The Protective Role of Efficacy in Sustaining Work Engagement under Organizational Stress among Gen Z Employees

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Abstract: The objective of this research was to explore the effect of role efficacy on the maintenance of work engagement for white-collar employees in manufacturing under the influence of organizational role stressors. This study draws on the Conservation of Resources Theory (COR) and the Job Demands–Resources Model to conceptualize role efficacy as a personal psychological resource that helps protect employees from the negative impact of role-based stressors on their level of engagement. The sample predominantly consisted of Gen Z employees, reflecting early-career workforce dynamics. A cross-sectional, non-parametric, correlational research design was applied and included a purposive sample of 172 participants. Standardized measures of work engagement, organizational role stress, and role efficacy were administered. Due to non-normal data distribution, Spearman's rank-order correlation, Mann–Whitney U, and Kruskal–Wallis H tests were used for analysis. Results indicated a significant positive association between role efficacy and work engagement, and significant negative associations between organizational role stress and engagement. Role efficacy was also negatively correlated with the majority of role stress dimensions, suggesting a protective pattern. Gender differences emerged in selected stress dimensions, and significant cross-company differences were observed in both role efficacy and stress. Although causality cannot be inferred, findings support the proposition that strengthening role efficacy may help sustain employee engagement in high-demand organizational environments.

Keywords: Role Efficacy, Organizational Role Stress, Work Engagement, Psychological Resources.

Introduction

Work engagement has emerged as one of the most extensively studied constructs in organizational psychology and human resource management over the past two decades. Work engagement is generally viewed as an emotional, cognitive and physical investment employed by an employee to perform their job over time; it is positively related to an employee's level of energy, dedication and immersion in their work (Schaufeli et al., 2002). The changing composition of organisations has led to a change in how organisations view their engaged employees; organisations have identified that engaged employees are not just employees who are satisfied, but they are also employees who exert greater levels of discretionary effort, are more committed, G. Bakker and E. Demerouti (2008). Previous research has demonstrated that work engagement is positively related to a variety of positive organisational outcomes, including increased productivity, decreased absenteeism, reduced employee turnover intentions, and increased customer satisfaction (Harter et al., 2002). Accordingly, organisations operating in environments that place high demands on employees, are increasingly prioritising their understanding of the factors that may support or weaken their employees' levels of engagement.

In recent years, the workforce has witnessed a significant influx of Gen Z employees (born approximately between 1997 and 2012), who bring distinct work values, expectations, and psychological orientations. Gen Z employees tend to prioritise meaning, flexibility, and psychological well-being at work, while also being more sensitive to role ambiguity and organisational stressors. Understanding how personal resources such as role efficacy function within this cohort is therefore critical for sustaining engagement in contemporary organisational settings. Organizational role stress is defined as the mental strain that people face when they are unable to meet the demands of their job responsibilities. In 1983, Pareek proposed that role stress may be understood as a multi-faceted phenomenon consisting of six types of role stress—role overload, role ambiguity, role erosion, role inadequacy, inter-role distance and role isolation. Examples of each of these types include: Role overload happens when an employee has too much work (according to their available time); Role ambiguity happens when an employee does not clearly know what their

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responsibilities are or what is expected of them; Role inadequacy happens when an employee feels there is a mismatch between his/her ability to meet the demands of his/her job (Pareek, 1983). Together, these stressors have been shown to produce negative consequences for employee performance, including draining cognitive and emotional resources; impairing an employee's ability to make effective decisions; and increasing employee exhaustion levels (Maslach et al., 2001). Long-term role stress has also been connected through research to burnout; disconnection from work; and less commitment to the organisation (Fried et al., 1998).

According to (Pareek & Purohit, 2018), role efficacy is defined as 'the individual's belief about their effectiveness (and power) within their role'. Role efficacy differs from the more general concept of self-efficacy in that self-efficacy is based on an individual's confidence in his/her capacities or skills in any area (i.e., general self-efficacy), while role efficacy refers specifically to an employee's confidence in their ability to meet the expectations of their job or occupation (i.e., role-specific self-efficacy). Role efficacy is made-up of five dimensions of one's performance within the context of their job or occupation; Centrality to the organisation, Inclusive behaviours, Proactive behaviours, Creativity, and Linking of work to other roles (Pareek 2018). According to role theory (Katz & Kahn, 1978) and resource perspective (Hobfoll, 1989), role efficacy is defined as a personal resource that provides employees with the ability to interpret demand as positive, feel like they have control over work issues, and have their psychological well-being maintained during difficult times. Highly-efficacious employees approach their work with confidence, show resilience despite adverse circumstances, and view their work as significant, and each of these factors relates to long-term engagement.

This study utilizes the Conservation of Resources (COR) Theory (Hobfoll, 1989) and the Job Demands - Resources (JD-R) Model (Bakker & Demerouti, 2007) to develop a consistent theoretical framework. COR Theory indicates that psychological stress results from 1.) the existence or threat of loss of valued resources. When an employee is exposed to role-related stressors (e.g. workload), this leads to the depletion of resources and reduces the capacity for continued engagement. Similarly, JD-R indicates that high job demand takes away energy from the employee, whereas personal resources mitigate the negative impact of demand on wellness/performance. In this integrated framework, role efficacy is a vital personal resource as employees who view themselves as effective in their roles are better prepared to manage short and long-term challenges. This logic fortifies the defensive role framing central to this study; role efficacy is hypothesised not only to be positively related to engagement, but to attenuate the debilitating stimulus of organisational role stress.

There has been a growing body of scholarly literature examining both individual aspects of (a) role efficacy, (b) organizational role stress, and (c) work engagement; yet there is still a lack of empirical studies that investigate the interrelationship among all three constructs simultaneously. Most of the emergent studies typically examine two of these constructs only (e.g., stress vs. engagement; efficacy vs. performance), without examining the triangular relationships among the three constructs within an integrated framework (Schaufeli & Taris, 2014). Furthermore, there is a scarcity of evidence available from non-Western countries with regard to corporate employee populations, thus limiting the applicability of the conclusions drawn from existing studies. Most prior research studies of these three constructs have been conducted using parametric statistical methods, even though data from organizational populations on psychological constructs do not conform to the assumptions of normality associated with parametric statistical methods. This study aims to examine the relationships among the three constructs identified above by utilizing a non-parametric correlational research design that uses Spearman's rank-order correlation, the Mann-Whitney U test, and the Kruskal–Wallis H test in a heterogeneous sample of corporate employees.

Objectives of the Study

Aim of the Study

To examine the protective role of role efficacy in sustaining work engagement in the presence of organizational role stress among employees.

Primary Objectives

1. To examine the relationship between role efficacy and work engagement.
2. To examine the relationship between organizational role stress and work engagement.
3. To examine the relationship between role efficacy and organizational role stress.

4. To examine whether role efficacy functions as a protective psychological resource under conditions of organizational stress.

Secondary Objectives

5. To examine gender differences in role efficacy, organizational role stress, and work engagement.

6. To examine differences across companies in role efficacy and organizational role stress.

Hypotheses of the Study

Association Hypotheses

H1. There will be a statistically significant positive association between employees' perceived role efficacy and their level of work engagement.

H2. There will be a statistically significant negative association between organizational role stress and employee's level of work engagement.

H3. There will be a statistically significant negative association between employees' perceived role efficacy and organizational role stress.

Group Difference Hypotheses

H4. There will be statistically significant differences between male and female employees in dimensions of organizational role stress.

H5. There will be statistically significant differences across companies in employees' perceived role efficacy and organizational role stress.

Method

Research Design

The present study adopted a quantitative, cross-sectional, non-parametric correlational research design supplemented by group comparisons. A cross-sectional approach was deemed appropriate given the study's aim to examine associations among role efficacy, organizational role stress, and work engagement at a single point in time, within a corporate employee sample. Given that preliminary normality testing revealed violations of the assumption of normality across key study variables, non-parametric statistical procedures were employed throughout the analysis. This methodological choice strengthens the appropriateness and rigor of the findings (Field, 2018).

Participants

The sample consisted of 172 employees in white-collar occupations within the manufacturing industry. Participants primarily belonged to the Gen Z age group which representing early-career employees in white-collar roles within the manufacturing sector. They were selected through a purposeful sampling method where participants were carefully selected from different job titles and levels of management as well as employees from various departments after giving their informed consent. The sample population included both male and female participants so comparisons could be made between the two groups. Participants were representative of different age categories and belonged to a number of different companies within the manufacturing industry so that comparisons could be made across companies as well. Only respondents who were able to provide informed consent were included if they were currently employed fulltime in their position. Anyone currently on leave for an extended period of time or who worked on a temporary contract was excluded from the study.

Measures

Utrecht Work Engagement Scale (UWES)

To measure the levels of work engagement, respondents completed the Utrecht Work Engagement Scale (UWES) developed by Schaufeli and Bakker (2006), which is an established self-report measure that has been validated extensively and has shown high reliability. This instrument measures engagement through three primary aspects of work engagement including vigour (how much energy and psychological resilience employees are experiencing at work), dedication (how much meaning and excitement employees feel about their jobs), and absorption (how much time employees are consuming at work). To measure the three different aspects of work engagement, the UWES is comprised of 17 items measured on a scale of 0 (never) to 6 (always/every day). The internal

reliability of each dimension of the UWES has also been evaluated, with Cronbach alphas exceeding 70.

Organizational Role Stress Scale (ORS)

To evaluate Organizational Role Stress, the Organizational Role Stress Scale (ORS;Pareek, 2001; as standardized by Sen, 1982) was used. This was developed to be a comprehensive instrument that assesses ten different role stressors: role ambiguity, role erosion, role overload, inter-role distance, role stagnation, role expectation conflict, and personal inadequacy representing the key areas of concern when people have difficulty managing their job duties. The ORS was developed using the described ten role stressors and consists of 50 items (five for each role stressor) rated on a five-point scale with responses of 0 (never) to 4 (very frequently). Thus, the higher the aggregate score, the greater the perceived role stress. Additionally, the ORS is a reliable measure of role stress with an internal reliability coefficient of .91 and a test-retest reliability coefficient significant at the .001 level (Sen, 1982; Pareek, 2001).

Role Efficacy Scale (RE)

To determine Role Efficacy, another measure called the Role Efficacy Scale (RE; Pareek, 2001; as standardized by Sen, 1982) was utilized. This was developed to measure the respondent's perception of his/her effectiveness within the organizational role across ten dimensions: centrality, integration, proactivity, creativity, inter-role linkage, helping relationship, superordination, influence, growth, and confrontation. The RE consists of 20 triads of statements from which the respondent is asked to select the one statement that best represents their experience. The score is computed by summing the value of the statements selected from the triads and the higher the sum the greater the role efficacy perceived by the respondent. The Role Efficacy Measure also has a reported reliability of .68 at the .001 level of significance (Sen, 1982; Pareek, 2001).

Procedure

The study's data were collected from voluntary, white-collar employees from a manufacturing environment and were approved by the university's Institutional Review Board (IRB) prior to data collection. The participants were provided with detailed information regarding the study, the voluntary nature of their involvement, their right to withdraw from the study at any time without penalty, and that their responses would be confidential. Informed written consent was obtained from every participant prior to their completion of the surveys. In addition to administering the survey instruments for clarity and to minimize bias and ensure the accurate completion of the surveys, the researcher also specifically instructed the participants that there were no right or wrong responses and that they should provide responses from their actual experience working on the job. The researcher communicated an estimated time to complete the surveys (~25–30 minutes) prior to participation so that the participant could be informed prior to completing the surveys. The researcher assured representatives of the organizations that no individual or organization-specific information would be disclosed or reveal the identity of any individual in any reports published as a result of this study.

Statistical Analysis

Prior to conducting inferential analyses, the normality of the distribution of scores for all study variables was assessed using the Shapiro–Wilk test. Results indicated significant departures from normality across variables, warranting the use of non-parametric statistical procedures for all subsequent analyses (Field, 2018).

To examine the associative hypotheses (H1–H3), Spearman's rank-order correlation (rs) was employed, as it provides a robust measure of monotonic association between ordinal or non-normally distributed variables (Siegel & Castellan, 1988). To investigate group differences, the Mann–Whitney U test was used to compare male and female employees on dimensions of organizational role stress (H4), given its suitability for independent-samples comparisons with non-normal distributions. The Kruskal–Wallis H test was applied to examine differences across companies in role efficacy and organizational role stress (H5), as it is the non-parametric equivalent of a one-way analysis of variance. For all analyses, the significance level was set a priori at $p < .05$ (two-tailed).

Results

Table 1. Demographic Characteristics of the Sample

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Company	Company A	48	27.9	27.9	27.9
	Company B	32	18.6	18.6	46.5
	Company C	88	51.2	51.2	97.7
	Others	4	2.3	2.3	100.0
Age	22	8	4.7	4.7	4.7
	23	20	11.6	11.6	16.3
	24	48	27.9	27.9	44.2
	25	40	23.3	23.3	67.4
	26	24	14.0	14.0	81.4
	27	32	18.6	18.6	100.0
Gender	Male	108	62.8	62.8	62.8
	Female	64	37.2	37.2	100.0
Management Level	Junior	164	95.3	95.3	95.3
	Middle	8	4.7	4.7	100.0

Mann-Whitney Test

	Gender	N	Mean Rank	Sum Of Ranks	Mann-Whitney U	Asymp. Sig. (2-Tailed)
RES	Male	108	81.17	8766.00	2880	0.67
	Female	64	95.50	6112.00		
UWE	Male	108	91.31	9862.00	2936	0.99
	Female	64	78.38	5016.00		
O1	Male	108	85.69	9254.00	3368	.778
	Female	64	87.88	5624.00		
O2	Male	108	83.39	9006.00	3120	.284
	Female	64	91.75	5872.00		
O3	Male	108	90.80	9806.00	2992	.133
	Female	64	79.25	5072.00		
O4	Male	108	82.72	8934.00	3048	.193
	Female	64	92.88	5944.00		
O5	Male	108	90.94	9822.00	2976	.124
	Female	64	79.00	5056.00		
O6	Male	108	87.24	9422.00	3376	.799
	Female	64	85.25	5456.00		
O7	Male	108	79.54	8590.00	2704	.016
	Female	64	98.25	6288.00		
O8	Male	108	85.61	9246.00	3360	.760
	Female	64	88.00	5632.00		
O9	Male	108	80.57	8702.00	2816	.039
	Female	64	96.50	6176.00		
O10	Male	108	93.31	10078.00	2720	.019
	Female	64	75.00	4800.00		

Correlation Matrix

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	RES	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10	U1	U2	U3
R2	-.04	1																						
R3	.24**	.51**	1																					
R4	.01	.45**	.14	1																				
R5	.13	-.06	.27**	.36**	1																			
R6	.20**	-.09	-.19**	-.09	.11	1																		
R7	.23**	-.20**	.19*	-.48**	-.11	-.09	1																	
R8	.16*	.15*	.45**	-.24**	.08	-.09	.55**	1																
R9	.39**	.05	.43**	.35**	.52**	.10	.03	.40**	1															
R10	0.11	.10	-.01	.33**	.27**	.16*	.03	.07	.36**	1														
RES	.51**	.29**	.63**	.22**	.54**	.23**	.39**	.58**	.72**	.40**	1													
O1	-.10	.29**	.01	-.09	-.57**	-.08	-.18*	-.17*	-13**	-.23**	-.317**	1												
O2	-.04	-.07	-.06	-.37**	-.43**	-.15	.05	-.26**	-.47**	-.17*	-.37**	.55	1											
O3	-.15*	.07	-.09	-.34**	-.68**	-.07	-.01	-.23**	-.39**	-.21**	-.44**	.70*	.66	1										
O4	.13	-.29**	.03	-.30**	-.17*	-.18*	.07	.12	-.15*	-.09	-.11	.14	.39**	.18	1									
O5	.09	-.06	-.09	-.36**	-.58**	.08	.26**	.02	-.25**	-.29**	-.23**	.35	.21	.55	.20**	1								
O6	-.06	-.09	-.01	-.52**	-.59**	-.04	.22**	.13	-.28**	-.14	-.22**	.45	.39	.60	.36**	.63**	1							
O7	-.17*	.09	-.09	-.18*	-.29**	.004	-.01	.18*	-.18*	-.15*	-.21**	.26*	.43	.42	-.05*	.17**	.21	1						
O8	-.36**	-.05	-.32**	-.16*	-.53**	-.08	-.38**	-.56**	-.68**	-.16*	-.70**	.40**	.63	.62**	.25*	.27**	.35	.30**	1					
O9	-.22**	.39**	.10	-.03	-.26**	-.06	-.14	-.12	-.27**	-.02	-.19*	.57**	.54**	.66	-.04	.29**	.24	.46	.43	1				
O10	.05	.03	-.005	-.36**	-.47**	.05	.14	0.1	-.16*	-.23**	-.18*	0.5	.27	.68	.09**	.57**	.56	.31	.26	.47*	1			
U1	.19**	.06	.27**	-.20**	-.09	.26**	.22**	.25**	.20**	-.07	.30**	-.18**	-.27	.16**	-.06**	.19	.27**	-.20**	-.14	-.18	.45	1		
U2	.17*	.30**	.25**	.01	-.10	.33**	.03	.27**	.13	-.06	.26**	-.07*	-.35**	-.04**	-0.23	.12	.05**	.08	-.23	-.13	.37	.63*	1	
U3	.31**	.03	.26**	-.19*	-.02	.35**	.12	.28**	.30**	.03	.34**	-.29**	-.26	.006**	-.06*	.10	.18**	-.09	-.19	-.2	.36	.83**	0.73	1
UWS	.24**	.16*	.30**	-.10	-.03	.36**	.11	.28**	.28**	.00	.36**	-.22**	-.34*	.02**	-.13	.09	.16**	-0.1	-.23	-.18	.39	.89**	.84*	.9**

Note. R1–R10 denote the dimensions of the Role Efficacy Scale (RES): R1 = Centrality, R2 = Confrontation, R3 = Creativity, R4 = Growth, R5 = Helping Relationship, R6 = Influence, R7 = Integration, R8 = Inter-Role Linkage, R9 = Proactivity, and R10 = Superordination. O1–O10 denote the dimensions of Organizational Role Stress (ORS): O1 = Inter-Role Distance, O2 = Role Stagnation, O3 = Role Expectation Conflict, O4 = Role Erosion, O5 = Role Overload, O6 = Role Isolation, O7 = Personal Inadequacy, O8 = Self-Role Distance, O9 = Role Ambiguity, and O10 = Resource Inadequacy. U1–U3 denote the dimensions of the Utrecht Work Engagement Scale (UWES): U1 = Absorption, U2 = Dedication, and U3 = Vigor.

Discussion

Summary of Findings

The present study examined the interrelationships among role efficacy, organizational role stress, and work engagement in a sample of 172 white-collar employees from the manufacturing sector. These findings are particularly relevant for Gen Z employees, who are at an early stage of their careers and may experience heightened sensitivity to role-related stressors and clarity. The observed role of efficacy as a protective psychological resource may therefore be especially critical for sustaining engagement among this cohort. Using Spearman's rank-order correlation, Mann-Whitney U test, and Kruskal-Wallis H test, the findings yielded partial to full support for all five hypotheses. Role efficacy was found to be positively and significantly associated with work engagement (r_s = .365, $p < .001$), confirming H1. Organizational role stress dimensions demonstrated pervasive negative associations with work engagement, supporting H2. A consistent pattern of significant negative correlations between role efficacy and the majority of organizational role stress dimensions confirmed H3. Statistically significant gender differences emerged on three specific stress dimensions -- personal inadequacy, role ambiguity, and resource inadequacy -- providing partial support for H4. Finally, significant cross-company differences were observed in both role efficacy (chi-squared = 47.982, $p < .001$) and the majority of organizational role stress dimensions, supporting H5.

Role Efficacy and Work Engagement

The significant positive relationship between role efficacy and overall work engagement (r_s = .365, $p < .001$) aligns with both theoretical as well as empirical evidence which indicate that a person's subjective evaluation of his/her effectiveness in their work role is an important source of motivation. A worker who believes their work role is meaningful; critical to the success of their organisation; and something over which they have some degree of control; will be more likely to exert cognitive, emotional, and behavioural effort toward their work, which are foundational elements of work engagement as defined by Schaufeli et al.'s (2002) work. Across each of the three dimensions of engagement; vigour (r_s = .301, $p < .001$); dedication (r_s = .261, $p = .001$); and absorption (r_s = .341,

$p < .001$), the connection between role efficacy and engagement is clear and suggests that an individual experiences his/her role in terms of energy at work and their sense of having impact and being fully immersed in the work they do. The resource-based view (Hobfoll, 1989) also allows one to interpret the data as evidence that role efficacy acts as a personal resource that can facilitate motivational processes. Therefore, employees with high levels of role efficacy are likely to perceive the demands of their work as manageable and that there is a match between the demands of their jobs and their individual skill sets -- both of which are conditions that lead to proactive engagement, rather than passive compliance. The findings are also consistent with the findings of the JD-R literature, which show that other personal resources such as self-efficacy and optimism, can predict work engagement beyond the influence of job characteristics.

Organizational Role Stress and Work Engagement

The study confirmed the hypothesis 2 (H2) in that the organizational role stress dimensions were consistently negatively related to work engagement, supporting H2 with strong evidence. The self-role distance dimension had the greatest negative correlation ($rs = -.230$, $p = .002$), followed by inter-role distance ($rs = -.225$, $p = .003$) and role stagnation ($rs = -.345$, $p < .001$). The dedication subscale was particularly sensitive to organizational role stress, as it demonstrated a large negative association with role stagnation ($rs = -.354$, $p < .001$); therefore, employees who perceive their role as not providing growth and/or change opportunities are more likely to lose the significance and enthusiasm that define dedicated engagement.

These results support the Conservation of Resources Model (Hobfoll, 1989), which asserts that when an employee perceives an erosion of valued resources (e.g., role clarity, career progression, and sense of belonging), the employee experiences a strain and is less likely to engage in their work, due to the depletion of psychological energy. In accordance with the JD-R framework (Bakker & Demerouti, 2007), organizational role stressors are job demands; thus, if the stressor is present at acute and/or chronic levels, they erode the degree to which the employee can continue to have absorbed, vigorous, and dedicated engagement in their work. Therefore, the results replicate the existing relationship between organizational role stress and work engagement in the broader engagement literature (i.e., Maslach et al., 2001; Schaufeli & Taris, 2014) while establishing a base in an Indian manufacturing context.

Protective Function of Role Efficacy

Perhaps the most theoretically significant finding of this study is the systematic negative relationship between role efficacy and organizational role stress. Across the majority of ORS dimensions, higher role efficacy was associated with lower stress. The strongest associations were observed with self-role distance ($rs = -.709$, $p < .001$), role expectation conflict ($rs = -.445$, $p < .001$), role stagnation ($rs = -.372$, $p < .001$), and role overload ($rs = -.228$, $p = .003$). Concurrently, role efficacy maintained a positive and significant association with work engagement ($rs = .365$, $p < .001$). This dual pattern -- role efficacy negatively associated with stress and positively associated with engagement -- provides meaningful indirect evidence for a protective psychological mechanism. It is essential to carefully interpret this finding. The current investigation utilized a cross-sectional correlational design and did not evaluate moderation or mediation directly; hence, any claims of causation or buffering would go beyond what the data can support. However, the converging pattern is congruent with Hobfoll's (1989) proposition that personal resources lessen the deleterious psychological effects of resource-depleting demands. In general, those employees who identify themselves as being effective in their roles are likely to view stressors in a more manageable way, feel as though they have a degree of control over the challenges they may face in their roles and thus experience reduced levels of subjective distress - which ultimately helps conserve the psychological fuel available for them to engage with their job. Future research that uses a longitudinal or experimental methodology will provide a platform for formally evaluating whether role efficacy will function as a moderator, or mediator in the relationship between role efficacy and engagement with work.

Gender and Organizational Differences

Regarding the gender differences in organizational role stress (H4), the Mann-Whitney U test identified significant differences on three dimensions: personal inadequacy ($U=2704$, $z=-2.408$, $p=.016$); role ambiguity ($U=2816$, $z=-2.060$, $p=.039$); and resource inadequacy ($U=2720$, $z=-2.353$, $p=.019$). Female respondents had significantly higher mean ranks than males on both personal

inadequacy and role ambiguity, while male respondents scored higher than females on resource inadequacy. Structural inequities in role definition, limited access to mentoring, and unclear expectations in the organization may account for the higher levels of personal inadequacy and role ambiguity experienced by female employees (Fried et al., 1998). In contrast, the male respondents' greater resource inadequacy can likely be attributed to the common understanding of performance-based role expectations within the largely male manufacturing industry. Overall, the difference in the remaining seven role stress dimensions indicates that the gendered experience of role stress is selective rather than generalizable.

The Kruskal-Wallis H test provided evidence of significant differences across companies with regard to role efficacy (chi-squared = 47.982, df = 3, $p < .001$) as well as for the majority of ORS dimensions, indicating strong support for H5. Employees of Apollo reported the highest role efficacy mean rank (mean rank = 130.00), in comparison to JSM (83.59) and Airnow (57.50). With respect to organizational role stress, Airnow employees consistently experienced greater role stress across the various dimensions of inter-role distance, role stagnation, and role expectation conflict. Collectively, these disparities across companies support the argument that the organization (culture, leadership, work systems, and role structures) significantly impacts how perceived role efficacy and role stress shape. In other words, these constructs of efficacy and stress do not reflect static attributes of the individual, but instead are dynamic elements that react and adapt to the conditions within the organizations in which employees work, suggesting that this finding has very important implications.

Theoretical Implications

This study's findings make important theoretical contributions to multiple frameworks that intersect with one another. First of all, the findings provide empirical evidence to support role theory (Katz & Kahn, 1978) that supports the idea that one's perception of the quality of their experience in a role has both direct as well as measurable impacts on their psychological engagement (how engaged one feels at work). It is shown that role-based constructs have a direct relationship with motivational outcomes rather than just being descriptive (i.e., they are not just descriptive attributes but are also significant contributors to motivational outcomes). Therefore, these findings indicate the importance of understanding the role dynamic conceptually as a primary theoretical contributor to the field of organizational psychology. Secondly, the role efficacy findings of the study further support resource-based theories, especially Hobfoll's (1989) Conservation of Resources theory.

For instance, the nature of the co-occurrence of high role efficacy, low role stress, and high engagement provide evidence to support the theorized relationship that personal resources serve to buffer against resource loss and maintain functioning and well-being. This study contributes to the literature by identifying role efficacy as a domain-specific, role-based resource, thus adding to the theoretical perspective of personal resources and other previously studied constructs such as general self-efficacy and psychological capital. Third, this study advances theoretical integration between the organizational stress literature and the work engagement literature, two bodies of scholarship that have historically developed somewhat independently. By simultaneously examining role stress, role efficacy, and engagement within a single framework, the study demonstrates that stress and engagement are not simply opposite poles of a continuum but are mediated by psychological resources. This integrative approach responds to calls in the literature for more unified models of employee well-being (Schaufeli & Taris, 2014) and establishes a foundation upon which formally tested mediation or moderation models can be built.

Practical Implications

These findings have great relevance for organizational practice, and especially for practitioners dealing with Human Resources, Organizational Development, and Leadership Teams within organizations with high demands and pressures. Programs designed to improve employee role efficacy through appropriate training are a way to achieve this outcome. There is a positive relationship between role efficacy and engagement; there is a negative relationship between role efficacy and role stress. Therefore, organizations should develop structured programs that will provide employees with a heightened sense of perceived efficacy in their respective roles, thereby improving all employees' feelings of job-related confidence and motivation. Examples of such training can consist of role development workshops, competency mapping, and assigning employees to projects that will help develop confidence through true role development versus short-term

motivation. Organizations should conduct role clarification activities to ensure all employees have clear expectations for their roles.

Both the strong correlation between role ambiguity and engagement, as well as the differences in the data between men and women as they pertain to role ambiguity, indicate that many employees (especially women) work under conditions of inadequate role clarity. To that end, the organization should perform systematic role clarification activities and ensure that job descriptions are accurate and up-to-date, and there should be periodic discussions between supervisors and their employees to ensure that everyone has a common understanding of what is expected of them in their jobs. Defining clear role boundaries will reduce ambiguity-induced stress and create an environment conducive to creating both engagement and efficacy. Conducting stress audits at the organizational level is essential because of the considerable variation across different companies in terms of role stress, suggesting that the organizational context is a key factor affecting employee stress. Organizations that share similar characteristics to the Airnow organization in this study (i.e., those that consistently rated high on stress rankings) should perform structured organizational stress audits using valid tools, such as the ORS scale, to determine which stressor dimensions are most commonly experienced. This will lead to interventions that are targeted rather than generic. Leadership coaching and awareness among managers are critical to the creation/destruction of environmental conditions that contribute to or alleviate role stress. Leadership development programs should include learning modules related to identifying and eliminating role stressors, clarifying role expectations, providing developmental feedback, and creating a work environment where employees feel able and supported. Special attention should be given to the role stressors, self-role distance and role stagnation, that had the strongest correlations with lower levels of engagement in this study. There are a number of limitations associated with this study that need to be called out for the sake of scientific integrity and to aid in the proper interpretation of the results of this study.

Limitations

The most significant limitation is the cross-sectional design of the study, which prevents conclusions about the causal relationships and the directionality of the relationships between the variables. Although the patterns observed are theoretically coherent, it is equally plausible that lower engagement contributes to heightened stress perceptions, or that both are influenced by unmeasured third variables. Longitudinal data would be necessary to disentangle these possibilities. The research also used purposive sampling, which is not random. It involved getting participants from a small number of manufacturing companies located within a set (geographic) area and within a specified industry. This reduces the extensibility of the findings to other employee populations across different industrial or cultural sectors or organisational types. Each of the three constructs was measured using self-reports; responses to self-report measures will have inherent biases (including social desirability, acquiescence and common method variance). The use of a single data collection point and a single informant per observation also lends to this problem; future research should try to incorporate supervisor ratings or behavioural measures of engagement along with self-report measures. The study did not investigate moderation or mediation, so although role efficacy is associated with both stress and engagement, the potential for either buffering or indirect effects is speculative until statistically tested. Thus, the protective nature of role efficacy with regard to engagement is theoretically inferred only, not confirmed through empirical evidence. The low level of reliability of the Role Efficacy Scale ($\alpha = .68$) poses a psychometric limitation. This is acceptable for exploratory research, and may decrease the size of observed correlations, therefore, future studies should continue to use instruments with stronger psychometric properties to confirm these findings.

Future Research Directions

The results from this study lend themselves to numerous valid directions for future research to pursue. The most urgent next step is conducting longitudinal studies to assess at which points over time role efficacy and role stress directly influence and predict levels of work engagement. Conducting longitudinal studies designed to show time-lagged effects will improve our ability to demonstrate causality and to establish whether improvements in role efficacy are associated with decreases in role stress or increases in work engagement. Formal mediation and moderation analyses will be the logical next step in terms of study methodology. Future studies can explore whether role efficacy serves to mediate the relationship between role stress and work engagement, or, conversely, as this

study suggests in its ecological protection framing, whether role efficacy serves to moderate the relationship between role stress and work engagement. No empirical study to date has specifically investigated the mediation and moderation relationships that this study implies for role efficacy.

Applied research studies focused on interventions will have particularly high value to practitioners. For example, quasi-experimental or randomized-controlled intervention studies on the effectiveness of a variety of role efficacy enhancement programs in relation to stress reduction and work engagement will provide practitioners and organizations with actionable, evidence-based information to assist with decision making. Multi-sectoral research methodology will increase the external validity of the findings resulting from this study. Conducting this research in service, information technology, health care, and public sectors will clarify the extent to which the findings in this study can be generalized to those sectors or whether the findings are restricted to manufacturing environments. Prior research has yet to explore the potential impact of demographic and cultural moderators (such as organization tenure, job position and cultural orientations such as collectivism) on the experience and expression of role efficacy and role stress across various employee groups.

Conclusion

The purpose of this research was to determine whether role efficacy serves as a protective factor for sustaining work engagement in response to job stress experienced by white-collar manufacturing employees within organizational contexts where employees have experienced some degree of role-based stress. The findings are particularly meaningful in the context of Gen Z employees, highlighting the need for organisations to develop role clarity and efficacy-building interventions tailored to this emerging workforce. Across all three relative (positive) correlations (Vigor, dedication, and absorption), the findings unanimously support the view that role efficacy can be considered an important psychological resource. Role efficacy was also observed to have systematic negative correlations with the vast majority of the dimensions of organizational role-based stress. Additionally, the results of this investigation indicate that organizational context is a key variable in understanding both role efficacy and organizational role-related stress. This study found significant differences in role experiences across participating companies and illustrates the importance of the external context of employment, e.g., the organization or company through which employees work, in helping employees shape their experiences of both role efficacy and organizational role-based stress. The results of this research would suggest that employees who have a greater perception of their role efficacy within an organization will have less role stress and exhibit higher levels of (sustained) work engagement. As a result, interventions aimed at building employees' role efficacy would represent an effective psychological intervention for sustaining work engagement in high-stress workplace environments. Given the ongoing increase in performance pressures, role complexity, and diversity within today's workforce, organizations should consider the value of investing into the psychological resources of their employees through job design and training as a method of enhancing the quality and level of employee role performance as well.

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