

## Perceived Social Support and Employee Well-being in Remote Work Settings: Exploring the Mediating Role of Workplace Loneliness - A Case Study of a Top 500 Enterprise in China

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### Abstract

After the pandemic, companies have begun to pay attention to the issue of workplace loneliness and well-being. This study employs purposive sampling and conducts an online questionnaire survey to investigate the relationship between perceived social support (supervisors' and coworkers' support), workplace loneliness, and employee well-being. The participants are 735 Chinese employees of Top 500 Chinese enterprise from the Shandong Province of China. This study uses SPSS 25.0 to analyze the data. The results indicated that higher levels of perceived social support from supervisors and coworkers will lead to lower levels of workplace loneliness, which in turn will improve employee well-being. This study's results could provide useful insights for human resources departments. This study has the potential to contribute to the understanding of the impact of social support and workplace loneliness on employee well-being and to inform practical interventions to promote employee well-being in the manufacturing industry.

**Keywords:** Employee well-being, Workplace loneliness, Perceived social support, Chinese employees, Shandong

Amid the COVID-19 pandemic, addressing loneliness becomes a crucial concern in remote work, not only in China but globally. Remote workers may grapple with feelings of isolation and loneliness due to the absence of face-to-face interactions with colleagues and limited social opportunities (Wang et al., 2021). Workplace loneliness, defined as the negative psychological experience of feeling isolated or disconnected in the work environment (Wright et al., 2006), has become an increasingly prevalent emotional challenge in workplaces, as highlighted by Ozcelik and Barsade (2018). Numerous studies underscore the significant adverse effects of workplace loneliness on employees' mental health (Anand & Mishra, 2021; Erdil & Ertosun, 2011;

Ozcelik & Barsade, 2018). Recognizing employees as valuable assets, organizations should prioritize investments in their well-being and development to cultivate a culture of innovation, growth, and success (Como et al., 2021; Gubler et al., 2021). This transition can be particularly challenging for individuals accustomed to a traditional office setting. Additionally, Liu (2022) highlights new energy as a globally strategic and leading emerging industry, with Shandong being singled out as the foremost province in China in this field. As a result, Shandong Province has been selected as the primary focus for this study, with the aim of examining the psychological well-being and feelings of loneliness among Chinese employees in Shandong, specifically those within the Top 500 Chinese manufacturing industries enterprise.

Becker et al. (2022) propose that job control in remote work can contribute to increased employee loneliness. During the COVID-19 pandemic, the lack of face-to-face communication among employees further intensifies workplace loneliness, leading to negative emotions and adverse effects on mental health. Research consistently highlights the importance of social support and connection in promoting positive mental health outcomes. Seeking support from coworkers and supervisors becomes even more important. Therefore, receiving support from colleagues and supervisors in the workplace is crucial in reducing loneliness and enhancing mental well-being. In summary, it is essential to recognize the significance of addressing individual loneliness to prioritize mental health and well-being.

How to alleviate loneliness and enhance subjective well-being (SWB)? Ramzan et al. (2021) investigated the moderating impact of social support on the correlation between workplace loneliness and psychological well-being. While extensive research on workplace loneliness during the pandemic has primarily concentrated on healthcare professionals, particularly frontline nurses, it is essential to acknowledge that workplace loneliness impacts employees across all industries and sectors (Li et al., 2021). Additionally, perceived support from supervisors and coworkers has demonstrated associations with job satisfaction, physical health, and emotional well-being. Given these findings, perceived support from supervisors and peers may also contribute to mitigating workplace loneliness and enhancing the subjective well-being of employees in diverse industries. Through the exploration of these inquiries, this study aims to investigate the influence of perceived social support and workplace loneliness on employee well-being outcomes. In summary, the research questions for this study are outlined as follows:

1. Does Perceived Social Support (PSS) in the workplace have a direct positive impact on employee well-being (EWB)?
2. Does social workplace loneliness mediate the relationship between perceived social support from PSS and Employee Well-Being (EWB)?

## Literature Review

### Theoretical Foundation

This study adopts Weiss and Cropanzano's (1996) Affective Events Theory (AET) and Demerouti et al.'s (2001) Job Demand-Resource (JD-R) Model as the overarching frameworks.

AET encompasses emotional reactions, attributes of the work environment, work-related events, individual traits, work attitudes, judgment-driven behavior, and emotion-driven behavior. In this research, feelings of loneliness stemming from insufficient workplace support were associated with decreased subjective well-being (SWB). The Job Demands-Resources (JD-R) model serves as a conceptual framework for comprehending occupational stress, suggesting that strain arises when there is an imbalance between the demands placed on an individual and the resources available to address those demands. In the context of this study, Perceived Social Support (PSS) functions as a job resource capable of mitigating employee loneliness.

### Definition

#### 1. Employee Well -Being

This study acknowledges the broader definition of employee well-being proposed by Siegrist et al. (2006), which considers non-work-related factors and emphasizes the importance of overall life satisfaction and relationships outside of work. This expanded definition recognizes that employee well-being is influenced by various aspects of their lives, beyond just their work and health.

Furthermore, Zheng et al. (2022) and Zheng et al. (2015) have emphasized the significance of life well-being in enabling employees to effectively cope with work demands. Employees with high levels of life well-being are more likely to experience fulfillment and satisfaction in their lives, which can have positive effects on their work lives and overall work productivity. In line with Zheng et al.'s (2015) conceptual definition of employee well-being as employees' overall perception of work and life, this study adopts the dimensions of employee well-being proposed by Zheng et al. (2015), which include work well-being, life well-being, and psychological well-being.

#### 2. Workplace Loneliness

Loneliness can be defined as a negative emotion that stems from an individual's subjective perception of social isolation (Qualter et al., 2015). Buecker et al. (2020) also describe loneliness as the perceived discrepancy between the desired and actual relationships one has. Overall, Loneliness is the negative emotion generated by an individual's subjective perception of social isolation, and the negative emotion generated by an individual's subjective perception of social isolation (Masi et al., 2011; Qualter et al., 2015). In the workplace context, Wright (2005) proposes that workplace loneliness is the distressing and subjective gap between an individual's real and ideal social environment, particularly in terms of social and intimate relationships.

This study based on the definition of workplace loneliness proposed by Wright and Silard (2021) as a psychological feeling that arises when employees' actual workplace interpersonal relationships do not meet their expectations. The study also used Wright's (2005) dimensions of social loneliness (a lack of belonging within the organization).

### 3. Perceived Social Support

Social support can be understood as a sense of contentedness, belonging, and the belief that one can rely on others for help and support during challenging times (Wills, 1991). It encompasses both perceived social support and received social support, which are distinct concepts. Perceived social support refers to an individual's subjective perception or belief that they have access to social support and that others are available to provide care and assistance when needed. It is based on the individual's own perception of the support available to them. On the other hand, received social support refers to the actual support and assistance that an individual receives from their social network. It represents the tangible support received from others in the form of emotional, instrumental, or informational help (Taylor et al., 2004).

In this study, the concept of perceived social support at work is defined based on the work of Shi and Ek-lem (2020). As the study focuses on employees, the two dimensions of social support used are Friends (coworkers) and significant others (supervisors) which were adapted from Zimet et al. (1988). These dimensions capture the perceived support and concern received from coworkers and supervisors, respectively (Zimet et al., 1988; Shi & Ek-lem, 2020).

### 4. Related Research

The social support from colleagues and supervisors in the workplace has a moderate impact on reducing feelings of loneliness (Ramzan et al., 2021). Su et al. (2018) provide evidence that perceived social support has a positive effect on employees' well-being in the workplace. Furthermore, Yang et al. (2019) demonstrate that a lack of interactive links or social support from colleagues can lead to higher levels of work stress. This highlights the importance of social support from colleagues in promoting a positive work environment and reducing stress levels. Moreover, Rahim et al. (2020) emphasize the significant positive relationship between supervisor support and personal well-being. In summary, the research indicates that perceived social support at work, both from colleagues and supervisors, has a significant positive impact on employee well-being in the workplace. Based on these observations, the following hypotheses can be proposed.

H1: Perceived social support has a positive impact on employee well-being.

According to Uslu (2021), emotional loneliness (referred to as Emotional Loneliness) significantly affects employees' psychological well-being. Maintaining positive social exchange relationships with colleagues is

identified as an important factor in reducing workplace loneliness, as highlighted by Jung et al. (2021). It is worth noting that extreme and adverse working conditions can contribute to increased loneliness among employees, thereby negatively impacting their job-related well-being (Ayazlar & Güzel, 2014; Erdil & Ertosun, 2011).

Chou et al. (2022) discovered that perceived social support positively influences students' subjective well-being. Additionally, they observed that higher levels of loneliness correspond to lower levels of subjective well-being. Given these insights, positive perceived social support from supervisors and colleagues can play a vital role in alleviating workplace loneliness. By fostering a sense of connection and providing social support, such support can contribute to promoting employee well-being. Based on these findings above, the following hypotheses can be proposed.

H2: Workplace Loneliness plays a mediating role between Perceived Social Support and Employee Well-Being.

H3: Perceived Social Support has a negative impact on Workplace Loneliness.

H4: Workplace Loneliness has a negative impact on Employee Well-Being.

### The Research Framework

Based on the literature review, the following research framework can be synthesized for the study. The research framework was shown in the below in Figure 1.

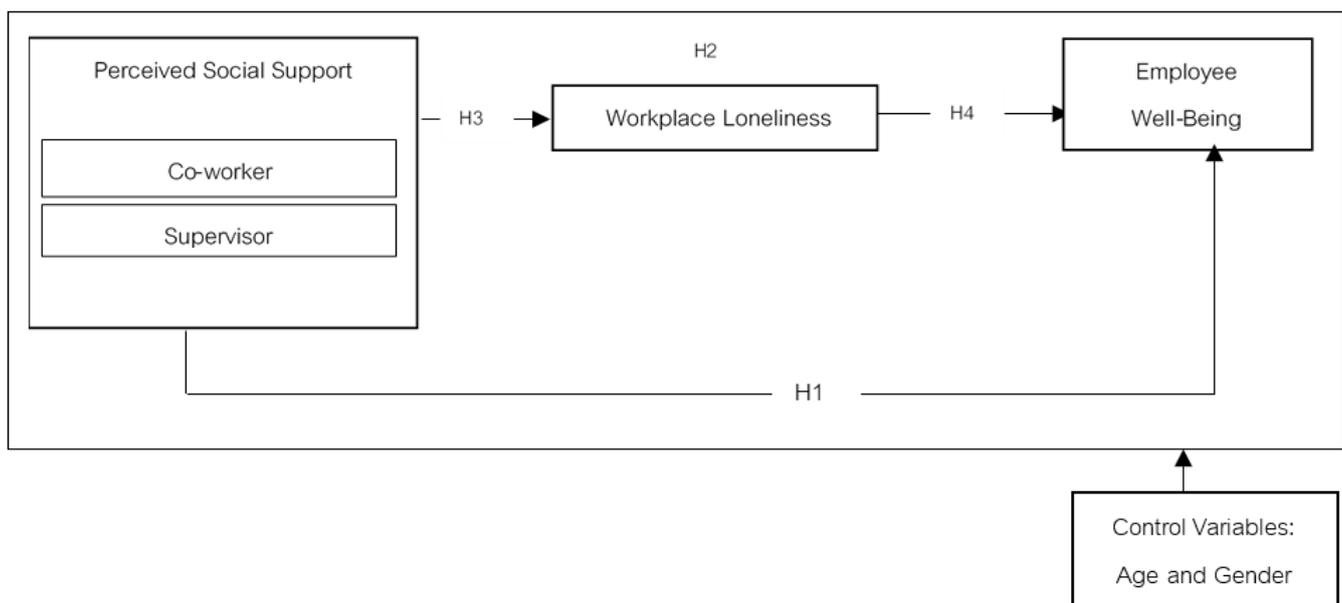


Figure 1 Proposed Research Model

## Research Methodology

### Sample and Method

Shandong has become a frontrunner in terms of the cumulative number of new energy vehicles and the development of charging infrastructure. In accordance with the recommended ratio of the number of questions to the number of participants in the research questionnaire proposed by Tinsley and Tinsley (1987), an acceptable ratio of 1:5 is typically suggested. In this study, the research questionnaire consists of approximately 36 items, the sample size should be at least 180. Ensures a more robust and reliable analysis of the data, this study used the purpose sample method to collect 100 valid responses for pre-test and received 735 valid responses for this study's formal questionnaire.

Top 500 Enterprises of China (中国企业500强) refers to a prestigious and influential ranking that showcases the most prominent and dynamic companies operating within the vast landscape of the Chinese economy. The study's participants are Chinese employees of Top 500 Chinese enterprise (Manufacturing industries) from the Shandong Province of China.

### Questionnaire Development and Measurement

In this study, well-established measurement scales and methods with high reliability and validity were utilized. The process of translating the questions into Simplified Chinese involved several stages, including forward translation, consensus meetings, and backward translation, ensuring accurate and culturally appropriate translations.

The measurement scale used in this study follows the format of a typical five-level Likert item. The response options range from "1" representing "strongly disagree" to "5" representing "strongly agree". This study ensured that reliable and validated measures were used to assess workplace loneliness, employee well-being, and perceived social support. The Workplace Loneliness Scale used in this study was adapted from Wright et al.'s (2006) scale. Examples of items from this scale include "I feel myself withdrawing from the people I work with" and "I often feel alienated from my co-workers." These items assess the level of loneliness experienced by individuals in the workplace. The Employee Well-Being scale employed in this study was adapted from the scale developed by Zheng et al. (2015), Examples of items from this scale include "I find real enjoyment in my work" and "I feel a sense of accomplishment from my work." These items aim to measure employees' well-being and their satisfaction with their work. The Perceived Social Support Scale used in this study was adapted from Jiang's (2001) scale. Examples of items from this scale include "My friends really try to help me" and "I have a special person who is a real source of comfort to me." These items assess individuals' perception of the support they receive from others, such as friends or significant others.

## Data Collection

For this quantitative research, primary data was collected using a method called Purposive sampling. WJX (<https://www.wjx.cn/>) was chosen as the platform for this study's data collection, and the survey time is from June to July 2023.

## Demographic Information of Respondents

The female employees participating in this study amounted to 597, constituting the majority (81.2%), while males numbered 138 (18.8%).

The age distribution revealed that the highest number of participants fell within the 31–35 age range, totaling 270 individuals (36.7%). The subsequent age group was 36–40 years old, comprising 189 individuals (25.7%), followed by 92 individuals aged 41–45 (12.5%). Additionally, there were 5 participants aged below 20 (0.7%) and 16 individuals aged 51 and above.

## Results

### Reliability and Validity Test

The researchers utilized SPSS 25.0 software to conduct the Reliability and Validity Analysis. In this study, Fuller et al. (2016) pointed out that if more than 40% of the variance is attributed to a common method bias in the first factor; in this study, the first factor explains a variance of 32.539%; therefore, this study used Harman's single factor test to examine the common method variance among the study variables, yielding a value of 32.539%, which is lower than the proposed 40% by scholars. Thus, this study does not exhibit common method bias.

The Meyer-Olkin (KMO) measure is utilized to assess the adequacy of sampling by examining the proportion of variance in the variables attributable to underlying factors. Typically, a KMO value of 0.7 or higher is considered favorable. In this study, the KMO value is ranged from 0.814 to 0.937, indicating that the sampling adequacy is satisfactory. Furthermore, Hair et al. (2013) suggests that a commonly accepted threshold for Cronbach's alpha is 0.70 or higher. The Cronbach's alpha values for the variables in the study ranged from 0.820 to 0.888, which indicates greater internal consistency and reliability of the scale. Corrected Item-Total Correlation (CITC) measure used to assess the relationship between individual items and the total score of a scale or questionnaire, this study's CITC value is ranged from 0.596 to 0.888. See the below Table 1.

**Table 1** Cronbach's alpha

Variables	Cronbach's alpha	CITC (Corrected Item-Total Correlation)
Workplace Loneliness (16 items)	0.892	0.867-0.888
Perceived Social Support (8 items)	0.820	0.767-0.818
Employee Well-Being (12 items)	0.888	0.596-0.779

### Linear Regression Analysis

In this section, this study set age and gender as the control variable. According to the viewpoint of Baron and Kenny (1986), this study employed the following four-step procedure to test the mediating effect of workplace loneliness on the relationship between perceived social support and employee well-being.

Following these four steps, this study conducted regression analyses. In the first step, all control variables were entered in Model 1. It was found that perceived social support (Independent Variable, X) significantly influences employee well-being (Dependent Variable, Y) (Beta = 0.732,  $p = 0.000$ ). In Model 2, workplace loneliness (Mediator Variable, M) was added to the regression for employee well-being (Y), and it was found that workplace loneliness negatively influences employee well-being (H4: Beta = -0.58,  $p = 0.000$ ). In Model 3, both perceived social support (X) and workplace loneliness (M) were included in the regression for employee well-being (Y). The effect of perceived social support on employee well-being changed from Beta = 0.732 ( $p = 0.000$ , adjusted  $R^2 = 0.532$ ) to Beta = 0.640 ( $p = 0.000$ ). In Model 4, perceived social support and workplace loneliness were both included (Beta = -0.600,  $p = 0.000$ ). The conducted study included a multiple collinearity test of the model, revealing that the Variance Inflation Factor (VIF) values across the model variables were all below 2. This signifies the absence of collinearity issues within the model. Additionally, the Durbin-Watson statistic yielded a value below 2, indicating the absence of autocorrelation within the model. This suggests that there is no correlation among the sample data, thereby enhancing the model's reliability and validity.

According to Baron and Kenny (1986), the direct effect of perceived social support (X) on employee well-being (Y) weakened, indicating partial mediation. Thus, perceived social support (X) and workplace loneliness (M) partially mediate employee well-being (Y). The analysis results are shown in below Table 2, and the statistical results of the research model in below Table 3. The results of hypothesis shown in below Table 4.

**Table 2** Linear regression analysis

	Linear regression analysis results of Employee Well-Being (n=735) (Dependent Variable: Employee Well-Being)		
	Employee Well-Being	Workplace Loneliness	Employee Well-Being
Variables	Model 1	Model 2	Model 3
Perceived Social Support	0.732**	-0.600**	0.640**
Workplace Loneliness			-0.538**
R <sup>2</sup>	0.538	0.388	0.552
Adj. R <sup>2</sup>	0.532	0.380	0.546
F	93.762**	51.038**	89.289**

Note. \* p<0.05 \*\* p<0.01

**Table 3** Statistical results of the research model

Paths	$\beta$	p	Results
H1: PSS→EWB	0.732	0.000	Supported
H2: PSS →Workplace Loneliness→EWB	$\beta$ changed from 0.732(P=0.000) to 0.640 (P=0.000)	0.000	Supported (Partial mediation)
H3: PSS→ Workplace Loneliness	-0.600	0.000	Supported
H4: Workplace Loneliness→EWB	-0.538	0.000	Supported

**Table 4** The results of hypothesis

H1: Perceived social support has a positive impact on Employee Well-Being.	Accepted
H2: Workplace Loneliness plays a mediating role between Perceived Social Support and Employee Well-Being.	Accepted
H3: Perceived Social has a negative impact on Workplace Loneliness.	Accepted
H4: Workplace Loneliness has a negative impact on Employee Well-Being.	Accepted

## Discussion

This study contributes to the literature of other research study of the Perceived social support at work, Workplace Loneliness, and Employee's Well-Being. Perceived social support (supervisors support and coworker support) has a positive impact on employee well-being, which tallied with the study from Mohr et al. (2021), and Rahim et al. (2020). Workplace Loneliness plays a mediating role between Perceived Social Support and Employee Well-Being, which is consistent with past studies (Jung et al., 2021; Kuriakose et al., 2019). Therefore, research has consistently shown that perceived social support can help reduce workplace loneliness and improve overall well-being.

## Conclusion

In conclusion, the study emphasizes a noteworthy correlation between the social support provided by colleagues and supervisors to Chinese employees and their mental well-being. Notably, individuals experiencing greater levels of social support in the workplace tend to demonstrate reduced levels of depression and enhanced overall well-being. These findings underscore the importance of recognizing and actively addressing workplace loneliness.

This study offers two crucial insights for management practices. Firstly, social support within the organization, both from colleagues and supervisors, has been found to effectively reduce loneliness among manufacturing industry employees. Secondly, social support in the workplace significantly enhances employee well-being. Therefore, this research suggests that companies should regularly assess the workplace atmosphere created by supervisors and colleagues. Additionally, organizing more communication activities between supervisors, colleagues, and frontline employees is recommended to enhance the level of social support.

Certainly, the research conducted in this study has provided valuable insights into the relationship between social support, workplace loneliness, and well-being among Chinese employees specifically in the Shandong (山東) province. However, it's important to acknowledge the limitations of the study, particularly its geographic scope. The research was confined to a single province, which may restrict the generalizability of the findings to the entire population of China. To enhance the robustness and applicability of the study's conclusions, it is recommended that future research endeavors consider expanding the survey and data collection efforts to encompass a more diverse and representative sample from various provinces across China. By involving participants from different regions, cultural backgrounds, and work settings, a more comprehensive and holistic understanding of the relationship between social support, workplace loneliness, and well-being can be attained.

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