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Asia Pacific Management Review

journal homepage: www.elsevier.com/locate/apmr

Comparing effects of toxic leadership and team social support on job insecurity, role ambiguity, work engagement, and job performance: A multilevel mediational perspective

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ARTICLE INFO

Article history:

Received 21 November 2022

Received in revised form

16 July 2023

Accepted 5 September 2023

Available online 28 September 2023

Keywords:

Toxic leadership

Team social support

Job insecurity

Role ambiguity

Work engagement

Job performance

Multilevel perspective

ABSTRACT

While job demands have been known to reduce work engagement and job performance, the literature has not investigated uncertainty-based job demands such as job insecurity and role ambiguity. Acknowledging that leadership and team members are critical for reducing an employee's job demands and increasing an employee's job performance, the current study, drawing on social information processing theory, probes the roles of toxic leadership and team social support in shaping employee job demands (i.e., job insecurity & role ambiguity) and, subsequently, work engagement and job performance. A sample of 265 employees (50.9% males) in 48 teams from various private organizations in Malaysia participated in the study. The results showed that toxic leadership was positively related to job demands and negatively related to job performance, while team social support was negatively related to job demands and positively related to work engagement. Furthermore, work engagement mediated the relationship between job demands and job performance. Role ambiguity only mediated the relationship between toxic leadership and work engagement, while job insecurity only mediated the relationship between team social support and work engagement. The current study highlights the distinctive roles of toxic leadership and team social support in the relationships with employee job demands, work engagement, and job performance.

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1. Introduction

Given the human tendency to seek predictability and stability, uncertainty is one of the most inherently stressful features of life. Uncertainty in relation to working life is becoming more apparent (Lee, C. et al., 2018). The changing nature of work in Industry 4.0 and looking ahead to Industry 5.0 is characterized by the introduction of new technologies, such as artificial intelligence, machine learning, automation of jobs, and contract work (Shoss, 2017); in this transition, rapid industrial revolution and organizational restructuring have also called into question employees' views about

the stability of their work. As global competition becomes more intensified, organizations are seen to be cutting costs and becoming more flexible in their work processes (Sverke & Hellgren, 2002). Further, the COVID-19 pandemic has seen the rise of alternative forms of employment arrangements, such as contract-based employment, together with ongoing changes in how, when, and where work is done. These developments highlight the importance of studying uncertainty-based demands in order to mitigate their effects. Indeed, when employees cannot predict outcomes in any given situation, they cannot prepare well for future events (Van den Bos & Lind, 2002) which often results in employees going into a self-protective mode and displaying avoidance behaviors to conserve energy and resources for future events (Grupe & Nitschke, 2013).

In this research, we are interested in two types of job demands characterized by uncertainty – job insecurity and role ambiguity – and their influence on work engagement and job performance.

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Peer review under responsibility of College of Management, National Cheng Kung University.

According to the health-erosion pathway of the job demands–resources (JD-R) model (Bakker & Demerouti, 2007), job demands require physical, psychological, social, or organizational effort, which creates physiological and psychological strain (Demerouti & Cropanzano, 2010). Ongoing exposure to job demands depletes energy reserves in this way, resulting in burnout and a variety of adverse effects. Findings from the meta-analysis by Gilboa et al. (2008) support the destructive effects of job demands on a number of outcomes, such as decreased motivation, work performance, and engagement, as well as a higher likelihood of burnout.

Acknowledging the important role of the co-workers as well as the leaders at a workplace (Yahya et al., 2022), we examine how these social factors shape uncertainty-related demands. That is, we look at the origins of job insecurity and role ambiguity in the team setting; specifically, in toxic leadership and team social support. To make sense of this influence process, we draw on the social information processing (SIP) theory (Salancik & Pfeffer, 1978). Using SIP theory, we propose that leaders and co-workers provide a working environment that defines and shapes employees' social information processing through job demands which, in turn, relate to work engagement and job performance (see also Sekhar et al., 2018). Toxic leadership tends to undermine employees' job performance by creating an atmosphere where the sharing of ideas through two-way conversation is limited. Employees' experience barriers to staying focused and are less able to understand their roles, which also contributes to a sense of uncertainty about their jobs (Sim et al., 2021), ultimately preventing them from displaying their full competency at work. In terms of the co-worker perspective, we look at team social support which serves as a social resource that translates into higher-quality relationships and connections (Jolly et al., 2021) which reduce employees' perceptions of job insecurity and role ambiguity.

We investigate these issues in the Malaysian context. Like other Asian countries, Malaysia is characterized by close-knit relationships between employees, highlighting team social support an important shaper of social information processing. As hierarchical and patriarchal cultures are practiced in Malaysia, with individuals tending to hold in great respect those of higher authority, age, and position, those in higher positions often hold a degree of influence or control over those in lower positions, even in times when bad, unethical, and unlawful decisions are made (Lee & Idris, 2017a, 2017b). When applied to the work environment, this means that employees are likely to feel the need to obey their leaders to retain their jobs and maintain a good relationship with their organization. In contrast, team social support often appears in the form of informal and formal work relationships within the Asian context, providing extensive support in times of uncertainty that greatly helps employees to reduce their job demands (Georgiadou & Syed, 2021).

The current study makes several contributes to the literature. First, we explore the origins of uncertainty-based job demands, investigating two social factors (i.e., toxic leadership and team social support) as critical mechanisms related to uncertainty-based job demands (i.e., job insecurity and role ambiguity), work engagement, and job performance. Understanding these relationships will enable organizations to better manage their human capital in the future of work, optimizing their leaders and team member support to reduce uncertainty. Second, our study will utilize a multilevel design in which toxic leadership and team social support are viewed as team-level constructs, while job demands, work engagement, and job performance are viewed as individual-level constructs. This approach acknowledges the importance of environmental factors and their impact on employee work-related attitudes and behaviors (Hafeez et al., 2019) and the need to study

them in a multilevel way. This allows organizations to manage employee uncertainty-based job demands from a more collective perspective. Finally, taking a top-down, team-level view on toxic leadership and team social support aligns with the collectivist culture within the Asian setting (Minkov & Hofstede, 2012). Our interest lies in the effects of toxic leadership and team social support on organizational outcomes at the team level, as leadership and team social support influence on a collective basis rather than at the individual level (Hauge et al., 2011). The findings will allow organizations to find appropriate measures in reducing employee uncertainty-based job demands through proper leadership and team management. The proposed model is shown in Fig. 1.

2. Theoretical background

2.1. Social information processing theory

The focus of SIP theory is on individuals' perceptions of the social world, which are formed by interacting with other individuals in the social environment (Salancik & Pfeffer, 1978; Grant et al., 2010). A core assumption of the theory is that, rather than being objectively determined, workplace conditions and characteristics are constructed through both individual and social processes, and that social processes are actually more consequential. In this view, the immediate social environment is an important source of information about how to construct and interpret workplace events and conditions, and about what attitudes, needs, and behaviours are relevant and appropriate at work. Through social information processing, group-level factors (such as leadership style and social support, of interest here) are thus likely to determine the experience of job demands (including uncertainty-based demands, job insecurity and role ambiguity) over and above of the objective reality, and shape job attitudes and behaviours (such as work engagement and performance).

3. Hypotheses development

3.1. Uncertainty-based job demands

In this research, we focus on two types of uncertainty-based demands: job insecurity, that is, “the subjectively perceived likelihood of involuntary job loss” (Niesen et al., 2018, p. 176) and role ambiguity, that is, “the lack of clarity in understanding the actions to be taken to achieve proposed individual goals” (Albort-Morant et al., 2020, p. 3). Both of these demands involve ambiguity about central aspects of the experience of work: ambiguity about the future of the employee's position and about effective ways of operating in that role.

Job insecurity has been portrayed as an important uncertainty-based job demand that has detrimental effects on employees' work-related functioning. Feelings such as powerlessness or lack of control are evoked by the job insecurity experienced by employees which then results in impaired work. For instance, the feeling of being trapped by a lack of control over their work and organization changes, events such as restructuring, budgetary changes, and new leadership may lead to less trust towards their employer as they are worried about the changes and loss of their employment. In addition, few opportunities to find a better job may be also a lead where employees are afraid to speak up and suppressing negative emotions towards themselves (Asplund et al., 2022).

On the other hand, role ambiguity reduces employees' well-being and their ability to perform effectively as more energy is required and used to seek appropriate ways to accomplish their job (Inoue et al., 2018). We argue that job insecurity and role ambiguity interfere with employees' establishment of a consistent and strong

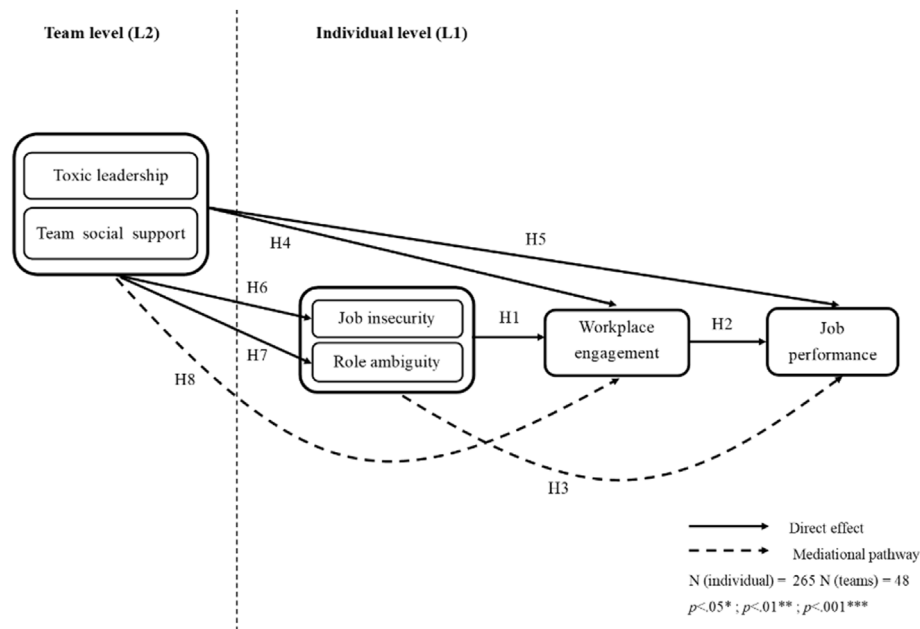


Fig. 1. Proposed model with hypotheses numbering.

profile of themselves at work. Therefore, they are not able to fully and effectively connect with their team or organization, resulting in a sense of detachment, and are less likely to channel their energy and focus at work to contribute to the organization. When an employee's perspective towards his/her work (i.e., his/her role at work) and the work environment (i.e., what is expected from employer) are aligned, the employee is likely to stay engaged. However, when this relationship is undermined, for instance through exposure to uncertainty-based demands, psychological distress sets in, manifesting in anxiety, social dysfunction, and depression, preventing employees from staying engaged with their work (Asplund et al., 2022; Kathryn et al., 2013).

Within the work engagement literature, work engagement refers to “vigour, dedication, and absorption characterise a positive, affective-motivational state of high energy combined with high levels of dedication and a strong focus on work.” (Schaufeli et al., 2002, p. 74). Engagement is likely to arise in a meaningful and psychologically safe work environment from which employees draw a sense of trust and security at work (Knight et al., 2017). In contrast, employees without a sense of security or certainty at work tend not to display high levels of work engagement (Lee & Idris, 2017a, 2017b).

Past literature on job insecurity has also demonstrated a negative relationship with work engagement (Vander Elst et al., 2010). For instance, employees experience a breach of their psychological contract due to the violation of their expectations of security in exchange for loyalty to their organization (Memon & Ghani, 2020). Role ambiguity has also shown its relationship to employees' lower work satisfaction and lower job performance, as unclear role expectations lead employees to have a reduced focus at work. When employees are unclear about the expected goals, they will put less effort into their jobs and will show behavior that is less than what is required for their job (Caillier, 2016). This is further supported by a study which found that role ambiguity was negatively associated with employees' willingness to display behavior that contributes to the organization's social and psychological well-being (Chu et al., 2006).

Hypothesis 1. Job insecurity (1a) and role ambiguity (1b) are

negatively related to work engagement.

Job performance is defined as “the behaviors employees engage in while at work. It refers to how well someone performs at his or her work” (Fogaça et al., 2018, p. 231). As mentioned previously, employees who are certain of their social stand and identify personally with their job can perform well at work (Ariani, 2013). On the other hand, when employees do not have a strong sense of their social stand in their workplace, due to the uncertainties they are facing, they are not able to provide their best, resulting in work behavior that is passive, robotic, and detached (Rich et al., 2010). Hence, when employees have greater certainty about their work, they can channel energy into their work, displaying high resilience and immersion (Bakker & Bal, 2010; Schaufeli & Bakker, 2004). When employees can direct all their effort and energy into their work, this enables them to perform their work well with fewer work errors reported (Prins et al., 2009).

Hypothesis 2. Work engagement is positively related to job performance.

Employees with lower job insecurity and less role ambiguity have better psychological and physical health (Cheng & Chan, 2008). In other words, when employees do not face job insecurity and role ambiguity, they are more able to fully engage in their work (Maden-Eyiusta, 2019). Work engagement characteristics associated with high energy, resilience, dedication, and joy experienced at work (Schaufeli & Bakker, 2004) can be seen as a motivational process that leads to higher job performance (Van Wingerden & Van der Stoep, 2018). On the other hand, job insecurity refers to individual experiencing insecurity of their job and role ambiguity where the lack of clarity of one's job responsibilities or expectation bring forth stress and anxiety for employees which makes them undergo fewer positive effects and experience greater anxiety, anger, and frustration which make them unable to be fully engaged at work (Raub et al., 2021). Organizations can promote work engagement as strategy to mitigate the negative effects of job insecurity and role ambiguity on job performance. While providing clear expectation, opportunity for professional development, organizations can support employees' work engagement and

improve job performance. Thus, this study proposes the following hypothesis.

Hypothesis 3. Work engagement mediates the negative relationships between job insecurity (3a) and job performance, and between role ambiguity (3b) and job performance.

3.2. Drivers of uncertainty-based demands: leadership and team social support

Toxic leadership refers to leaders who “by their destructive behaviors and their dysfunctional personal qualities or characteristics, inflict serious and enduring harm on the individuals, teams, organizations, communities and even the nations that they lead” (Lipman-Blumen, 2005, p. 29). Team social support is defined as “an interpersonal transaction that involves emotional concerns, instrumental aid, information, or appraisal” (Carlson & Perrewé, 1999, p. 514) and is potentially the most important source of socialization (Gruman & Saks, 2020).

Within the leader–employee relationship, leaders have a significant influence on employees' job security and work roles. One manifestation is that toxic leaders use their authority in the organization to stimulate employees to turn against each other. When employees are led by a toxic leader, the leader's authoritarian, disparaging, and ridiculing behavior has a range of negative effects on employees, resulting in their lower autonomy in completing their core work. Studies have shown that dysfunctional leadership, such as toxic leadership, has a greater negative influence than functional leadership on work engagement, job satisfaction and, conversely, on burnout. Leaders with positive and supportive behavior motivate employees, making them more productive, engaged, and enthusiastic about their work (Serrano & Reichard, 2011). This denotes the vital role played by leadership in influencing employee work engagement (Lee, Lin, et al., 2023).

From SIP theory, employees working under toxic leadership may get the sense that they lack control over their circumstances because toxic leaders often control the dynamics of the work relationship. Research has shown that toxic leaders control their employees in an overpowering way (i.e., by extreme work monitoring, undermining of work contributions, deliberately withholding resources or information important for carrying out work tasks, and failure to give credit for work when credit is due) (Skogstad et al., 2007). Recent research has also shown that toxic leaders have an evident lack of concern for employees' welfare and a personality that negatively affects organizational culture; they also create a belief among employees that their superior's actions are driven primarily by selfish motives and self-interest (Smith & Fredricks-Lowman, 2020). Toxic leaders display workplace bullying behavior by engaging in a spectrum of top-down influences to maintain control by limiting employees' interaction and autonomy (Anjum & Ming, 2018). Employees who are facing attacks on their self-esteem by toxic leaders display low self-confidence and a reduced sense of self-efficacy, leading to deterioration in their job performance (Kusy & Holloway, 2009).

Conversely, social support helps employees to deal with workplace stressors, playing a role in building a robust social network with their co-workers, managers, friends, and employee assistance programs. Employees with a strong social support network at work are better able to deal with stressful situations. They are also more successful at stress management as their co-workers' support can create a better work dynamic, bonds between workers, and the flourishing of each other's resources (Foy et al., 2019; Ladegård, 2011; Smith et al., 2012).

Team social support is often considered to be a positive feature in the workplace as it increases work engagement and job

performance. It plays an important role in helping employees to achieve goals and cope with work overload and strain (Bakker & Demerouti, 2007). Given the support provided by co-workers, employees can replenish their resources drained by work demands, helping them to sustain an adequate resource pool to sustain work engagement (Yang et al., 2018). Furthermore, when employees receive support from their colleagues or leaders, they can strongly identify with the team and the organization, feeling compelled to reciprocate through functional work attitudes such as better work engagement and job performance.

Hypothesis 4. Toxic leadership is negatively related to work engagement (4a), while team social support is positively related to work engagement (4b).

Hypothesis 5. Toxic leadership is negatively related to job performance (5a), while team social support is positively related to work engagement (5b).

3.3. Toxic leadership, team social support, job insecurity, and role ambiguity

The current study proposes that leadership and team support both relate to employees' job insecurity and role ambiguity. In this context, we propose that toxic leadership is a stressor for employees, increasing their job demands. Toxic leadership has been associated with employees' role ambiguity (Wu et al., 2019). When employees have a clear job description, they know the full details of their position in the organization; hence, they are clear about their responsibilities and tasks at work. Dysfunctional leaders, such as toxic leaders, may, however, create difficult working conditions to ensure their control of employees. These conditions include situations where toxic leaders create work roles that are confusing and, at times, where toxic leaders create a threatening situation in which employees may feel insecure about their job prospects (Darvishmotevali & Ali, 2020).

Team social support plays an important role in enabling employees to work well in their jobs. As team members come together to complete a task, they play a part in influencing each other's job characteristics (Peiró et al., 2020). Social support given by team members is seen to effectively provide emotional support (i.e., empathy, care, love, and trust), appraisal (i.e., helping individuals to help themselves), and instrumental support (i.e., various sorts of practical help) to employees (Peeters & Le Blanc, 2001). When social support is given, it reduces the effects of negative stress by helping individuals to cope more adequately with job insecurity and role ambiguity. The reason is that team members can guide and lead their fellow employees to what needs to be done when confusion over tasks is present; in addition, employees do not feel alone when experiencing these situations.

Hypothesis 6. Toxic leadership is positively related to job insecurity (6a), while team social support is negatively related to job insecurity (6b).

Hypothesis 7. Toxic leadership is positively related to role ambiguity (7a), while team social support is negatively related to role ambiguity (7b).

Job Insecurity and Role Ambiguity Mediate Toxic Leadership, Team Social Support, and Work Engagement.

When toxic leaders remain in power in organizations and have authority over employees, communication on work-related matters is made impossible due to their dominant position in decision making. Toxic leaders intimidate employees with their authority, thus decreasing employees' growth and making work goals difficult to achieve, with the characteristics of toxic leaders translating as

job insecurity and role ambiguity for employees. This eventually diminishes employees' work engagement as their energy, resilience, and feelings of the significance of their work are depleted. On the other hand, team social support is perceived as a key influence in increasing work engagement (Schaufeli et al., 2008). Team social support is seen to alleviate work stress and increase employees' motivation. Hence, when employees feel supported at work, their sense of insecurity and ambiguity about their work is greatly reduced, as the social support they receive may redefine the potential harm posed by a predicament. At the same time, this strengthens their perceived ability to cope with imposed demands, preventing a specific situation from occurring while giving employees the trust and strength they need to stay engaged with their work (Lee, Lin, et al., 2023; Middleton & Nowell, 2018).

Hypothesis 8. Job insecurity and role ambiguity mediate the relationships of toxic leadership, team social support, and work engagement.

4. Method

4.1. Participants

We approached 48 private organizations in Malaysia to participate in the study. One team from each organization was chosen to take part in the study. In our study, teams were defined as having at least three members who come together in achieving a common goal. The final sample was comprised of 265 individuals nested in the 48 teams. The number of respondents per team ranged from three to 12 (mean $[M] = 5.5$, $SD = 1.95$). This study had sufficient power, according to the guidelines provided by Kreft and de Leeuw (1998), for multilevel modeling, which specify a minimum of 30 teams and three respondents per team.

Respondents had an average of 3.74 years of working experience (standard deviation $[SD] = 5.24$) with an average age of 29.59 years. Participation by female respondents (49.1%) and male respondents (50.9%) was almost evenly distributed. Chinese made up the majority of responders (63.7%), followed by Malay (27.1%) and Indian (4.2%). According to Yashaiya and Noh (2019), there is a strong concentration of non-Malays working in the private sector, which contrasts with their high percentage in the non-Malay community. The Department of Statistics Malaysia [DOSM], 2020, reports that Malaysia had 1.6 million civil servants, most of whom are Malays (78.8%), followed by Aborigines (11.2%), Chinese (5.2%), Indians (4.1%), and others (0.7%). The majority of respondents (73.7%) were single, married (24%), separated (1.9%), and widowed (0.4%).

4.2. Data collection procedure

Firstly, a list of publicly listed organizations in Malaysia was developed through purposive sampling, followed by snowball sampling based on recommendations by the initial set of organizations. Invitations to participate in this study were sent via email to private organizations in the Klang Valley, Malaysia. The current study set up a meeting with each participating organization with a liaison officer from its human resource (HR) department to provide a briefing on the data collection process. The liaison officers chose one team from their respective organizations that met the participation criteria: at least three full-time, white-collar employees with at least three months of service with the organization. Emails were sent to employees who expressed interest in taking part in the study, along with printed copies of the questionnaire. After being filled out, questionnaires were sealed and delivered to the liaison officer for each organization in the designated envelope. Employees who were not interested in participating were asked to return a

blank questionnaire in the envelope. To ensure privacy and anonymity, no identifiers were placed on the envelopes. As a token of appreciation, a voucher to the value of Malaysian ringgit (RM) 20 was sent to the contact address of each respondent who completed the questionnaire. Participation in the study was voluntary, with the confidentiality and anonymity of all information ensured.

4.3. Instruments

The 15-item Toxic Leadership Scale was employed to evaluate toxic leadership (Schmidt, 2008). The scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. One sample of the items was: "My supervisor drastically changes his/her demeanor when his/her superior is present".

The six-item Supervisor Support Scale (Abbey et al., 1985), which was instead focused on the team, was used to measure the social support of the team. The scale ranged from 1 = 'none' to 5 = 'a great deal'. The word 'supervisor' was replaced with the word 'co-workers'. An example of the items was: "My co-workers act in ways that show they appreciate what I do".

Job insecurity was measured using the four-item Job Insecurity Scale (De Witte, 2000), with the scale end-points ranging from 'strongly disagree' to 'strongly agree'. An example of the items was "I think I might lose my job in the near future".

The Copenhagen Psychosocial Questionnaire (COPSOQ) Role Ambiguity Scale (Nübling et al., 2006) was used to measure role ambiguity. The five-item scale end-points range from 'a very large extent' to 'a very small extent'. An example of the items was "Does your work have clear objectives?"

The nine-item Utrecht Work Engagement Scale (UWES-9) was used to measure employees' levels of work engagement (Schaufeli et al., 2006). The scale measures the employee's vigor, dedication, and absorption level. An example of the items was "At my work, I feel bursting with energy". The scale end-points range from 'never' to 'a few times a week'.

The World Health Organization's (WHO) Health and Work Performance Questionnaire (HPQ) was used to measure employee performance (Kessler et al., 2003). Responses on the three-item scale (i.e., how would you rate your overall performance on the days you worked in the past 7 days?) were rated from 'worst job performance' to 'performance of a top worker'.

4.4. Analysis strategy

For data analysis, hierarchical linear modelling (HLM) programme was used (Bryk & Raudenbush, 1992). We first argue that both toxic leadership and team social support are considered team-level construct in multilevel studies as toxic leadership style are categorized as abusive, manipulative towards employees which can impact the entire team performance and well-being. This behaviour is not only directed towards employee as an individual but to the whole team dynamics. In addition, team social support refers to provide other co-workers with emotional or instrumental support to cope with stressors. However, it's not only limited to individual receiving support from other but the whole support received, and relationship bonded within the team that influence employee work engagement and job performance.

Before conducting the analysis, assumption tests for toxic leadership and team social support, as multilevel variables, were carried out. Interrater agreement (i.e., $r[WG][JJ]$), intraclass correlation coefficients $ICC(1)$, one-way random effect analysis of variance (ANOVA) with $F_{(III)}$ values was tested. Where the $r[WG][JJ]$ depicted high interrater reliability (LeBreton & Senter, 2008), and ANOVA with $F_{(III)}$ values were also analyzed to meet the 'owning group-level properties' assumption and for aggregation as group-

level variables. The ICC(1) value for toxic leadership was .25 and for team social support was .23; thus, the ICC(1) values for toxic leadership and team social support were within the acceptable range of .15–.30, according to Mathieu et al. (2012). Lastly, the F(III) values were found to be significant: toxic leadership = 5.54, $p < .001$ and team social support = 2.84, $p < .001$. All assumption tests were fulfilled.

As previously mentioned, to test all hypotheses, HLM software was used. This comprised three types of analyses: lower-level (LL) direct effects, cross-level direct effects, and mediation effects. Mathieu and Taylor's (2007) recommendation on multilevel testing were used, the LL direct effects and cross-level direct effects were tested using. A cross-level direct effects analysis was then carried out for LL direct effects by regressing the LL outcome variable on LL independent variables.

Firstly, a cross-level direct effects analysis was conducted for Hypotheses H2, H3, and H4 to test the effects of toxic leadership and team social support on job insecurity, role ambiguity, work engagement, and job performance. Below is an example of a cross-level HLM equation:

Cross-level equation for HLM
Level 1 Model

$$\text{Job performance} = \beta_0 + r$$

Level 2 Model

$$\beta_0 = \gamma_{00} + \gamma_{01}(\text{Toxic leadership}) + (\text{Team social support})$$

Secondly, an LL direct effects analysis was carried out for H1 and H5. Below is an example of an LL HLM equation:

Lower-level (LL) equation for HLM

$$\text{Job performance} = \beta_0 + \beta_1(\text{work engagement}) + r$$

Lastly, mediation analysis was undertaken for H6 and H7 using Baron and Kenny's (1986) steps of mediation. The current study found a significant relationship between job insecurity (X) and work engagement (M), $X \rightarrow M$ (see Model 2). Subsequently, the study found a significant relationship between work engagement (M) and job performance (Y), $M \rightarrow Y$, in the presence of job insecurity (X) (see Model 3). Hence, if the $X \rightarrow Y$ relationship with the inclusion of M remains significant, a partially mediated path is predicted. If the addition of M produces an insignificant $X \rightarrow Y$ relationship, a fully mediated path is predicted. The Monte Carlo test (Selig & Preacher, 2008) was used to confirm the mediation pathway. In the current study, the mediation pathway was tested using estimates of path a ($X \rightarrow M$) and path b ($M \rightarrow Y$). Mediation effect is confirmed if the values of lower-level (LL) and upper-level (UL) direct effects do not contain zero (0) (Mackinnon, Lockwood, & Williams, 2004). The Monte Carlo test was conducted using a 95% confidence interval (CI) with 20,000 repetitions (cf. Lee & Idris, 2017a, 2017b).

Discriminant analysis was also conducted to ensure that the constructs were unrelated to one another. Using the Fornell-Larcker criterion (FL criterion) (Fornell & Larcker, 1981), all values were above the other correlated constructs and above 0.70 (Henseler et al., 2015). This fulfils the discriminant validity of the constructs in this study.

5. Results

Table 1 summarises the means, standard deviations, reliability, correlations, and validity for the study variables at Level 1. Fig. 2 illustrates the hierarchical linear modelling (HLM) analyses of LL outcomes and the cross-level effects of toxic leadership on LL outcomes.

In Hypothesis 1, job uncertainty and role ambiguity were shown to have a negative impact on job engagement. The hypothesis was supported as job insecurity was negatively related to work engagement ($\beta = -.35$, $p < .001$) and role ambiguity was also negatively related to work engagement ($\beta = -.19$, $p < .05$) (see Table 2, Model 2).

The second hypothesis asserted that job performance and workplace engagement are positively correlated. The result was significant and positive ($\beta = .27$, $p < .001$) (see Table 2, Model 1). Hence, Hypothesis 2 was supported.

Hypothesis 3 predicted that work engagement mediates the negative relationships between job insecurity and job performance and between role ambiguity and job performance. The Monte Carlo method's indirect parameter estimate revealed partial mediation between job insecurity (95% CI, UL = -.1254; LL = -.0132), role ambiguity (95% CI, UL = -.1015; LL = -.0146), and job performance through work engagement. Therefore, Hypothesis 3 was supported.

Hypothesis 4 predicted that toxic leadership negatively relates to work engagement, but this was not supported by the data ($\gamma = .10$, $p > .10$) (see Table 3, Model 5). However, a significant negative relationship was found between toxic leadership and job performance ($\gamma = -.33$, $p < .001$) (see Table 3, Model 4), consistent with Hypothesis 4. In contrast, our results showed that team social support had a positive significant relationship with work engagement ($\gamma = .25$, $p < .01$) (see Table 3, Model 5), in line with Hypothesis 5, but this was not significantly related to job performance ($\gamma = -.04$, $p > .10$) (see Table 3, Model 4), meaning that Hypothesis 4 and 5 were partially supported.

According to Hypothesis 6, team social support is negatively correlated with job insecurity, whereas toxic leadership is positively correlated with it. A positive and significant relationship was found between toxic leadership and job insecurity ($\gamma = .15$ with one-tailed significance) (see Table 3, Model 6). In addition, the relationship between team social support and job insecurity was negative and significant ($\gamma = -.21$, $p < .01$) (see Table 3, Model 6). Hence, Hypothesis 6 was supported.

According to Hypothesis 7, team social support is negatively correlated with role ambiguity, whereas toxic leadership is positively correlated with it. This study found the relationship between toxic leadership and role ambiguity was significant and positive ($\gamma = .29$, $p < .001$) (see Table 3, Model 7). The relationship between team social support and role ambiguity was significant and negative ($\gamma = -.10$ with one-tailed significance) (see Table 3, Model 7). Hence, Hypothesis 7 was supported.

According to Hypothesis 8, interactions between toxic leadership, team social support, and workplace engagement are mediated by job insecurity and role ambiguity. The significance of the indirect parameter estimate using the Monte Carlo method showed that no mediation occurred between toxic leadership and work engagement through job insecurity, whereas team social support and work engagement showed a partial mediation through job insecurity (95% CI, UL = .0202; LL = .1264). The same test was employed to test the mediation effects for role ambiguity which showed a partial mediation between toxic leadership and work engagement (95% CI, UL = -.0085, LL = -.1149), but no mediating effect was found for the relationship between team social support and work engagement.

Table 1

Means, Standard Deviations, Reliability, Pearson's Bivariate Correlations, Discriminant Validity Values (*in bold*), One-Way Random Effects ANOVA ($F_{(III)}$), and Intra-Class Correlation (ICC)(1).

Variables	Mean	SD	α	1	2	3	4	5	$F_{(III)}$	ICC(1)
Toxic leadership	2.57	.92	.79	.74					5.54***	.4644
Team social support	3.47	.87	.90	-.38**	.81				2.48***	.2259
Job insecurity	2.34	.82	.79	.37**	-.43**	.76			1.79**	.1225
Role ambiguity	2.13	.81	.73	.32**	-.23**	.43**	.73		1.86**	.1335
Work engagement	4.51	1.29	.93	-.10	.29**	-.26**	-.16*	.85	2.09***	.1752
Job performance	6.84	1.32	.83	-.37**	.23**	-.27**	-.22**	.26**	2.12***	.1726

Notes. SD = standard deviation; α = Cronbach's alpha; ICC = Intra-class correlation coefficient; $F_{(III)}$ = One-way random effects ANOVA; N (Individual) = 265; N (Team) = 48; *** p < .001, ** p < .01, * p < .05.

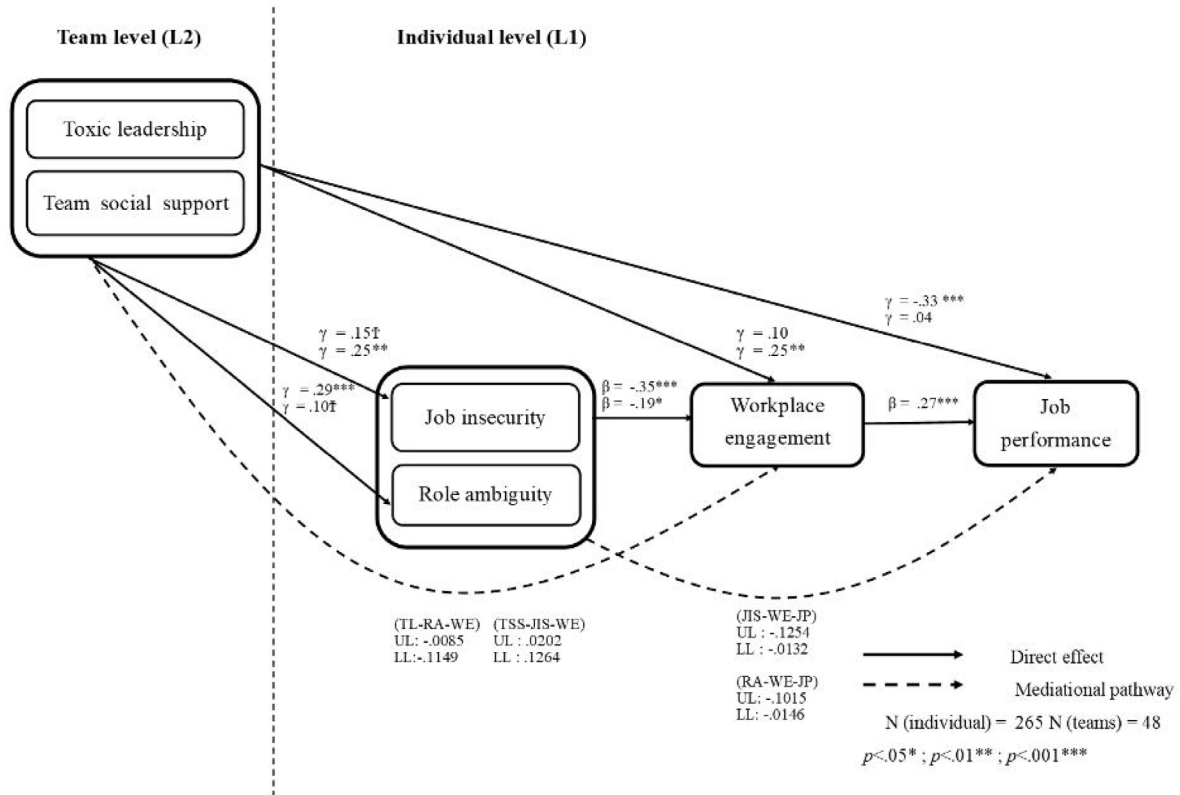


Fig. 2. Final model.

Table 2

Hierarchical linear modeling (HLM) analysis of lower-level outcomes.

Effect	Job performance	Work engagement	Job performance
Model	1	2	3
Lower-level effects			
Workplace engagement	.27(.08)***		.23(.07)***
Job insecurity		-.35(.07)***	-.22(.08)**
Role ambiguity		-.19(.08)*	-.13(.06)*

Notes: The first value is the unstandardized parameter estimate, and the value in parentheses is the standard error (SE). *** p < .001, ** p < .01, * p < .05.

6. Discussion

This study examined the effects of toxic leadership and team social support on two uncertainty-based job demands (i.e., job insecurity and role ambiguity) and, in turn, the implications for work engagement and job performance. These two social factors (i.e., toxic leadership and team social support) are related to uncertainty-based job demands differently where toxic leadership led to higher role ambiguity (but not job insecurity) while team

social support led to lower job insecurity (but not role ambiguity). We also found that toxic leadership eroded job performance and work engagement, while team social support supported job performance and work engagement.

6.1. Theoretical implications

The major finding of our study is that employees' relationships with both their leaders and their teams influence the extent of

Table 3

Hierarchical linear modeling (HLM) analyses of lower-level outcomes and cross-level effects of toxic leadership and team social support on lower-level outcomes.

Effect	Job performance	Work engagement	Job insecurity	Role ambiguity	Work engagement
Model	4	5	6	7	8
Lower-level effects					
Job insecurity					-.33(.07)***
Role ambiguity					-.19(.08)*
Cross-level effects					
Toxic leadership	-.33(.06)***	.10(.07)	.15(.08)†	.29(.07)***	.15(.07)*
Team social support	-.04(.06)	.25(.08)**	-.21(.07)**	-.10(.07)†	.23(.08)**

Notes: The first value is the unstandardized parameter estimate, and the value in parentheses is the standard error (SE). *** $p < .001$, ** $p < .01$, * $p < .05$, † one-tailed significance.

uncertainty-related demands that they experience. Applying SIP theory, these two types of relationships provide important social information that shapes the experience of uncertainty at work. Specifically, we found that toxic leadership contributes to higher levels of uncertainty, as reflected in greater role ambiguity and job insecurity. Team social support has the opposite effect, reducing the manifestation of uncertainty in the form of job insecurity and role ambiguity. Demands, then, are not only objectively determined; rather, they are shaped by the immediate social environment. Leadership and team social support do not just buffer against or exacerbate the deleterious effects of uncertainty but, instead, can be seen as important antecedents in influencing uncertainty-based job demands in the first place.

The social construction of core job characteristics – demands and resources – is not inherent in job characteristics models such as the JD-R model. While the role of subjective perceptions is acknowledged, our findings highlight the opportunity to explore more deeply the role of leadership and team in influencing how employees perceive their workplace social environment that subsequently affects their work engagement and job performance.

Toxic leadership relates to employee job insecurity through stressful and uncomfortable work environments which could also cause employees to display dissatisfaction towards their colleagues or leaders (van Schalkwyk et al., 2010). Toxic leaders often elicit feelings of violation, uncertainty, and reduced emotional stability among employees (Malik et al., 2019). These feelings are often associated with lower levels of work engagement and job satisfaction, and higher levels of job search intention and emotional exhaustion. Toxic leaders also attempt to create an environment that is confusing and ambiguous, so they retain control of the situation, in addition to protecting themselves from evaluation and criticism by others.

However, the social factor, team social support, acts as a key element to promote employee work engagement. Social support from co-workers allows the individual employee to cope with tense situations more easily and fosters an adequate level of self-regulation of thoughts and emotions at work (Jena et al., 2018). This phenomenon is consistent with the social information processing theory, social impact may serve as a lens through which people view their workplace as individuals comprehend and develop their necessities, principles, and perceptions through interaction with others. Individuals subsequently employ a process of rationalisation to comprehend their wants and perceptions based on this understanding (Bhave et al., 2010).

Hence, employees displaying a positive attitude and high motivation towards their work which leads to their active involvement in their work (Sekhar et al., 2018). However, when ambiguity at work specifically affects their role in the organization, employees are likely to feel less empowered as they experience decreased work satisfaction, having doubts about their work achievements and an inability to comprehend what is expected

from them. Thus, a negative relationship develops between role ambiguity and work engagement (Caillier, 2016).

Studies have also underlined the finding that role ambiguity is related to lower work engagement as it generates negative emotions which act as a barrier to employees gaining interesting goals, decreasing their motivation and engagement in work activities (Mañas et al., 2018). A significant relationship is shown between uncertainty-based job demands, work engagement, and job performance when team social support acts as an antecedent.

As shown in previous studies, employees who experience higher social support, such as team social support and their supervisor's support, will experience greater work engagement (Schaufeli & Bakker, 2004). When an employee receives insufficient social support, however, his/her motivation to work decreases, resulting in lower work engagement. Hence, in a team, the leader should not only be task-oriented (i.e., set specific goals and integrate team members' efforts) but also people-oriented (i.e., being considerate and caring) (Lee & Ding, 2022).

When social support is given to employees by their co-workers, their basic need for belongingness is fulfilled. Social support in workplace received like emotional support where empathy, care, and understanding to other co-workers helps employees to feel validated, cared and understood fulfils the need of belongingness (Suthatorn & Charoensukmongkol, 2022; Warszewska-Makuch et al., 2015).

In support of findings in previous studies, the current study's findings on job demands, work engagement, and job performance indicate that high job demands reduce work engagement and, subsequently, lower job performance. In the current study, we investigated uncertainty-based job demands in which job insecurity and role ambiguity represented uncertainty. One meta-analysis has depicted that sense of belongingness and high involvement in organizational activities are those who are engaged actively with their organization (Christian et al., 2011). This is often reflected in higher productivity, lower employee turnover, and a lower work absenteeism rate (Shuck et al., 2011), hence, better job performance. In terms of job insecurity (Karatepe et al., 2020), when employees feel uncertain about their job security and experience role ambiguity (Orgambidez & Almeida, 2020), this anxiousness would bother them, hence leading to lower work engagement and, subsequently, lower job performance.

In comparing the two uncertainty-based job demands (job insecurity and role ambiguity), team social support (compared to toxic leadership) has a significantly higher relationship with job insecurity, while toxic leadership (compared to team social support) has a stronger influence on role ambiguity than job uncertainty, with the reverse pattern for team social support. This indicates that toxic leaders are established as the decision-makers in their organizations being in control of employees' work, whereas team social support is seen to provide elements such as advice or direction in times of uncertainty.

Job insecurity and role ambiguity, as uncertainty-based job demands, are both key factors affecting employees' performance in an organization. They are found to impair work engagement through lack of resources and high demands (Taris & Schaufeli, 2015). These job demands also affect employees' loyalty and dedication when their efforts are not reciprocated, resulting in a lower level of work engagement (Parzefall & Hakanen, 2010). Hence, to achieve a favorable relationship between leader and employee, clarity of the employee's job role is important.

6.2. Strengths, limitations, and future studies

The purpose of this study was to investigate the relationship between toxic leadership and team social support, as well as their relationships with job demands, increased work engagement, and job performance. Employing a multilevel design, the study added an additional perspective to better understand the top-to-bottom influence of the higher-level constructs of leadership and team social support on the lower-level constructs of employees' work engagement and job performance. Furthermore, as employees rated their leaders as a team, the multilevel design made respondents' ratings more objective, resulting in a more precise reflection of work engagement and job performance in each participating organization (Lee & Idris, 2017a, 2017b). Nevertheless, the study has some limitations. Cross-sectional design is employed which limited the possibility of examining the causal directions between the predictors in our model – leadership and team social support – and uncertainty demands. To untangle the relationships between the study variable, a longitudinal approach would be useful, especially as reversed relationships may occur. A longitudinal design, by increasing temporal isolation, would also help to mitigate the potential for common method variance bias arising from respondents completing the survey at a single point in time (Lee et al., 2017). Several occupational health researchers have highlighted the importance of longitudinal designs as strong effects have been found for time lags of eight months to three years in work-related research (De Lange et al., 2004; Rospenda et al., 2006).

Finally, it would be beneficial for future research to consider the wider organizational context through an examination of organizational climate, extending beyond the current study's leadership and team social support as social factors. Organizational climate refers to an organization's shared perceptions of its policies, practices, and procedures (Reichers & Schneider, 1990): an employee's relationships with leaders and with his/her team are nested within this larger context. Psychosocial safety climate (PSC) – a sub-facet of organizational climate related to policy, practice, and the safeguard of employees' psychological health and safety (Lee & Idris, 2019) – could be a fruitful avenue to explore as a source of social information that shapes the experience of uncertainty at work.

7. Practical implications

High-level team social support within the organization's teams also significantly fosters work engagement, ensuring that employees are well engaged and able to demonstrate good job performance (Bakker & Demerouti, 2008; Schaufeli & Bakker, 2004). For instance, co-worker support, such as fair and positive perceptions of employees concerning aspects of their work, can have a dominant influence on employee behaviors at work (Kuvaas, 2008), hence providing them with positive energy, dedication, and absorption in their work. Besides employees' receiving support from their leader, co-workers are seen as a strong job resource in enhancing employees' work engagement: support from co-workers may help in balancing work strains. For example, when common ground is established between employees and their co-workers,

the emotional, physical, and instrumental support given would increase their personal development and aid in the achievement of their organization's goals. This is further articulated in Lazarus and Folkman's (1984) theory of stress: Social support shields people from the negative effects of stressful events and helps to prevent stress by making aggressive experiences seem less serious or by offering useful resources to cope when stress occurs. Hence, as toxic leadership acts as a hindrance stressor towards employees while team social support provides a grounding of job resources, team social support should buffer the effects of toxic leadership.

Most importantly, the HR department may employ a more rigorous approach in recruiting a candidate for a managerial position (i.e., a leadership role), with a clear job description developed to curb toxic behaviors. Besides assessment through the basic interview procedure, referring to past work experience, and contacting past organizations about a candidate's performance (McEntire & Greene-Shortridge, 2011), work sample techniques, such as an in-tray exercise, can be utilized to simulate administrative tasks, such as reviewing and prioritizing work, designing a procedure or course of action, communicating with team members and stakeholders, and expressing opinions. Furthermore, with the behavior of this leadership candidate observed and evaluated by HR personnel, this could also help in decreasing employees' role ambiguity and job insecurity as leaders are evaluated before they begin to handle the uncertainty-based job demands that may possibly take place in the organization.

Fostering team social support as well as provide job security is vital. Promoting collaboration, communication, and support among team members would encourage positive team dynamics. Team building activities and training able to open up and improve communication as part of the dynamic of work has shifted from face-to-face to virtual as well as the advancement of technology in this era has brought each of us to stay in our shell. By improving communication skills would bring forth clearer expectation and the transparency of the organization towards their employees (Costa et al., 2014; Ku et al., 2013).

8. Conclusion

This study highlights the importance of social factors in a work environment and their roles in shaping job demands which may occur by influencing employees' social information processing theory. In particular, we examined the effects of toxic leadership and team social support on uncertainty-based job demands (i.e., job insecurity and role ambiguity) and the flow-on effects for work engagement and job performance.

Data availability

The datasets generated and/or analyzed during the current study are available from the corresponding author in response to a reasonable request.

Funding

There was no funding for this study.

Informed consent

All participants were given a participant information sheet and participated voluntarily in the study. Participants could also end their participation at any point of the study without any penalty.

Declaration of competing interest

On behalf of all authors, the corresponding author states that no author has a conflict of interest.

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