

Enhancing Innovative Work Behaviour among State Civil Apparatus Employees through Leadership and Engagement

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ABSTRACT

State civil apparatus (SCA) employees in North Kalimantan Province, Indonesia's youngest frontier province, are increasingly required to exhibit innovative work behaviour (IWB) as directed by national innovation policy. Transformational leadership (TFL) and work engagement (WE) are broadly understood to promote such behaviour, yet the moderating role of organisational justice (OJ) in this frontier public sector context remains underexplored. This study aimed to determine the direct influence of TFL, WE and OJ on IWB and to examine whether OJ functions as a moderating variable in these relationships. The study was conducted across regional apparatus organisations in North Kalimantan Province, Indonesia, with a random sample of 480 SCA employees drawn in 2025. Structural equation modelling partial least squares (SEM-PLS) was applied as the analytical method to test causal relationships and moderation effects for each hypothesis. TFL and WE each exerted significant positive direct effects on IWB. OJ, however, did not produce a significant direct effect on IWB and did not function as a moderating variable in any tested relationship. These findings affirm the central role of inspirational leadership and employee engagement in cultivating innovative behaviour within frontier public organisations. OJ, while ethically foundational, does not serve as a catalyst for IWB in this regional government context. This study extends social exchange theory to a frontier provincial context in Indonesia, empirically demonstrating that relational and motivational factors dominate over structural justice perceptions in shaping IWB among SCA employees.

Keywords: Transformational Leadership, Work Engagement, Innovative Work Behaviour, Organisational Justice, State Civil Apparatus.

INTRODUCTION

Growing citizen expectations alongside evolving social, economic and environmental pressures are compelling governments everywhere to pursue new and innovative approaches to public service delivery (Akram et al., 2020). In Indonesia, the national government has institutionalised this imperative through regional innovation assessment, issuing Regional Innovation Index scores and awarding Regional Government Innovation Awards through the Ministry of Home Affairs in 2022 and 2024. North Kalimantan Province (Kalimantan Utara), Indonesia's youngest province established in 2012, recorded an index value of 36.47 in 2022, placing it in the less innovative category. By 2024, this figure had improved to 57.83, approaching but still falling short of the very innovative threshold of 60 to 100. This trajectory reveals that IWB within North Kalimantan's local government sector has not yet met central government expectations. The government's ambition for expanding regional innovation is to accelerate community welfare, strengthen regional competitiveness and enhance independence through improved public services and community empowerment. Regional Work Units (RWUs) in this frontier province must therefore treat IWB as a strategic imperative. Government Regulation Number 38 of 2017 on Regional Innovation defines innovation as encompassing all forms of change in local government implementation aimed at enhancing effectiveness, service quality and efficiency while upholding transparency, propriety, public interest and the avoidance of conflicts of interest.

Implementing regional innovation in practice requires SCA employees to creatively address innovation deficits across internal governance, human resource management processes, public service delivery, procurement and other regional functions (Lai et al., 2020)(Sabuhari et al. 2021). As a frontier region bordering Malaysia in northern Borneo, North Kalimantan presents unique contextual challenges involving limited institutional history, geographic isolation and a still developing public administration workforce, making it an important but understudied setting for IWB research (Afsar & Umrani, 2020)(Kamis et al. 2023).

This study seeks to address these challenges by examining the influence of TFL and WE on IWB and analysing the moderating role of OJ within North Kalimantan's regional apparatus organisations. Prior research affirms that TFL plays a positive and significant role in advancing IWB (Bogilovic et al., 2021; Groselj et al., 2021; Knezovic & Drkic, 2021). Organisational justice, defined as an individual's perception of the fairness of decisions, processes and interactions within an organisation, encompassing distributive, procedural, interpersonal and informational dimensions (Gupta, 2020; Koroglu & Ozmen, 2022; Sharma & Nambudiri, 2020), has been examined as a contributor to IWB in other settings (Pakpahan et al. 2020; Kamis et al. 2023). However, its moderating role within the TFL, WE and IWB relationship remains underexplored, particularly in frontier provincial governments. The relationship between WE and IWB has also attracted sustained empirical attention (Amankwaa et al., 2022; Erhan et al., 2022; Iqbal et al., 2023), though its integration with OJ as a moderator has not been adequately tested in this context.

Theoretical contributions emerge from this investigation. The first is extending and refining a model confirming how OJ interacts with TFL and WE in shaping IWB among SCA employees across the Indonesian frontier provincial setting. The second is broadening social exchange theory by analysing the characteristics of TFL, WE and IWB within a research model that positions OJ as a potential moderator, thereby offering new empirical insight into the relational dynamics underlying civil servant innovation.

HYPOTHESIS DEVELOPMENT

Relationship Between Transformational Leadership and Innovative Work Behaviour

IWB entails generating, promoting and applying new ideas that contribute to organisational performance, sustainability and long-term competitiveness. Recent studies affirm that IWB flourishes when organisations deploy high performance work practices and cultivate supportive, inclusive environments that encourage individual creativity and collaborative problem solving (Karimi et al., 2023; Korku & Kaya, 2023; Lin, 2023). Strong empirical evidence further demonstrates that IWB significantly enhances organisational outcomes across sectors, including public administration, by enabling continuous adaptation and improvement (Oh & Sabharwal 2024). In a holistic sense, IWB encompasses not only individual idea generation but also active involvement in communicating, advocating and realising innovations throughout the work process. IWB is influenced by multiple determinants including the organisational culture and the degree of job autonomy afforded to individuals.

TFL plays a pivotal role in fostering IWB within public sector organisations, principally through its capacity to inspire employees, challenge assumptions intellectually and provide personalised support. Leaders who embody transformational characteristics create meaningful work environments that elevate employee engagement and creativity (Barkat et al., 2024; Elamin, 2024). In public sector contexts, particularly regional government institutions, TFL is critical for navigating bureaucratic constraints while simultaneously nurturing an innovative orientation (Aristana, 2024; Sharif et al., 2024).

Leadership inquiry spans numerous disciplines including social science, management and psychology, reflecting its central importance across fields of knowledge (Garg et al., 2023). TFL consists of four core factors: idealised influence, inspirational motivation, intellectual stimulation and individual consideration. Psychological mechanisms have also been identified as critical links between TFL and IWB, with research showing that employees who derive a sense of meaningfulness, competence and autonomy from their work tend to demonstrate stronger innovative behaviour (Ullah et al., 2024). This implies that leaders who cultivate goal oriented work climates enhance employee creativity substantially. When TFL is combined with an organisational culture that values innovation, employee IWB increases markedly (Azmi, Liana & Siregar 2023). TFL has accordingly been advanced as a primary driver of IWB (Nassani et al., 2024; Nazir et al., 2020; Rahman & Karim, 2022). Thus:

H1: TFL has a significant effect on IWB.

Relationship Between Work Engagement and Innovative Work Behaviour

WE can be understood through dimensions of vigour, dedication and absorption. Vigour captures the physical and psychological energy that employees invest in their work, expressed through enthusiasm, resilience and persistence. Dedication reflects a profound psychological connection to one's role, where individuals derive purpose and pride from their tasks. Absorption describes a state of intense, positive immersion in work where time seems to pass quickly and disengaging feels difficult. Recent studies confirm

that engaged employees are more inclined to demonstrate creativity, persistence and superior job performance (Inam et al., 2021; Jiatong et al., 2022; van Zyl et al., 2021).

The relevance of WE extend increasingly to broader organisational outcomes. (Almulhim, 2020) emphasise that WE involve not only heightened motivation but also improved job design and leadership quality to sustain energy and identification. Engaged employees who find their work inspiring and feel emotionally committed tend to generate and implement new ideas more readily (Salem et al. 2023). Cultivating engaged employees is therefore critical to sustainable organisational growth and innovation. WE has emerged as a significant predictor of IWB, as energetically and emotionally invested employees are more likely to generate, promote and implement novel ideas (Guo et al., 2022; Huynh, 2021; Jan et al., 2021). Among Indonesian regional civil servants specifically, WE has been found to produce a significant positive effect on IWB, underlining its role in driving public sector innovation (Kamis et al. 2023). Leadership and engagement also operate jointly: (Abuzaid, 2024) confirmed that leadership fosters engagement, which in turn drives organisational innovation. Thus:

H2: WE has a significant effect on IWB.

Relationship Between Organisational Justice and Innovative Work Behaviour

OJ refers to employees' perceptions of the fairness and equity with which they are treated within the organisation, encompassing distributive, procedural, interpersonal and informational dimensions of justice (Kaur & Rahmadani, 2023; Sari et al., 2021). These perceptions significantly shape organisational performance including employee commitment, job satisfaction and workplace cohesion (Hussain et al. 2020). OJ emphasises how leadership decisions, fairness perceptions and equality in interaction affect workplace dynamics, ultimately influencing employee attitudes and voluntary behaviours. This perception is also closely associated with enhanced trust in leadership, psychological safety and intrinsic motivation, all of which are recognised antecedents of IWB (Charli et al., 2023; Nathaniel & Dewi, 2024).

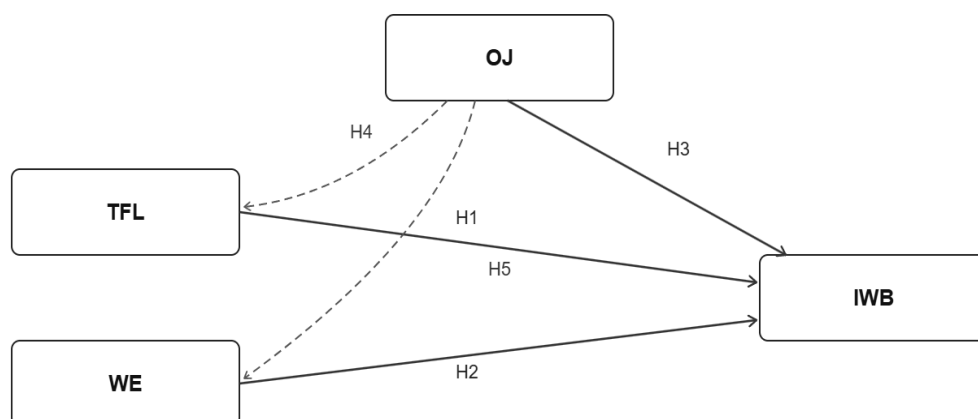
Empirical findings broadly support that OJ positively influences IWB (Pakpahan et al. 2020; Jaboob et al. 2024). Fair procedures foster a sense of ownership and initiative among employees, which are qualities essential to innovation. Social exchange theory provides the theoretical foundation for this relationship: when employees perceive fair treatment, they reciprocate through positive discretionary behaviours including innovation (Nurahmad et al., 2022; Sofia, 2024) underscore the importance of fair leadership practices in fostering proactive, beneficial employee behaviours. OJ has also been found to positively and significantly influence IWB in Indonesian public sector contexts (Agata, 2024). These insights support the hypothesis that OJ positively and directly affects IWB. Furthermore, OJ is integral to sustaining innovative behaviour, as without perceived justice, engagement and innovation may be undermined (Achmad, 2021). Perceived unfairness in organisational processes may cause employees to withdraw psychologically and behaviourally, diminishing willingness to innovate. Thus:

H3: IWB is influenced by OJ.

H4: OJ moderates the relationship between TFL and IWB.

H5: OJ moderates the relationship between WE and IWB.

Based on the theoretical discussion and the proposed hypotheses, the conceptual framework is presented below.



H, hypothesis; TFL, transformational leadership; OJ, organisational justice; WE, work engagement; IWB, innovative work behaviour.

Figure 1. Conceptual Framework Model

METHODS

Sample and Data Collection

This study surveyed SCA employees actively serving in regional apparatus organisations across North Kalimantan Province, one of Indonesia's most recently established and frontier developing regions. SCA employees were selected as the unit of analysis because they carry out public service functions aligned with the vision, mission, goals and strategic objectives of the local government. Specifically, TFL, WE, IWB and OJ are critical to realising those goals. The study draws on regional innovation index data, referencing the 2022 assessment placing North Kalimantan in the less innovative category (index value 36.47) and the 2024 assessment showing improvement to 57.83, still below the very innovative threshold of 60.

Non-probability sampling with purposive sampling was applied, with the criterion that included employees who had served for more than two years. To determine sample size with an unknown population, indicators were multiplied by seven, as recommended in the structural model assessment literature (Hair et al. 2022). With a total of 64 indicators multiplied by 7, the minimum sample required was 448. Accordingly, 480 questionnaires were distributed via Google Forms to SCA employees active in less innovative and innovative regional apparatus organisations across North Kalimantan Province.

Of the 480 distributed questionnaires, 398 were successfully returned, yielding a response rate of 82.9%. Demographic data showed that 58.3% of respondents were male and 41.7% were female. The majority of participants fell between 31 and 50 years of age (63.6%), followed by those over 50 years (22.1%) and a smaller proportion aged 21 to 30 years (14.3%). In terms of educational attainment, most respondents held bachelor's or master's degrees (85.4%), while the remaining 14.6% included high school or vocational graduates and diploma level holders. These demographic characteristics provide a comprehensive picture of the sample's composition and its representativeness of the North Kalimantan regional apparatus workforce.

Measurement

The questionnaire applied a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). It comprised four sections covering TFL, IWB, WE and OJ. The measurement framework integrated and adapted established instruments: TFL items were adapted from instruments employed in (Huynh, 2021) and (Charli et al., 2023); IWB items were adapted from (Inam et al., 2021; van Zyl et al., 2021); WE items from Koroglu and Ozmen (2022) and Gürbüz et al. (2024); and OJ items from (Bogilovic et al., 2021; Gupta, 2020). All items were refined by the researcher to align with the specific characteristics of SCA work in North Kalimantan's local government context.

Data Analysis and Results

The data were analysed using SEM-PLS, encompassing tests of validity, reliability and hypothesis evaluation. Analysis was conducted using SmartPLS 3.2.9. The measurement model was evaluated by testing discriminant validity, convergent validity and reliability of reflective indicators. Indicators failing to meet loading factor thresholds were excluded from subsequent analysis stages to ensure robustness and accuracy. Convergent validity was assessed using a loading factor threshold greater than 0.70 and an average variance extracted (AVE) greater than 0.5 (Hair et al. 2022). Reliability was confirmed using Cronbach's alpha and composite reliability, with values exceeding 0.7 considered acceptable (Hair et al. 2022). Two stages of testing were conducted: the first assessed convergent validity to confirm that indicators within each construct were strongly correlated, and the second assessed discriminant validity to confirm construct distinctiveness. Table 1 presents the first stage analysis.

Table 1: Variables, Dimensions And Indicators (Second order reflective)

Vari able	Dimensions	Code	Indicator	Loading Factor	Cronbach's Alpha Dimension
TFL	Inspirational motivation	TFL 01	Leaders motivate	0.792	0.875
		TFL 02	Leaders build self-confidence	0.824	
		TFL 03	Leaders provide confidence about the organisation's goals	0.788	
		TFL 04	Leaders generate enthusiasm	0.857	
		TFL 05	Leaders communicate about the work	0.763	
	Idealised influence	TFL 06	Leaders are role models	0.813	0.851
		TFL 07	Leaders provide guidance	0.771	

		TFL 08	Leaders instil a sense of pride	0.845	
		TFL 09	Leaders are highly respected	0.741	
	Intellectual stimulation	TFL 10	Leaders encourage creativity	0.831	0.908
		TFL 11	Leaders encourage innovation	0.843	
		TFL 12	Leaders are eager to listen to ideas	0.768	
		TFL 13	Leaders encourage rational or logical work problem-solving	0.849	
		TFL 14	Leaders solve problems from various perspectives	0.806	
	Individual consideration	TFL 15	Leaders strive to improve employee self-development	0.781	0.853
		TFL 16	Leaders are fair to all employees individually and in groups	0.748	
		TFL 17	Leaders are willing to listen to employees' concerns	0.789	
		TFL 18	Leaders provide advice that is very important for employee development	0.783	
		TFL 19	Leaders value employees from different backgrounds	0.828	
IWB		IWB 01	Issues outside of routine work	0.468	—
		IWB 02	Efforts to improve work results	0.731	
		IWB 03	Searching for new methods and ways of working	0.769	
		IWB 04	Generating original solutions	0.784	
		IWB 05	New ways to complete work	0.751	
		IWB 06	New ideas get enthusiasm from colleagues (work team)	0.824	
		IWB 07	Efforts to convince others to support new ideas	0.672	
		IWB 08	Efforts to explain new innovation ideas in the work environment	0.797	
		IWB 09	Contributing to the implementation of new ideas	0.724	
		IWB 10	Developing new ideas	0.713	
WE	Actively participate in work	WE 01	Taking part in various tasks	0.874	0.768
		WE 02	Active participation in carrying out tasks from the institution	0.901	
		WE 03	Self-involvement in current work	0.793	
	Affective commitment	WE 04	Active personal involvement	0.758	0.815
		WE 05	This job is everything	0.726	
		WE 06	Regret negligence of work	0.737	
	Seeing work as something important for self-esteem	WE 07	Able to carry out important tasks	0.772	0.876
		WE 08	Very strong bond with work	0.802	
		WE 09	This job is important for self-existence	0.831	
	Mental and emotional involvement	WE 10	Developing ideas	0.776	0.857
		WE 11	Striving for the progress of the institution	0.738	
		WE 12	Interest is focused on work	0.849	
		WE 13	Work occupies the majority of one's daily time investment	0.753	
	Responsibility	WE 14	Carrying out assigned tasks in a responsible manner	0.821	0.779
		WE 15	Putting tasks above everything else	0.774	
		WE 16	Completing main tasks before doing others	0.791	
OJ	Distributive justice	OJ 01	Performance assessment of work done	0.871	0.782
		OJ 02	Appropriate grading	0.859	
		OJ 03	Assessing contributions to the organisation	0.819	
		OJ 04	Performance evaluations are justified	0.622	

Procedural justice	OJ 05	Appraisal procedures are based on accurate information	0.731	0.829
	OJ 06	There are other influences from appraisal procedures	0.601	
	OJ 07	Procedures are applied consistently	0.761	
	OJ 08	Procedures are free from response bias	0.789	
	OJ 09	Employees can appeal appraisals	0.741	
	OJ 10	Uphold ethical and moral standards	0.787	
Interpersonal justice	OJ 11	The superior treats subordinates politely	0.812	0.876
	OJ 12	The superior treats subordinates with consideration for self-esteem	0.798	
	OJ 13	The superior treats subordinates with respect	0.865	
	OJ 14	The superior refrains from making inappropriate comments	0.711	
Informational justice	OJ 15	The superior communicates honestly	0.803	0.881
	OJ 16	The superior explains procedures thoroughly	0.856	
	OJ 17	Supervisor's explanation of work procedures is logical	0.869	
	OJ 18	The superior communicates work in detail and in a timely manner	0.879	
	OJ 19	The superior is able to adjust his or her communication to the needs of employees	0.748	

TFL, transformational leadership; OJ, organisational justice; WE, work engagement; IWB, innovative work behaviour

The convergent validity analysis at the first stage revealed that IWB 01 (0.468) and IWB 07 (0.672), and OJ 04 (0.622) and OJ 06 (0.601) returned outer loading values below 0.70. These items were judged unable to adequately measure their intended constructs. Second stage calculations proceeded with these items removed. All remaining indicators satisfied the validity criteria, allowing the analysis to advance through convergent validity, discriminant validity and reliability testing using the embedded two-stage approach method (Hair et al. 2022), as illustrated in Figure 2.

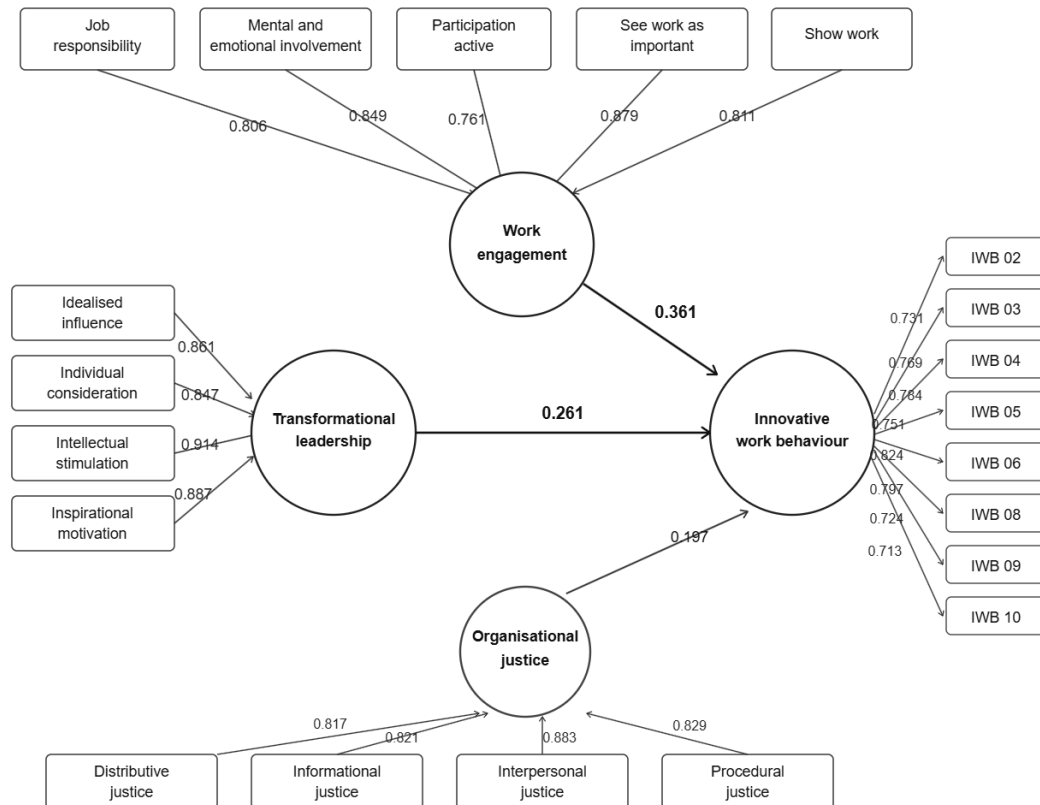


Figure 2. The Third-Stage of The Embedded Two-Stage Approach Method.

The calculation results confirm that all dimensions employed to measure the latent variables satisfy the established reliability and validity criteria. The third stage analysis confirms that TFL, IWB, WE and OJ all meet the discriminant validity and reliability criteria. Cronbach's alpha and composite reliability must exceed 0.7, and AVE must exceed 0.5 for good reliability (Hair et al. 2022). Detailed results are presented in Table 2.

Table 2: Reliability And Discriminant Validity.

Variable	Cronbach's alpha	Composite reliability	AVE
IWB	0.897	0.919	0.589
OJ	0.861	0.905	0.701
TFL	0.901	0.931	0.769
WE	0.882	0.913	0.676

Source: SmartPLS 3.2.9 calculation result output (2025) AVE, average variance extracted; OJ, organisational justice; WE, work engagement; IWB, innovative work behaviour; TFL, transformational leadership.

The inner model evaluates latent variables based on substantive theory and is tested using the goodness of fit model to determine the contribution of independent variables to dependent variables. The R^2 value of 0.553 indicates that TFL, OJ and WE collectively account for 55.3% of the variance in IWB, while the remaining 44.7% is attributable to factors outside the model. The subsequent model assessment incorporates moderation variables. In SEM-PLS, the presence of common method bias is indicated when the variance inflation factor (VIF) exceeds 3.3, which signals pathological collinearity and potential model contamination by common method bias (Kock 2021; Sabuhari et al. 2023). VIF values in this study were: TFL to IWB = 2.401, WE to IWB = 2.591 and OJ to IWB = 3.198, all below the threshold of 3.3, confirming the model is free from common method bias. The path coefficient for the moderating effect of OJ on the TFL and IWB relationship is negative, as is the path coefficient for the OJ moderation of the WE and IWB relationship.

Table 3 presents the hypothesis testing results indicating whether each hypothesis is accepted or rejected.

Table 3: Direct Influence and Moderating Result.

Hypothesis	Influence	Path coefficients	T statistics	p	Inner VIF values	Decision
H1	TFL -> IWB	0.242	3.724	0.000	2.401	Accepted
H2	WE -> IWB	0.348	6.521	0.000	2.591	Accepted
H3	OJ -> IWB	0.109	1.498	0.135	3.198	Rejected
H4	Moderating Effect1 OJ*TFL -> IWB	-0.089	1.284	0.199	8.073	Rejected
H5	Moderating Effect2 OJ*WE -> IWB	-0.018	0.327	0.744	7.951	Rejected

Source: SmartPLS 3.2.9 calculation result output (2025) H, hypothesis; VIF, variance inflation factor; TFL, transformational leadership; OJ, organisational justice; WE, work engagement; IWB, innovative work behaviour.

H1, positing that TFL influences IWB, is accepted, indicating a significant positive effect. H2, suggesting WE exerts a positive and significant direct effect on IWB, is similarly accepted with strong empirical support. H3, proposing that OJ directly affects IWB, is not supported. H4, positing that OJ moderates the TFL and IWB relationship, is also unsupported, indicating that OJ does not function as a moderator in this context. H5, which proposes that OJ significantly moderates the effect of WE on IWB, is rejected, with no evidence of moderation. These findings suggest that further empirical investigation is needed to clarify the role of OJ in moderating these relationships. A visual representation of the influence between variables according to the tested hypotheses is provided in Figure 3.

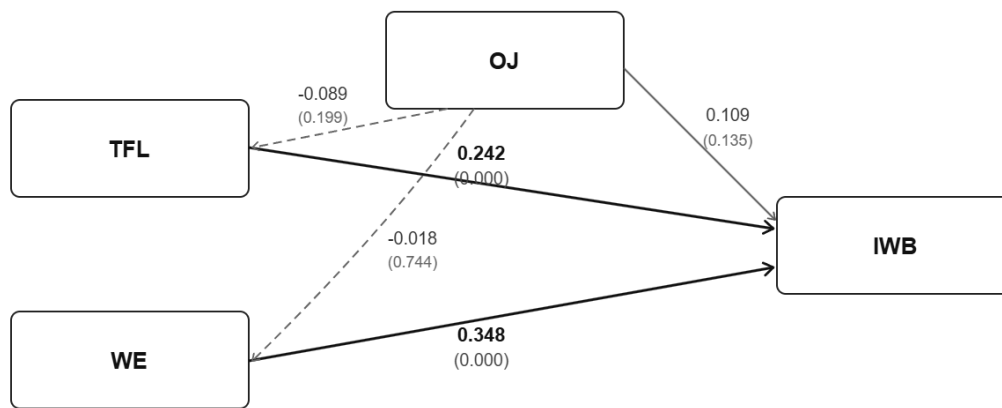


Figure 3. Empirical Confirmation That Organisational Justice Does Not Play A Moderating Role.

DISCUSSION

This study investigated the impact of TFL, WE and OJ on IWB among SCA employees in North Kalimantan Province, Indonesia. Additionally, it examined the moderating role of OJ in strengthening the relationship between TFL, WE and IWB, providing insights into how justice perceptions shape innovation within a frontier public sector context. The analysis confirms that TFL and WE each exert a positive and statistically significant direct effect on IWB. The effective application of TFL has been shown to meaningfully enhance the IWB of SCA employees in North Kalimantan's regional apparatus organisations, fostering a climate that encourages innovative behaviour in daily public administration work.

TFL produces this influence because transformational leaders in frontier provincial settings like North Kalimantan are uniquely positioned to motivate civil servants who work under conditions of institutional novelty and geographic isolation. By communicating inspiring visions, stimulating intellectual engagement and providing individualised support, such leaders create a psychological climate that is conducive to creativity and risk taking. This aligns with findings from Az Zahra and (Erhan et al., 2022; Iqbal et al., 2023; Karimi et al., 2023), who consistently report that TFL significantly predicts IWB across Indonesian public sector and educational contexts. The present findings also resonate with (Karimi et al., 2023), who confirmed TFL as a predictor of employee creativity and innovation in public service organisations. North Kalimantan's SCA workforce, characterised by relatively young institutional structures and a high proportion of bachelor's and master's degree holders, appears particularly responsive to the visionary and developmental dimensions of TFL. In this setting, a successful leader can serve as a role model, be admired and generate positive employee perceptions that translate directly into innovative effort.

The positive and significant influence of WE on IWB further illustrates that when SCA employees in North Kalimantan feel energetically, emotionally and cognitively involved in their daily work, they tend to be more proactive in generating, advocating and implementing new ideas. Promoting WE enables government organisations to increase productivity through innovative employee behaviour, thereby achieving both individual and collective organisational goals. The present investigation confirms that WE exerts a favourable and statistically significant influence on SCA IWB, supporting conclusions from prior studies conducted in comparable settings (Barkat et al., 2024; Elamin, 2024). These results suggest that when organisations actively and directly engage employees in meaningful tasks, employees can enhance their performance and adopt innovative behaviours. In the specific context of North Kalimantan, where regional apparatus organisations are still consolidating their institutional identities and workforce cultures, the cultivation of engaged employees is therefore a particularly potent lever for driving innovation.

Modern public organisations strive to achieve long term goals and demonstrate IWB as a mark of competence and professionalism in a competitive environment (Setiawan et al. 2021). This study examined how SCA employees in North Kalimantan perceive the role of OJ in moderating the relationships between TFL, WE and IWB. The findings reveal that OJ does not significantly affect IWB, suggesting that the current state of OJ in these organisations does not appear to enhance SCA innovative behaviour. Despite OJ being a critical organisational factor rooted in justice theory, in this research context OJ does not significantly drive innovative

behaviour. This indicates that, from respondents' perspectives, OJ does not contribute meaningfully to employee innovativeness.

In highlighting OJ's theoretical relevance as a motivational source, social exchange theory holds that fair treatment forms the foundation of positive employment relationships. However, this study's findings reveal that variance in the observed aspects of OJ is insufficient to stimulate employees toward innovative effort. SCA employees in North Kalimantan's local government organisations appear to perceive that OJ does not effectively energise their innovation. These results contrast with certain prior studies that found OJ positively contributing to IWB (Jnaneswar & Ranjit 2021; Kurniawan & Ulfah 2021), and may reflect contextual factors unique to North Kalimantan, including the novelty of the province's institutional structures, culturally embedded norms around hierarchical fairness that differ from older, more established provinces, and the possibility that OJ dimensions such as distributive and procedural justice are perceived as relatively homogeneous across the sample, reducing their statistical explanatory power.

This study delineates the relationships among TFL, WE and OJ concerning IWB while also examining the moderating influence of OJ. The empirical findings reveal robust and statistically significant positive relationships between TFL and IWB, and between WE and IWB, thereby corroborating H1 and H2. Conversely, H3, H4 and H5 are not substantiated, as OJ does not exhibit a significant direct or moderating effect on IWB. This shows that SCA employees in North Kalimantan Province can carry out their duties effectively and improve their innovative behaviour even in the absence of OJ reinforcement.

The study underscores the significance of WE and TFL as critical components for advancing the innovative behaviour of employees in local governmental institutions. The results show that both WE and TFL exert positive and significant influence on the tendency of employees to demonstrate IWB, such as generating new ideas, accepting risk and actively seeking alternative solutions in completing bureaucratic tasks. In North Kalimantan's frontier context, the role of transformational leaders who can build an inspiring vision, provide motivation and empower employees is essential in creating a psychological climate conducive to active employee engagement. When employees feel emotionally and intellectually involved in their work, innovation potential naturally increases. Strengthening these two aspects is therefore an important strategy in human resource management reform across the provincial public sector.

The finding that OJ does not have a significant influence on IWB, either directly or as a moderating variable, provides noteworthy insights. Although justice remains a foundational principle of organisational governance, the results indicate that justice perceptions are not the primary driver of innovation in the context of North Kalimantan's local government institutions. This may reflect the dominance of psychological and motivational factors, such as inspiration from leaders and the depth of personal work involvement, over structural justice perceptions. Innovation enhancement strategies in frontier provincial governments should therefore not be confined to structural dimensions such as procedural and distributive fairness but should be directed at creating environments that encourage active participation, recognise new ideas and empower leadership at all levels. These findings offer important contributions to the development of more contextually grounded and evidence-based personnel policies in regional government bureaucracy.

The study strengthens social exchange theory's emphasis on reciprocal relationships between individuals and organisations and provides a theoretical basis for human resource management development grounded in trust, commitment and mutual benefit. In this context, TFL and WE reflect a form of positive exchange between the organisation and its employees. When leaders demonstrate care, provide inspiration and support individual development, employees feel valued and voluntarily reciprocate with IWB. WE also manifests as a trusting relationship that encourages employees to transcend formal job demands and contribute more creatively to organisational goals. This theoretical implication reinforces the need to develop human resource management in North Kalimantan's public sector that prioritises not only administrative procedures but also the building of relational and psychological quality between supervisors and subordinates. By situating OJ as a non-significant factor in driving innovation, this study suggests that human resource development must shift from a structural-formal approach to a relational-psychological one, enabling public organisations to become more adaptive, innovative and responsive to change.

IMPLICATIONS FOR LOCAL GOVERNMENTS

The findings suggest that North Kalimantan's local governments should prioritise policies that strengthen TFL capabilities and cultivate work environments conducive to active employee engagement, as both TFL and WE significantly promote IWB. Strengthening the visionary, inspirational and supportive

dimensions of TFL is essential to encouraging innovation. Policies should also create opportunities for SCA participation and foster appreciation of new ideas to bolster WE. Although OJ remains ethically essential, this study indicates that it does not significantly foster IWB in this context, and innovation strategies should accordingly focus on relational and motivational levers rather than structural justice alone.

CONCLUSION

This study concludes that transformational leadership and work engagement are important determinants of innovative work behaviour among State Civil Apparatus employees in North Kalimantan Province. The empirical results confirm that transformational leadership has a positive and significant effect on innovative work behaviour. This finding indicates that leaders who provide inspiration, intellectual stimulation, role modelling, and individual consideration are able to encourage employees to generate, promote, and implement new ideas in public sector organisations. In a frontier provincial context such as North Kalimantan, where institutional structures are still developing and regional innovation performance remains below the very innovative category, transformational leadership becomes a strategic factor in strengthening bureaucratic innovation capacity.

The study also finds that work engagement has a positive and significant effect on innovative work behaviour. Employees who are physically, cognitively, and emotionally involved in their work tend to show stronger initiative, creativity, and willingness to contribute beyond routine administrative duties. This result confirms that innovation in public organisations is not only shaped by formal procedures, but also by the extent to which employees feel motivated, connected, and committed to their work. Therefore, efforts to improve innovative behaviour among State Civil Apparatus employees should prioritise the creation of meaningful work, active employee participation, and organisational support for idea development.

In contrast, organisational justice does not have a significant direct effect on innovative work behaviour and does not moderate the relationship between transformational leadership and innovative work behaviour or between work engagement and innovative work behaviour. This finding suggests that, although fairness remains an essential ethical and managerial principle in public organisations, it is not the main driver of employee innovation in the context of this study. Innovative behaviour among State Civil Apparatus employees in North Kalimantan appears to be more strongly influenced by relational and motivational factors than by structural justice perceptions.

This study contributes to the development of social exchange theory by showing that positive reciprocal behaviour in the form of innovation is more strongly activated through inspirational leadership and employee engagement than through perceived organisational justice in a frontier public sector setting. Practically, local governments should strengthen leadership development programmes, encourage participatory work environments, provide space for employee creativity, and recognise innovative contributions in regional apparatus organisations. These efforts are expected to support the improvement of regional innovation performance and public service quality.

This study is limited to State Civil Apparatus employees in North Kalimantan Province and uses a cross-sectional survey design. Future research may expand the sample to other provinces, apply longitudinal methods, and include additional variables such as psychological empowerment, innovation climate, knowledge sharing, or digital leadership to provide a more comprehensive explanation of innovative work behaviour in public sector organisations.

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