

## Social Relations and Voice Behavior: The Mediating Role of Psychological Safety

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*Abstract:* - Over the years much research has been devoted to understanding how employee's voice behavior may be promoted. Existing studies, however, have not yet fully examined the voice behavior process, because they have not taken the mediating role of cognitive and mental processes into adequate consideration. In order to fill this gap, this study develops and tests a theoretical model which focuses on psychological safety as a mediating mechanism between social relations and voice. Data were collected from 652 employees from the largest express transportation company in Taiwan. Structural equation modeling analysis was used to test the study's hypotheses. Empirical results showed that psychological safety did mediate the relationship between voice behavior and workers' perceived relationships with supervisors and co-workers. Practical management and research implications are discussed and future research directions are suggested.

*Key-words:* - perceived relationship with supervisor, perceived relationship with co-workers, psychological safety, voice behavior

### 1 Introduction

Numerous organizations benefit from proactive behaviors such as employees behaving proactively and voicing suggestions [18], to help improve organizational functions and systems [55], which can contribute to organizational effectiveness and hence business survival [12]. Organizations depend for success on their members speaking up and sharing ideas, intelligence, and concerns. Organizations need the input of employee ideas for "doing things better" [22], while, at the same time, promoting their employees to work harder and to seek out opportunities for constructive change [18].

Previous studies have shown that better decisions are made when employees voice their ideas to their supervisors, because their input helps to improve the work process and aids in correcting and solving work-related problems [12, 42]. Employees' voice can also play an important role in the functioning of work groups [32, 40], and alert managers to areas where change and adjustment in organizational policy and strategy are needed. A better understanding of the factors motivating employees'

voice behavior, therefore, has both practical and theoretical significance.

It is critical for practicing managers to understand how to promote employees' voice behavior in a hypercompetitive environment [25]. The objective of this study, then, is to identify factors which affect the degree to which voice behavior takes place in the work environment. Because voice behavior appears to have such an important influence in efforts to improve organizations, a great deal of research has taken place to determine what factors influence voice behavior most. The theoretical and empirical literatures examining the role of voice have demonstrated that individual differences [27], employee attitude [32], and organizational context [12], are major predictors. A number of researchers have argued that further research into other possible factors influencing the voice process needs to take place [32, 45].

Studies in social relations have pointed to other factors influencing employees' work attitudes, behavior and performance [47, 49]. In a work group, two of the most important interpersonal relationships

for an individual are the individual's perceived relationship with his or her supervisor [31], and with other work group members [34]. Research has been presented which suggests that perceived relationships with a supervisor and with co-workers can increase job satisfaction, organizational commitment, job performance, and organization citizenship behaviors (OCBs) [4, 26, 35, 49, 54]. Little is known, however, about how social relations with co-workers affect voice behavior. To date, studies have exclusively concentrated on the way in which employee voice behavior can be affected by the perceived relationship with a supervisor [3, 53]. Our treatment of social relations is more comprehensive because we investigate the employees' social relations with their supervisors, and with their co-workers, enabling us to clarify statistically the relative both effects of each on voice behavior.

Certain research studies have suggested that psychological safety appears to play a crucial mediating role between work contexts and work outcomes [38, 55]. If employees perceive that there is a cost to speaking up, they will not provide constructive viewpoints aimed at improving team effectiveness out of fear that if they do speak up they may face substantial personal and interpersonal risk [12]. In summary, the research suggests that the way employees assess their work context cognitively and affectively will affect their decision about whether to voice their thoughts or to remain silent. There is research to show that individual perceptions and behaviors can be influenced by supervisors and co-workers via observations that take place during daily interactions [17]. Morrison et al. [40] have highlighted the importance of social interactions in the development of safety beliefs and perceptions in a work group. Safety perceptions can shape employees' willingness to speak up. While these studies highlight the importance of social relations in determining whether employees will be willing to voice their ideas, the effect of psychological safety in an employees' social relations context has not yet been fully clarified.

The purpose of this study is to extend previous research by investigating the connection between social relations (i.e. the perceived relations which an employee has with supervisors and co-workers), employee perceptions of psychological safety, and voice behavior. This paper makes two contributions. First, while a number of scholars have contributed extensively to the research literature on voice [18, 7, 58], existing studies have not examined the mediating role of cognitive and mental processes which contribute to voice behavior. This paper addresses this gap by examining the development of

voice in subordinates, and tests a theoretical model highlighting psychological safety as a mediating mechanism in the development of voice in relationships between workers and co-workers, and between workers and their supervisors. Second, although research on voice has been undertaken from a number of different perspectives, none of these studies focuses on the effect of social relations on voice. Fuller et al. [18], for example, have examined voice behavior from the impression management perspective. Detert and Burris [12] used leadership and power theory to conduct a two-phase study of transformational leadership and managerial openness in their voice research. Janssen et al. [27] adopted an adaptation-innovation perspective to investigate how personality and environment interact to effect voice behavior.

None of these studies, however, focuses its attention on the way social relations influence employee's voice behavior. Our research attempts to examine the way in which employees' perceptions of their relationships with co-workers and supervisors influences their voice behavior, particularly when those relationships affect an employee's sense of psychological safety. The results of this study can extend existing knowledge about the development of voice in the work context and help managers develop strategies for encouraging employees to expand their voice behavior in the workplace. In summary, this study proposes a model for voice behavior in which a need for psychological safety serves as a mechanism affecting the voice behavior of employees in their social relationships in the workplace.

## 2 Theory and Hypotheses

### 2.1 Employee's Voice Behavior

Voice is a term that originated in Hirschman's [24] model of exit, voice, and loyalty. It is derived from the idea that employees need to be able to voice their ideas when they recognize some source of dissatisfaction or see an opportunity for improving their organization's well-being. Over the past 40 years, scholars have recognized voice as an important issue in organizations, and research into the nature of voice in the workplace is ongoing. Several scholars have indicated that past studies have had difficulty explaining voice behavior [18]. Several reasons are proposed for this difficulty. Some of the research, for instance, employed inaccurate construct operationalization in research or discussed only main effects, and some of the research was narrowly focused, focusing only on the effects of criticism [32, 58].

This study goes beyond an investigation of the main effects of voice behavior to an investigation of the psychological mediating factors that influence voice behavior. This study focuses on the development of voice which was developed by LePine and Van Dyne [32, 33] in their research on the use of voice to speak out and challenge the status quo with the intent of improving the work context rather than criticizing status quo. Accordingly, this research should be more appropriate than with that in previous works for the existence of the effect of voice behavior.

## 2.2 Perceived Relationship with Supervisor and Voice Behavior

The norm of reciprocity [19] asserts that leaders offer tangible and intangible rewards to employees in the expectation of receiving benefits of equivalent value from the employees in return. Leaders have a crucial impact in fostering subordinates' perceptions and behavior at work, and do so in distinct ways [38], such as satisfaction with leaders [8], commitment [2], task performance [56], and voice [12]. Prior research has established that the perceived relationship with a supervisor refers to the way subordinates perceive the quality of the relationship they have with their immediate supervisor [13, 35]. When subordinates perceive that they have a high quality relationship with their supervisors, those relationships tend to be characterized by feelings of emotional support, trust, preferential treatment, mutual respect, liking, and higher resource allocation [20, 21]. Based on the principle of reciprocity, subordinates will invest greater time and effort in team affairs when they perceive that they have a high quality relationship with their supervisor [6], and will accordingly tend to speak up about any work-related problems in constructive ways to return the benefit to the supervisor.

Empirical findings have investigated the positive association between perceived relationships with supervisors and voice behavior. For example, Deci and Ryan's [11] reported that supervisors who reinforce a supportive work environment by typically displaying concern for employees and by providing positive feedback encouraged their employees to voice their concerns and to solve work-related problems. Moreover, supervisor-subordinate relationship has been found to be a significant positive effect in producing change-oriented OCBs [3], and employees were more likely to engage in helping and voice behavior when they perceived a high-quality relationship with their supervisor [4, 39, 53].

Thus, theory and empirical findings lead us to hypothesize that when subordinates perceive higher quality relations with their immediate supervisor they will be more likely to engage in voice in order to maintain equivalent reciprocity benefits [26], and to facilitate team effectiveness and efficiency. We expect in our Taiwan sample to see that subordinates' perceived relationship with their supervisors is positively associated with their voice behavior.

## 2.3 Perceived Relationship with Co-workers and Voice Behavior

The notion of perceived relationships with co-workers refers to the way employees perceive the quality of the relationships between themselves and their team members [48]. In a high quality relationship between co-workers, individuals are likely to feel supported and mutually respected. High quality relationships with co-workers will be reciprocated to show they value these social exchange relationships [31].

In this type of relationship, individuals are more prone to assist each other and to share information, ideas, and feedback [51, 28]. Some studies provide evidence to support this prediction. For instance, Seers et al. [48] attribute the emphasis on these relationships to the belief that these reciprocity-based exchanges are predictive of employees' exhibiting positive work behavior (e.g., extra-role behaviors), and allow them to benefit from, and belong to, the group. In a similar vein, Cole, Schaninger, and Harris [10] also suggested that exchange relationships between team members express a willingness to exert discretionary extra-role behavior that assists the team by providing information to accomplish team goals.

Following this line of reasoning and previous research findings, we claim that while employees work in a team with higher-quality co-worker relations, members will be mutual supportive, will show each other appreciation and respect, and will cooperate in reaching task goals. These perceptions may be important in developing a sense of group identity, may lead to greater job satisfaction and encourage employees to be more willing to engage in extra-role behaviors such as speaking up or reflecting a constructive voice when solving work-related problems. Thus, we infer higher-quality co-worker relations will enhance employee's voice behavior, and we hypothesize that in our Taiwan sample a subordinate's perceived relationship with co-workers will be positively associated with his or her voice behavior.

## 2.4 Mediating Roles of Psychological Safety

The concept of psychological safety was originally developed in the study of organizational change. Schein and Bennis [46] discussed the need to create psychological safety for individuals if they are to feel secure and capable of changing. Psychological safety can be defined as an employee's "sense of being able to show and employ one's self without fear of negative consequences to self-image, status, or career" [30]. Because supervisors usually represent the organization's agent [15], when employees perceived that they had a higher-quality relationship with their supervisor, they were likely to feel supported, trusted, and safer in their work environment.

More recent studies have found that higher relations with a supervisor will raise the perception of psychological safety for an employee [14, 38]. As to the linkage between psychological safety and voice, past empirical research has generally shown that a perception of psychological safety has a significant link to voice behavior [12, 41]. That is to say, when individuals perceive risk or determine that a situation is threatening, they will be unwilling to demonstrate voice behaviors. In contrast, when employees perceive that their workplace supports new ideas and change, they will not be afraid to speak up and to make suggestions to the group. Despite the above studies indicated that the possible route of relationships from supportive and good relations with a supervisor, to psychological safety, and to employees' voice behaviors, unfortunately, we are unaware of the mediating role of psychological safety in the relationships between the perceived relationship with supervisors and the voice behavior of subordinates. There is little evidence to suggest that psychological safety influences employees' tendency to engage themselves in the job [30]. We argue that when subordinates in our Taiwan sample perceive higher-quality relations with the supervisor in a work team they will be more likely to take risks in proposing new ideas and in making constructive suggestions because they feel that they are working in a supportive environment, under conditions which are personally nonthreatening. The following hypothesis is proposed:

Hypothesis 1: Psychological safety mediates the relationship between the perceived relationship with supervisors and voice behavior.

Past researches also highlighted that the high quality of relations climate in work units have an influence on employees' sense of psychological safety [14, 30]. In other words, co-worker relations that are supportive and trusting will promote perceptions of psychological safety in team members.

In addition, findings by May et al. [38], and Love and Forret [36] suggested that the perceived relationships with co-workers are positively associated with psychological safety, as well as positively related to civic virtue OCBs. Van Dyne and Lepine [52] argued that voice can be viewed as a type of OCB. More explicitly, these perceptions of psychological safety reduce employees' sensitivity to threats and increase their willingness to voice enthusiasm about ways to improve the work context and to provide constructive feedback about their job [41].

As discussed above, we argue that psychological safety is a mediator linking the perceived relationships with co-workers and voice behavior. This is because we anticipate that co-workers relations among team members that are supportive, trusting and which demonstrated mutual respect for each other, also enhance psychological safety, with the result that employees are willing to share ideas or offer constructive suggestions without fearing the consequences. To summarize, we infer that high-quality co-worker relations in a team will increase employee's psychological safety, and then facilitate voice behavior. Hence, the following hypothesis is proposed:

Hypothesis 2: Psychological safety mediates the relationship between the perceived relationship with co-workers and voice behavior.

## 3 Method

### 3.1 Participants and Procedures

The research design was a field study using survey methodology. The participants for this study were deliverymen from the largest express transportation company in Taiwan. The reason for choosing these participants was because the primary focus in this kind of work is on teamwork. Organizational work team requires clearly defined membership, and often requires members to share responsibility for group performance, especially when these deliverymen have to make deliveries which cross each other's boundaries. These deliverymen not only deliver commodities to customers but also collect firsthand data. If they are willing to share customer information as feedback to their team they can increase team effectiveness and performance.

Contact information obtained from the headquarters of the company was used to ascertain their willingness to participate. Upon receiving consent, 800 employees were invited to participate. The employees also received notification in an annual meeting that the president supported the study and encouraged participation. Prior to distributing

the survey, we guaranteed the participants' anonymity to ensure confidentiality. The 652 usable employee survey responses received constituted a response rate of 81.5%. On average, the organizational tenure of the employees was 77.61 months, with the majority aged between 26 and 35 years (58%). Of these 652 respondents, 83.6% were males; 20.1% held an associate or technical degree and 60.0% had a high school education.

### 3.2 Measures

Since the original survey instrument was developed in English, all scale items were translated into Chinese and back-translated to ensure the semantic equivalency of the scale-item contents [5]. Employees were evaluated on all measures and each item was rated via a 6-point Likert-scale that ranged from "1 □ strongly disagree" to "6 □ strongly agree."

**Perceived relationship with supervisor.** The perceived relationship with supervisors was measured using a 3-item scale, which was taken from May et al. [38]. Sample items from this measure include "my supervisor helps me solve work-related problems," and "my supervisor keeps informed about how employees think and feel about things." The scale had an adequate internal reliability (Coefficient alpha =0.94), mean (4.83), and standard deviation (0.93).

**Perceived relationship with co-workers.** Three items were adopted from the perceived relationship with co-workers scale by May et al. [38]. Sample items include "I feel a real kinship with my co-workers," and "I trust my co-workers." Coefficient alpha for the scale was 0.93. The mean and standard deviation were 4.97, and 0.81.

**Psychological safety.** Psychological safety was measured with a 4-item scale derived from Brown and Leigh [6]. Sample items include "The feelings I express at work are my true feelings," and "It is

okay to express my true feelings on the job." Coefficient alpha for the scale was 0.90. The mean and standard deviation for the psychological safety were 4.75, and 0.84.

**Voice behavior.** Employee voice behavior was measured with a 6-item scale developed by Van Dyne and LePine [52]. We slightly altered the wording of the items by replacing the words "the particular employee" with "I". Sample items include "I develop and make recommendations concerning issues that affect this work group," and "I speak up in this group with ideas for new projects or changes in procedures." Coefficients alpha for the scale was 0.91. The mean and standard deviation were 4.76, and 0.77.

**Control variables.** Prior studies provide evidence to support the claim that employee demographic factors (i.e., organizational tenure and education) are related to voice behavior [16, 50]. The present study controlled for employee organizational tenure and education to minimize the potential influence of these demographic variables.

### 3.3 Analytic procedures

We adopted Anderson and Gerbing's [1] recommendation by using a two-phase analytical procedure to test the hypothesized model. The measurement model was first confirmed using confirmatory factor analyses (CFA) to ensure that the distinct factors assessed the discriminate validity of the perceived relationship with the supervisor, the perceived relationship with co-workers, psychological safety, and with the voice behavior scales. We then performed a structural equation model analysis, employing LISREL 8.51 [29] with maximum-likelihood estimation based on the measurement model, to assess the fit of the hypothesized model to the data.

**Table 1 Means, standard deviations, inter-correlation and reliability among study variables**

Variables	M	S.D.	1	2	3	4	5	6
1. Organisational tenure	77.61	68.28	-					
2. Education	2.42	0.80	-0.10	-				
3. Perceived relationship with supervisor	4.83	0.93	0.06	-0.05	<b>(0.94)</b>			
4. Perceived relationship with co-workers	4.97	0.81	0.11**	-0.08*	0.60**	<b>(0.93)</b>		
5. Psychological safety	4.75	0.84	0.09*	-0.09*	0.69**	0.55**	<b>(0.90)</b>	
6. Voice behavior	4.76	0.77	0.21**	-0.06	0.52**	0.58**	0.60**	<b>(0.91)</b>

Note. N =652; \*\*p < 0.01; \*p < 0.05

Cronbach's alpha coefficients are presented on the diagonal

## 4 Results

Table 1 shows the descriptive statistics, inter-correlations, and scale reliabilities for the variables. As predicted, perceived relationship with supervisor had a positive association with psychological safety and voice behavior ( $r = 0.69$  and  $0.52$ ,  $p < 0.01$ ). Perceived relationship with co-workers had a positive correlation with psychological safety and voice behavior ( $r = 0.55$  and  $0.58$ ,  $p < 0.01$ ). Psychological safety was also positively related to voice behavior ( $r = 0.60$ ,  $p < 0.01$ ).

### 4.1 Measurement Model

This study used CFA to examine the factor structure between four latent constructs (i.e., perceived

relationship with supervisor, perceived relationship with co-workers, psychological safety, and voice behavior).

Table 2 presents the analytical results. The chi-square difference test indicated that the proposed model (four-factor model) provided the best fit to the data ( $\chi^2 = 357.90$ ,  $df = 98$ , comparative-fit index, CFI = 0.97, goodness of fit index, GFI = 0.93, non-normed fit index, NNFI = 0.96, root mean square error of approximation, RMSEA = 0.07, standardized root mean square residual, SRMR = 0.04) in comparison with other models. All indicators had statistically significant factor loadings on their intended constructs. These results therefore provide evidence of discriminant and convergent validity.

**Table 2 Measurement model comparisons**

Model	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$	CFI	GFI	NNFI	RMSEA	SRMR
Model 1	357.90	98	-	-	0.97	0.93	0.96	0.07	0.04
Model 2	1445.08	101	1087.18**	3	0.85	0.75	0.82	0.16	0.08
Model 3	1523.29	101	1165.39**	3	0.84	0.69	0.81	0.18	0.09
Model 4	3232.16	104	2874.26**	6	0.64	0.53	0.59	0.26	0.11

Note. The values of  $\Delta\chi^2$  and  $\Delta df$  represent differences between the Model 1 and other models

Model 1: Proposed model (Four factors)

Model 2: Perceived relationship with supervisor and perceived relationship with co-workers were merged to form a single factor

Model 3: Psychological safety and voice behavior were combined to form a single factor

Model 4: Combining all the variables into a single factor

N = 652

\*\* $p < 0.01$

**Table 3 Comparisons of structure equation models**

Model	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$	CFI	GFI	NNFI	RMSEA	SRMR
Partial mediation	416.78	124	-	-	0.97	0.93	0.96	0.06	0.04
Full mediation	509.16	126	92.38**	2	0.96	0.92	0.95	0.07	0.07

Note. N = 652

\*\* $p < 0.01$

### 4.2 Structural Model

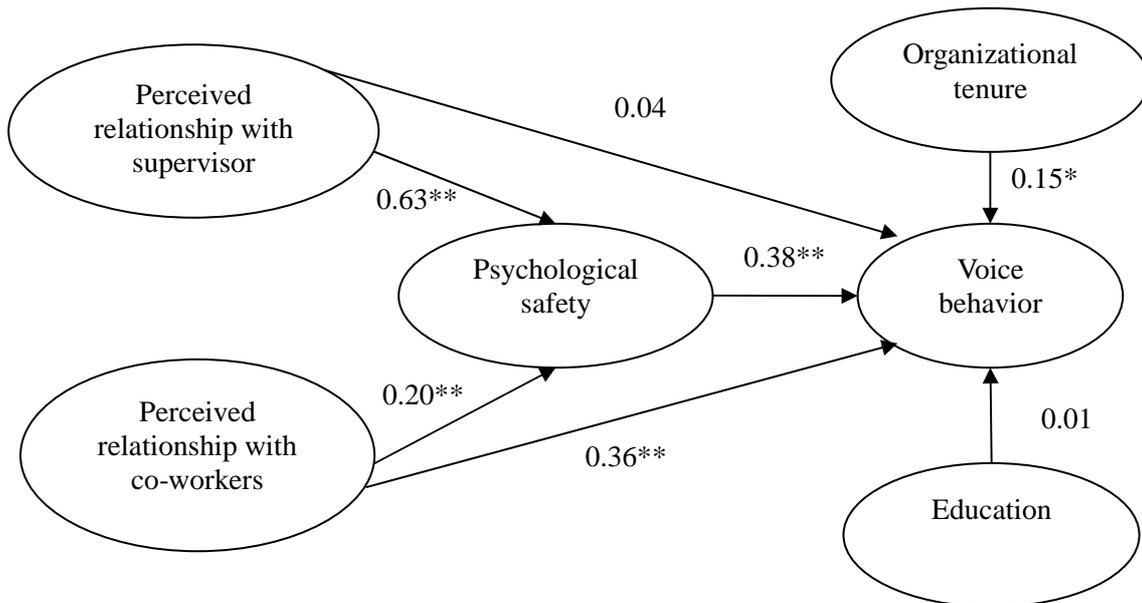
Table 3 lists the structural equation of the fit indices of all models, as well as model comparisons. The structural modeling results suggested that the hypothesized model (which is partially mediated) fit the data well. Hayduk [23] suggested testing and comparing other competing models while conducting a structural equation analysis. Hence, the plausibility of a completely mediated model was estimated as well by removing two direct paths: from the perceived relationship with supervisor and the perceived relationship with co-workers, to voice

behavior. As Table 3 showed, the chi-square difference test indicated that the  $\Delta\chi^2$  value was significant, which meant the complete mediation model did not sufficiently improve the model fit compared to the partially mediated model. Therefore, based on the principle of model parsimony, the partially mediated model ( $\chi^2 = 416.78$ ,  $df = 124$ , CFI = 0.97, GFI = 0.93, NNFI = 0.96, RMSEA = 0.06, SRMR = 0.04) was demonstrably better than the completely mediated model ( $\chi^2 = 509.16$ ,  $df = 126$ , CFI = 0.96, GFI = 0.92, NNFI = 0.95, RMSEA = 0.07, SRMR = 0.07).

Figure 1 illustrates the overall structural model with path coefficients.

As shown in Figure 1, the path coefficient of the perceived relationship with supervisor significantly influenced the psychological safety ( $\gamma = 0.63, p = 0.00$ ) positively, and psychological safety significantly influenced voice behavior ( $\beta = 0.38, p = 0.00$ ) positively. However, the perceived relationship with supervisor was not significantly related to voice behavior ( $\gamma = 0.04, p = 0.09$ ). The results supported Hypothesis 1: psychological safety mediated the relationship between the perceived relationship with supervisor

and voice behavior. The total effect was 0.28; the indirect effect was  $0.24 = 0.63 \times 0.38$ , and the direct effect was 0.04. In addition, the perceived relationship with co-workers significantly influenced psychological safety ( $\gamma = 0.20, p = 0.00$ ) and voice behavior ( $\gamma = 0.36, p = 0.00$ ) positively. Furthermore, psychological safety was positively associated with voice behavior ( $\beta = 0.38, p = 0.00$ ). The results revealed that psychological safety partially mediated the relationship between perceived relationship with co-workers and voice behavior. Hypothesis 2 was supported: the total effect was 0.44; the indirect effect was  $0.08 = 0.20 \times 0.38$ , and the direct effect was 0.36.



**Fig. 1 Results of the structural equation model (path coefficients were completely standardized)**  
\* $p < 0.05$ , \*\* $p < 0.01$

$\times 0.38$ , and the direct effect was 0.36. The total strength of the effect of the perceived relationship with co-workers on voice behavior was higher than that on the perceived relationship with supervisor and voice behavior.

In order to verify the mediation effect, we also conducted Sobel tests to confirm the mediated effects [44]. The results showed that the perceived relationship with the supervisor and the perceived relationship with co-workers both had a statistically significant indirect association with voice behavior via psychological safety ( $Z = 5.73, p < 0.01$ ;  $Z = 4.13, p < 0.01$ , respectively), Sobel test results supported Hypothesis 1 and Hypothesis 2.

## 5 Discussion

The present research focused primarily on the mediating effect of psychological safety. Consistent with our expectations, the findings of this study contribute to our understanding that these antecedents were shown to influence voice

behavior indirectly via their impact on the cognitive psychological safety process involved in the formation of employee voice behavior.

However, it is interesting to note that the results demonstrated one unexpected relationship. The results showed that the perceived relationship with supervisors did not have a direct significant association with voice. One possible explanation is that paternalistic leadership (benevolent, moral and authoritarian leadership) is the prevalent leadership style in Chinese business organizations rooted in Confucian ethics [57, 9]. Paternalism is congruent with the values of collectivistic, high-power distance and consideration cultures, and has a strong impact on subordinate reaction. Statistical analyses generally support the finding that leaders' authoritarian leadership leads to fear in responding to the leaders' requests in Chinese business organizations. In a word, when a high-power distance exists between subordinates and supervisors, employees have to think carefully about how their supervisors will

react to an employee's voice before they speak up [45]. Milliken et al. [39] indicated that the hierarchical relationship between subordinate and supervisor appears to intensify the mum effect.

This study extends the literature on voice behavior in two ways: First, previous studies found that leaders' behaviors and individual differences can be used to predict employee voice behavior (e.g., [55]), but these researchers were less attentive to the workplace context in terms of social relations [34]. Further, several empirical studies have shown that the relationships of supervisors and co-workers can facilitate employee attitudes and behaviors on an individual basis (e.g., [54]). However, the majority of voice studies have only focused on the perceived social relationships with supervisors (e.g., [53]), while the perceived relationship with co-workers tended to be neglected. In order to fill this gap, we took both social relations (i.e., the perceived relationship with supervisor and the perceived relationship with co-workers) into consideration simultaneously to investigate the effects on voice behavior.

Second, scholars have demonstrated that psychological safety is positively related to voice behavior (e.g., [12]). However, previous studies have not simultaneously examined the relationship between social relations and voice behavior with psychological safety as a mediator. From a theoretical perspective, psychological safety is likely to be influenced by the group's social interactions [40]. Group theory also suggests that in high quality relationships individuals find it easier to attempt a task without fearing the consequences because they feel that any criticism would be constructive, and others will not feel embarrassed or reject them when they speak up [59]. Hence, this study expands on previous studies of psychological safety, because it examines the association between social relations and voice behavior.

### 5.1 Practical Implications

To enhance competitiveness in a dynamic environment, organizations need to promote, and capitalize on, employee voice. The managerial implications of this study are straightforward. Our results highlight the important role of psychological safety when considering supervisor relations and co-worker relations as predictors of voice behavior. Organizational managers should focus on creating an atmosphere where employees feel safe to speak up in the workplace by developing high quality social

relations with subordinates.

They should also encourage participation that allows employees to express their opinions without fear of negative consequences. Furthermore, organizational managers should provide team-training programs to build co-workers' relationships with each other by developing altruistic friendship and respect which will nurture a safe environment. Taken together, organizational managers can positively adapt the results of this study to promote employee voice behavior.

### 5.2 Limitations and Directions for Future Research

Several limitations regarding this study can be acknowledged. First, it relies on a cross-sectional design. Although the use of structural equation modeling permitted a simultaneous test of all variables in the hypothesized model, the causal conclusions were not unambiguously determined. Future studies could adopt longitudinal designs or experimental methods to measure these variables at different points in time and thereby more accurately evaluate causality. Second, all measures of constructs were gathered via self-reports from employees, raising the possibility of common method variance (CMV). We used CFA to ascertain the severity of common method bias [43]. The results reveal that the proposed four-factor model is superior to the single-factor aspect ( $\Delta\chi^2 = 2874.26$ ,  $\Delta df = 6$ ,  $p < 0.01$ ). This suggests that common method bias is unlikely to be a major threat in this study. Still, future studies should be designed to reduce reliance on self-reports, and multiple ratings of voice behavior should be obtained both from immediate supervisors and co-workers. Third, the generalizability of these results is limited because the sample was taken from the single largest express transportation company in Taiwan that primarily employs males. Future studies should aim to increase the generalizability of our findings through investigating multiple organizational settings.

In addition, this study uses a cognitive motivation mechanism to support the link between interpersonal relationships and voice behavior at work. However, it is reasonable to explore the extent to which interpersonal relationships facilitate positive affective responses that lead to favorable work behaviors. Future studies can explore other potential mediating variables, such as affective mechanisms. For example, previous studies have suggested that social relations in work groups are

positively related to affective commitment [37]. Therefore, the relationships between affective mechanism, social relations, and voice behavior can be further explored.

## 6 Conclusion

Notwithstanding these limitations, this study has successfully integrated—rather than addressing them separately, as per previous studies—the perceived relationship with supervisor, the perceived relationship with co-workers, psychological safety, and voice behavior. The results not only clarify previously unclear relationships, but also extend the overall understanding of voice behavior practices, which should provide fertile ground for additional contributions to applied voice behavior research.

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