



# Generation Z software employees turnover intention

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## Abstract

This study applied the social exchange and social identity theories to investigate the association among resonant leadership, self-efficacy, organizational identification, work performance, and turnover intentions in Generation-Z (Gen-Z) software professionals. The study sampled 73 leader-subordinate dyads from 10 large-scale software companies in India through an online survey. Hierarchical linear modeling, including multilevel mediation, was conducted to test the proposed model. The results of this study revealed the cross-level effect of resonant leadership on the work-related outcomes among the Gen-Z software operators based on two psychological mediators, namely, self-efficacy and organizational identification. It suggests that resonant leadership could be the potential driver to manage the predominant psychological factors of the incoming cohort group of Gen-Z software professionals, which yield positive work outcomes. Based on the empirical evidence, the software companies can devise suitable intervention mechanisms to enhance productivity and reduce turnover intentions of the Gen-Z cohort. Thus, this study is a novel attempt to establish a comprehensive theoretical framework that provides a broad scope for future research to investigate the mechanisms which manage the expectations of Gen-Z cohorts.

**Keywords** Resonant leadership · Work performance · Self-efficacy · Organizational identification · Turnover intention

There has been immense growth in the Indian information technology (IT) industry, particularly the software industry, over the past two decades. However, several challenges were experienced during the coronavirus disease 2019 (COVID-19) pandemic. One such challenge was the decline in the profit margin resulting from a sharp decline in export services, which account for a significant amount of revenue (Malik & Velan, 2020). Another challenge was the alarming attrition rate (Pramanik, 2021; Raja Simhan, 2020), which normally staggers at approximately 21.8% (Srirangam Ramaprasad et al., 2018). The IT industry is labor-, technology-, and knowledge-intensive (Mathew, 2007); however, it experiences the perennial issue of a high attrition rate, which creates major concerns for the attraction and retention of talent (Bhatnagar, 2007). The software sector workforce underwent a rapid change in landscape owing to the high influx of generation-Z (Gen-Z) professionals during

the COVID-19 pandemic (Barhate & Dirani, 2022), thus creating a multigenerational work environment. Organizational leaders experienced significant challenges in addressing employee expectations (Benítez-Márquez et al., 2021) because of differences in values, preferences, attitudes, and behaviors among generations (Twenge, 2010). Furthermore, Gen-Z employees outnumber other generations and thus are likely to have more influence in the workplace (Barhate & Dirani, 2022; Miller & Lu, 2018). As a result, this attention emphasizes the need for scholars and practitioners to understand their work outcomes.

Gen-Z refers to individuals born after 1995 (Bolser & Gosciej, 2015). These individuals are identified as collective thinkers who are realistic, open-minded, digital integrators. In contrast to previous generations, Gen-Z has been regarded as individualized and disrespectful toward authority and leaders (Burton et al., 2019). Previous studies suggested that each generation comprises favorable and unfavorable characteristics that influence workplace outcomes (Costanza & Finkelstein, 2015; Twenge, 2010). For example, the highly nomadic behavior of Gen-Z indicates a lack of organizational identification suggesting that long-term loyalty to organizations is not a priority of the individual (Chillakuri & Mahanandia, 2018). Reportedly,

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these attributes intensified because of the accelerated rate of change (Batra, 2020) and the lasting impact of COVID-19 in the work context (Kniffin et al., 2020), which had adverse effects on employee performance (Becker, 2021; Muzumder et al., 2021). Similarly, the dependence on organizational support among Gen-Z may be because of undermined self-autonomy since childhood (Evans & Karl, 2021; Schroth, 2019). This dependence may interfere with managing task complexities (Arpita & Dawlinmaria, 2020) that are common in the software sector (Cummings & Worley, 2009), thus suggesting a lack of innate self-efficacy, which may hinder continuous skill and career advancement (Bocciardi et al., 2017). Consequently, psychological distress can be exacerbated, by a lack of organizational support while working remotely in an unprecedented crisis (Becker et al., 2020; Russo et al., 2021). According to previous studies, continual psychological distress has been associated with an increased attrition rate (Nigam et al., 2011) and decreased productivity (Bayraktar & Jiménez, 2020; Cummings & Worley, 2009). Existing literature that identifies the levers of previous generations' work outcomes is adequate. However, the exceeding figure of the Gen-Z cohort in the workplace suggests a notable lack in the literature underscoring the probable predictors of work outcomes among Gen-Z employees (Chillakuri & Mahanandia, 2018; Pandita & Kumar, 2021).

A few studies have hypothesized that leadership is a potential lever for the Gen-Z cohort's behavior (Schroth, 2019), particularly from a cultural perspective (Deal et al., 2012). Other studies have observed that leadership style preferences vary across generations (Anderson et al., 2017; Rudolph et al., 2018). Previous investigations in the software sector have shown that leadership is a crucial lever for employees' work behavior in terms of turnover intention (Sahu et al., 2018) and performance (Gaan & Shin, 2022; Huckman et al., 2008). However, generalizations of leadership are not applicable across generations. Among the several types of leadership, a resonant leader embodies an overarching vision, positive mood, and compassion (Boyatzis et al., 2006), which aids in overcoming unprecedented challenges (Mahon et al., 2014). Furthermore, they aim to strengthen identification among individuals within the organization using a transformational approach (Marques, 2015; Schuh et al., 2012), and to maintain ongoing conversations to establish emotional bridges (Lenka & Tiwari, 2016). Thus, resonant leaders help to solve the environmental demands of businesses (Malik & Velan, 2020). Consequently, Gen-Z employees' work outcomes are enhanced (Becker, 2021; Dukerich et al., 2002; Ngo et al., 2013; Pandita & Kumar 2021) in a remote context (Gaan & Shin, 2022). Resonant leaders orient themselves toward self-renewal, growth, and the development of others (Boyatzis & Mckee, 2005) which facilitates the mitigation of work-related issues experienced by Gen-Z resulting from the radical changes that emerged during the COVID-19 pandemic

(Jayathilake et al., 2021). This orientation may improve self-efficacy among Gen-Z employees (Arpita & Dawlinmaria, 2020; Gomes & Deuling, 2019), inevitably increasing their performance when delivering work remotely (Bayraktar & Jiménez, 2020). Moreover, a resonant leader creates a flexible environment (Marques, 2015) that can meet expectations and manage crises among Gen-Z employees (Stoker et al., 2019). Thus, the willingness to stay within an organization increases extensively, resulting in positive outcomes (Suifan et al., 2020). However, studies that link resonant leadership with work outcomes among Gen-Z employees using self-efficacy and organizational identification are notably limited.

Currently, there are few studies that investigate the multi-level effects of leadership on the behavior of Gen-Z employees because of their dyadic association (Gaan & Shin, 2022; Yammarino et al., 2012), particularly when the software sector comprises team- and project-based tasks. Therefore, resonant leadership is expected to exhibit direct and indirect effects on the professional performance of Gen-Z software employees in the context of a crisis (Gaan & Shin, 2022; Lenka & Tiwari, 2016). Furthermore, attrition levels are influenced by providing coping skills (Lenka & Tiwari, 2016). An adequate amount of empirical research is available, underscoring the multilevel effect of leadership on the behaviors of generational cohorts of employees (Lord et al., 2001; D'Amato & Baruch, 2020) other than Gen-Z.

To bridge the gap in literature, this study provides meaningful contributions to the existing Gen-Z literature. This study has several aims. First, this investigation combines the literature on Gen-Z, leadership with studies on the software industry. Second, the mechanism of mediation within leadership processes reflects a unique framework that outlines the significance of self-efficacy and organizational identification as mediators, resonant leadership as antecedents, as well as work performance and turnover intention as the potential outcomes among Gen-Z. Thus, this study emphasizes the distal effect of leadership on Gen-Z employees work outcomes by delineating the mediating constructs, such as self-efficacy and organizational identification (Antonakis et al., 2011). Third, the social exchange and social identity theories comprise the theoretical framework delineating the direct and indirect effects of leadership on Gen-Z work outcomes. As a result, a novel perspective of Gen-Z is introduced to existing theories.

## Theoretical framework and hypothesis development

### Social exchange theory

The social exchange theory (SET) refers to the exchange of resources between leaders and subordinates in a series of interactive processes that may include materials or

non-materials, which consequently yield obligations (Blau, 1964; Cropanzano & Mitchell, 2005; Emerson, 1976; Homans, 1958; Thibaut & Kelley, 1959). The bi- or multi-directional resource exchange among actors depends on several conditions: First, the resources invested by one actor in other actors must result in the reciprocal behavior of the latter. Furthermore, the value of the investment must exceed the value and utility of the resources received from another actor as a reciprocal behavior resulting in the loss of resources for the investing actor. Second, the two-way exchanges among actors should be continuous and the leader–subordinate exchange of resources should be bidirectional. For instance, employees exchange work for pay, which, in turn, produces beneficial outcomes, including a sense of personal obligation, gratitude, and trust (Blau, 1964; Schroth, 2019), consequently enhancing satisfaction, organizational commitment, and turnover intention (Lu & Gursoy, 2016) among subordinates.

SET applies to leaders who have a relational and interactive approach (Gürbüz et al., 2014), which aligns best with resonant leadership. The relational orientation of resonant leadership (Marques, 2015) suggests that a resonant leader will exchange self-efficacy with the Gen-Z cohort using the approaches of self-renewal and development, which is predominantly expected by Gen-Z employees. Consequently, positive emotions are evoked (Thibaut & Kelley, 1959) in Gen-Z employees to reciprocate positive work outcomes (Grant et al., 2011; Kark et al., 2003; Lu & Gursoy, 2016).

## Social identity theory

The social identity theory (SIT) focuses on group membership and self-behavior (Hogg et al., 1995). An individual is linked to a group based on cognitive schema wherein core concepts regarding the self (i.e., enduring identity) are partly determined by the peripheral concept (group identity). The core concept refers to an individual's personal history, adaptation to social situations, goals, motives, and needs (Turner & Onorato, 1999, pp. 15–16). In contrast, the peripheral concept embodies self-concept, which is more fluid and allows the individual to adopt various roles and group identities. In addition to the individual–group dyads, the group concept covers organizations that serve as groups that influence individual performance (Hogg & Terry, 2000; Pratt, 2003). Socialization provides individuals with the values and emotional attributes of group membership (Hogg & Terry, 2000) as well as an extended identity. While the power of social identity is variable, it always exceeds the power of individual identity (Hogg & McGarty, 1990). Thus, studies argue from the perspective of SIT that organizational identity is

the tendency of employees to identify with the organization based on its salient prototypical characteristics.

Social identity and exchange complement each other (van Knippenberg & Schippers, 2007). The theoretical frameworks underscore the assumption that social exchanges, such as self-efficacy, cannot be sustained or effective to ensure a positive work outcome unless the Gen-Z cohort identifies or relates their individual self-concept with the organization. Thus, a leader may enhance the Gen-Z cohort's contribution to the organization by assisting them to identify the organization's prototypical characteristics, ensuring that individuals work for the collective interest of the organization. Therefore, a leader's support in enabling the psychological sources of subordinates (self-efficacy) can be made effective when organizational salience is internalized by subordinates during the process of self-categorization (van Knippenberg & Hogg, 2003).

## Resonant leadership and work performance of Gen-Z

Sustainable and favorable work outcomes of subordinates have been observed to be positively predicted by an appropriate leadership style that inspires employees to produce effective results (Wong et al., 2013). In contrast to previous generations, the performance of Gen-Z employees depends highly on the leader as they tend to mitigate expectations that emerge from assigned roles which can interfere with their performance (Wilkie, 2019). Furthermore, existing literature indicates that the Gen-Z cohort has weak interpersonal skills owing to over-reliance on digital technology, social media, and mobile communications (Becker et al., 2020) even during leisure hours (Twenge, 2017). Consequently, these individuals lack social skills and emotional stability (Twenge, 2017; Twenge et al., 2019). Furthermore, these weaknesses impair work performance, particularly with the onset of COVID-19 and associated remote work practices. Reportedly, these work practices do not fit with the nature of the occupation in the software industry, which is typically project- and team-driven (Huckman et al., 2008; Mathew, 2007). Moreover, their advocacy for work-life balance contradicts the culture of extensive working hours in the software sector (Armstrong et al., 2007) and overwork during COVID-19 (Russo et al., 2021). However, all issues associated with Gen-Z are presumably resolved through human connections, which are inherently present in resonant leaders who exhibit an empathetic approach (Goleman et al., 2002, 2013). Resonant leaders display characteristics such as compassion, hope, and mindfulness. These attributes are required in the digital era to mitigate challenges arising from incessant crises and pressure (McKee & Massimilian, 2006).

Managing the conversation in the digital space (Smith et al., 2011) can facilitate the Gen-Z project team cohort to confront the challenges associated with social and interpersonal skills owing to the physical distance (Russo et al., 2021) during the COVID-19 pandemic (Gaan & Shin, 2022). Consequently, emotional clarity (Burton et al., 2019) and contentment in the team inadvertently emerge within employees, thus encouraging positive behavior (Becker et al., 2020; Loring & Wang, 2021; Wagner et al., 2013) despite the context of the pandemic (Gaan & Shin, 2022).

According to the SET, social exchanges between leaders and subordinates will inspire and obligate employees to perform effectively (Rhoades & Eisenberger, 2002) at individual and dyadic levels, in the context of COVID-19 (Gaan & Shin, 2022; Yammarino et al., 2012). Therefore, studies have hypothesized that resonant leaders with desired self-regulation and awareness (Goleman et al., 2013) maintain social exchanges to develop interpersonal communication, social skills, and emotional stability (Cropanzano & Mitchell, 2005) amidst incessant crises and pressure, while simultaneously addressing the Gen-Z cohort's expectations (Boyatzis & McKee, 2005). Consequently, Gen-Z employees will feel obliged to demonstrate desired performance (Gaan & Shin, 2022; Lu & Gursoy, 2016). There is a severe gap in literature regarding the cross-level association between resonant leadership styles and Gen-Z software professional performance, which warrants further investigation. Therefore, we propose the following hypothesis:

Hypothesis 1: Resonant leadership has a positive cross-level effect on the work performance of Gen-Z employees during the COVID-19 pandemic.

## Resonant leadership and turnover intention among Gen-Z

The leadership style, operationalized in subjective norms, is considered an antecedent to turnover intention (Eisenberger et al., 2002; Sahu et al., 2018). The extant literature indicates that Gen-Z employees tend to switch organizations if their current leader does not prioritize individualized orientation (Chillakuri, 2020), flexibility, growth, job stability, effective communication, and resources for training programs (Schroth, 2019). The unmet expectations of Gen-Z employees compounded during COVID-19 (Jayathilake et al., 2021) because of the unprecedented changes experienced by software sector employees during their transition to remote work practices (Russo et al., 2021). Consequently, the inadequate resources and insecurities associated with the crisis created an unstable work environment for beginners, such as the Gen-Z cohort (Becker et al., 2020). Furthermore, these inadequacies and insecurities can potentially destabilize

one's attitude (Chillakuri & Mahanandia, 2018; Goh & Lee, 2018) in the initial stage of their career (Becker et al., 2020). However, effective mobility in the market for software professionals is not a challenge (Singh et al., 2012). Under such circumstances, the vibrance and flexibility of resonant leadership are anticipated to work conveniently in the digital space (McKee & Massimilian, 2006). Moreover, the ability to mobilize resources among project team members in crisis (Gaan & Shin, 2022; Lenka & Tiwari, 2016) is enhanced to accommodate the expectations of Gen-Z employees. Thus, a leadership approach that incorporates elements of transformation (Marques, 2015) and flexibility can explain the significant negative variance in the team members' turnover intention (Sahu et al., 2018; Squires et al., 2010) and mitigate emerging complexities during a crisis (Stoker et al., 2019).

According to SET, the employee's perceived quality of the beneficial personal and professional exchange relationship with the leader (Chaudhuri & Ghosh, 2012) can predict withdrawal behavior or turnover intention at the individual and the dyadic level (Eisenberger et al., 2002; Waldman et al., 2015). However, there are limited studies in the software sector that underscore the association between team-level resonant leadership and the turnover intention of team members constituting the Gen-Z cohort. Thus, the following hypothesis was derived:

Hypothesis 2: The cross-level effect of resonant leadership has a negative cross-level effect on the turnover intention of Gen-Z employees during the COVID-19 pandemic.

## The mediating role of self-efficacy

Self-efficacy refers to an individual's beliefs regarding their capabilities to implement the measures required to manage any situation. Previous studies have reported that self-efficacy affects an individual's learning ability, motivation, and performance (Lunenburg, 2011).

The software sector is typically characterized by flexibility, adaptability, and mobility (Arunprasad, 2017). Therefore, software industry leaders must provide an environment that fosters continuous learning, technical competence, and autonomy (Ramakrishna & Potosky, 2003). This environment aligns well the dynamic nature of the industry (Scholarios & Marks, 2004) which peaked during COVID-19 (Batra, 2020; Kniffin et al., 2020). Furthermore, it induces a sense of control over tasks (Jayathilake et al., 2021) and independence (Wickramasinghe & Weliwitigoda, 2011). As a result, performance among Gen-Z employees in the software sector intensifies (Jayathilake et al., 2021; Reddy & Dawlinmaria, 2020) while the turnover intention reduces (Porto Bellini et al., 2019).

Resonant leaders with buoyant attitudes (Laschinger et al., 2014; Marques, 2015) can manage complexities associated with care and decipher employees' needs, knowledge, goals, and capabilities (Goleman et al., 2013) by promoting the democratization of learning (Cummings, 2004; Jayathilake et al., 2021), especially among Gen-Z employees. Furthermore, resonant leaders prioritize their self-renewal and employee development (Boyatzis, 2014; Boyatzis & Mckee, 2005) to navigate the crisis (Lenka & Tiwari, 2016). Thus, employee needs (Deepika & Chitranshi, 2021) and self-efficacy increase among Gen-Z software professionals (Evans & Karl, 2021). Consequently, higher performance (Arpita & Dawlinmaria, 2020; Gomes & Deuling, 2019) and lower turnover intention have been reported (Afzal et al., 2019; Cowden et al., 2011).

SET stipulates that leader who maintain continuous social exchanges (i.e., coaching and mentoring) generate positive outcomes for employee expectations (i.e., learning orientations; Blau, 1964; Lu & Gursoy, 2016; Schroth, 2019). Self-efficacy has been identified as a mediating variable in the leadership process (Porto Bellini et al., 2019; Singh et al., 2018; Bayraktar & Jiménez, 2020). However, the literature underscoring its linkages with cross-level effects is limited (i.e., resonant leadership → self-efficacy → work performance and resonant leadership → self-efficacy → turnover intention). Thus, the following hypothesis is proposed:

Hypothesis 3: Self-efficacy mediates the relationship between resonant leadership and work performance among Gen-Z employees during the COVID-19 pandemic.

Hypothesis 4: Self-efficacy mediates the relationship between resonant leadership and turnover intention among Gen-Z employees during the COVID-19 pandemic.

## The mediating role of organizational identification

Identity refers to an individual's emotional association with their organization, occupation, role, or work (Hogg & Terry, 2000). There are two ways through which an employee identifies with the organization. The first is social identification, wherein employees associate themselves with organizational membership (Ashforth & Mael, 1989; Ashforth et al., 2008) based on the perceived distinct identity of the organization resulting from the work environment and values of the leader. The second denotes psychological factors, such as trust and interpersonal relationships within the organization, which may address affiliation needs. The study combined both identification methods to strengthen identification with organizations in relationship-oriented societies, such

as India (Ngo et al., 2013), and among Gen-Z employees (Chillakuri, 2020). Resonant leaders are considered to have high levels of mindfulness as they incorporate social capital into the organization's intrapreneurship culture (Boyatzis & Mckee, 2005), which fosters a sense of belonging to an organization. This cooperation aligns with the perceived idiosyncratic values of entrepreneurship (Twenge, 2017) and flexibility (Schroth, 2019) among Gen-Z employees, thus improving control over their performance (Ashforth et al., 2008; Jayathilake et al., 2021; Twenge, 2017) and software industry requirements (Jayathilake et al., 2021). Furthermore, Gen-Z is intolerant of crisis-related ambiguities and complexities (Arpita & Dawlinmaria, 2020; Schroth, 2019) even though such attributes are inherent to the nature of the software industry. Thus, it is assumed that resonant leaders can fulfill the Gen-Z employee expectations because of their inherent flexibility (Marques, 2015) and attitude to guide and coach individuals during a crisis (Lenka & Tiwari, 2016), which enhances the willingness of Gen-Z to identify with the organization (Smith & Strawser, 2022). In the software industry, interpersonal leader-subordinate relationships enhance the perceived image and sense of belonging to an organization (Mazumder et al., 2017). In this context, the second part of organizational identification becomes crucial because building interpersonal relationships and trust between the leader and the Gen-Z cohort (Lazanyi & Bilan, 2017) is vital to enhance the open expression of opinions. However, psychological factors worsened during COVID-19 owing to remote work practices which increased stress and anxiety among Gen-Z employees who are often susceptible to these emotions (Twenge, 2017; Becker et al., 2020). Previous literature suggests that empathetic leaders (Jayathilake et al., 2021) and their in-person interactions (Ashforth, 2016; He & Brown, 2013) can create interpersonal relationships and trust (Lazanyi & Bilan, 2017) with employees. Furthermore, it is envisaged that a resonant leader's inherent ability to express empathy (Goleman et al., 2013) can promote positive emotions (Lenka & Tiwari, 2016) among the Gen-Z cohort and invariably reduce distrust associated with a crisis (Becker et al., 2020). Consequently, empathy can restore Gen Z employees' faith, trust, and a sense of attachment to the organization (Mazumder et al., 2017).

In the context of SIT and SET (van Knippenberg & Schippers, 2007), it is argued that employees with a desire to identify with the organization (Mazumder et al., 2021) work towards goals with higher efficiency and potential (Bakotic, 2016; Jiang & Law, 2013; Mazumder et al., 2021; Singh et al., 2018). Thus, through fulfilling their entrepreneurial orientations based on the trust established by the leaders, Gen-Z employees feel more obliged to stay with the organization. Moreover, it can be argued from the perspective of social exchange that resonant leaders who treat Gen-Z employees with dignity, care, and empathy

(Smith et al., 2011) can manage Gen-Z expectations. Similarly, this evokes a desire among Gen-Z employees to identify with the organization (Smith & Strawser, 2022), improves performance (Mazumder et al., 2021), and lowers attrition (Suifan et al., 2020). However, research on the Gen-Z cohort is limited, particularly studies that consider resonant leadership as an antecedent at the team level and work performance and turnover intention as individual outcomes. Although the outcomes of organizational identification, such as work performance and turnover intention, have been studied independently (Cole & Bruch, 2006; Mazumder et al., 2021), their linkages with resonant leadership have not been empirically confirmed in a single study from a crisis perspective. Furthermore, previous studies have various limitations, such as multiple sources of data collection as a lacuna (Mazumder et al., 2021). Thus, we propose the following hypotheses:

**Hypothesis 5:** Organizational identification mediates the relationship between resonant leadership and work performance among Gen-Z employees during the COVID-19 pandemic.

**Hypothesis 6:** Organizational identification mediates the relationship between resonant leadership and turnover intention among Gen-Z employees during the COVID-19 pandemic.

Based on the complementary perspective of the SET and SIT, this study assumes that the cross-level effect of resonant leadership on work-related outcomes among Gen-Z employees occurs through two mediators—self-efficacy and organizational identification. Accordingly, we propose the following hypotheses:

**Hypothesis 7:** Self-efficacy and organizational identification jointly mediate the relationship between resonant leadership and a) work performance and b) turnover intention among Gen-Z employees during the COVID-19 pandemic.

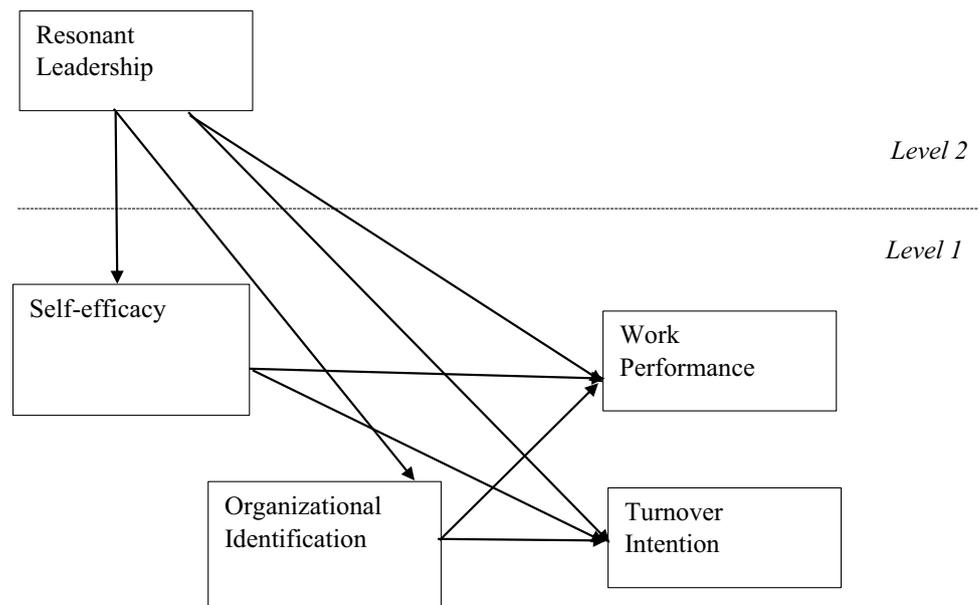
Figure 1 illustrates the conceptual model used in this study.

## Methods

### Sample and procedures

This study was conducted in 10 large-scale software companies located globally that offer services ranging from digital services and information technology (IT) distribution to business solutions. These organizations were selected based on the nature of the teams that typically engage in technological research and development, process improvements, bug testing, and prototype design work. The teams regularly held virtual meetings to increase collaboration frequency and worked on the project for at least 180 days. Furthermore, the research firm recruited for this study applied a purposive sampling technique to collect relevant data from the Gen-Z cohort. Two anonymous security questions were asked to obtain corresponding responses from the team leader and members. All participants were assured of data confidentiality to ensure honest responses. Prior to enrolment in the study, the researchers obtained the informed consent of all the participants. In total, 940 out of the 1,374 team members, managers, and leaders of the project development teams

**Fig. 1** Conceptual framework



voluntarily completed the online survey. Among the 940 surveys, 70 had incomplete responses and 30 represented a different cohort. Consequently, the responses of 100 participants were excluded from the analysis. Moreover, some of the responses were unmatched (i.e., leader–subordinate). Thus, responses from 636 participants were included in the final analysis. The sample size of 636 Gen-Z individuals nested in 73 teams obtained from the survey adhered to the guidelines of Maas and Hox (2005). The data were collected in two phases over three months during the first wave of the COVID-19 pandemic, starting in May 2020. Resonant leadership, self-efficacy, and organizational identification were measured by the team members at time period  $T_1$ ; work performance and turnover intention were measured by the team leaders and team members, respectively, at time period  $T_2$ .

Several measures were implemented for procedural remedies. First, the matched responses (leader–subordinates) of 73 team leaders and 636 Gen-Z members were used to mitigate concerns about receiving a socially desirable response (Podsakoff et al., 2003). Second, the order of the items in the subordinate survey was counterbalanced against the independent and dependent variables to alleviate the effects of eventual response bias related to the survey design (Podsakoff et al., 2003). Third, the data were collected from two different sources—team leaders and team members (team leader–team member dyad)—to mitigate the issue of common method bias.

The average age of the leaders and members was 31.11 (standard deviation [SD] = 0.38) and 23.82 (SD = 0.76) years, respectively. The average tenure of the leaders and members was 7.11 (SD = 1.65) and 1.08 (SD = 0.61) years, respectively. Furthermore, approximately 52% of the participants were males while 48% were females. Moreover, 88.9% of the participants had a degree in electronics and telecommunications, and computer science whereas the remaining 11.1% had a postgraduate degree in computer science.

## Measures

Resonant leadership was measured ( $\alpha = 0.73$ ) using the 10-item resonant leadership scale developed by Cummings et al. (2010). The sample items rated by subordinates were “My team leader focuses on successes and potentials rather than failures” and “My team leader actively mentors and manages individual and team performance.”

A similar approach was adopted to measure subordinates’ workplace performance ( $\alpha = 0.91$ ). Subordinates required more time and energy to complete tasks as a result of the looming crisis (Bartsch et al., 2020). Thus, work performance was examined using an established five-item scale (Brown & Leigh, 1996) of work intensity. Sample items for the leader version of the scale included “When my subordinates work,

they do so with intensity” and “When they work, they exert themselves to the fullest.” Responses were measured on a scale ranging from 1 (strongly dissatisfied) to 5 (strongly satisfied).

Self-efficacy was examined ( $\alpha = 0.87$ ) using a scale comprising 10 items measuring task-related self-beliefs used to cope with various job demands (Parker, 1998). The sample items on the scale included, “I feel confident enough to analyze a long-term problem to find a solution to it.”

Organizational identification was measured ( $\alpha = 0.83$ ) using a six-item global scale developed by Edwards and Peccei (2007). Sample items were scored on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items included, “I share the goals and values of the organization.”

The turnover intention was evaluated ( $\alpha = 0.93$ ) using a three-item scale developed by Yavas et al. (2003). The sample item included “I will probably be looking for another job soon.”

Studies have reported that demographic variables exert a confounding effect on hypothesized relationships in the leadership processes (Becker et al., 2016). Furthermore, gender, age, experience, marital status, educational level, and the respondents’ position in the organization can considerably affect the dependent variables, such as work performance (Bauer & Green, 1996; Maslyn & Uhl-Bien, 2001). Therefore, this study controlled for these variables while testing the hypotheses.

## Data analysis

The data were nested within the teams (i.e., 636 Gen-Z team members and 73 leaders), as per the hierarchical structure. Furthermore, the multilevel mediation effect was examined to estimate the cross-level indirect randomized effect (Bauer et al., 2006). Therefore, consistent with Zhang et al. (2009), multilevel modeling was performed using HLM 7.0 with restricted maximum-likelihood estimation to conduct data analysis for model 2–1–1 (independent variable at Level 2 and dependent variable at Level 1). For multilevel modeling, it is necessary to examine the interrater reliability index  $r_{wg}$  and intraclass coefficients ICC (1) and ICC (2) of Level 2 variable resonant leadership. The obtained values ( $r_{wg} = 0.78$ , ICC (1) = 0.16, and ICC (2) = 0.83) were higher than the threshold, thus confirming the aggregation test (Campion et al., 1993).

## Results

### Descriptive statistics

Table 1 summarizes the descriptive statistics and correlations between the study variables. At Level 1, we observed a positive association between organizational

identification and work performance ( $r = 0.27, p < 0.05$ ) but a negative association between organizational identification and turnover intention ( $r = -0.24, p < 0.01$ ). Similarly, we noted a positive correlation between self-efficacy and work performance ( $r = 0.46, p < 0.01$ ) but a negative correlation between self-efficacy and turnover intention ( $r = -0.19, p < 0.01$ ). Furthermore, self-efficacy was positively correlated with organizational identification ( $r = 0.17, p < 0.01$ ).

## Confirmatory factor analysis

Confirmatory factor analysis (CFA) was performed to examine whether Gen-Z employees' scores on resonant leadership, self-efficacy, organizational identification, and turnover intention registered distinct constructs. However, a multivariate normality test was conducted to check for the presence of outliers that measured any observed variable. The study showed that the critical ratio (CR) value of 0.961 was below the threshold value of 1.25.

The four-factor model fit the data well, with all indicators significantly loaded on the respective latent variables ( $\chi^2 [366] = 755.51$ , comparative fit index (CFI) = 0.96, normed fit index (NFI) = 0.95, standardized root-mean-square residual (SRMR) = 0.06, and root-mean-square error of approximation (RMSEA) = 0.06). Thus, the measures captured distinctive constructs.

## Hypotheses testing

We tested the hypotheses using multilevel modelling at the individual level (Gen-Z) performance ( $\chi^2(69) = 918.218, p < 0.01$ ) and turnover intention ( $\chi^2(69) = 856.091, p < 0.01$ ). We examined the within-level analysis to test the relationships among the variables before performing the cross-level analysis according to the guidelines of Mathieu and Taylor (2007). All individual variables were group-mean centered to obtain unbiased estimates of all cross-level interactions. However, Level 2 variables remained unchanged (Zhang et al., 2009). The multilevel modelling results are presented in Tables 2 and 3.

Table 1 illustrates the confounding effect of leaders' demographic characteristics on the leadership process, which concurs with a previous study (Becker et al., 2016). The correlation between the demographic characteristics of the employees and their outcomes was consistent with the findings of previous studies (Chen & Francesco, 2000; Tsui & O'Reilly, 1989). Models 1 and 2 in Table 2 show the significant influence of resonant leadership on self-efficacy ( $\gamma = 0.20, p < 0.01$ ) and organizational identification ( $\gamma = 0.15, p < 0.01$ ), respectively. Models 3 and 7 show the predictive value of resonant leadership for work performance ( $\gamma = 0.11, p < 0.01$ ) and turnover intention ( $\gamma = -0.16, p < 0.01$ ). To understand the cross-level effect of resonant leadership on work outcomes, the guidelines by Zhang et al. (2009) were followed. Furthermore, resonant leadership was introduced as a Level 1 covariate to test its direct effects. The results indicated that the direct effects on work performance ( $\gamma = -0.20, p = 0.21$ ) and turnover intention

**Table 1** Descriptive statistics and correlation for the individual- and team-level variables

Variables	Mean	SD	1	2	3	4	5	6	7
<i>Level-1 Variable</i>									
1 Self-efficacy	3.05	0.30	(0.87)						
2 Organizational Identification	4.10	0.40	0.17*	(0.83)					
3 Work Performance	3.67	0.42	0.46**	0.27*	(0.91)				
4 Turnover Intention	2.45	0.25	-0.19**	-0.24**	-0.13**	(0.93)			
5 Age	23.82	0.76	0.03	0.04	0.01*	0.02	-		
6 Gender	1.11	0.23	0.10*	0.02	0.06*	0.03*	0.05	-	
7 Position Tenure	1.08	0.61	0.06	0.02	0.01*	-0.01*	0.02	0.02	-
<i>Level-2 Variable</i>									
1 Resonant Leadership	3.90	0.36	(0.73)						
2 Team Size	8.09	1.10	0.07*	-					
3 Age	31.11	0.38	0.11	0.06*	-				
4 Gender	1.22	0.62	0.03*	0.02	0.01	-			
5 Position Tenure	7.11	1.65	-0.07*	0.04*	0.01	0.04	-		

Values on the right indicate Cronbach's alpha coefficient; For level 1 (team members) = 636, Level 2 (Team leaders) = 73 \* $p < 0.05$ ; \*\* $p < 0.01$

**Table 2** Results of multilevel linear modeling for work performance

Dependent Variable	Self-Efficacy	Organizational Identification	Work Performance				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6a	Model 6b
Fixed effects	2.42(0.45)**	1.59(0.22)*	4.21(0.76)**	3.86(0.29)**	3.92 (0.29)*	3.32 (1.01)*	3.48 (1.21)**
<i>Controls</i>							
Team Size				-0.05*	-0.08*		-0.11*
Age (L)				0.03	0.02		0.02
Gender (L)				0.01	0.03		0.05
Position Tenure(L)				-0.11	-0.11		-0.12
<i>Level 1</i>							
Resonant Leadership	0.22(0.23)**	0.28(0.15)**	0.20(0.13)	0.19(0.17)	0.19 (0.12)	0.18(0.12)	0.17(0.11)
Self-Efficacy				0.40(0.07)**		0.42(0.03)**	0.44(0.03)**
Organizational Identification					0.23 (0.06)**	0.26(0.01)**	0.28(0.09)**
<i>Level 2</i>							
Resonant Leadership	0.20(0.05)**	0.15(0.06)**	0.11(0.11)**	0.10(0.02)	0.06 (0.05)	0.13(0.10)	0.14(0.13)
Self-Efficacy				0.35(0.15)		0.21(0.09)	0.23(0.10)
Organizational Identification					0.22(0.03)	0.06(0.08)	0.08(0.10)
<i>Level 1</i>							
Intercept	0.31(0.05)	0.29(1.21)	0.91(1.48)	0.91(1.60)	0.91(1.65)	0.91(1.67)	0.91(1.72)

Unstandardized estimates are reported with standard errors in parentheses. For Level 1(team members)=636, Level 2 (team leaders)=73; Model 1: Self-efficacy predicted by resonant leadership. Model 2: Organizational identification predicted by resonant leadership. Model 3: Work performance predicted by resonant leadership. Model 4: Self-efficacy mediates the relationship between resonant leadership and organizational performance. Model 5: Organizational identification mediates the relationship between resonant leadership and organizational performance. Model 6: Work performance predicted by resonant leadership, self-efficacy, and organizational identification (6a without/6b with control variables). \*p < 0.05; \*\*p < 0.01

**Table 3** Results of multilevel linear modeling for turnover intention

Dependent Variable	Turnover Intention				
	Model 7	Model 8	Model 9	Model 10a	Model 10b
Fixed effects	6.11(0.62)**	5.88 (0.36)**	5.12(0.61)**	4.86(0.97)**	4.92(1.05)*
<i>Controls</i>					
Team Size					0.06*
Age (L)					0.03
Gender (L)					-0.03
Position Tenure(L)					0.07
<i>Level 1</i>					
Resonant Leadership	-0.35(0.08)	-0.32(0.07)	-0.31(0.07)	-0.31(0.08)	-0.29(0.08)
Self-Efficacy		-0.12(0.03)**		-0.13(0.02)**	-0.17(0.01)**
Organizational Identification			-0.09(0.02)**	-0.10(0.01)**	-0.13(0.02)**
<i>Level 2</i>					
Resonant Leadership	-0.16(0.05)**	-0.15(0.05)	-0.15(0.08)	-0.17(0.07)	-0.19(0.08)
Self-Efficacy		-0.11(0.03)		-0.10(0.02)	-0.12(0.01)
Organizational Identification			-0.07(0.02)	-0.08(0.04)	-0.09(0.04)
<i>Level 1</i>					
Intercept	0.72(1.06)	0.72(1.11)	0.72(1.24)	0.72(1.68)	0.72(1.81)

Unstandardized estimates are reported with standard errors in parentheses. For Level 1(team members)=636, Level 2 (team leaders)=73. Model 7: Turnover intention predicted by resonant leadership. Model 8: Self-efficacy mediates between resonant leadership and organizational identification. Model 9: Organizational identification mediates the relationship between resonant leadership and turnover intentions. Model 10: Turnover intention predicted by resonant leadership, self-efficacy, and organizational identification (10a without/10b with control variables)

\*p < 0.05; \*\*p < 0.01

( $\gamma = -0.35$ ,  $p = 0.32$ ) were not significant, thus supporting Hypotheses 1 and 2.

The multilevel mediation test was based on Zhang et al.'s (2009) principle of introducing Level 2 predictors as Level 1 covariate, and vice versa. The proposed Level-1 mediators—self-efficacy and organizational identification—were introduced while predicting work performance and turnover intention from resonant leadership to test the proposed multilevel mediation. As shown in Table 2, Models 4 and 5 revealed a significant cross-level mediation of self-efficacy ( $\gamma = 0.40$ ,  $p < 0.01$ ) and organizational identification on work performance ( $\gamma = 0.23$ ,  $p < 0.01$ ), as there was no direct effect of resonant leadership on work performance. Furthermore, the indirect effect of resonant leadership on work performance through self-efficacy and organizational identification was confirmed using the Sobel test ( $z = 2.63$ ,  $p < 0.01$ ;  $z = 1.80$ ,  $p < 0.01$ ), which is consistent with Hypotheses 3 and 5. Similarly, Models 8 and 9 exhibited a significant cross-level mediation of self-efficacy ( $\gamma = -0.12$ ,  $p < 0.01$ ) and organizational identification on turnover intention ( $\gamma = -0.09$ ,  $p < 0.01$ ) as no direct effect of resonant leadership on turnover intention was observed.

As shown in Table 3, the indirect effect of resonant leadership on turnover intention through self-efficacy and organizational identification was confirmed using the Sobel test ( $z = -3.40$ ,  $p < 0.01$ ;  $z = -2.42$ ,  $p < 0.01$ ), thus supporting Hypotheses 4 and 6. To assess the joint mediation effect of self-efficacy and organizational identification on the relationship between resonant leadership and a) work performance and b) turnover intentions, we adopted bias-corrected 95% confidence intervals (CI) through bootstrapping (with 20,000 resamples). The bootstrapping results presented in Table 3 suggest that Models 6a and 6b (indirect effect = 0.17, 95% CI [0.03, 0.35], excluding zero) as well as 10a and 10b (indirect effect = 0.05, 95% CI [-0.03, 0.24]; excluding zero) supported Hypothesis 7.

## Discussion

This study examined the multilevel mediation effect of self-efficacy and organizational identification on resonant leadership and Gen-Z employees' remote work outcomes. The results reveal the direct and indirect effects of resonant leadership on work performance and turnover intention (Gaan & Shin, 2022; Sahu et al., 2018; Squires et al., 2010; Wagner et al., 2013). Furthermore, the findings indicated that self-efficacy (Bayraktar & Jiménez, 2020; Jayathilake et al., 2021; Reddy & Dawlinmaria, 2020; Singh et al., 2018) and organizational identification (Chillakuri & Mahanandia, 2018; Mazumder et al., 2021; Shen et al., 2014; Walumbwa et al., 2011) mediated the leadership process significantly and positively (Afzal et al., 2019; Suifan et al., 2020). Thus,

the findings of this study concur, to some extent, with the results of the extant literature.

## Theoretical contributions

Considering the increasing composition of Gen-Z employees in the workplace and several other dynamics that impact work outcomes, this study contributes to the existing literature on Gen-Z, resonant leadership, and the software industry in the context of COVID-19. These contributions occur through various mechanisms. *First*, the study was conducted in the software industry to investigate the mechanism by which resonant leadership in a leader–employee dyad influences the Gen-Z cohort's work outcomes in the context of a crisis. Thus, it revealed the cross-level mechanism by which leadership influences employees' work outcomes in a remote context (Gaan & Shin, 2022). Thus, this study has contributed to the existing literature on Gen-Z, as it uncovers factors predicting the reduced nomadic behavior (Chillakuri & Mahanandia, 2018) and poor performance (Jayathilake et al., 2021) of Gen-Z software professionals in the context of the unprecedented crisis. The *second* mechanism revealed that the Gen-Z cohort's reduced turnover intention and enhanced performance are because of growing self-efficacy (Evans & Karl, 2021) and organizational identification (Schroth, 2019; Smith & Strawser, 2022). Thus, resonant leadership serves as an independent variable of such outgrowth, emphasizing its indirect effect on Gen-Z work outcomes. Although the current findings concur with previous study results (Cowden et al., 2011; Mazumder et al., 2021; Walumbwa et al., 2011; Zhang & Chen, 2013), the integrated and cross-level effect of resonant leadership on Gen-Z outcomes through self-efficacy and organizational identification contributes to Gen-Z literature. The *third* mechanism provided a novel contribution to the existing literature on the Gen-Z cohort in the context of the software industry; it revealed the significance of self-efficacy and organizational identification as a joint mechanism of mediators that influence the relationship between resonant leadership and work outcomes.

Thus, this study offers potential insights while integrating the SET and SIT (van Knippenberg & Schippers, 2007) to establish a linkage between the resonant leader and Gen-Z employees' work outcomes. Furthermore, it validates how resonant leaders exchange resources to build psychological factors, such as self-efficacy and organizational identification among the Gen-Z cohort during a crisis. In turn, employees reciprocated with enhanced performance and reduced withdrawal behavior. Thus, this study extends the complementary nature of the social exchange and identity theories, and widens the theoretical perspectives of Gen-Z literature.

## Practical implications

Human capital issues are often neglected in the software industry because of the overestimation of team efficacy over individual self-efficacy, as the occupation leverages the socio-technical systems to a great extent (Dingsøyr & Dybå, 2012). Thus, job-hopping and attrition are common in this industry (Srirangam Ramaprasad et al., 2018), especially among Gen-Z (Chillakuri et al., 2018). Therefore, the self-efficacy and organizational identification of Gen-Z software professionals could be significantly affected during crises (Jayathilake et al., 2021; Kniffin et al., 2020).

Hence, leadership plays a pivotal role in explaining generational effectiveness and the intention to withstand a crisis by enhancing the flexibility of the approach (Stoker et al., 2019) to align with generational expectations (Rudolph et al., 2018). Resonant leadership is rooted in self-regulation and renewal (Boyatzis & McKee, 2005; Lenka & Tiwari, 2016), possessing attributes that integrate well with Gen-Z characteristics and expectations. Therefore, from a managerial perspective, leaders in human resources from the software industry can draw insights from the present study by instilling compassion, hope, and mindfulness in the project leader through regular training programs. Furthermore, this study can enhance managers' attitudes, encourage them to exhibit emotions such as empathy and optimism, and listen to others with care and compassion. Moreover, mandatory yoga and meditation exercises could be implemented after the reporting hours to ensure that managers remain mindful in their approach to mitigating ambiguities and complexities. This type of leadership could support a culture of self-renewal and continuous development (Boyatzis & McKee, 2005) in the digital era (McKee & Massimilian, 2006) and improve Gen-Z employees' self-efficacy. Consequently, a desirable sense of security, growth, and professional competence can be restored in the workplace (Chillakuri & Mahanandia, 2018). The strategic initiative to improve the skills of the team leaders adheres to the value-based resonant leadership style enhancing their experiences with and sense of belonging to the organization while emphasizing the values of success. Trained project leaders forge a flexible environment (Marques, 2015) that reduces the likelihood of nomadic and withdrawal tendencies among Gen-Z employees. In turn, this can reduce the reported high costs of replacement and recruitment (Porto Bellini et al., 2019), especially in the context of a crisis.

## Limitations and future scope

This study has several limitations that should be addressed. *First*, the cross-sectional data present a challenge in terms of generalizing the results; as the newer generation may exhibit different work behaviors because of their continuous growth

and emotional maturity (Rudolph et al., 2018), a longitudinal study is advisable if the model is to be replicated using a sample of project teams at the team and organizational levels. *Second*, the examined model did not consider the moderating effects of self-efficacy (Kirkpatrick & Locke, 1996) of the resonant leader and mindfulness of the employee as a boundary condition to test the indirect effect on Gen-Z work behavior. Thus, further research ought to be conducted. *Third*, the research design was deductive and positivist; however, a mixed method with a social constructivist approach can provide a better understanding of the proposed phenomenon, as every project group in the software industry may have distinct norms and values that contribute to their exceptional performance (Blau, 1995). Therefore, possible incongruences with other project teams and organizational values are reflected (Blau, 1995; Hui et al., 2020). Nuances in the discrepancy provide scope for future research to examine the power of resonant leadership in explicating the variance associated with organizational and group identification as well as differences using a mixed-method research. Thus, future studies should also prioritize the range of outcomes based on organizational and group identification among Gen-Z employees because of the significant explanatory power of leadership effectiveness. *Fourth*, this study was conducted in a developing Asian country, which limits its generalizability. Therefore, the proposed framework needs to be further investigated in developed nations using cautionary measures.

## Conclusion

In the present era, technology drives businesses and Gen-Z is considered more comfortable and sociable than other generations. However, this generation has its challenges (Twenge, 2017) which are compounded when organizational dynamics encounter a crisis, such as the COVID-19 pandemic. Therefore, this study explicating the influence of leadership on the Gen-Z cohort's behavior is crucial in a crisis context. Considering these challenges and the scarce literature on the Gen-Z cohort in the context of remote work practices, the present study highlights the potential drivers that can influence Gen-Z employees' remote work outcomes. Expanding the theories of social exchange and social identity, the present study investigated the multilevel effect of resonant leadership on the work outcomes of Gen-Z software professionals through self-efficacy and organizational identification, thereby adding a new dimension to the Gen-Z cohort. From the organizational perspective, software companies can implement intervention mechanisms wherein the project leader can enhance their value-based resonant leadership style that resonates with the Gen-Z cohort's expectations. This, in turn, ensures the attraction and retention of

Gen-Z employees at the workplace while articulating success through continuous renewal and self-identification with the organization.

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## Declarations

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