



Effect of Psychological Ownership on Employee Defensive Voice in IT Services Organisations: The Moderating Role of Power Distance Orientation

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Abstract

The relationship between psychological ownership (PO) and defensive voice to supervisor, and the moderation of this relationship by power distance orientation (PDO) are not examined in current research. To reduce harmful defensive voice to supervisor in organisations, it was examined if PO (job or organisation) is negatively related to defensive voice to supervisor. As research reports that PDO affects different predictor–employee voice relationships, the moderating effect of PDO on PO (job or organisation)–defensive voice to supervisor relationship was examined. Survey method and judgement sampling were employed for data collection from 349 information technology (IT) services employees in India. Confirmatory factor analysis and moderated hierarchical regression were used for analysis. PO (job or organisation) was found to be negatively related to defensive voice to supervisor, and PDO moderated this relationship such that high PDO employees express lower defensive voice to supervisor than low PDO employees.

Keywords: Defensive Voice to Supervisor, Psychological Ownership, Power Distance Orientation, Information Technology Services

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Introduction

Employee defensive voice is a dysfunctional and harmful voice behaviour (Howard & Holmes, 2020; Ma, 2016; Maynes & Podsakoff, 2014; Ng et al., 2021). Employee defensive voice to supervisor causes undesirable consequences in organisations (Ayyagari et al., 2011; Maynes & Podsakoff, 2014). As possible means of alleviating this harmful defensive voice to supervisor, the effect of psychological ownership (PO) experienced towards one's job or organisation on defensive voice to supervisor is studied. Predictors of defensive voice such as contempt for organisation, decreased ethical leadership (Ng et al., 2021), work stress (Lu et al., 2019), and leader humility (Bharanitharan et al., 2019) have been studied by extant research. Further, PO (experienced towards job or organisation) has been found to alleviate negative attitudes or behaviour such as employee intentions of turnover (Bernhard & O'Driscoll, 2011), knowledge withholding behaviour (Peng & Pierce, 2015), and burnout (Kaur et al., 2013). Therefore, it is proposed that PO (experienced towards job or organisation) may alleviate the negative behaviour of defensive voice to supervisor. Extant research has not examined the role of PO (experienced towards job or organisation) in alleviating defensive voice communicated to supervisor. This research gap is addressed in Research Question 1 (RQ1): Does an employee's PO (job-based) or PO (organisation-based) alleviate defensive voice to supervisor?

Power distance orientation (PDO) regulates employee voice expressed to the supervisor (Botero & Van Dyne, 2009; Lin et al., 2019). Moderation by PDO has been examined on leader-member exchange–employee voice relationship (Botero & Van Dyne, 2009), on the mediation of personal sense of power in leader humility–employee voice relationship (Lin et al., 2019), and on the mediation of PO in employee control–organisational citizenship behaviour, and employee control–affective commitment relationships (Liu et al., 2012). Thus, it is understood that the influence of PO on employee behaviour is dependent on PDO (Liu et al., 2012), and, therefore, it is proposed that the influence of PO on employee behaviour of defensive voice to supervisor is moderated by PDO. It is also understood that PDO moderates the association linking independent variables and employee voice (Botero & Van Dyne, 2009; Lin et al., 2019), and, therefore, it is proposed that PDO moderates the association between PO (experienced towards job or organisation) and defensive voice to supervisor. Extant literature has not examined the influence of PDO in PO (experienced towards job or organisation)–defensive voice to supervisor relationship. This research gap is addressed in Research Question 2 (RQ2): Does an employee's PDO moderate the relationship between PO

(organisation-based) and defensive voice to supervisor and the relationship between PO (job-based) and defensive voice to supervisor?

Information technology (IT) services sector in India was considered as a suitable research site for this study as this sector constantly faces changes at multiple levels such as technology, project, job and environment (Ayyagari et al., 2011; Bharanitharan et al., 2019; NASSCOM, 2016; NASSCOM, 2021b; Rivard et al., 2011; The Economic Times, 2021), which necessitates the implementation of corrective actions by supervisors as a response to these rapid changes. These corrective actions by supervisors may elicit obstructive defensive voice to supervisor from the subordinate (Maynes & Podsakoff, 2014), and this obstructive defensive voice to supervisor causes negative organisational consequences (Ayyagari et al., 2011; Ragu-nathan et al., 2008; Yang et al., 2015).

This study is conducted in response to calls for research on defensive voice (Maynes & Podsakoff, 2014), and the defensive voice of employees with a low perception of power of self (Liu et al., 2021). Two unique theoretical contributions are submitted: First, this study contributes to the scarce research on Maynes and Podsakoff's (2014) defensive voice, by showing the negative associations between PO (job-based) and defensive voice to supervisor, and PO (organisation-based) and defensive voice to supervisor. Second, this is the earliest study to show the moderating effect of PDO on PO (organisation-based)-defensive voice to supervisor and PO (job-based)-defensive voice to supervisor relationships. This study benefits organisations [negative consequences such as work exhaustion (Ayyagari et al., 2011) can be reduced], supervisors [lowered stress (Maynes & Podsakoff, 2014)], and defensively-voicing subordinates [low performance evaluations (Maynes & Podsakoff, 2014) and “performance anxiety” (Maynes & Podsakoff, 2014, p. 101) can be avoided].

The next section will discuss the extant literature to showcase the knowledge gap described above. It will also present the conceptual framework of the study. The section to follow will present the research methodology used in the study. The next section will present analytical techniques and results. The section to follow will present the discussion. The last section will present the conclusion of the study.

Review of Literature and Hypothesis Development

Defensive Voice to Supervisor: Definition and Harmful Effects

Defensive voice is defined as “voluntary expression of opposition to changing an organisation’s policies, procedures, programs, and practices, even when the

proposed changes have merit or making changes is necessary” (Maynes & Podsakoff, 2014, p. 92). Defensive voice is usually directed towards employees inside the organisation (Maynes & Podsakoff, 2014), but defensive voice which is directed specifically to the employee's supervisor is studied here.

Defensive voice to supervisor causes undesirable consequences in organisations: When an employee expresses defensive voice to supervisor, he/she opposes implementation of needed or worthy changes (Maynes & Podsakoff, 2014). When supervisors implement changes, it is important for subordinates to accept these necessary changes and work accordingly. When they express defensive voice, a manager has to spend more time and effort to make the subordinate understand why these changes are important and subsequently convince the subordinate to perform the work required (Maynes & Podsakoff, 2014). This causes stress to supervisors as they have to expend a greater level of effort and time to convince the defensively-voicing subordinate, in addition to their regular workload. High stress causes strain (Ayyagari et al., 2011), resulting in low organisational commitment, low job satisfaction, higher turnover intentions (Ayyagari et al., 2011), and absenteeism (Ragu-Nathan et al., 2008) in managers. Stress also causes work exhaustion and low productivity in managers (Ayyagari et al., 2011). Stress may also cause depression (Yang et al., 2015) in managers. Thus, when supervisors are stressed, the organisation has to pay a considerable price (Rivard et al., 2011). Hence, organisations need to mitigate this negative defensive voice to supervisor.

Psychological Ownership and Defensive Voice to Supervisor

PO is defined as “the psychologically experienced phenomenon in which an employee develops possessive feelings for the target” (Van Dyne & Pierce, 2004, p. 439). PO directed towards organisation called PO (organisation-based) and PO experienced towards job called PO (job-based) (Dawkins et al., 2017) are studied here. Regarding previously conducted research on Maynes and Podsakoff’s (2014) defensive voice, Ng et al. (2021) reported that employees who felt more contempt for their organisation expressed more defensive voice. Also, when an employee perceives a decrease in ethical leadership, he/she expresses defensive voice through increased contempt for organisation (Ng et al., 2021). Lu et al. (2019) found that work stress perceived by an employee contributed to defensive voice, and this relationship was mediated by ego depletion. In addition to the predicting role of negative attributes such as contempt for organisation, decreased ethical leadership (Ng et al., 2021) and work stress (Lu et al., 2019) in defensive voice, Bharanitharan et al. (2019) showed that positive attributes such as leader humility may also

contribute to defensive voice, through mediating effects of follower's feeling of being trusted and follower's self-efficacy.

It is also posited that, while negative triggers in an organisation can cause the negative reaction of defensive voice from an employee, positive triggers in an organisation [such as positive organisational behaviour (POB) of PO experienced towards job or organisation (Avey et al., 2009)] may mitigate the negative reaction of defensive voice from an employee. On examining the extant literature on the relationship between different predictors and defensive voice (Bharanitharan et al., 2019; Lu et al., 2019; Ng et al., 2021), and the relationship between PO (experienced towards job or organisation) and positive employee voice (Andiyasari et al., 2017; Gardner et al., 2021; Mustafa et al., 2015; O'Driscoll et al., 2006; Ramos et al., 2014; Wang et al., 2019), it was identified that the relationships between PO (organisation-based) and negatively-intended defensive voice to supervisor and between PO (job-based) and negatively-intended defensive voice to supervisor are not examined in existing literature. This research gap is examined in hypotheses 1 and 2 (associated with RQ1) discussed below.

It is observed that PO is a productive reserve in organisations which can influence employee performance in a positive manner (Avey et al., 2009). It is reported that PO results in a host of beneficial outcomes such as in-role performance (Park et al., 2015), job satisfaction (Bernhard & O'Driscoll, 2011; Peng & Pierce, 2015; Sieger et al., 2011; Van Dyne & Pierce, 2004), affective organisational commitment (Bernhard & O'Driscoll, 2011; Mayhew et al., 2007; O'Driscoll et al., 2006), helping extra-role behaviour (O'Driscoll et al., 2006), feelings of care (Kaur et al., 2013), organisation-based self-esteem (Liu et al., 2012; Van Dyne & Pierce, 2004), contextual performance (Han et al., 2015), work engagement (Ramos et al., 2014), creativity (Zhang et al., 2021), and financial performance of a firm (Torp & Nielsen, 2018). It has been observed that PO has a distinctive role in inspiring organisational citizenship behaviour (OCB) in employees, beyond the influence exerted by organisational commitment and job satisfaction in OCB (Van Dyne & Pierce, 2004).

PO experienced towards job or organisation results in an employee behaving in a positive manner owing to a sense of responsibility (Avey et al., 2009; Van Dyne & Pierce, 2004), and causes nurturing feelings towards the job or organisation (Avey et al., 2012). When an employee experiences PO towards his/her job or organisation, then the job or organisation gets assimilated into the identity of the

employee (Pierce et al., 2001), and, therefore, the employee will engage in benevolent and compassionate behaviour towards the job or organisation (Pierce et al., 2001).

Hence, observing the positive outcomes of PO reported by research above, and the beneficial feelings it causes in employees towards job or organisation, it is posited that when an employee experiences a positive feeling such as PO towards job or organisation, he/she may not engage in damaging and negative behaviour such as defensive voice to supervisor. As per the propositions of Pavitra and Sarikwal (2020), and relating to RQ1, it is hypothesized:

Hypothesis 1: Employee PO (organisation-based) is negatively related to defensive voice to the supervisor.

Hypothesis 2: Employee PO (job-based) is negatively related to defensive voice to the supervisor.

Power Distance Orientation as a Moderator

PDO is defined as “the extent to which an individual accepts the unequal distribution of power in institutions and organisations” (Clugston et al., 2000, p.9). With regard to the moderating role of PDO on the association between PO and two criterion variables, Liu et al. (2012) showed that the mediation effect of PO (organisation-based) in the relationship between employee control and OCB, and in the relationship between employee control and affective commitment (AC) was moderated by PDO in a way that the mediation of PO is present only for low PDO employees and the mediation of PO is absent for high PDO employees. Thus, it is observed that the effect of PO on employee behaviour can be contingent on PDO (Liu et al., 2012). Therefore, it is posited that the effect of PO on defensive voice to supervisor may also be influenced by PDO.

The presence of the effect of PDO has also been identified in the relationships between various predictors and employee voice. Lin et al. (2019) report that PDO moderates the effect of humility of leader on subordinate voice via the mediator personal sense of power, in such a manner that this effect was more dominant for low PDO employees rather than high PDO employees. Botero and Van Dyne (2009) demonstrated the moderation of PDO on the relationship between leader-member exchange (LMX) and subordinate voice in such a manner that a positive link between LMX and employee voice was observed only for employees possessing low PDO. Thus, it is observed that PDO moderates predictors–employee voice

relationships, such that high and low PDO employees express different levels of voice (Botero & Van Dyne, 2009; Lin et al., 2019). Therefore, it is posited that PDO moderates the negative relationship between PO (experienced towards job or organisation) and defensive voice to supervisor, such that high and low PDO employees express different levels of defensive voice to supervisor. On examining the extant literature of moderation by PDO on the relationships, discussed above, between different predictors and employee voice and PO and different criterion variables, it is identified that the moderating effect of PDO on the relationships between PO (organisation-based) and defensive voice directed to supervisor, and on PO (job-based) and defensive voice directed to supervisor are not examined. This research gap is examined in hypotheses 3 and 4 (associated with RQ2) presented below.

The direction of the interaction presented above is proposed as follows. A high PDO employee is less probable to express defensive voice to his/her supervisor because of a preference for obeying the supervisor without countering the supervisor's opinion (Hon & Lu, 2016). A high PDO employee may not prefer to disagree with supervisor (Tyler et al., 2000) and challenge opinions of his/her supervisor (Botero & Van Dyne, 2009). Hence, a high PDO employee with high PO is less probable to engage in defensive voice to the supervisor, and therefore, a strong negative link between PO and defensive voice to supervisor is likely to be observed in such employees. In contrast, a low PDO employee is more probable to express defensive voice. They do not easily agree with their supervisors (Lam et al., 2002), regard conflict with their supervisor as a conventional as well as an essential practice (Tyler et al., 2000), and do not hesitate to voice their opinions (Kirkman et al., 2009). Hence, a low PDO employee with high PO is more probable to engage in defensive voice to the supervisor compared to a high PDO employee with high PO. Therefore, a low PDO employee is likely to exhibit a weak negative link between PO and defensive voice to supervisor. Hence, it is hypothesized that a high PDO employee with high PO (experienced towards job or organisation) may express lower defensive voice to supervisor than a low PDO employee with high PO (experienced towards job or organisation). As per the propositions of Pavitra and Sarikwal (2020) and relating to RQ2, it is hypothesized:

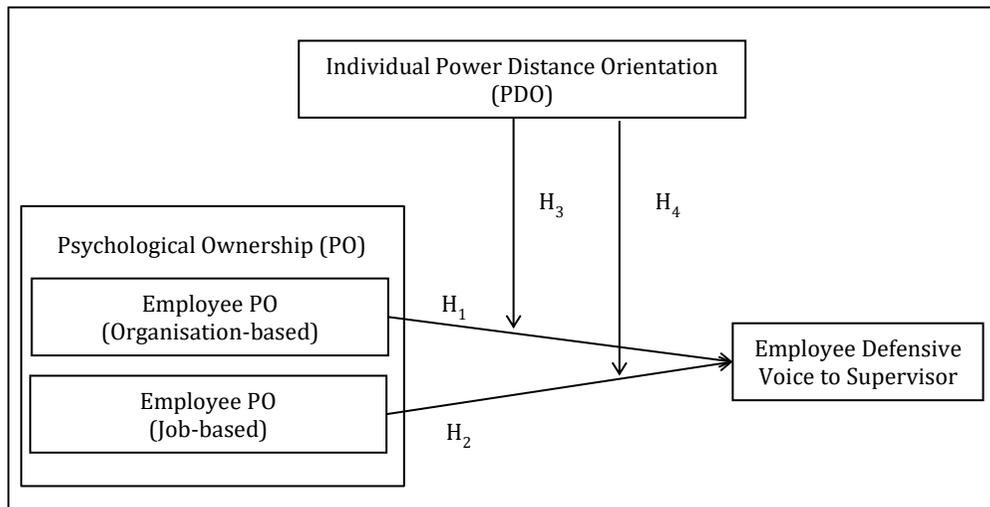
Hypothesis 3: Employee's PDO moderates the negative relationship between PO (organisation-based) and defensive voice to the supervisor in such a way that there is a strong negative relationship between PO (organisation-based) and defensive voice to the supervisor for high PDO employees and a weak negative

relationship between PO (organisation-based) and defensive voice to the supervisor for low PDO employees.

Hypothesis 4: Employee’s PDO moderates the negative relationship between PO (job-based) and defensive voice to the supervisor in such a way that there is a strong negative relationship between PO (job-based) and defensive voice to the supervisor for high PDO employees and a weak negative relationship between PO (job-based) and defensive voice to the supervisor for low PDO employees.

The hypothesized relationships are represented in the form of a conceptual model shown in Figure 1.

Figure 1: Conceptual Framework of the Study



Source: Based on Pavitra and Sarikwal (2020)

Research Methodology

Research Site

The supervisors in IT services organisations, a sector of information technology–business process management (IT-BPM) industry (Ministry of Electronics and Information Technology, Government of India, 2017; NASSCOM, 2021a), are regularly confronted with changes on many levels:

- At the technological level, matters such as changes related to software and information and communication technology (ICT) that employees work with, technological developments in the overall sector such as a focus on business

consulting, cloud, internet, and software as a service (SaaS) models from 2003-04 to 2008, focus on social, cloud, analytics, mobile (SCAM) model from 2009 to 2012 and focus on digital technology such as virtual reality (VR), artificial intelligence (AI), internet of things (IoT), machine learning (ML), augmented reality (AR), and blockchain beginning from 2013 (The Economic Times, 2021) and a continual necessity for upgrading themselves and their subordinates with reference to reskilling-related initiatives and other training endeavours (Ayyagari et al., 2011; Bharanitharan et al., 2019; NASSCOM, 2016; Ragu-Nathan et al., 2008).

- At the project level, changes such as the dynamic nature of software project requirements (Rivard et al., 2011).
- At the job level, the shifting nature of jobs due to automation and nascent technology in IT services (NASSCOM, 2016), and
- At the environment level (Ayyagari et al., 2011) concerns such as the COVID-19 pandemic (NASSCOM, 2021b).

Managers need to implement necessary corrective actions (managers' own initiative or directed by their seniors in the organisational hierarchy) as and when the aforementioned changes arise. Subordinate defensive voice to supervisor [for e.g., voicing opposition to the implementation of novel technologies (Liu et al., 2021)] obstructs the execution of these needed changes (Maynes & Podsakoff, 2014) in IT services organisations, causing supervisory stress, and consequently harmful organisational consequences (Ayyagari et al., 2011; Ragu-nathan et al., 2008; Yang et al., 2015). Hence, this study was conducted in IT services organisations in India, which was considered as a suitable site where employee defensive voice is likely to be high due to constant changes required and also because findings of the study could assist in minimizing this harmful defensive voice in the sector.

Participants and Procedure

A cross-sectional research design was employed, and data was collected using questionnaires from 382 middle-level and lower-level employees of IT services organisations in India (Pavitra & Sarikwal, in press) through a survey, administered online using Google Forms, in the period between February 2021 and May 2021. The population considered for this study comprises all employees in IT services organisations in India. Considering that this is a large population (India Brand Equity Foundation, 2022; NASSCOM, 2022), the sample size of 382 was selected as per these two criteria: First criterion applied was Cochran's (1977) formula for a large population:

$$\text{Sample size, } n = (z^2pq)/e^2$$

Where z (z value for 95% confidence level) = 1.96, p (population proportion) = 0.5, q ($1-p$) = 0.5, and e (margin of error) = 0.05. Substituting these values in the above Cochran's (1977) formula gives us a sample size of 384. Second criterion applied was a recommendation of sample size of 400 for population greater than 100,000 with a precision level of plus or minus 5% given by Israel (1992) and Yamane (1967, as cited in Israel, 1992). Hence, from the above recommendations of 384 sample size of Cochran (1977), and 400 sample size of Israel (1992) and Yamane (1967, as cited in Israel, 1992), a sample of 382 was considered adequate. Initially, 382 completed forms were received, but after inappropriate responses were removed, the final sample size of the study was 349 (Pavitra & Sarikwal, in press). The sampling technique used in this study is judgement sampling. The judgement criterion was that employees had to belong to middle-level or lower-level because their position in the organisational hierarchy requires them to report to a supervisor to whom the employee may communicate defensive voice (Pavitra & Sarikwal, in press). The sample of the study comprises 134 female employees and 215 male employees; 123 employees holding a Bachelor's degree, and 226 employees holding a master's degree (Pavitra & Sarikwal, in press). Regarding details on age and organisational tenure of the sample, the mean age was 28.76 years and mean organisational tenure was 36.78 months (Pavitra & Sarikwal, in press).

Measures

In all four variables, the construct was formed by first summing the individual scores of the items in each construct and then by computing the mean of the individual item scores. For all the measures mentioned below, a Likert scale with five points spanning from 1 = strongly disagree to 5 = strongly agree was employed.

The scale of Van Dyne and Pierce (2004) was used to measure an employee's PO (organisation-based). Cronbach's alpha of the seven-item scale was 0.930 (Pavitra & Sarikwal, in press). Mayhew et al. (2007) modified PO (organisation-based) scale of Van Dyne and Pierce (2004), and this was used to measure employee's PO for his/her job. Cronbach's alpha of the five-item scale was 0.862 (Pavitra & Sarikwal, in press). The scale of Dorfman and Howell (1988) was used to measure employee's PDO. The Cronbach's alpha of the six-item scale was 0.812 (Pavitra & Sarikwal, in press). The Cronbach's alpha values of all these variables indicate sufficient reliability as they were above 0.7 (Leech et al., 2005).

Maynes and Podsakoff's (2014) defensive voice scale was reworded to measure defensive voice to supervisor. The original scale measures defensive voice of employee, an example item being "(This employee) Stubbornly argues against changing work methods, even when the proposed changes have merit" (Maynes & Podsakoff, 2014, p.96). The wording of items of the scale was changed to denote defensive voice of employee directed only to the supervisor, an example item being "(As an employee, you) Stubbornly argue with your supervisor against changing work methods, even when the proposed changes have merit". The Cronbach's alpha of the five-item scale was 0.948, which shows that this measure has sufficient reliability as it was above 0.7 (Leech et al., 2005).

Several control variables were also included in the study. Employee gender (dummy codes assigned as male=0 and female=1) was added as a control variable as men may express more voice than women (Pavitra & Sarikwal, in press; Ward et al., 2016). Employee education (dummy codes assigned as master's degree=0; bachelor's degree=1) was added as a control variable as employees with a greater level of education may communicate greater voice (Liang et al., 2012; Pavitra & Sarikwal, in press). Employee age (calculated in years) was taken as a control variable because older employees may speak up more (Pavitra & Sarikwal, in press; Qin et al., 2014). Organisational tenure (calculated in months) was also added as a control variable as employees who have a greater organisational tenure tend to express more voice (Chan, 2014; Liang et al., 2012; Pavitra & Sarikwal, in press).

Analyses and Results

Confirmatory Factor Analysis

Prior to performing the test of hypotheses, confirmatory factor analysis (CFA) was performed with AMOS 21 for the purpose of checking the model fit with data, and to check if the constructs have convergent and discriminant validity. It was seen from the results that all the factor loadings were statistically significant ($p < 0.001$), but three items had standardized factor loadings lower than 0.5. These three items were "most of the people that work for this organization feel as though they own the company" of PO (organisation-based) with a loading of 0.46, "most people that work for this organization feel as though they own their job" of PO (job-based) with a loading of 0.458, and "managers should avoid off-the-job social contacts with employees" of PDO with a loading of 0.237. The standardized factor loadings of all items need to be higher than 0.5 for convergent validity (Hair et al., 2019). It was inferred from the indices of model fit that the fit to the data was not good for a

sample of 349 respondents [$\chi^2/df = 2.977$, comparative fit index (CFI) = 0.933, root mean square error of approximation (RMSEA) = 0.075] as per Hair et al. (2019).

Due to low standardized loadings (loadings below 0.5), these three items were eliminated from further analysis (Hair et al., 2019), and CFA was performed again. It was seen from the results that all factor loadings were statistically significant ($p < 0.001$), and this time, the standardized factor loadings of all items (shown in Table 1) were greater than 0.5, indicating convergent validity for all constructs (Hair et al., 2019). After the elimination of the three items mentioned above, the model fit indices also showed improvement ($\chi^2/df = 2.594$, CFI = 0.958, RMSEA = 0.068), indicating that now the model fit with the data was good (Hair et al. 2019). Hence, after elimination of three items with standardized loadings below 0.5, model fit with data was achieved. From Table 1, it is seen that the average variance extracted (AVE) for all constructs was higher than 0.5 and construct reliability (CR) for all constructs was higher than 0.7. This indicates that the four constructs of the study contain convergent validity (Hair et al., 2019).

Table 1: Confirmatory Factor Analysis Results

Construct	Scale items	Standardized factor loadings	AVE	CR
PO (Organisation-based)	1. This is MY organization	0.929	0.7716	0.9528
	2. I sense that this organization is OUR company	0.911		
	3. I feel a very high degree of personal ownership for this organization	0.861		
	4. I sense that this is MY company	0.919		
	5. This is OUR company	0.883		
	6. It is hard for me to think about this organization as MINE (reverse-scored)	0.756		
PO (Job-based)	1. This is MY job	0.929	0.7362	0.9171
	2. I feel a very high degree of personal ownership for this job.	0.854		
	3. I sense that this is MY job.	0.907		
	4. It is hard for me to think about this job as MINE (reverse-scored)	0.728		

Construct	Scale items	Standardized factor loadings	AVE	CR
PDO	1. Managers should make most decisions without consulting subordinates.	0.734	0.5809	0.8718
	2. It is frequently necessary for a manager to use authority and power when dealing with subordinates.	0.855		
	3. Managers should seldom ask for the opinions of employees.	0.77		
	4. Employees should not disagree with management decisions.	0.570		
	5. Managers should not delegate important tasks to employees.	0.847		
Defensive voice to supervisor	1. Stubbornly argue with your supervisor against changing work methods, even when the proposed changes have merit.	0.854	0.7908	0.9496
	2. Speak out to your supervisor against changing work policies, even when making changes would be for the best.	0.929		
	3. Vocally oppose your supervisor regarding changing how things are done, even when changing is inevitable.	0.894		
	4. Rigidly argue with your supervisor against changing work procedures, even when implementing the changes makes sense.	0.842		
	5. Vocally argue with your supervisor against changing work practices, even when making changes is necessary.	0.924		

Note: AVE=Average variance extracted; CR=Construct reliability

Table 2 shows the squared inter-correlations among all variables. From Tables 1 and 2, it was seen that for each construct, the AVE is greater than the squared inter-

correlation values with all other variables. From this, it is inferred that the constructs of this study contain discriminant validity (Hair et al., 2019) as well.

Table 2: Squared Inter-correlations Among Variables

Construct	PO (Organisation-based)	PO (Job-based)	PDO
PO (organisation-based)			
PO (job-based)	0.567		
PDO	0.0161	0.0331	
Defensive voice to supervisor	0.0144	0.0432	0.021

Hence, it is inferred that there is adequate model fit with data, and this study’s constructs are found to have convergent validity and discriminant validity. Additionally, nomological validity and content validity of the construct defensive voice to supervisor were also tested because Maynes and Podsakoff’s (2014) existing defensive voice scale was reworded to denote defensive voice to supervisor.

Additional Validity Tests for Defensive Voice to Supervisor: Nomological Validity and Content Validity

First, nomological validity of defensive voice to supervisor was tested. Table 3 shows the correlations between defensive voice to supervisor and PO (organisation-based), PO (job-based), and PDO.

Table 3: Correlations of Defensive Voice to Supervisor with Other Constructs

Construct	Defensive voice to supervisor
PO (organisation-based)	-0.120
PO (job-based)	-0.208
PDO	0.145

It is seen from Table 3 that defensive voice to supervisor is negatively correlated with PO (organisation-based) ($r = -0.120$) and with PO (job-based) ($r = -0.208$). As extant empirical research on the relationship between PO (job or organisation) and defensive voice to supervisor could not be found, theory is used for confirmation. As hypothesized above, based on research of Avey et al. (2009), Avey et al. (2012), Van Dyne and Pierce (2004), and propositions of Pavitra and

Sarikwal (2020), it is seen that as PO experienced towards organisation or job increases, defensive voice to supervisor decreases.

Table 3 shows that defensive voice to supervisor is positively correlated with PDO ($r = 0.145$), indicating that when PDO increases, defensive voice to supervisor also increases. This seemed to be in disagreement with the moderation hypotheses (Hypothesis 3 and Hypothesis 4), wherein it is suggested that as both PO and PDO increase in an employee, his/her defensive voice to supervisor decreases. This divergence from these hypotheses can be explained with the following: Liu et al. (2021) identified that when an employee feels they hold low power, he/she will engage in more defensive voice to reduce pressure caused by change. It is possible that in this study, high PDO employees, in addition to perceiving a huge power difference between themselves and the supervisor, may also be feeling a low sense of power themselves. That is, high PDO employees feel that their supervisor holds more power than them and also that they themselves hold a low amount of power. Thus, due to this perception of low power, a high PDO employee may express more defensive voice to supervisor (Liu et al., 2021).

Why then is it hypothesized that high PDO and high PO feelings in employees would lead to lower defensive voice to supervisor? This can be explained with two reasons: One, it may be the case that due to the interaction effect of high PO and high PDO, the sense of control gained from high PO (Pierce et al., 2001) in high PDO employees may increase their sense of power, reduce the pressure caused by change, and consequently mitigate their need to express defensive voice to supervisor. Two, it is also possible that the possessive and positive feelings experienced towards job or organisation arising from PO experienced towards job or organisation may increase the already present respect for hierarchy and supervisory status in high PDO employees and hence contribute to lowering defensive voice to supervisor. Hence, PDO by itself may be positively correlated with defensive voice to supervisor ($r=0.145$ from Table 3), but the combined effect of PO and PDO of employee may reduce defensive voice to supervisor (hypotheses 3 and 4). Hence, from above points it is seen that directions of correlations of defensive voice to supervisor with other constructs are in accordance with theoretical foundations (empirical research on the relationship among these constructs could not be found), and the construct defensive voice to supervisor is found to have nomological validity (Hair et al., 2019).

Second, content validity of defensive voice to supervisor was tested. On comparing each of the five items of defensive voice to supervisor scale (shown in

Table 1), a high level of conformance between the scale items [for e.g. “(As an employee, you) Stubbornly argue with your supervisor against changing work methods, even when the proposed changes have merit”] and theoretical definition of the construct [“voluntary expression of opposition to changing an organisation’s policies, procedures, programs, and practices, even when the proposed changes have merit or making changes is necessary” (Maynes & Podsakoff, 2014, p.92) expressed by an employee to his/her supervisor] was found. Hence, the construct defensive voice to supervisor was found to have content validity (Hair et al., 2019).

From the above results, nomological validity and content validity were found to be satisfactory for the construct defensive voice to supervisor. Thus, the construct, defensive voice to supervisor, possesses construct reliability and construct validity (convergent validity, discriminant validity, nomological validity, and content validity) as per Hair et al. (2019). Correlation analysis is employed in the next sub-section to examine the degree of association between variables.

Correlation Analysis

The Pearson’s correlation coefficient between all possible pairs of variables in this study as well as each variable’s mean value and standard deviation value were computed as displayed in Table 4.

As displayed in Table 4, it is found that PO (organisation-based) is negatively and significantly correlated with defensive voice to supervisor ($r = -0.117, p < 0.05$). Thus, employees who feel a high level of PO towards organisation may communicate a low level of defensive voice to supervisor. It is found that PO (job-based) is negatively and significantly correlated with defensive voice to supervisor ($r = -0.181, p < 0.01$). Thus, employees feeling a high degree of PO for their jobs may communicate a low level of defensive voice to supervisor. These correlations were found to be in accordance with the directions indicated by the hypotheses of the study. Moderated hierarchical regression is employed for testing hypotheses in the next sub-section.

Hypotheses-Testing Using Moderated Hierarchical Regression

Moderated hierarchical regression was performed with SPSS version 21 to test the hypotheses of the study. The reasons for using a moderated hierarchical regression were twofold: firstly, to separate the influence of control variables on defensive voice to supervisor, and secondly, to understand the additional variance contributed by the interaction term (Dawson, 2014). Before conducting the

Table 4: Correlations between Pairs of Variables, Means, and Standard Deviations

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1. Gender	0.38	0.487	1							
2. Age (in years)	28.76	4.289	-.139**	1						
3. Education	0.35	0.478	.010	-.346**	1					
4. Organisational Tenure (in months)	36.78	26.069	-.005	.596**	-.196**	1				
5. PO (Organisation-based)	4.1581	0.6840	.049	.162**	-.196**	.220**	1			
6. PO (Job-based)	4.4771	0.6022	.072	.230**	-.166**	.244**	.717**	1		
7. PDO	1.8504	0.6669	.016	-.022	.072	-.064	-.113*	-.164**	1	
8. Defensive voice to supervisor	1.0705	0.3209	.025	.069	.021	.035	-.117*	-.181**	.133*	1

Notes: 1. N = 349, *p < 0.05 (2-tailed), **p < 0.01 (2-tailed).

2. Means and standard deviations of variables, and correlations between pairs of variables in numbers 1 to 7 are sourced from Pavitra and Sarikwal (in press).

analyses, the independent variables PO (organisation-based), PO (job-based) and the moderator PDO were mean-centred as per Cohen et al. (2003). The interaction term was calculated from the multiplication of mean-centred independent variable and moderator (Cohen et al., 2003; Dawson, 2014). Regarding the hierarchical entry of variables, the first step saw the inclusion of control variables, the second step saw the inclusion of the independent variable and moderator, and the third step saw the inclusion of the interaction term. The result for each hypothesis is given separately in the following sub-sections.

Impact of PO (Organisation-based) on Defensive Voice to Supervisor

Table 5 shows the results of PO (organisation-based) as the independent variable in the moderated hierarchical regression.

Table 5: Results of Moderated Hierarchical Regression Conducted with PO (Organisation-based)

Independent Variables	Dependent variable: Defensive voice to supervisor		
	Model 1	Model 2	Model 3
Control variables			
Age	0.008	0.007	0.006
Education	0.036	0.017	0.015
Gender	0.025	0.028	0.023
Organisational tenure	0.000	0.000	0.000
Direct effect			
PO (organisation-based)		-0.056*	-0.057*
PDO		0.058*	0.063*
Moderating effect			
PO (organisation-based) * PDO			-0.072*
R Square	0.009	0.039	0.051
R square change	0.009	0.03	0.012
F	0.741	2.298*	2.613*
F change	0.741	5.374**	4.372*

Notes: 1. Unstandardized regression coefficients are displayed
 2. *p < 0.05; **p < 0.01

It is seen from Table 5, Model 2 that PO (organisation-based) has a negative and statistically significant effect on defensive voice to supervisor (b = -0.056, p <

0.05). This indicates that PO (organisation-based) is negatively related to defensive voice to supervisor, providing support for Hypothesis 1. The independent variable PO (organisation-based) and moderator PDO together contribute to a statistically significant increase in variance in defensive voice to supervisor (R square change = 0.03, $p < 0.01$).

Impact of PO (Job-based) on Defensive Voice to Supervisor

Table 6 shows the results of PO (job-based) as the independent variable in the moderated hierarchical regression. It is seen from Table 6, Model 2 that PO (job-based) has a negative and statistically significant effect on defensive voice to supervisor ($b = -0.105$, $p < 0.001$). This shows that PO (job-based) is negatively related to defensive voice to supervisor, providing support for Hypothesis 2. The independent variable PO (job-based) and moderator PDO together contribute to a statistically significant increase in variance in defensive voice to supervisor (R square change = 0.052, $p < 0.001$).

Table 6: Results of Moderated Hierarchical Regression Conducted with PO (Job-based)

Independent Variables	Dependent variable: Defensive voice to supervisor		
	Model 1	Model 2	Model 3
Control variables			
Age	0.008	0.009	0.008
Education	0.036	0.018	0.013
Gender	0.025	0.035	0.029
Organisational tenure	0.000	0.000	0.000
Direct effect			
PO (job-based)		-0.105***	-0.105***
PDO		0.049	0.051*
Moderating effect			
PO (job-based) * PDO			-0.095*
R Square	0.009	0.06	0.078
R square change	0.009	0.052	0.017
F	0.741	3.660**	4.101***
F change	0.741	9.425***	6.403*

Notes: 1. Unstandardized regression coefficients are displayed.

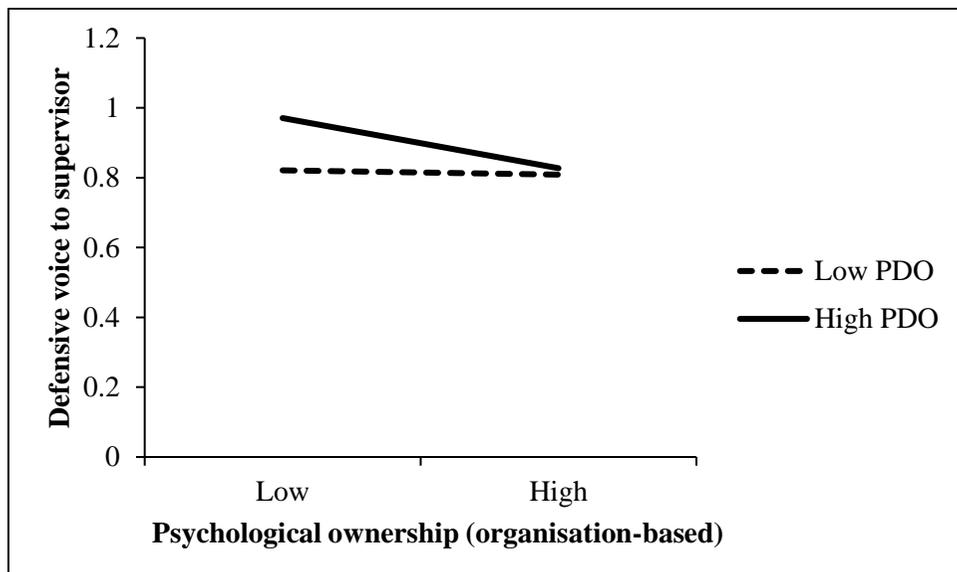
2. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Interaction Effect of PDO on the PO (Organisation-based) and Defensive Voice Relationship

It is seen from Table 5, Model 3 that the interaction term is negative and it is also statistically significant ($b = -0.072, p < 0.05$). In addition to this, the interaction term contributes to a statistically significant increase in variance in defensive voice to supervisor ($R^2 \text{ change} = 0.012, p < 0.05$). Hence, moderation by PDO is found on the negative relationship between PO (organisation-based) and defensive voice to supervisor.

After finding a significant moderation effect of PDO on the relationship between PO (organisation-based) and defensive voice to supervisor, the directions of this significant interaction was examined by plotting the simple slopes between PO (organisation-based) and defensive voice to supervisor at high and low levels of PDO, computed as one standard deviation added to the mean value and one standard deviation subtracted from the mean value respectively (Cohen et al., 2003). The moderation by PDO on PO (organisation-based)-defensive voice to supervisor relationship is displayed in Figure 2.

Figure 2: The Interaction Effect of PDO on PO (Organisation-based) and Defensive Voice to Supervisor



It is illustrated from Figure 2 that a negative relationship is present between PO (organisation-based) and defensive voice to supervisor for both categories of high

PDO employees and low PDO employees. However, the trend line between PO (organisation-based) and defensive voice to supervisor is more negative [(Low PO, 0.97) and (High PO, 0.83)] for high PDO employees than the negative trend line [(Low PO, 0.82) and (High PO, 0.81)] for low PDO employees. Thus, the negative relationship between PO (organisation-based) and defensive voice to supervisor is moderated by employee PDO, such that there is a strong negative relationship between PO (organisation-based) and defensive voice to the supervisor for high PDO employees and a weak negative relationship between PO (organisation-based) and defensive voice to the supervisor for low PDO employees. This provides support for Hypothesis 3.

Interaction Effect of PDO on the PO (Job-based) and Defensive Voice Relationship

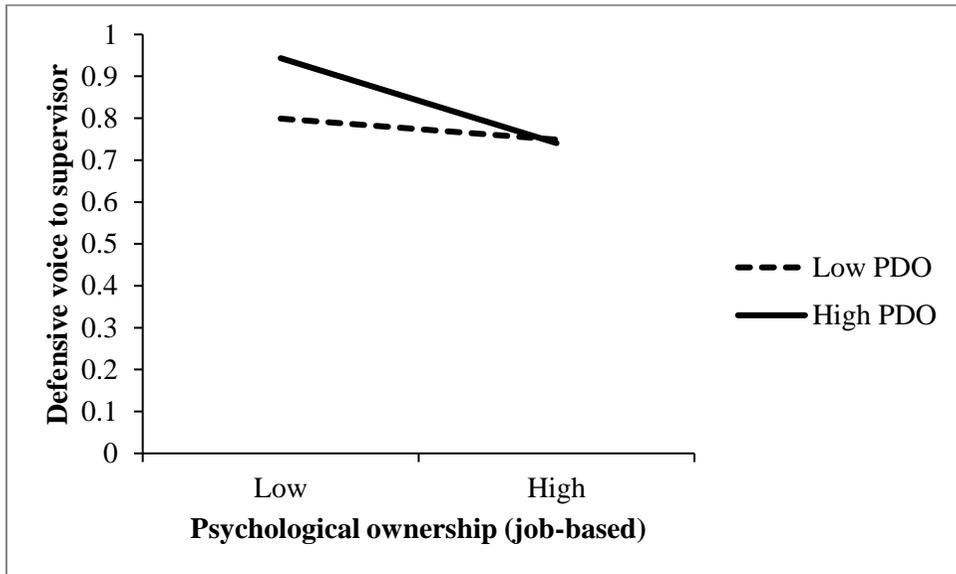
It is seen from Table 6, Model 3 that the interaction term is negative, and it is also statistically significant ($b = -0.095$, $p < 0.05$). In addition to this, the interaction term contributes to a statistically significant increase in variance in defensive voice to supervisor (R square change = 0.017, $p < 0.05$). Hence, moderation by PDO is found on the negative relationship between PO (job-based) and defensive voice to supervisor.

After finding a significant moderation effect of PDO on the PO (job-based)-defensive voice to supervisor relationship, the directions of this significant interaction were examined by plotting the simple slopes between PO (job-based) and defensive voice to supervisor at high and low levels of PDO, computed as one standard deviation added to the mean value and one standard deviation subtracted from the mean value respectively (Cohen et al., 2003). The moderation by PDO on PO (job-based)-defensive voice to supervisor relationship is displayed in Figure 3.

It is illustrated from Figure 3 that a negative relationship is present between PO (job-based) and defensive voice to supervisor for both categories of high PDO employees and low PDO employees. However, the trend line between PO (job-based) and defensive voice to supervisor is more negative for high PDO employees than the negative trend line for low PDO employees. Thus, the negative relationship between PO (job-based) and defensive voice to supervisor is moderated by employee PDO, such that there is a strong negative relationship between PO (job-based) and defensive voice to the supervisor for high PDO employees and a weak negative relationship between PO (job-based) and defensive voice to the supervisor for low PDO employees. This provides support for Hypothesis 4.

In summary, all four hypotheses were supported in this study.

Figure 3: The Interaction Effect of PDO On PO (Job-based) and Defensive Voice To Supervisor



Results for Control Variables

It is seen from model 1 of tables 5 and 6 that none of the unstandardized regression coefficients of the four control variables are statistically significant and that control variables contribute to a low level of 0.9% variance in defensive voice to supervisor. Hence, control variables (age, gender, education and organisational tenure) do not have a significant effect on defensive voice to supervisor.

Discussion

With respect to RQ1, hypotheses 1 and 2 were examined. Both hypotheses were supported. With respect to studies on PO and undesirable attitudes or behaviour, it was seen that PO (experienced towards job or organisation) was negatively related to employee intentions of turnover (Bernhard & O’Driscoll, 2011), PO (organisation-based) was negatively related to knowledge withholding behaviour (Peng & Pierce, 2015) and PO (job-based) was negatively related to burnout (Kaur et al., 2013). Similar to these three studies, it was identified in this study that PO (experienced towards job or organisation) were negatively related to the undesirable behaviour of defensive voice to supervisor.

With respect to RQ2, hypotheses 3 and 4 were examined. Both hypotheses were supported. Similar to previous studies which found a moderation effect of PDO on

LMX–employee voice relationship (Botero & Van Dyne, 2009), on the mediating role of personal sense of power in leader humility–employee voice relationship (Lin et al., 2019), and on the mediating role of PO on the relationship between employee control and several criterion variables (OCB and AC) (Liu et al., 2012), a moderation effect of PDO on PO (experienced towards job or organisation)-defensive voice to supervisor relationships was found in this study. The results of this study also conform to previous research which report that high PDO employees are less probable to disagree with their supervisor (Botero & Van Dyne, 2009; Tyler et al., 2000), and low PDO employees are more probable to disagree with their supervisor (Kirkman et al., 2009; Lam et al., 2002; Tyler et al., 2000).

The control variables, age, gender, education, and organisational tenure were included as previous research suggested that they have an effect on employee voice (Chan, 2014; Liang et al., 2012; Qin et al., 2014; Ward et al., 2016). However, no significant effect of these control variables was found on defensive voice to supervisor. Therefore, it appears that age, gender, education level, and organisational tenure do not influence employee defensive voice to supervisor in IT services organisations.

Conclusion

In conclusion, it was identified in this study that an employee's PO, experienced towards organisation or job, alleviates his/her defensive voice to supervisor in IT services organisations in India. It is also concluded from this study that an employee's PDO moderates the relationship between PO (experienced towards organisation or job) and defensive voice to supervisor, such that high PDO employees who feel PO towards organisation or job express lower level of defensive voice to supervisor compared to low PDO employees who feel PO towards organisation or job in IT services organisations in India.

Two theoretical contributions are made in this study. First, while most of the research on employee voice have studied positively-intended voice (Ma, 2016; Maynes & Podsakoff, 2014), this study contributes to the small but expanding body of research on Maynes and Podsakoff's (2014) negative voice behaviour of defensive voice (Bharanitharan et al., 2019; Déprez et al., 2019; Duan et al., 2021; Liu et al., 2021; Lu et al., 2019; Ma, 2016; Ng et al., 2021; Unler & Caliskan, 2019) by showing a negative relationship between PO (job-based) or PO (organisation-based) and negatively-intended defensive voice to supervisor. Second, although current literature has reported a moderating effect of PDO on several relationships

featuring employee voice as the criterion variable (Botero & Van Dyne, 2009; Lin et al., 2019) and PO as the mediating variable (Liu et al., 2012), to the best of the authors' knowledge, this is the earliest study to show the moderating effect of employee PDO on the relationships between PO (organisation-based and job based) and defensive voice to supervisor.

The results of this study also have practical implications. Since IT services organisations are constant users of ICTs (Ayyagari et al., 2011), organisations must ensure that technology is used for performing work-related processes only and not for holding control over the way employees work, as it may reduce PO (organisation-based) in employees (O'Driscoll et al., 2006). Organisations may also train managers in transformational leadership as it encourages PO (job-based) in the employee (Bernhard & O'Driscoll, 2011). In order to mitigate the low PDO employees' defensive voice to supervisor, organisations should counsel low PDO employees to make them aware of the negative effects of defensive voice to supervisor occurring on three levels: organisational level [slower change implementation (Maynes & Podsakoff, 2014)], team level (low morale), and individual level [low performance evaluations and "performance anxiety" (Maynes & Podsakoff, 2014, p.101)]. Alternatively, organisations may prefer to employ high PDO employees as it is faster for organisations to implement changes; however, organisations must be aware that high PDO employees contribute to lower positively-intended voice (Botero & Van Dyne, 2009; Hsiung & Tsai, 2017; Lin et al., 2019) than low PDO employees. This "double-edged sword" (Lian et al., 2012, p.119) nature of high PDO employees must be evaluated by organisations while hiring them.

As the research design followed in this study is cross-sectional, causality between the variables of the study cannot be reported (Hsiung, 2012). Future researchers may use a research design of the longitudinal type to investigate if the constructs in the study contain causal relationships (Hsiung, 2012). The original defensive voice scale of Maynes and Podsakoff (2014) was extended because only defensive voice communicated to the supervisor was to be measured. Although this construct was found to have good construct reliability and construct validity, it undoubtedly requires further validation from other future studies.

Future studies may also investigate underlying mechanisms that might mediate this PO (experienced towards job or organisation)–defensive voice to supervisor negative relationships, such as an increased sense of control (Pierce et al., 2004) or an increased sense of power (Liu et al., 2021) experienced by the subordinate. This

study showed a moderating effect of PDO on the relationship between PO (experienced towards job or organisation) and defensive voice to supervisor. Future researchers may investigate the moderating impact of other variables such as abusive supervision (Lian et al., 2012), negative mood (Hsiung & Tsai, 2017), impression management reasons (Grant & Mayer, 2009), and personality traits from the Big Five framework such as agreeableness and emotional stability (Maynes & Podsakoff, 2014) to understand if any of these variables influence the PO (experienced towards organisation or job)–employee defensive voice to supervisor relationships.

In conclusion, this study demonstrated that how defensively an employee voices to supervisor in IT services organisations depends on feelings of ownership for the organisation or job and acceptance of power differences between himself/herself and supervisor.

Declaration of Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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