significantly. Furthermore, when the significance of the mediated effect was tested using the bootstrapping method (Table 3), one mediating effect was found to be statistically significant ( $p < .001$ ), indicating that although the property of POS is crucial for IWB, the RES of employees plays an important role in this relationship. Having good RES helps employees to adjust quickly, adapt fluidly to different situations, and learn as well as develop themselves effectively. Therefore, it is important to consider RES as a key factor to strengthen IWB among employees in the future.

### 5. Discussion

The SET suggests that individuals engage in social relationships with others based on the expectation of mutual benefits. This theory is often applied in the

workplace context, where employees provide efforts and contributions to their organizations in exchange for various types of rewards, including financial compensation, recognition, and support. According to the theory, employees are more likely to develop positive attitudes toward their organizations and exhibit positive behaviors, such as IWB, when they feel that their contributions are reciprocated by the organization.

Table 3: Test results of indirect effects through POS, RES, and IWB using the 5,000-round bootstrap method

Path analysis	Estimate	SE	t	95% CI	
				LL	UL
POS → RES → IWB	0.237	0.044	5.386	0.149	0.327

The present study found that POS was a significant predictor of IWB among support staff at the Rajamangala University of Technology. This finding is consistent with previous research that has shown a positive relationship between POS and various outcomes, including job satisfaction, organizational commitment, and task performance.



For example, a study by Eisenberger et al. (2002) found that POS was positively related to job satisfaction and performance and that this relationship was mediated by affective organizational commitment. Another study by Rhodes and Eisenberger (2002) found that POS was related to employees' willingness to engage in organizational citizenship behavior, which is a form of extra-role behavior that goes beyond the requirements of the job. The present study also identified RES as a potential mediator to potentially explain the relationship between POS and IWB. This finding is supported by previous research that has shown that RES is an important factor that can enhance employees' ability to cope with stress and adversity as well as to adapt to changing circumstances. For example, a study by Tuncdogan et al. (2017) found that individuals who scored high on RES were more likely to experience positive emotions and recover more quickly from negative events. Another study by Luthans and Youssef (2004) found that psychological capital, which includes RES as one of its components, was positively related to employee performance and well-being.

The results of this study also indicate that POS and RES are positively associated with IWB among support staff at Rajamangala University of Technology. This finding is consistent with previous research that has shown a positive relationship between POS and employee outcomes such as job satisfaction (Eisenberger et al., 1986), organizational commitment (Eisenberger et al., 1986), and job performance (Rhodes and Eisenberger, 2002). Similarly, previous studies have demonstrated a positive relationship between RES and employee outcomes such as job satisfaction (Mawritz et al., 2017), job performance (Hou et al., 2020), and organizational commitment (Youssef and Luthans, 2007). The findings of this study also suggest that RES acts as a mediator in the relationship between POS and IWB. This is consistent with the SET, which suggests that employees with POS are more likely to reciprocate by exhibiting positive behaviors such as innovation (Eisenberger et al., 1986). Furthermore, the mediating role of RES is consistent with previous research that has shown the importance of RES in facilitating the positive effects of organizational support on employee outcomes (Youssef and Luthans, 2007; Mawritz et al., 2017).

The present study contributes to the understanding of factors that promote innovative work behavior (IWB) among support staff at Rajamangala University of Technology. The findings underscore the importance of perceived organizational support (POS) and resilience (RES) in fostering IWB, while also highlighting the mediating role of RES in the relationship between POS and IWB.

Consistent with previous research, the results confirm a positive association between POS and IWB. This aligns with studies that have demonstrated the positive influence of POS on various employee outcomes, including job satisfaction, organizational

commitment, and task performance (Eisenberger et al., 2002). By reciprocating the support received from the organization, employees are more likely to develop positive attitudes and engage in behaviors that contribute to innovation. Furthermore, the positive relationship between RES and IWB found in this study is consistent with prior research highlighting the role of resilience in enhancing employee performance and well-being. Individuals with higher levels of resilience are better equipped to cope with stress, adapt to changing circumstances, and display positive work-related outcomes (Tandogan and Ilhan, 2016; Tuncdogan et al., 2017; Luthans and Youssef, 2004). The mediating effect of RES suggests that employees' resilience serves as a mechanism through which POS influences IWB. This finding supports the notion that a resilient workforce is more likely to engage in innovative behaviors when supported by the organization.

The results of this study align with the Social Exchange Theory (SET), which posits that individuals engage in social relationships based on the expectation of mutual benefits. In the workplace context, employees contribute their efforts and contributions to the organization, expecting various forms of rewards in return. The positive association between POS and IWB reflects the reciprocity between employees and the organization, as individuals who perceive greater organizational support are more motivated to exhibit innovative behaviors.

While this study provides valuable insights into the relationships between POS, RES, and IWB among support staff, there are certain limitations to consider. The findings are specific to the context of Rajamangala University of Technology and may not be generalizable to other employee populations or organizations. Future research should explore these relationships in diverse settings to enhance the generalizability of the findings.

In conclusion, this study contributes to the existing literature by emphasizing the significance of POS and RES in promoting IWB among support staff. The findings highlight the importance of cultivating supportive and resilient work environments to encourage employees' innovative behaviors. By aligning with previous research and theoretical frameworks, this study provides valuable insights for organizations seeking to enhance innovation within their workforce.

## 5.1. Theoretical implications

The present study has theoretical implications for the SET, which posits that individuals engage in social relationships based on the expectation of mutual benefits. Specifically, the findings suggest that employees are more likely to exhibit positive behaviors such as IWB when they observe support from their organization. This is consistent with previous research that has shown organizational support can lead to positive employee attitudes and behaviors, including job satisfaction, organizational

commitment, and job performance (Rhodes and Eisenberger, 2002; Eisenberger et al., 2002). Furthermore, the present study identified RES as a mediator in the relationship between POS and IWB, which supports the notion that resilient employees may be better equipped to cope with stress and adversity as well as to adapt to changing circumstances. This finding is consistent with previous research that has shown the importance of RES in facilitating positive employee outcomes (Luthans et al., 2007b; Youssef and Luthans, 2007; Mawritz et al., 2017).

## 5.2. Practical implications

This study has practical implications for organizations seeking to promote IWB among their employees. The findings suggest that organizations should provide support to employees in order to foster positive attitudes and behaviors. Specifically, organizations can provide various types of support, including emotional support, instrumental support, and informational support (Eisenberger et al., 1986). Additionally, organizations can promote RES among their employees by providing the training and resources employees need to cope with stress and adversity (Luthans et al., 2007b; Mawritz et al., 2017). By promoting supportive and resilient work environments, organizations can create a culture that encourages employees to engage in IWB which can lead to improved organizational performance and competitiveness.

## 5.3. Limitations and future research

This study involved several limitations that should be considered. First, the study was conducted at a single university in Thailand, which may limit the generalizability of the findings to other contexts. Future research should examine the relationships between POS, RES, and IWB in other settings and cultures to determine the generalizability of the findings. Second, the study used a cross-sectional design, which limited the ability to draw causal inferences. Future research should use longitudinal designs to examine the causal relationships between POS, RES, and IWB. Finally, the study relied on self-reported measures, which may have been subject to social desirability bias. Future research should use other methods to measure IWB, such as behavioral observation or performance data.

Overall, the present study provides valuable insights into the factors that promote IWB among support staff at Rajamangala University of Technology. The findings suggest that organizations should provide support to employees and promote RES in order to foster IWB among them. Future research should examine the relationships between POS, RES, and IWB in other contexts and cultures using longitudinal designs and other measures to strengthen the validity of the findings.

## Compliance with ethical standards

## Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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