Gender, Age, and Bag Weight as Predictors of Stress Among Southern China Office Workers

Yiyuchen Zhu[*]

Osaka Metropolitan University, 3-3-138 Sugimoto Sumiyoshi-ku, Osaka-shi, Japan

`*Floppy-unnilennium-266@outlook.com`

Abstract. This study investigates the predictors of stress among office workers in Southern China, focusing on the impact of gender, age, and the weight of bags carried to work. Data were collected from 104 office workers using the Chinese version of the Perceived Stress Questionnaire (C-PSQ). Results revealed significant stress levels across the sample, with no significant differences in stress levels between males and females or between different age groups. However, bag weight was found to significantly influence stress levels, with those carrying heavier bags experiencing higher stress. Regression analysis confirmed bag weight as a significant predictor of stress, while age and gender were not. These findings highlight the importance of considering physical burdens such as bag weight in stress management interventions. Organizations should focus on reducing physical strain on employees by providing storage facilities or encouraging lighter bags. Future research should explore additional factors influencing stress and consider longitudinal studies to establish causal relationships. This study contributes to the understanding of workplace stress and provides practical insights for improving employee well-being.

Keywords: Workplace Stress, Office Workers, Bag Weight, Gender Differences, Age Differences.

1 Introduction

Stress is a prevalent issue among office workers, affecting both physical and mental health [1]. Understanding the factors contributing to stress in the workplace is crucial for developing effective interventions. Previous research has identified several predictors of workplace stress, including job demands, lack of control, and interpersonal conflicts [2]. However, less attention has been given to physical factors, such as the weight of bags carried to work, which may also play a significant role in contributing to stress levels.

This study aims to address this gap by investigating the impact of gender, age, and bag weight on stress levels among office workers in Southern China. By identifying and analyzing these factors, the research seeks to provide a more comprehensive understanding of workplace stress and its predictors. This understanding can inform the

development of targeted interventions to reduce stress and improve the overall well-being of office workers.

2   Stress

2.1   Stress and Mental Health

Stress significantly impacts mental health, defined by the American Psychological Association as a response to environmental demands that exceed an individual's ability to adapt, potentially causing psychological distress [3]. Chronic exposure to stressors like work pressures, social stressors, or major life events is linked to higher risks of anxiety and depression [4]. Research highlights the importance of psychological resilience and social support in reducing stress's negative effects. Psychological resilience helps individuals adapt and recover from challenges [5], while strong social support networks mitigate stressors' adverse effects [6]. Understanding these relationships is crucial for creating targeted interventions that promote optimal mental health outcomes amidst stress. Future research should explore these dynamics further and develop effective strategies to enhance mental health resilience.

2.2   Stress and Gender

Stress affects mental health differently across genders. Studies show that women often face higher stress levels due to multiple roles, societal expectations, and discrimination [7], leading to increased rates of anxiety and depression compared to men. Gender-specific stressors, such as caregiving responsibilities and workplace discrimination, further exacerbate these issues. Recognizing these gender-related stressors is essential for developing interventions that address the unique mental health needs of both men and women, fostering resilience and well-being in diverse populations.

2.3   Stress and Bag Weight

While psychological resilience and social support are vital in mitigating stress, physical factors like the weight of bags carried to work also contribute to stress levels. Chronic exposure to stressors such as works pressures, social stressors, or major life events is consistently linked to higher risks of anxiety and depression [8]. Understanding these complex relationships is essential for developing targeted interventions that promote optimal mental health outcomes amidst stress.

2.4   Stress and Age

Stress varies significantly across different age groups, influencing mental health outcomes in distinct ways. Young adults often experience stress related to academic pressures, career transitions, and social expectations [9]. Middle-aged adults commonly face stressors such as work demands, financial responsibilities, and caregiving

obligations [10]. Understanding these age-specific stressors is crucial for developing interventions tailored to each age group.

3   The Current Study

This research aims to explore and answer two primary questions:

To what extent do stress levels manifest among office workers in Southern China, particularly when comparing individuals of different ages and genders?

How does the weight of bags impact stress levels among office workers in Southern China?

Based on previous literature, this study proposes three hypotheses:

-H1: Office workers in Southern China experience significant levels of stress.

-H2: Office workers of different ages experience varying degrees of stress.

-H3: There is a correlation between the stress experienced and the weight of office workers' bags.

4   Method

4.1   Participants

The number of participants in this survey is 104, of which 104 questionnaires are valid. In the valid questionnaire, one individual was unwilling to disclose their gender, 62 females and 41 males, all from the southern region of China. They were born between 1963 and 2006, average age is 38 years old.

4.2   Measurement

One scale was used in the study:

Chinese version of the Perceived Stress Questionnaire (C-PSQ)

The Chinese version of the Perceived Stress Questionnaire (C-PSQ) maintains its original 30-item structure. Participants rate each item on a 5-point Likert scale ranging from 1 (never) to 5 (very often). Principal component analysis identified five factors, explaining 52.136% of the total variance. The Scale Content Validity Index/Average (S-CVI/Ave) was 0.913. Concurrent validity coefficients were 0.525 for anxiety and 0.567 for depression. Confirmatory factor analysis yielded the following fit indices: χ^2/df = 4.376, RMR = 0.023, GFI = 0.921, AGFI = 0.907, CFI = 0.916, RMSEA = 0.048, PNFI = 0.832, PGFI = 0.782, CN = 342, and AIC/CAIC = 0.809. The scale demonstrated high internal consistency (Cronbach's alpha = 0.922), with alphas for each dimension as follows: worries/tension (0.899), joy (0.821), overload (0.688), conflict (0.703), and self-realization (0.523). Test-retest reliability coefficients were 0.725, 0.787, and 0.731 for the first-second, first-third, and second-third tests, respectively [11].

Scoring: Respondents complete the PSQ based on their experiences of stress over the past month. Scores range from 1 ("almost never") to 4 ("usually"), with higher

scores indicating higher levels of perceived stress. The total score is computed by summing scores for each item (questions 1, 7, 10, 13, 17, 21, 25, and 29 are positively phrased and scored accordingly; the remaining 8 items are reverse-scored: 4=1, 3=2, 2=3, and 1=4). A PSQ index is derived by subtracting 30 from the raw score and dividing the result by 90, yielding a score between 0 and 1[12].

4.3   Analytical Approach

This research employed statistical analyses to investigate stress experiences and their predictors among office workers in Southern China. A one-sample t-test was utilized to assess stress occurrences, while an independent sample t-test was conducted to explore potential age-related differences in these experiences. Gender-based disparities in PSQ index values were examined using independent sample t-tests. Additionally, the relationship between PSQ and Bag Weight was assessed through an independent samples t-test. Finally, a regression analysis was performed to identify predictors of PSQ, including age and gender presence.

5   Results

5.1   Perceived Stress Questionnaire (PSQ)

To assess participants' stress levels, a one-sample t-test was conducted, revealing significant stress levels ($t(103) = 52.898$, $p < 0.001$, Cohen's d = 0.080), with all participants scoring significantly above 0 on the PSQ, indicating universal experience of stress and significant variation in stress levels among individuals.

An independent samples t-test examined gender differences in PSQ scores, showing no significant disparity between males and females ($t(101) = 0.587$, $p = 0.558$, Cohen's d = 0.082).

To explore age-related differences in PSQ scores, participants were divided into two groups based on the mean age of 38 years. An independent samples t-test found no significant age-related variation in stress levels ($t(101) = 0.208$, $p = 0.835$, Cohen's d = 0.082), indicating consistent stress levels across different age groups.

5.2   Bag Weight

An independent samples t-test was conducted to investigate whether individuals carrying bags of varying weights experience different levels of PSQ. Participants were grouped based on the average weight of all bags. The results revealed a significant difference in PSQ scores between those carrying light and heavy bags ($t(102) = 2.319$, $p = 0.022$, Cohen's d = 0.080). Fig. 1 shows the relationship between the average PSQ of people carrying heavy and light bags
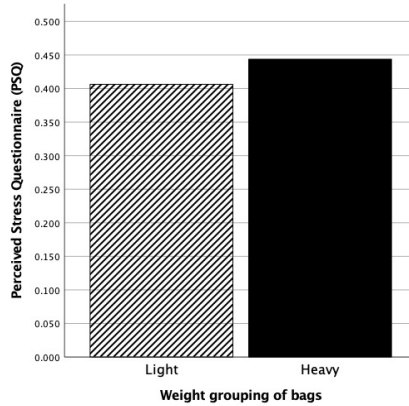
Fig. 1. The average PSQ of people carrying heavy and light bags.

5.3 Factors Influencing PSQ

To examine the factors that predict PSQ, a regression analysis was conducted with PSQ as the dependent variable and participants' age, gender, bag weight as independent variables. The model was significant ($F(3, 99) = 1.953$, $p < 0.001$). Among all the predictors, bag weight was a significant predictor ($\beta = 0.229$, $t = 2.334$, $p = 0.022$). These results indicate that age has a significant impact on PSQ scores. All other factors did not significantly predict EDS (all $t < 2.334$, all $p > 0.438$). Table 1 shows the relationship between Predictors of Perceived Stress Questionnaire and age, gender, and backpack weight.

Table 1. Predictors of Perceived Stress Questionnaire (PSQ) Scores

Model	Unstandardized B	Coefficients Std. Error	beta	t	p
(Constant)	0.350	0.044		8.007	0.000
Age	-0.002	0.016	-0.010	-0.103	0.918
Gender	0.013	0.016	0.076	0.779	0.438
Bag Weight	0.038	0.016	0.229	2.334	0.022

6 Discussion

This study aimed to explore the impact of age, gender, and bag weight on stress levels among office workers in Southern China, contributing to the limited research on this topic.

6.1 Key Findings

The first hypothesis, which proposed that office workers in Southern China experience significant levels of stress, was supported. The one-sample t-test revealed that

participants' PSQ scores were significantly above zero, indicating widespread stress among the sample. This aligns with previous research highlighting the high-stress levels among office workers due to job demands, lack of control, and interpersonal conflicts.

The second hypothesis, which suggested age differences in stress levels, was not supported. The independent sample t-test indicated no significant difference in PSQ scores between older and younger participants. This finding suggests that age may not be a significant factor in determining stress levels among office workers in this region. This contrasts with previous research that identified age-specific stressors. Further research may be needed to explore this discrepancy and identify other potential factors that influence stress levels across different age groups.

The third hypothesis, which proposed a correlation between the weight of bags and stress levels, was partially supported. The independent samples t-test revealed a significant difference in PSQ values between individuals carrying heavy and light bags. This finding suggests that the physical burden of carrying heavy bags can contribute to higher stress levels among office workers. Additionally, the regression analysis identified bag weight as a significant predictor of PSQ scores, further emphasizing its impact on stress levels.

6.2   Implications

The findings of this study have several practical implications. First, organizations should consider implementing measures to reduce stress levels among office workers, such as providing support for managing job demands and improving workplace ergonomics. Second, addressing the physical burden of carrying heavy bags may help alleviate stress among employees. Providing storage facilities or encouraging the use of lighter bags could be effective strategies in this regard.

6.3   Limitations and Future Research

This study has several limitations that warrant acknowledgment. Firstly, the sample was confined to office workers in Southern China, potentially limiting the generalizability of findings to other regions or occupations. Secondly, the cross-sectional design precludes causal inferences. Future research could utilize longitudinal designs to explore causal relationships between bag weight and stress levels over time. Furthermore, investigating additional factors like job demands and social support could offer a more comprehensive understanding of stress predictors among office workers.

7   Conclusion

In conclusion, this study provides valuable insights into the factors influencing stress levels among office workers in Southern China. The findings highlight the significant stress experienced by this population and the impact of carrying heavy bags on stress levels. Organizations should consider implementing strategies to reduce stress and

address the physical burden of carrying heavy bags to improve the well-being of their employees.

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