



Going the Extra Mile: What Drives Employee Voluntarism in Public Sector Organizations?

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ABSTRACT

This research intends to investigate the impact of employee age and innovative work climate on the relationship between supportive supervisory roles and employee acts of voluntarism. Using a large cross-sectional survey of the Australian Public Service we find that the influence of supportive supervisors on employees' acts of voluntarism and extra role behaviors at work is higher amongst younger employees. This indicates that younger employees are more likely to engage in acts of voluntarism as a result of supportive supervisory roles. Findings also indicate that innovative work climate accentuates the relationship between supportive supervisory behaviors and acts of voluntarism. Employees who experience high levels of innovative work climate and high levels of support from supervisors tend to display higher levels of voluntarism and extra role behaviors at work. These findings have several theoretical and practical implications.

Keywords: Voluntarism, Extra Role Behaviors, Supportive Leadership, Employee Age, Innovative Work Climate

JEL Classifications: M00, M10, M12

1. INTRODUCTION

Employee voluntarism, a part of Organizational Citizenship Behaviors (OCB), plays a significant role in enhancing organizational effectiveness (Hermawan et al., 2024). These behaviors can be described as actions that go beyond formal job requirements, such as helping colleagues, working extra hours and taking on extra tasks (Worku and Debela, 2024). Research on public sector administration highlights the significance of these behaviors in public sector organizations, as they contribute to overall organizational performance (Demircioglu and Berman, 2019). Employee age is considered an influential factor in predicting employee acts of voluntarism and extra-role behaviors. This is due to a combination of generational differences in work values, motivations and varying career stages and priorities (Demircioglu and Audretsch, 2017). An innovative work climate also positively impacts employee voluntarism. Organizations that foster innovation tend to empower employees, which motivates them to engage in extra-role behaviors (De Vries et al.,

2016). Additionally, the role of supervisors is critical in shaping these behaviors. Supportive supervisory behaviors, such as providing guidance, recognition, and resources, can significantly influence employees' willingness to go beyond their formal job roles (Demircioglu and Audretsch, 2017). Employees who perceive strong support from their supervisors are more likely to demonstrate higher levels of organizational commitment and engage in voluntary actions that benefit the organization.

As the interest in Organizational Citizenship Behavior (OCB) research continues to rise (Ocampo et al., 2018) it is important to explore the many factors influencing employee OCB. This paper intends to examine a unidimensional construct of OCB involving the individual initiative of employees, also referred to as extra role behaviors, voluntarism, and/or "going the extra mile" at work. Examples of such behaviors encompass activities like spending weekends in the office, arriving early or staying late for work, and volunteering for special projects beyond regular job duties (Klotz et al., 2018). Although many of these behaviors could be

seen as part of one's in-role responsibilities, it is the heightened level or intensity of these behaviors that classifies them as a form of voluntarism (Organ, 1988).

Furthermore, this paper intends to explore the influence of employee age on the relationship between supportive leadership and acts of voluntarism, and to examine the impact of innovative work climate on the relationship between supportive leadership and acts of voluntarism within the workplace. We seek to extend novel insights into the literature, providing detailed insights into constructs of voluntarism that will enhance its current role in indicating organizational effectiveness and performance.

2. LITERATURE REVIEW AND FRAMEWORK

2.1. Voluntarism

A key focus of this study is employee voluntarism, which we have operationalized in terms of employee willingness to go above and beyond their minimum, or formal, requirements in their roles. It is evident that the impact of technology and globalization has significantly influenced contemporary organizations, leading to heightened global competition in business (Hermawan et al., 2024; Ocampo et al., 2018). Companies are now focusing on enhancing employees' behavior as a key factor for gaining a competitive edge (Tran and Choi, 2019). Individual initiative, voluntarism, and/or "going the extra mile", a distinct form of Organizational Citizenship Behavior (OCB), wherein employees engage in task-related behaviors which go far beyond minimally required or generally expected that it takes on a voluntary flavor (Podsakoff et al., 2014). Contextual performance, denoting those extra-role behaviors for which individuals don't anticipate organizational rewards, holds significance across diverse jobs and organizations (Bakker, 2015). Engaging in voluntarism involves actions such as working on weekends, arriving early, or staying late at the office, attending work-related events during personal time, putting in extra hours at home, and similar behaviors (Bolino et al., 2023). These voluntary actions play a crucial role in fostering a positive and productive work environment, potentially contributing to improved organization effectiveness and overall performance (Chou et al., 2021). Research has demonstrated a positive correlation between voluntarism and indicators of success at both the team and organizational levels (Podsakoff et al., 2014). The behaviors of employees who engage in voluntarism diffuse within the team, influencing overall team processes and outcomes (Bolino et al., 2023). These findings support the standing proposition by Katz and Kahn (1966) that the effective functioning of an organization relies on employees' willingness to contribute beyond their formal roles.

Given the significance of OCB generally, and voluntarism, specifically, it is expected that researchers have invested substantial effort in understanding how organizations can foster employees to exhibit "good organizational citizenship" (Organ, 2014). Consequently, exploring factors that may influence employees' acts of voluntarism becomes crucial (Indarti et al., 2017).

2.2. Supportive Leadership

The presence of supportive leadership is a key construct of interest in this study. The topic of supportive leadership has been growing in literature over the years with a plethora of controversial discussions amongst philosophers and scholars (Behrendt et al., 2017). Viewed as one of the most significant topics in business research, leadership is a major driving force for employee behavior in organizations (Rafiq Awan and Mahmood, 2010). Literature has shown that leadership can be used to influence employee behavior in the workplace (Alonderiene and Majauskaite, 2016). Research indicates that leaders serve as the embodiment and representation of the organization in the working relationship between leaders and followers (Slemp et al., 2018). Consequently, leaders' behaviors, actions, and thoughts are believed to shape followers' perceptions of their organizations (Azila-Gbettor et al., 2024; Vlachos et al., 2013).

Among the organizational factors influencing employee behaviors, leadership and organizational cultures have piqued researchers' interest (Tran and Choi, 2019). Research shows that leadership style plays a significant role in shaping subordinates' acts of voluntarism (Asgari et al., 2020). Previous studies have revealed leaders' influences on subordinates' behaviors through social exchange processes characterized by social exchange theory (Grego-Planer, 2019; Usman et al., 2024). Social exchange theory suggests that when individuals receive favorable treatment, they are inclined to reciprocate with something of equal value (Cropanzano et al., 2017). The cognitive behaviors of employees may be impacted by the information they receive and the behaviors they observe from influential or trusted individuals in their surroundings (Chou et al., 2021). This theoretical lens provides valuable insights into how leaders' behaviors contribute to their followers' desired outcomes, supporting the linkage between leadership and employee acts of voluntarism (Wu and Parker, 2017). Leaders' support and helpful behaviors, characterized by features like high availability and openness, can make employees feel they are receiving favorable treatment (Grego-Planer, 2019). This aligns with the principles of social exchange theory, where employees reciprocate by increasing their voluntary commitment within the organization to enhance its effective functioning.

Leadership styles, anticipated leadership behaviors, and leader traits exhibit variations across countries, sectors, industries, and organizations (Azila-Gbettor et al., 2024; Hong et al., 2016). The clarification of the complex mechanisms through which leaders' behaviors exert influence on employees' act of voluntarism remains a subject of ambiguity within extant research, thereby highlighting the need for further research and exploration (Grego-Planer, 2019).

2.3. Employee Age

In recent years, there has been a growing focus on age diversity in workgroups driven by demographic shifts and competitive workforce environments (Von Bonsdorff et al., 2018). Previous research on age diversity has yielded inconsistent findings regarding its impact on team processes and organizational outcomes (Seong and Hong, 2018). Some studies suggest that high age diversity may negatively affect team functioning and

effectiveness, while others argue that heterogeneity does not necessarily have a detrimental impact (Lyons and Kuron, 2014; Rudolph and Zacher, 2024).

Literature shows that one of the most apparent individual differences affecting role perception is age (Von Bonsdorff et al., 2018), as employees with diverse experience levels and expectations challenge the workplace and its employers (Wanxian and Weiwu, 2007). Organizations need to consider the interaction of a diverse population and age groups to maintain organizational governance (Costanza et al., 2012). Generational gaps between younger and older employees are widely acknowledged, with different interpersonal perspectives observed among various age groups (Ng and Feldman, 2013). Although personality traits are generally considered stable, there are subtle changes across the adult lifespan, particularly in domains predictive of Counterproductive Work Behavior (CWB) and OCB (Pletzer et al., 2023). Age-related shifts in personality traits contribute to the observed associations between age and different aspects of contextual job performance (Pletzer, 2021). Older adults tend to operate based on internal standards, while younger adults adopt a more transactional approach (Guzzo et al., 2022). Empirical evidence suggests that older workers may have lower achievement needs and higher affiliation needs than younger workers (Lyons and Kuron, 2014). Younger workers may perceive their relationship with the company as an exchange, while older workers take more responsibility for the company's interests (Marcus et al., 2019). Ashton and Lee (2021) observed that Honesty-Humility consistently increases across the adult lifespan, with scores rising nearly one standard deviation from age 18 to 60. Pletzer (2021) reported an increase in Extraversion throughout adulthood, and a marginal increase in Conscientiousness and Openness to Experience in late adulthood. Emotionality decreases across the adult lifespan, and Agreeableness shows a slight increase from around age 30-65 (Pletzer et al., 2020). These findings indicate that employee age does play a role in influencing the extent to which an employee engages in acts of voluntarism at work (Pettit et al., 2004). Age differences contribute to varying expectations of employee behavior (Guzzo et al., 2022), thus eliciting the need to further explore its role in shaping employee voluntarism.

2.4. Intrinsic Motivation

Intrinsic motivation, which can be characterized as an individual's inherent satisfaction and enjoyment derived from work, aligns with other established constructs including skill utilization, a sense of work accomplishment, role recognition and role clarity.

The relationship between intrinsic motivation and OCB-related behaviors and outcomes has been supported in previous empirical research. Finkelstein (2011) conducted a study linking a OCB-related behaviors to the presence of intrinsic motivation. Similarly, Kim et al., (2020) and Pohl et al. (2012) found that intrinsic motivation had a positive impact on OCB, with employees who are inherently motivated by their work, or who feel that their psychological needs are a consideration of management, are more likely to engage in voluntary behaviors that benefit the organization (finding supported by Spanouli, 2023).

A sense of skills utilization (Organ et al., 2006) and work accomplishment (Deci and Ryan, 2000) have also been found to engender a higher level of voluntaristic, OCB-related behavior. Recognition for these outcomes has also been shown to motivate greater voluntaristic effort (Deci and Ryan, 2000). Similar outcomes exist driven by job inspiration (Bakker and Demerouti, 2008).

While this positive relationship is generally found in most situations, the strength of the relationship may be conditioned by individual differences, the organizational context, and the specific type of OCB being examined. For instance, a study found that the relationship holds true for OCB directed towards individuals, but not necessarily for OCB directed towards the organization (Williams and Anderson, 1991). This elicits the need for further exploration.

2.5. Innovative Work Climate

Innovative work behavior is described as a multifaceted phenomenon that is dynamic and involves creativity (Khan et al., 2020). With globalization and industries becoming more competitive, the need for innovation to achieve a competitive edge has become even more critical for organizations (AlEssa and Durugbo, 2022). Innovative work behavior has been discussed globally following the emergence of information technology and e-practices (Paruzel et al., 2023). Innovation is associated with change, development and application of ideas that are novel to the company, the country, the global community, and the industry (Muhamad et al., 2023; Rudolph and Zacher, 2024). Leaders have the ability to encourage, shape and retain desirable organizational cultures which can then lead to more innovative work environments (Khan et al., 2020). The link between organizational social climate and innovation has been well acknowledged and establishing a connection between employee voluntarism and innovation suggests managerial interventions (Paruzel et al., 2023). Despite practical implications, the correlation between leadership and innovative work behavior requires examination within industries, specifically to anticipate the outcomes of innovative work behavior in the public sector (Srirahayu et al., 2023).

3. HYPOTHESIS DEVELOPMENT

Supportive leadership has been consistently linked to increased OCB among employees (Podsakoff et al., 2000). In addition, it is evident that employees' age serves as influential factor shaping employee voluntarism and serves as an important individual difference influencing the perception of extra role behaviors amongst employees (Murphy and DeNisi, 2022). Age differences contribute to varying forms of employee behavior (Guzzo et al., 2022), thus eliciting the need to further explore its role in shaping employee voluntarism.

We anticipate an interaction of age and supervisory support in the determination of voluntary effort and commitment. This can be attributed to the lens of generational variance in work values and expectations whereby younger workers have been found to place a higher value on mentorship, feedback, and supportive supervisory relationships in the workplace compared to older

generations (Twenge et al., 2010). This suggests that younger employees may be more responsive to supportive supervision in terms of reciprocating with OCBs.

Additionally, in the context of the public sector, research has shown that public service motivation (PSM) plays a significant role in employee behavior (Piatak et al., 2020). Younger employees in the public sector may tend to be more idealistic and thus more influenced by supportive leadership that aligns with their public service values (Bright, 2008; Acheampong, 2021). Social Exchange Theory (Blau, 1964; Cook and Hahn, 2021) may also provide a theoretical foundation for understanding why supportive supervision may lead to increased OCBs. This theory suggests that employees tend to engage in a reciprocal relationship with their organization and supervisors, where positive treatment is likely to be reciprocated with positive behaviors (Jiang and Shen, 2023). Research has shown that younger employees, in the earlier phase of their careers, may be keen to establish positive relationships, potentially making them more responsive to supportive supervision (Ng and Feldman, 2010).

Finally, life-span theory of control (Heckhausen et al., 2010; Buchinger et al., 2022) have suggested that younger employees are more interested in investing in developing new skills and relationships. These align with the idea that they might be more responsive to the positive relationships underlying supportive supervision in terms of engaging in voluntarism and OCBs.

Hypothesis 1: Supervisor support interacts with employee age such that high supervisor support produces a stronger effect on voluntarism for young workers than older workers.

A second area of focus relating to the boosting of employee voluntarism relates to the creation of an innovative climate. Such a climate may support creativity among employees and risk-taking, key factors that in turn gain employee commitment for voluntary effort and activities.

Firstly, an innovative climate may create an amplification effect whereby supportive supervision allows employees to feel empowered to go beyond their formal, minimum job requirements. Amabile et al. (1996) found that organizational encouragement, which includes both supervisory support and an innovative climate, was crucial for creativity and innovation.

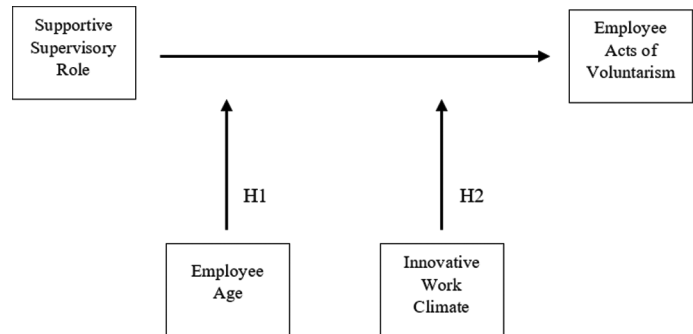
Additionally, according to the Job Demands-Resources model (Bakker and Demerouti, 2007), both supportive supervision and an innovative climate can be considered key job resources. The alignment of these resources can create a synergistic effect, activating employees' motivation to engage in voluntary behaviors.

Furthermore, an innovative climate, combined with supportive supervision, may also support a sense of psychological safety (Edmondson, 1999). Such a state may encourage employees to take risks and go to exercise discretionary efforts beyond their formal roles.

Finally, when employees perceive an innovative climate, they may view their supervisor's support as synergistically aligned with

organizational goals. This congruence increases the likelihood of engaging in voluntary behaviors that contribute to the achievement of these goals (Kristof-Brown et al., 2005).

Hypothesis 2: High supervisor support positively interacts with perceived innovative climate such that voluntarism is increased where supervisor support and innovative climate are both perceived by employees.



4. DATA AND EMPIRICAL ANALYSIS

Data used in this research was obtained from the Australian Public Service (APS) Employee Census, an annual survey conducted amongst all employees within the Australian Public Service, comprising individuals employed in the public sector by the federal or Commonwealth government of Australia. The administration of the Census is managed by the Australian Public Service Commission (APSC), the primary entity responsible for personnel matters within the APS. This Census serves as a crucial repository of data on employment attitudes, which yields the evidential basis for the Commission's annual report presented to the Australian Parliament. These datasets are available on the relevant Australian government data portal for researchers' access.

In Table 1, the study's dependent variable (I am happy to go the "extra mile" at work when required) and the question relating to remuneration fairness (I am fairly remunerated for the work I do) are both measured on a five-point Likert scale, from 1 (Strongly Disagree) to 5 (Strongly Agree). Age is scaled 1 (under 40), 2 (40-54) and 3 (55 years or older). Level is scaled 1 (Trainee/Graduate/APS), 2 (Executive) and 3 (Senior Executive). Supervisor, Intrinsic and Innovative are all derived factor scores, with a mean of zero and a SD of 1. All have a strong Cronbach alpha score (>0.80) illustrating acceptable fit (The three derived factor loadings are available if requested from authors).

With a mean of 4.255 on a 5-point Likert scale, across the sample employees generally show a high willingness to go the "extra mile" at work. This aligns with research suggesting that public sector employees may have higher levels of OCB-related attitudes and behaviors. With a mean of 1.845, the sample skews towards younger employees (under 40). In addition, with Level showing a mean of 1.374, most respondents are in lower level to middle management positions, as might be expected in an organization-wide survey. The remuneration mean of 3.439 indicates that employees generally feel fairly remunerated.

In Table 2, voluntarism, the primary variable of interest, shows positive significant correlations with all other variables ($P < 0.001$) except age, where the relationship is negative. Emerging as the most powerful predictor in both models, intrinsic satisfaction has the strongest correlation with voluntarism ($r = 0.551$). This is consistent with existing literature that emphasizes the role of intrinsic motivation in fostering PSM and voluntarism (Zubair et al., 2021; Perry and Wise, 1990). When employees are intrinsically motivated, they gain satisfaction from the work itself and not from external rewards. This results in them being more inclined towards going the extra mile and engaging in acts of voluntarism to obtain this satisfaction (Deci and Ryan, 2000). This suggests that employees who derive intrinsic satisfaction from their work tend to be more likely to engage in voluntary behaviors.

Age demonstrates a weak negative correlation with voluntarism ($r = -0.032$, $P < 0.001$), indicating that younger employees may be slightly more inclined to volunteer. Conversely, Level has a positive correlation with voluntarism ($r = 0.115$, $P < 0.001$), suggesting that employees in higher positions are more likely to report that they are willing to go the extra mile. Variables related to Age and Level both demonstrate unique relationships with voluntarism. This result conflicts with previous studies reporting that older employees are more subject to exhibit higher levels of PSM (Xu, 2020). This could be explained in terms of lifespan development theories (Rudolph, 2016), where younger

employees are more likely to seek opportunities for growth and career development which makes them more responsive to the support of leadership, leading to higher levels of voluntarism and extra-role behaviors (Rudolph et al., 2017). Younger workers may view their relationship with their organization as more of an exchange in order to grow and achieve career success, whereas older workers have lower achievement needs (Lyons and Kuron, 2014; Marcus et al., 2019). This possibility requires further examination in future studies.

Perceived supervisor support shows a moderate positive correlation with voluntarism ($r = 0.350$, $P < 0.001$). This indicates that perceived supportive supervisory behaviors tend to encourage voluntary actions. Similarly, remuneration satisfaction has a positive correlation with voluntarism ($r = 0.232$, $P < 0.001$). This suggests that perceived fair compensation contributes to employees' willingness to engage in extra-role behaviors. Supportive supervisory roles act as a motivator for employees to go beyond formal job requirements and engage in acts of voluntarism. This aligns with the social exchange theory suggesting that employees tend to reciprocate positive interactions by engaging in discretionary behaviors at work which include acts of voluntarism and extra role behaviors (Cropanzano and Mitchell, 2005). However, the relatively high Variance Inflation Factor ($VIF = 6.568$) for this variable suggests some multicollinearity, potentially complicating the interpretation

Table 1: Demographic characteristics of the sample (n=120, 662)

Descriptive statistics							
Variable	Voluntarism	Age	Level	Supervisor	Remuneration	Intrinsic	Innovative
Valid	119,766	120,645	120,645	117,824	119,722	118,979	115,435
Missing	896	17	17	2838	940	1683	5227
Mean	4.255	1.845	1.374	0.000	3.439	0.000	0.000
SD	0.725	0.821	0.532	1.000	1.109	1.000	1.000

SD: Standard deviation

Table 2: Bivariate correlations of variables used

Variable	Voluntarism	Age	Level	Perceived supervisor support	Remuneration satisfaction	Intrinsic satisfaction	Innovative climate
1. Voluntarism							
Pearson's R	-						
P-value	-						
2. Age							
Pearson's R	-0.032	-					
P-value	<0.001	-					
3. Level							
Pearson's R	0.115	0.088	-				
P-value	<0.001	<0.001	-				
4. Supervisor							
Pearson's R	0.350	-0.121	0.032	-			
P-value	<0.001	<0.001	<0.001	-			
5. Remuneration							
Pearson's R	0.232	-0.067	0.089	0.265	-		
P-value	<0.001	<0.001	<0.001	<0.001	-		
6. Intrinsic							
Pearson's R	0.551	-0.054	0.145	0.560	0.356	-	
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	-	
7. Innovative							
Pearson's R	0.401	-0.078	0.082	0.571	0.327	0.620	-
P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-

of these results. It is important that future studies explore this relationship in greater depth through considering other mediating variables such as trust in leadership or perceived organizational justice (Colquitt et al., 2001).

Innovative climate also shows a moderate positive correlation with voluntarism ($r = 0.401, P < 0.001$). This suggests a potential link between a work environment that fosters innovation and employees' willingness to go beyond their formal job requirements. The positive correlation between innovative climate and voluntarism shows that workplace environment is important in influencing employee behavior. Employees are more willing to contribute beyond their formal job roles in an innovative work climate that welcomes new ideas and fosters creativity among employees (Avey et al., 2009). This finding aligns with research by Choi (2007), which suggests that promoting innovation in organizations tends to result in higher levels of employee engagement and discretionary effort. The Job Demands-Resources (JD-R) model confirms that innovative climate serves as a job resource that boosts employee engagement and results in positive work behaviors including OCB and acts of voluntarism (Bakker and Demerouti, 2007), further supporting this finding.

Interestingly, intrinsic satisfaction and innovative climate show the strongest correlation ($r = 0.620, P < 0.001$) among all variables. This indicates a strong relationship between employees' internal motivation and their perception of an innovative work environment.

In the following section we present and discuss our regression model, with the dependent variable of "I am happy to go the "extra mile" at work when required" (termed voluntarism, for brevity).

Table 3 shows the baseline model (H_0), where both Age ($\beta = -0.040, P < 0.001$) and Level ($\beta = 0.119, P < 0.001$) were significant predictors of voluntarism. As previously observed, the negative coefficient for Age suggests that younger employees are more likely to engage in voluntary behaviors, while the positive coefficient for Level indicates that employees in higher positions are more inclined towards voluntarism. The positive correlation aligns with prior research indicating that employees in higher-level positions are more likely to exhibit OCB (Xu, 2020). Employees in senior

positions may feel obligated to set an example and demonstrate acts of voluntarism due to expectations from the organization and from their subordinates. However, in the expanded model (H_1), the effect of level diminishes ($\beta = 0.038, P < 0.001$), indicating that although higher-level employees are more likely to engage in acts of voluntarism, this effect may be partially mediated by other factors such as intrinsic satisfaction and/or workplace climate.

In the second stage, for the expanded model (H_1), we introduced additional predictors and two interaction terms. This aims to provide a more comprehensive explanation of voluntarism. In this model, Age ceased to be a significant predictor ($\beta = 0.002, P = 0.419$). Level remained significant, but with a reduced effect ($\beta = 0.038, P < 0.001$). These changes in significance suggest that the effects of Age and Level on voluntarism are reduced or removed by other factors in the workplace.

In our fully specified model, Intrinsic Satisfaction emerged as the strongest predictor of voluntarism ($\beta = 0.468, P < 0.001$). This suggests that employees who derive internal satisfaction from their work are substantially more likely to engage in voluntary behaviors. Perceived Supervisor Support ($\beta = 0.071, P < 0.001$), Remuneration Satisfaction ($\beta = 0.028, P < 0.001$), and Innovative Climate ($\beta = 0.079, P < 0.001$) were all shown to positively predicted voluntarism, albeit with smaller effect than Intrinsic Satisfaction. These results, taken together, are intuitive. The model suggests that a supportive work environment, fair compensation, and an innovative work climate contribute to employees' willingness to go beyond their formal job requirements. Remuneration satisfaction shows a positive relationship with voluntarism; however its impact is weaker compared to non-monetary factors such as intrinsic satisfaction. This finding is consistent with public sector literature that suggests the importance of financial compensation in the public sector, but also highlights that it is not the primary motivator for public sector employees (Perry et al., 2010). The role that remuneration plays is more comprehensive in which remuneration serves more as a hygiene factor that prevents dissatisfaction rather than a motivator that advances voluntarism amongst employees (Herzberg, 1966).

The model also revealed two significant interaction effects. The interaction between age and Supervisor Support ($\beta = -0.024,$

Table 3: Regression coefficients

Model	Coefficients						
	Unstandardized	SE	Standardized	t	P	Collinearity Tolerance	Statistics VIF
H₀							
Intercept	4.105	0.007		560.007	<0.001		
Age	-0.036	0.003	-0.040	-13.572	<0.001	0.992	1.008
Level	0.160	0.004	0.119	40.051	<0.001	0.992	1.008
H₁							
Intercept	4.109	0.009		478.398	<0.001		
Age	0.002	0.002	0.002	0.808	0.419	0.967	1.034
Level	0.051	0.003	0.038	14.970	<0.001	0.963	1.038
Supervisor	0.052	0.005	0.071	11.317	<0.001	0.152	6.568
Remuneration satisfaction	0.018	0.002	0.028	10.576	<0.001	0.850	1.177
Intrinsic satisfaction	0.339	0.002	0.468	137.952	<0.001	0.525	1.906
Innovative climate	0.057	0.002	0.079	23.551	<0.001	0.534	1.874
Age × supervisor	-0.008	0.002	-0.024	-4.040	<0.001	0.166	6.012
Supervisor × innovative	0.018	0.001	0.035	12.774	<0.001	0.817	1.224

VIF: Variance inflation factor, SE: Standard error

Figure 1: Moderating effects of age on the supervisor – voluntarism relationship

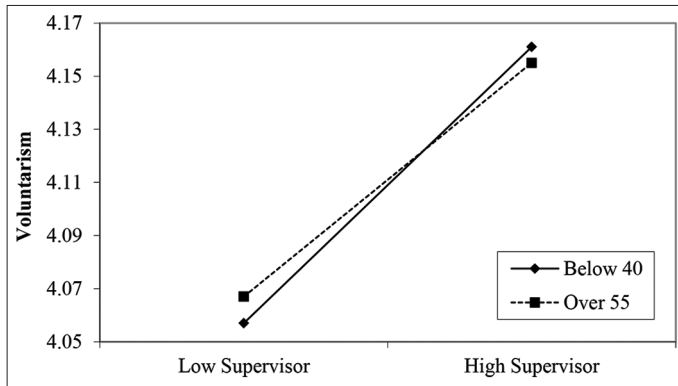
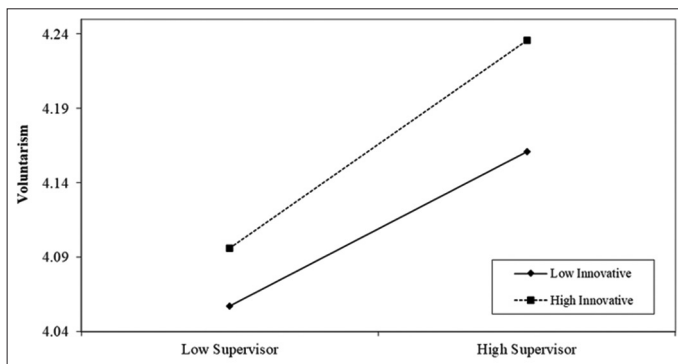


Figure 2: Moderating effects of innovative climate on the supervisor – voluntarism relationship



$P < 0.001$) suggests that the effect of supervisor support on voluntarism may vary across different age groups. The visualization (Figure 1) illustrates this intuitively. We note that for the younger age group (Below 40), the influence of supervisor support is more important in determining Voluntarism than is the case for those over 55 years.

Similarly, the interaction between Supervisor Support and Innovative Climate ($\beta = 0.035$, $P < 0.001$) indicates that the impact of supervisor support on voluntarism may depend on the level of innovation in the work environment. As is shown in Figure 2, where employees sense both high Supervisor Support and high Innovative Climate, they tend to also exhibit higher inclination to Voluntarism.

It is worth noting that the supervisor support variable and its interaction with age showed relatively high variance inflation factors ($VIF = 6.568$ and 6.012 respectively), indicating potential multicollinearity. While these values are below the common threshold of 10, they suggest that the effects of these variables should be interpreted with caution.

5. CONCLUSION, IMPLICATIONS, LIMITATIONS AND DIRECTIONS FOR RESEARCH

Results of this research offer significant insights into the degree to which employees engage in acts of voluntarism and

extra-role behaviors at work, particularly within the public sector. The primary dependent variable (DV), which measures employees' self-reported voluntarism, showed high average scores (mean = 4.255). This aligns with prior research on public service motivation (PSM) and organizational citizenship behavior (OCB), which suggests that public sector employees are more likely to go beyond formal job requirements due to a sense of intrinsic motivation and service orientation (Perry and Hondeghem, 2008).

5.1. Theoretical Implications

Findings of this study hold several significant theoretical implications for understanding the dynamics of employee acts of voluntarism within organizations. Firstly, the impact of employee age on the relationship between supportive supervisory roles and employee acts of voluntarism, where the weak negative correlation between age and voluntarism ($r = -0.032$, $P < 0.001$) suggests that age-related factors should be integrated into existing theories of organizational behavior and leadership. Traditional theories of work behavior have suggested that older more experienced employees with longer tenure, are more likely to go beyond their formal roles and engage in extra-role behaviors (Katz and Kahn, 2015). In the contrary, findings of this study suggests that younger employees may be more inclined towards engaging in acts of voluntarism as they are more motivated by career development opportunities. Younger employees, who place higher value on emotional satisfaction and positive social interactions, may be more responsive to supportive supervisors, thereby engaging more in voluntary organizational behaviors. The diminished effect of age in the expanded model (H_1), where age is no longer a significant predictor ($\beta = 0.002$, $P = 0.419$), suggests that age-related differences in voluntarism may be influenced by intrinsic satisfaction that employees gain from their work.

Intrinsic motivation plays a central role in the motivation of public sector employees with a strong relationship between intrinsic satisfaction and voluntarism ($r = 0.551$, $\beta = 0.468$, $P < 0.001$). This indicates that employees are significantly more likely to engage in acts of voluntarism when they are able to gain intrinsic satisfaction from their jobs through public service motivation (PSM). Employees with high levels of PSM are driven by internal factors such as altruism, a sense of duty and commitment to public service (Perry et al., 2010). Findings suggest that intrinsic satisfaction is a stronger predictor of voluntarism than remuneration satisfaction ($\beta = 0.028$, $P < 0.001$). Thus, employees who achieve internal satisfaction from their work are significantly more likely to engage in voluntary behaviors. This provides new theoretical insight and challenges traditional economic theories that place more significance on financial compensation as the primary motivator behind employee behaviors (Meckling and Jensen, 1976). The positive but weaker correlation between remuneration satisfaction and voluntarism ($r = 0.232$, $P < 0.001$) raises theoretical questions about the role of compensation in motivating acts of voluntarism and extra role behaviors.

With regards to workplace environment, the moderate positive correlation between innovative climate and voluntarism ($r = 0.401$, $P < 0.001$) indicates that employees are more likely to engage in acts of voluntarism when they perceive their workplace as innovative.

This finding is consistent with theories of organizational culture that suggests employees become more inclined towards acts of voluntarism and OCB when organizations foster a culture that encourages innovation and creativity (Kim and Wright, 2020).

With regards to supervisor support, the positive relationship between supervisor support and voluntarism ($r = 0.350$, $P < 0.001$) suggests that supportive supervisors have the ability to influence employees acts of voluntarism through offering them support. However, the interaction effect between supervisor support and age ($\beta = -0.024$, $P < 0.001$) complicates this relationship, calling for further exploration on how leadership styles could adapt to different age groups and generational norms, potentially contributing to the development of more comprehensive leadership theories (Lyons and Kuron, 2014).

In summary, the theoretical implications of this research suggest that in order to foster acts of voluntarism within the public sector, organizations must focus on multiple contextual factors such as intrinsic motivation, age differences, workplace innovation, and supportive leadership in shaping the effectiveness of these motivational drivers. These findings challenge traditional economic theories in that emphasis is placed on intrinsic motivational factors rather than emphasizing extrinsic rewards to drive acts of voluntarism and OCB within the workplace.

5.2. Practical Implications

Findings of this study hold several practical implications for organizations, leadership practices and human resource management within the public sector. Key practical implications include fostering intrinsic motivation, where the strong relationship between satisfaction and voluntarism ($r = 0.551$, $\beta = 0.468$, $P < 0.001$) suggest that enhancing job roles so that they align with employees' interests and values would lead to intrinsic satisfaction that increases acts of voluntarism within the workplace (Oldham et al., 1976). This can be done through implementing job enrichment and job crafting programs that enable employees to align their work with their strengths and preferences.

Another key implication involves the role of leadership, where the positive relationship between perceived supervisor support and voluntarism ($r = 0.350$, $\beta = 0.071$, $P < 0.001$) emphasizes the importance of leadership in fostering employees acts of voluntarism. This can be achieved through leadership training and mentorship programs. Such programs will enhance leadership's ability to offer the skills needed to offer support and empowerment. Additionally, findings of this study indicate that supervisor support interacts with age ($\beta = -0.024$, $P < 0.001$), thus such programs could be tailored based on age-specific needs. Leaders must recognize that the response to motivational drivers may vary across different age groups, where career growth, guidance, and a sense of autonomy may be key motivators for younger employees, whereas older employees may value stability, recognition, and fair compensation (Lyons and Kuron, 2014). Although remuneration satisfaction had a weaker correlation with voluntarism ($r = 0.232$, $\beta = 0.028$, $P < 0.001$) compared to intrinsic satisfaction, it still considered a factor in driving employees' willingness to engage in extra-role behaviors. Thus, implementing fair compensation

systems through transparent compensation policies will enable employees to benchmark their salaries/compensation against industry standards which can help maintain perceptions of fairness in compensation (Herzberg, 1966). Additionally, policies that promote flexible work arrangements, continuous learning opportunities, and a culture of open communication may also add to the perceived support of leadership.

The positive correlation between innovative climate and voluntarism ($r = 0.401$, $\beta = 0.079$, $P < 0.001$) indicates that highly innovative work environments can enhance acts of voluntarism among employees. Organizations should invest in initiatives that promote innovation, such as cross-functional team projects, idea-sharing platforms, and regular innovation workshops. An environment that encourages and values creativity can motivate employees to go the extra mile. Additionally, organizations should focus on policies that facilitate knowledge sharing and collaboration across age groups to enhance the overall work environment. Welcoming employees to share ideas and suggestions for different work improvements can enhance the overall innovative climate and drive OCB (Kim and Wright, 2020).

5.3. Limitations and Directions for Research

While our research expands empirical knowledge regarding the impact of employee age and innovative work climate on the relationship between supportive leadership and employee acts of voluntarism, there are several important limitations to consider.

First, our research relies on secondary data, which limits our ability to use a validated scale for the variables of interest. However, gaining access to such a sample size would have been challenging or even impossible, particularly with achieving a near 100% response rate. Therefore, the nature of the dataset offers both advantages and disadvantages.

Secondly, the study is based entirely on cross-sectional, self-reported survey data, which is more subject to common method bias that cannot be controlled ex-ante. To mitigate this, we checked for common method bias using Harman's single factor approach. The total variance explained after loading all independent variables onto a single factor was xxx%, comfortably below the 50% threshold suggested by Harman. However, the cross-sectional design still limits the ability to infer causal relationships between variables.

Future research should employ more elaborated and validated measures for variables such as supportive supervision, innovative work climate, and employee acts of voluntarism. Developing and utilizing refined measurement instruments will improve the accuracy and reliability of the findings. Additionally, future studies should extend the research to include private sector organizations and those outside Australia to enhance the generalizability of the findings. Moreover, examining different organizational contexts can provide a more comprehensive understanding of how supportive supervision, employee age and innovative work climates influence employee acts of voluntarism across various settings.

To better understand the causal relationships and dynamics over time, future research should adopt longitudinal designs. Longitudinal studies can help identify how the impact of employee age and innovative work climates effects the relationship between supportive supervisory roles and how employee acts of voluntarism evolve. Integrating qualitative methods such as interviews and focus groups can provide more insight into the mechanisms driving the observed relationships. Qualitative research can capture the detailed experiences and perceptions of employees, offering a deeper understanding of how age and innovative work climates interact with supportive supervision in influencing employee acts of voluntarism.

By addressing these limitations and pursuing these future research directions, scholars can develop a more robust and comprehensive understanding of the factors influencing employee acts of voluntarism, leading to improved organizational outcomes.

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