



Received: 18 September 2023   Revised: 14 December 2023   Accepted: 17 December 2023

# THE IMPACT OF MANAGERIAL COMMUNICATION STYLE ON EMPLOYEE SATISFACTION: THE MEDIATING ROLE OF PERCEIVED POWER

Fuangfa AMPONSTIRA<sup>1</sup>

<sup>1</sup> School of Management, Shinawatra University, Thailand; fuangfa.a@siu.ac.th

## Handling Editor:

Professor Dr. Ismail Suardi WEKKE

STIA Abdul Haris, Indonesia

(This article belongs to the Theme 1: Humanities and Social Sciences for Sustainable Development)

## Reviewers:

1) Adjunct Research Professor Dr. Shayut PAVAPANUNKUL      UMS Rappang, Indonesia

2) Professor Dr. Jean Paolo LACAP

City College of Angeles, Philippines

3) Assistant Professor Dr. Teetut TRESIRICHOD

RMUTT, Thailand

## Abstracts

The study aims to study the relationship among managerial communication style, employee satisfaction, and perceived power. Additionally, to analysis the mediating effects of perceived power in the relationship between managerial communication style and employee satisfaction. The data were gathered from 303 employees from universities of Thailand using purposive sampling. The data were analyzed by using Analysis of Moment Structure and the Statistical Package for Social Science. Data analysis concluded a positive and significant relationship among managerial communication style, employee satisfaction, and perceived power. And also mediating role of perceived power on the relationship between managerial communication style and employees' satisfaction also exist. The importance of this study rests in its examination of the direct relationship between managerial communication style and employee satisfaction, with a critical eye toward identifying the mediating role of perceived power dynamics. Considering this relationship can help firms improve employee satisfaction by managing power dynamics and using effective communication tactics.

**Keywords:** Managerial Communication Style, Employee Satisfaction, Perceived Power

**Citation Information:** Amponstira, F. (2023). The Impact of Managerial Communication Style on Employee Satisfaction: The Mediating Role of Perceived Power. *Asian Interdisciplinary and Sustainability Review*, 12(2), 20-31. <https://doi.org/10.14456/aisr.2023.3>

## Introduction

It is impossible to stress the importance of excellent managerial communication in today's fast-paced corporate environment (Orlu, 2023). An important factor in determining an organization's performance is the bond between managers and workers, which heavily depends on workplace communication (Sigdel & Amponstira, 2021, Elsafty & Oraby, 2022; Bhandari et al., 2022). The leadership and workforce are connected through a manager's communication style, which significantly impacts a variety of staff satisfaction and engagement factors (Lee et al., 2021a). Employee happiness is a key component of an organization's health and significantly affects output, retention rate, and overall performance (Kurdi & Alshurideh, 2020). Communication is commonly understood to be crucial in determining the nature of the workplace and the employees' experiences (Li et al., 2021). Employees may feel included, empowered, motivated or frustrated, demotivated, and disengaged depending on the manager's communication style. Consequently, firms aiming to establish a favorable and effective workplace culture must comprehend the subtleties of managerial communication styles and their impact on employee contentment.

Furthermore, the idea of perceived power arises as a crucial mediator in this intricate connection. An employee's view of their manager's influence, authority, and control is perceived power (Zhang & Liu, 2022). Employees' overall job satisfaction can be strongly impacted by how they view their manager's authority (Skopak & Hadzaihmetovic, 2022; Bhandari et al., 2023). It can increase employee job satisfaction by generating a sense of confidence and agreement with corporate goals when workers see their bosses as strong, authoritative characters who communicate clearly and with consideration (Moore & Hanson, 2022). Employees may view their bosses as overpowering or lacking in power when communications is perceived as repressive, non-collaborative, or unresponsive, lowering job satisfaction.

There is a substantial knowledge vacuum on the ways in which particular management communication styles affect worker satisfaction, despite a wealth of study on the subject. The complex relationship between managerial communication styles and the perceived power dynamics inside an organization has not received much attention in study. There is still a lack of research on the mediating function that perceived power plays in explaining how communication styles affect worker happiness. Furthermore, a lack of thorough research incorporating these variables further impedes a comprehensive comprehension of the complex interactions among employee satisfaction, perceived authority, and management communication. Closing this research gap will be crucial to creating focused interventions that improve satisfaction and communication at work.

This study attempts to provide a more thorough understanding of the relationship between managerial communication style and employee happiness by studying the mediating function of perceived authority. It aims to identify the mechanisms via which employees' views of authority and, consequently, their general job satisfaction is influenced by communication style. The impetus for this study stems from the realization that communication, dynamics of power, and job satisfaction all play intricate and intertwined roles in the varied interactions between managers and employees. Academically, it adds to the increasing body of work on corporate communication by illuminating the complex interactions between the many elements that influence employee satisfaction. Practically speaking, the knowledge gathered via this research can help firms create better managerial communication techniques that improve worker happiness and empower workers by positively influencing how they perceive managerial power. The objectives of this study are: 1) To study the relationship between managerial communication style, employee satisfaction, and perceived power. 2) To analyze the mediating effects of perceived power in the relationship between managerial communication style and employee satisfaction.

## Literature Review

An important factor in determining a business's success and the workforce's morale is the relationship between managerial communication style and employee satisfaction (Ahmed et al., 2010). The degree to which employees are satisfied with their jobs as a whole can be greatly impacted by effective manager communication (Dugguh & Dennis, 2014). Managers often use an honest and open communication style to create a productive workplace. A culture of trust and respect is established when managers communicate effectively, give frequent feedback, and actively consider the problems and suggestions of their staff (Lee et al., 2021b). Employee satisfaction can increase when they feel appreciated and involved in decision-making. Additionally, open communication makes it easier for staff members to understand their responsibilities, which lessens misunderstanding and annoyance (Itzhakov & Grau, 2022). How conflicts are handled within an organization can also be influenced by one's selection of communication style. Managers are more likely to resolve problems in a way that protects relationships and employee satisfaction if they employ open and constructive communication techniques (Amos et al., 2005). Conversely, supervisors with weak communication abilities could intensify disputes, adding to a toxic work environment.

H1: There is a significant and positive relationship between managerial communication style and employee satisfaction.

Effective leadership in any firm requires a strong correlation between managerial communication style and perceived power (Douglas et al., 2006). This link serves as evidence for the claim that a manager's ability to influence and exert authority over their staff is directly influenced by how they interact with them. Open and honest communication encourages trust and openness among team members (Nwankpa & Roumani, 2014). A manager can show they are competent and dedicated to the team's success by communicating clearly, giving frequent updates, and actively listening to their staff (West, 2012). Team members are, therefore more inclined to trust the manager's judgment and regard them as strong individuals looking out for their interests. The degree of authority and influence a manager is thought to have inside an organization is directly influenced by the manner in which they interact with their team members (Gaviria-Rivera & Lopez-Zapata, 2019). An efficient communication style that emphasizes confidence, openness, and conflict resolution increases the perception of a manager's power. This is because it demonstrates the manager's leadership skills and creates a conducive environment for work. The bottom line is that effective leadership and organizational development depend on a positive link between managerial communication style and perceived power (Brown et al., 2019).

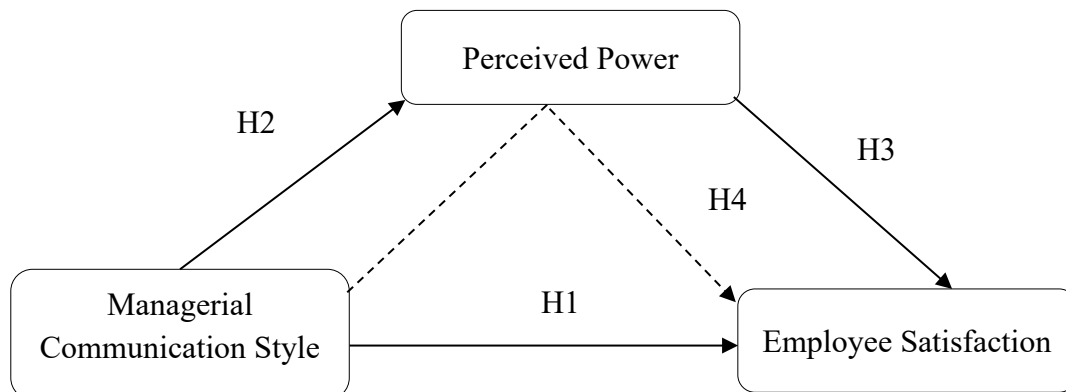
H2: There is a significant and positive relationship between managerial communication style and perceived power.

The dynamics at work are greatly influenced by how power is perceived. Employee perceptions of their manager's communication style and the extent of their influence within the company play a role in perceived power (Guzzo et al., 2021). Employees' perceptions of power are significantly influenced by managerial communication style (Raina & Roebuck, 2016). When managers engage in honest, open, and inclusive communication, employees are more likely to report feeling informed and participated in decision-making processes. As a result, their perceived power inside the organization may increase. Employees who feel their opinions are valued and heard tend to be more empowered, which increases job satisfaction (Sun et al., 2022). A happy and engaged workforce is more likely to be fostered by organizations that value open and inclusive communication as part of their approach to management, which will boost success and productivity overall.

H3: There is a significant and positive relationship between perceived power and employee satisfaction.

H4: Perceived power mediates the relationship between managerial communication style and employee satisfaction.

The conceptual framework of the study is shown in the figure 1.



**Figure 1** The Conceptual Framework

## Methodology

The study aims to study the relationship among managerial communication style, employee satisfaction, and perceived power. Additionally, to analysis the mediating effects of perceived power in the relationship between managerial communication style and employee satisfaction. The indicators used in managerial communication style are authoritarian, democratic, laissez-faire and supportive. The indicators used in perceived power are positional power, personal power and resource power (Ibarra & Andrews, 1993). Lastly, the indicators used in employee satisfaction are job satisfaction, compensation and benefits and career development (Murtiningsih, 2020). The Likert scale included five points, with one signifying "strongly disagree" and five signifying "strongly agree".

The study took a quantitative approach by employing a closed-end questionnaire survey. Five experts participated in a test to establish the validity of the questionnaire's item objective congruence (IOC) before the data collection process was started. The sample data is collected from the employee of university of Thailand's using a purposive sampling method. The validity of the questions is investigated in the pilot study using a sample of 30 participants. It was distributed to the 303 respondents to the poll. The Statistical Package for Social Science (SPSS) and Analysis of Moment Structure (AMOS) software packages were used to analyze the data. The demographic analysis is shown in the table 1 below:

**Table 1** Demographic Profile

<b>Gender</b>	Male	178	58.75 %
	Female	125	41.25 %
	<b>Total</b>	303	100 %
<b>Age</b>	Below 20 years	25	8.25 %
	21-30 years	129	42.58 %
	31-40 years	103	33.99 %
	41 and above years	46	15.18 %
	<b>Total</b>	303	100 %
<b>Year of Experience</b>	Below 2 years	78	25.74 %
	3-5 years	137	45.21 %
	6 and above years	88	29.05 %
	<b>Total</b>	303	100 %

## Results and Discussion

### Cronbach Alpha

Cronbach's alpha is a metric used to assess the dependability, as well as internal consistency, of a set of test or scale items. Cronbach alpha must be larger than 0.7 to be considered acceptable (Taber, 2018). In table 2 shows the Cronbach alpha of managerial communication style, perceived power and employee satisfaction.

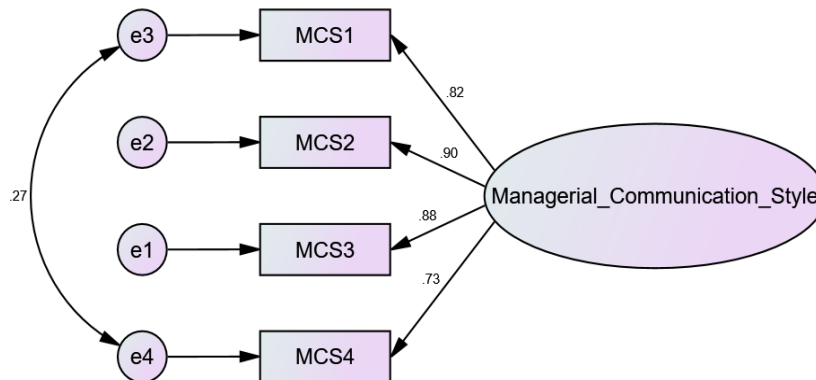
**Table 2** Cronbach alpha

Component	Variable	Cronbach alpha
Managerial Communication Style	MCS1	0.905
	MCS2	
	MCS3	
	MCS4	
Perceived Power	PP1	0.768
	PP2	
	PP3	
Employee Satisfaction	ES1	0.882
	ES2	
	ES3	

In table 2 shows that the Cronbach alpha of managerial communication style is 0.905, perceived power is 0.768 and employee satisfaction is 0.882 which are considered as acceptable.

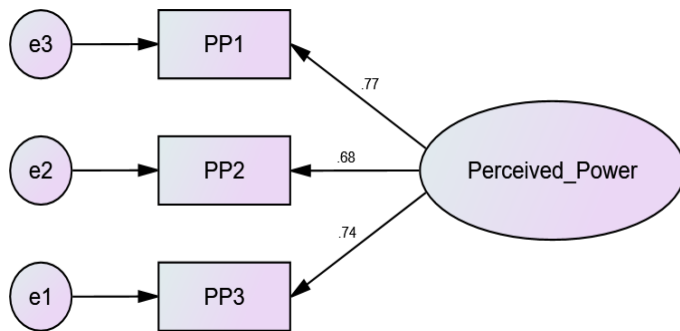
### Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a multivariate statistical technique used to determine how well measured variables predict the number of constructs. The model fit RMSEA less than 0.08, Chisq/df less than 5, GFI and CFI larger than 0.9, which is acceptable (Awang, 2012).



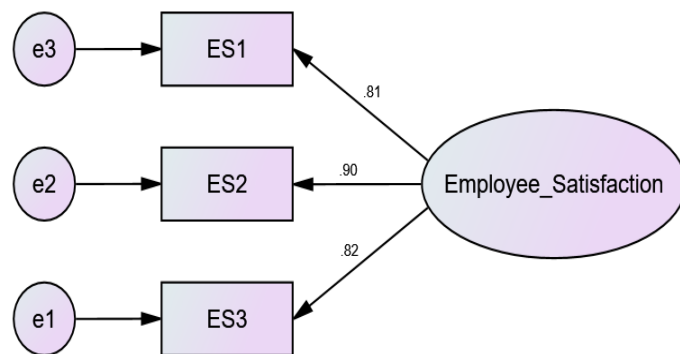
**Figure 2** Confirmatory factor analysis of managerial communication style

In figure 2 which shows the relationship between managerial communication style and observed variables (MCS1, MCS2, MCS3, MCS4). The latent variable managerial communication style has a higher factor loading in MCS2 (0.90) followed by MCS3 (0.88), MCS1 (0.82) and MCS4 (0.73) respectively. The model fit of managerial communication style is RMSEA value is 0.000 which is less than 0.08, Chisq/df is 0.062 which is less than 5 and GFI and CFI values are 1.000, 1.000 which is greater than 0.9 so, it indicates that the model is fit.



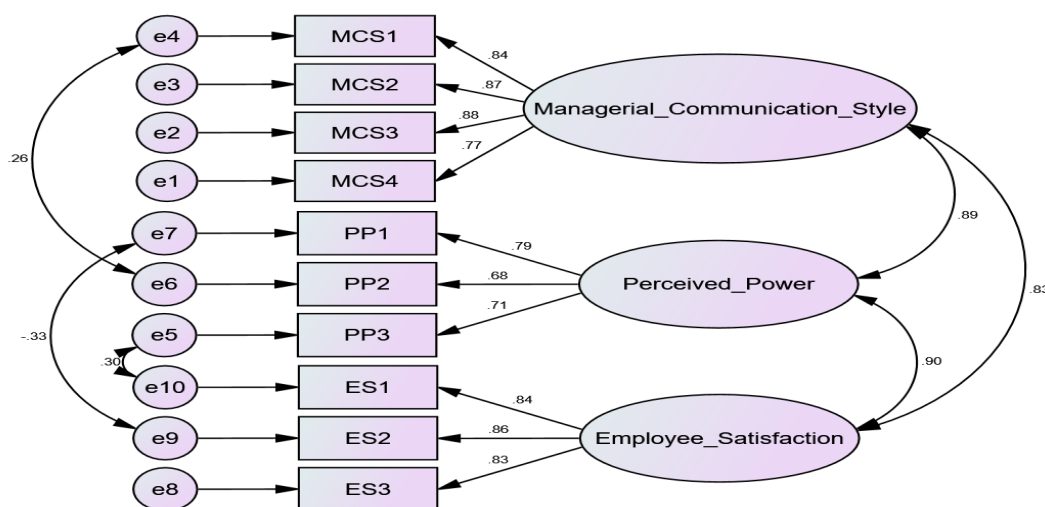
**Figure 3** Confirmatory factor analysis of perceived power

In figure 3 which shows the relationship between perceived power and observed variables (PP1, PP2, PP3). The latent variable perceived power has a higher factor loading in PP1 (0.77) followed by PP3 (0.74), PP2 (0.68) respectively. The model fit of perceived power is GFI and CFI values are 1.000, 1.000 which is greater than 0.9 so, it indicates that the model is fit.



**Figure 4** Confirmatory factor analysis of employee satisfaction

In figure 4 which shows the relationship between employee satisfaction and observed variables (ES1, ES2, ES3). The latent variable employee satisfaction has a higher factor loading in ES2 (0.90) followed by ES3 (0.82), ES1 (0.81) respectively. The model fit of employee satisfaction is GFI and CFI values are 1.000, 1.000 which is greater than 0.9 so, it indicates that the model is fit.



**Figure 5** Overall Confirmatory Factor Analysis

**Table 3** Correlation

	<b>Managerial Communication Style</b>	<b>Perceived Power</b>	<b>Employee Satisfaction</b>
Managerial Communication Style	1		
Perceived Power	.757**	1	
Employee Satisfaction	.740**	.746**	1

\*\* p < 0.010

In table 3 shows the correlation coefficient and also the p-value of managerial communication style and perceived power (0.757 and p < 0.010) which shows that there is a positive correlation between the variable. And the correlation coefficient and also the p-value of managerial communication style and employee satisfaction (0.740 and p < 0.010) which shows that there is a positive correlation between the variable. Similarly, the correlation coefficient and also the p-value of perceived power and employee satisfaction (0.746 and p < 0.010) which shows that there is a positive correlation between the variable.

**Table 4** Path Analysis

<b>Direct Path</b>	<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>
Managerial Communication Style -> Employee Satisfaction	0.410	0.06	7.631	***
Managerial Communication Style -> Perceived Power	0.757	0.035	20.155	***
Perceived Power -> Employee Satisfaction	0.435	0.065	8.101	***

\*\*\*p < 0.001

In table 4 consist of path coefficient and p-value in the relationship between the variables. In the relationship between managerial communication style and employee satisfaction has beta = 0.410 and p-value less than 0.001 which shows that the hypothesis 1 is accepted. And the relationship between managerial communication style and perceived power has beta = 0.757 and p-value less than 0.001 which shows that the hypothesis 2 is accepted. Similarly, the relationship between perceived power and employee satisfaction has beta = 0.435 and p-value less than 0.001 which shows that the hypothesis 3 is accepted.

**Table 5** Mediating Effect

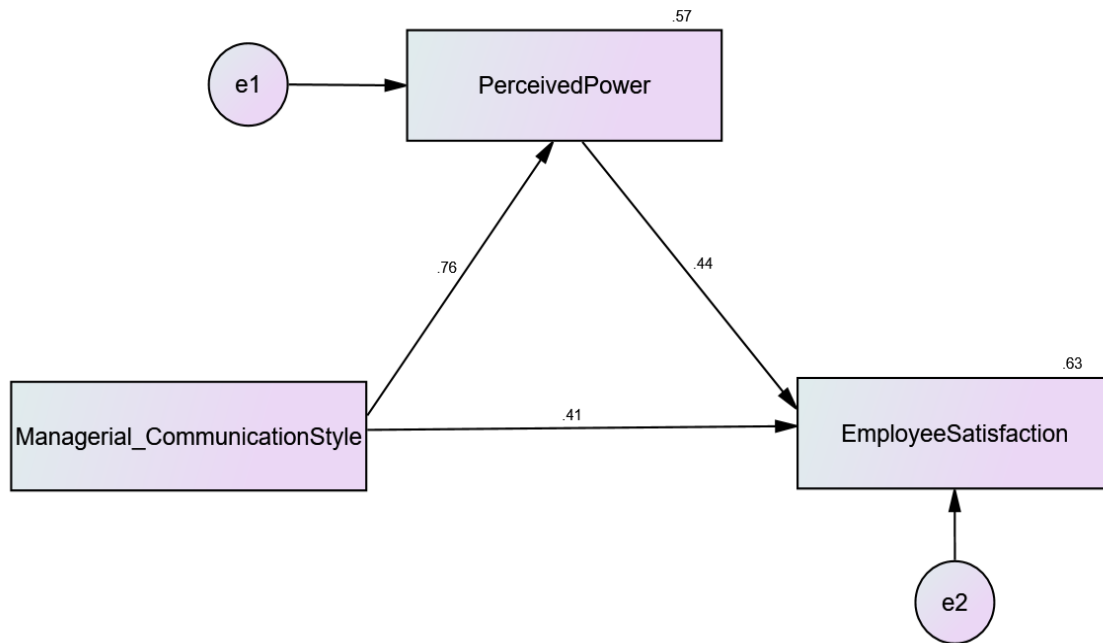
<b>Indirect Path</b>	<b>Estimate</b>	<b>Lower</b>	<b>Upper</b>	<b>P-Value</b>
Managerial Communication Style --> Perceived Power --> Employee Satisfaction	0.368	0.267	0.475	***

\*\*\*p < 0.001

In table 5 shows the path coefficient and p-value in the mediating effect of perceived power in the relationship between managerial communication style and employee satisfaction has beta = 0.368 and p-value less than 0.001 indicates that the hypothesis h4 is accepted.

### **Coefficient of Determination**

The coefficient of determination has a statistical metric that calculates the percentage of variance within the dependent variable which can be explained through the independent variables within a regression model. According to Hair et al. (2011)  $R^2 < 0.25$  - very weak,  $0.25 \leq R^2 < 0.50$  - weak,  $0.50 \leq R^2 < 0.75$  - moderate,  $R^2 \geq 0.75$  - substantial respectively. The study shows that the value of R2 of perceived power is 0.57, employee satisfaction is 0.63 which is considered as moderate. This indicates that the independent variable has a 57% variance in perceived power, 63% variance in employee satisfaction.



**Figure 6** Path analysis

## Discussion

In hypothesis 1 is there is a significant and positive relationship between managerial communication style and employee satisfaction which is supported. The result is in line with Everson (2022) states that communication style was positively associated with job satisfaction. In hypothesis 2 is there is a significant and positive relationship between managerial communication style and perceived power which is supported. The result is consistent with Richmond et al. (1980) states that managerial communication style positively increased the perceived power. In hypothesis 3 states that there is a significant and positive relationship between perceived power and employee satisfaction is supported. But in a study, Richmond et al. (1980) states that there is a little positive impact of perceived power on employee satisfaction. In hypothesis 4 states that perceived power mediates the relationship between managerial communication style and employee satisfaction. And also, Richmond et al. (1980) stated that there is a mediating effect of perceived power in the relationship between managerial communication style and employee satisfaction.

## Conclusion

The study shows that managers' communication styles greatly impact how satisfied their employees are. Employee satisfaction is typically better when they view their bosses as open, honest, and empowering. Furthermore, we have determined that communication style shapes perceived power dynamics and is a significant mediator in this association. Employee happiness is higher when managers use communication to properly handle power dynamics. This study emphasizes the significance of understanding how communication style affects employees' perceptions of authority inside the business in addition to its direct consequences. A more contented and engaged staff is probably something that organizations that promote open, inclusive, and powerful communication will experience. These findings highlight the importance of training and development initiatives that improve managerial communication abilities and support equitable power allocation, which provide managers and organizations with practical insights. In the end, in today's cutthroat business world, the capacity to foster



employee happiness though effective communication and a balanced power dynamic can be a strategic advantage in achieving organizational success and employee satisfaction.

Based on the study's findings, several recommendations are made to assist businesses and managers in increasing employee happiness by managing power dynamics and communication well. First and foremost, businesses should support managers' training and development initiatives to improve their communication abilities. Encourage managers to use open, inclusive, and sympathetic communication methods that promote employee engagement and trust. Secondly, managers should also receive training on identifying and resolving power disparities within their teams. This entails being conscious of how their behavior and words might be seen as favoring particular people or groups and acting to change those impressions. Thirdly, organizations can also think about developing mentorship or coaching programs that pair workers with knowledgeable managers who can act as role models in communication and power dynamics. These initiatives can aid in the skill development of younger staff members and improve their ability to deal with internal power dynamics. And lastly, to make sure that measures to improve communication and power dynamics are successful, regular feedback sessions and continuing monitoring and assessment of employee satisfaction should be incorporated into organizational processes. Organizations may establish a work environment that improves employee satisfaction and leads to better performance and overall success by putting these tips into practice.

### **Implication**

By clarifying the complex relationship between managerial communication styles and employee satisfaction and providing a sophisticated framework for comprehending communication dynamics inside businesses, this research makes substantial theoretical contributions. The study presents a novel mediation model that emphasizes the critical role that perceived power plays in determining how managerial communication affects employee satisfaction. It is based on well-established theories of communication and power. A thorough grasp of the processes underlying organizational communication is provided by the integration of these theories. Practically speaking, the study offers useful information for organizational interventions. Through the identification of perceived power's mediating role, the study contributes to the creation of leadership development programs, organizational policies that promote transparent communication, and manager-specific communication training programs. By empowering enterprises to foster a positive communication environment, these doable suggestions hope to improve employee satisfaction and the general well-being of the business as a whole.

### **Limitation and Further Study**

This study has some limitations that should be addressed, despite the fact that it offers insightful information about the connection between managerial communication style, employee satisfaction, and perceived power dynamics. The study's sample might not be entirely typical of all organizational situations, and results might differ depending on the organizations' industries, cultures, or sizes. To improve generalizability, future studies should seek to diversify the samples. Secondly, the study also concentrated on perceived power dynamics as a mediating factor. Future studies should examine additional potential mediating or moderating factors, such as organizational culture, leadership behaviors, or individual personality traits, in the link between managerial communication style and employee happiness. Additionally, the study could focus on the effects of particular communication techniques or interventions in enhancing employee satisfaction and communication style. Finding best practices that firms can use to improve communication efficiency and worker wellbeing would be valuable.

## References

- Ahmed, Z., Shields, F., White, R., & Wilbert, J. (2010). Managerial Communication: The Link between Frontline Leadership and Organizational Performance. *Journal of Organizational Culture, Communications and Conflict*, 14(1), 107-120.
- Amos, M., Hu, J., & Herrick, C. (2005). The impact of team building on communication and job satisfaction of nursing staff. *Journal for Nurses in Professional Development*, 21(1), 10-16.
- Awang, Z. (2012). *A Handbook on SEM Structural Equation Modelling: SEM Using AMOS Graphic*. 5<sup>th</sup> ed. Kota Baru: Universiti Teknologi Mara Kelantan.
- Bhandari, P., Sigdel, B., Photchanachan, S., Uppapong, K., & Bhattarai, A. (2023). Revamp of Tourism Industry in Nepal. *Journal of Women's Entrepreneurship and Education*, (1-2), 89-109.
- Bhandari, P., Sigdel, B., Rungsuk, A., Chumlim, M., & Phiewla-or, A. (2022). Survival of the Women Entrepreneurs During Pandemic: The Mediating Role of Competitive Advantage on Entrepreneurial Orientation and Firm Performance in Nepal. *The Journal of Pacific Institute of Management Science (Humanities and Social Science)*, 8(2), 223-235.
- Brown, O., Paz-Aparicio, C., & Revilla, A. (2019). Leader's communication style, LMX and organizational commitment: A study of employee perceptions in Peru. *Leadership & Organization Development Journal*, 40(2), 230-258.
- Douglas, C., Martin, J., & Krapels, R. (2006). Communication in the transition to self-directed work teams. *The Journal of Business Communication* (1973), 43(4), 295-321.
- Dugguh, S., & Dennis, A. (2014). Job satisfaction theories: Traceability to employee performance in organizations. *IOSR Journal of Business and Management*, 16(5), 11-18.
- Elsafy, A., & Oraby, M. (2022). The impact of training on employee retention: Empirical research on the private sector in Egypt. *International Journal of Business and Management*, 17(5), 58-74.
- Everson, B. (2022). *How a Manager's Communication Style affects an Employee's Job Satisfaction within the Workplace*. Master of Arts Communication Thesis, University of Hawai'i at Mānoa.
- Gaviria-Rivera, J., & Lopez-Zapata, E. (2019). Transformational leadership, organizational climate and job satisfaction in work teams. *European Research Studies Journal*, 22(3), 68-82.
- Guzzo, R., Wang, X., Madera, J., & Abbott, J. (2021). Organizational trust in times of COVID-19: Hospitality employees' affective responses to managers' communication. *International Journal of Hospitality Management*, 93, 102778.
- Hair, J., Ringle, C., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Ibarra, H., & Andrews, S. (1993). Power, social influence, and sense making: Effects of network centrality and proximity on employee perceptions. *Administrative Science Quarterly*, 38, 277-303.
- Itzhakov, G., & Grau, J. (2022). High-quality listening in the age of COVID-19: A Key to better dyadic communication for more effective organizations. *Organizational Dynamics*, 51(2), 100820.
- Kurdi, B., & Alshurideh, M. (2020). Employee retention and organizational performance: Evidence from banking industry. *Management Science Letters*, 10(16), 3981-3990.
- Lee, W., Choi, S., & Kang, S. (2021a). How Leaders' Positive Feedback Influences Employees' Innovative Behavior: The Mediating Role of Voice Behavior and Job Autonomy. *Sustainability*, 13(4), 1901.

- Lee, Y., Tao, W., Li, J., & Sun, R. (2021b). Enhancing employees' knowledge sharing through diversity-oriented leadership and strategic internal communication during the COVID-19 outbreak. *Journal of Knowledge Management*, 25(6), 1526-1549.
- Li, J., Sun, R., Tao, W., & Lee, Y. (2021). Employee coping with organizational change in the face of a pandemic: The role of transparent internal communication. *Public Relations Review*, 47(1), 101984.
- Moore, J., & Hanson, W. (2022). Improving leader effectiveness: impact on employee engagement and retention. *Journal of Management Development*, 41(7/8), 450-468.
- Murtiningsih, R. (2020). The Impact of Compensation, Training & Development, and Organizational Culture on Job Satisfaction and employee Retention. *Indonesian Management and Accounting Research*, 19(1), 33-50.
- Nwankpa, J., & Roumani, Y. (2014). The Influence of Organizational Trust and Organizational Mindfulness on ERP Systems Usage. *Communications of the Association for Information Systems*, 34, 85.
- Orlu, V. (2023). *Information and Communication Technology Resources and Organizational Effectiveness*. A paper presented at the 3<sup>rd</sup> International Conference on Institutional Leadership and Capacity Building in Africa, University of Africa, Nigeria.
- Raina, R., & Roebuck, D. (2016). Exploring cultural influence on managerial communication in relationship to job satisfaction, organizational commitment, and the employees' propensity to leave in the insurance sector of India. *International Journal of Business Communication*, 53(1), 97-130.
- Richmond, V., McCroskey, J., Davis, L., & Koontz, K. (1980). Perceived power as a mediator of management communication style and employee satisfaction: A preliminary investigation. *Communication Quarterly*, 28(4), 37-46.
- Sigdel, B., & Amponstira, F. (2021). A model of corporate social responsibility, firm reputation, and firm performance in small and medium enterprises in Kaski, Lamjung, and Gorkha District of Gandaki Province, Nepal. *Open Journal of Business and Management*, 9(5), 2248-2260.
- Skopak, A., & Hadzaihmetovic, N. (2022). The impact of transformational and transactional leadership style on employee job satisfaction. *International Journal of Business and Administrative Studies*, 8(3), 113-126.
- Sun, B., Zhu, F., Lin, S., Sun, J., Wu, Y., & Xiao, W. (2022). How is professional identity associated with teacher career satisfaction? A cross-sectional design to test the multiple mediating roles of psychological empowerment and work engagement. *International Journal of Environmental Research and Public Health*, 19(15), 9009.
- Taber, K. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273-1296.
- West, M. (2012). *Effective Teamwork: Practical Lessons from Organizational Research*. West Sussex: John Wiley & Sons.
- Zhang, Y., & Liu, S. (2022). Balancing employees' extrinsic requirements and intrinsic motivation: A paradoxical leader behaviour perspective. *European Management Journal*, 40(1), 127-136.

**Data Availability Statement:** The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

**Conflicts of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

**Publisher's Note:** All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.



**Copyright:** © 2023 by the authors. This is a fully open-access article distributed under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0).