Impact of Demographic Variables on Stress Level among Regional Transport Office Employees

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1. INTRODUCTION

The word ''stress'' may have originated from the Latin word *stringere* meaning to draw tight Cox, T. (1978). Since the seventeenth century, the term "stress" has been used to describe difficulty (Hinkle, L.E., 1973). The word stress appeared in psychology literature when (Jones, F., and Bright, J. 2001) published their abstracts in the year 1944. For the over 60 years lot of research is carried out in the area of stress (Doublet, 2000). Work stress causes physical illness, emotional instability, psychosomatic symptoms, and physiological changes.

In the modern workplace, stress has become an inevitable aspect of many individuals' lives. The implications of this stress, both for individuals and businesses, are significant and can have far-reaching consequences. Studies have shown that stress in the workplace can have detrimental effects on both the physical and mental health of employees. It can contribute to the development or exacerbation of various health issues, such as cardiovascular problems, anxiety, depression, and burnout. the impact of workplace stress extends beyond the well-being of individuals. Businesses also bear the burden of stress-related issues. High levels of stress can lead to decreased productivity, absenteeism, increased employee turnover, and decreased job satisfaction. These factors can have a direct impact on the overall performance and profitability of organizations. So it is in the best interest of both employees

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and businesses to address and manage workplace stress effectively.   (Ivancevich, J.M., Matteson, M.T., and Richards III, E.P., 1985). Given that a significant portion of individuals' lives is spent at work, the conditions and experiences in the workplace play a crucial role in shaping their overall well-being. The work environment, organizational culture, job demands, and interpersonal relationships all contribute to the level of stress experienced by employees. Therefore, creating a healthy work environment that promotes employee well-being and effectively manages stress is essential. (Beehr, T.A., and Newman, J.E. 1978).

2. TYPES OF STRESS

The word stress is mostly associated with negative situations and incidents, such as when a worker loses his/her job, a loved one becomes extremely ill over time, or when they receive a formal reprimand for another person's mistake. Distress, is the typical term used to describe this kind of negative stress. Further, there is a type of stress known as eustress, which is derived from the Greek word *eu*, which means good. For instance, when an employee is given an overseas assignment, he/she will experience stress since he must move away from his family, but this stress is not typically negative because the individual is put in an exotic location for which he or she has waited years (Luthans, F. 1989).

By categorizing and classifying types of stress, individuals can better identify the specific stressors they are experiencing. This classification brings awareness to the different sources and causes of stress, allowing individuals to recognize and understand the factors contributing to their stress levels. It helps individuals pinpoint the areas of their lives that may require attention or intervention.

Eustress, derived from the Greek prefix "*eu*" meaning "good," refers to positive or beneficial stress. It is characterized by feelings of excitement, motivation, and fulfilment that arise when individuals are engaged in challenging or meaningful activities. Eustress can be seen as a healthy response to situations that require effort and adaptation. It often occurs

when individuals are pursuing personal goals, facing new opportunities, or engaging in activities they enjoy. Eustress can enhance performance, boost productivity, and promote personal growth and development.

Distress refers to negative or harmful stress. It is the type of stress most commonly associated with adverse effects on well-being. Distress can occur when individuals perceive a situation as overwhelming, threatening, or beyond their ability to cope effectively. It is often accompanied by feelings of anxiety, worry, frustration, or sadness. Distress can result from various sources such as work-related pressures, relationship problems, financial difficulties, or traumatic events. Prolonged or severe distress can have detrimental effects on physical health, mental well-being, and overall quality of life. While eustress and distress represent two ends of the stress spectrum, it is important to note that the distinction between them is not always clear-cut. What may be perceived as eustress for one person might be distressing for another, as individuals have different capacities to cope with stressors.

Acute stress is short-term stress that happens in response to an urgent threat. For instance, an employee may suffer acute stress after receiving a reprimand from a supervisor. Acute stress triggers various physiological and psychological changes in the body. Some of the symptoms associated with acute stress include heightened alertness and excitement, increased energy levels, feelings of unease and worry, and temporary immune system suppression. Additionally, individuals may experience feelings of despair or helplessness, loss of appetite or hunger, accelerated metabolism, and increased fat burning. Developing effective stress management strategies is important for minimizing the impact of acute stress and maintaining overall well-being.

Chronic stress is a long-term stress reaction brought on by ongoing conditions like an employee may suffer chronic stress if they are afraid of losing their job during a recession. Chronic stress is a complex and multifaceted form of stress that can have profound

implications for individuals' physical and mental well-being. The example you provided of an employee experiencing chronic stress due to job insecurity during a recession highlights the long-lasting nature of this type of stress. Unlike acute stress, which is short-term and immediate, chronic stress persists over an extended period, subjecting individuals to ongoing strain and pressure. Chronic stress can lead to the conditions like depression, anxiety, panic attack, eating disorders, irritability, decreased resistance to infection and disease, diabetes, high blood pressure, and loss of sex desire (Hitt, *et al*, 2011). Recognizing the distinct characteristics and consequences of chronic stress is crucial for developing targeted interventions and support systems. Employers, healthcare professionals, and individuals themselves can benefit from understanding the specific challenges posed by chronic stress and implementing strategies to manage and reduce its impact. This may involve implementing stress management programs, promoting a healthy work-life balance, fostering supportive environments, and encouraging self-care practices.

## 3. DR. HANS SELYE – FATHER OF STRESS RESEARCH

The eminent physician and endocrinologist Dr. Hans Selye is regarded as the "Father" of the study of stress. In the field of stress, Dr. Selye has written 39 books and more than 1,700 articles also 362,000 scholarly papers have quoted his works have been referenced. He gained prominence on a global scale for introducing stress in a medical setting (Tan and Yip, 2018).

In an effort to understand how the body reacts to its surroundings, Dr. Seyle created the "General Adaptation Syndrome Model". "The alarm reaction", "The Resistance stage", and The "Exhaustion stage" are the three distinct phases that he discovered. Dr. Seyle came to the conclusion that people always react the same way under pressure. This reaction was referred to by him as General Adaptation Syndrome. It functions like a defence mechanism to

assist people in meeting environmental demands (Selye, H. 1956). The General Adaptation

Syndrome Model is depicted in the following Diagram.

Figure 1

General Adaptation Syndrome Model
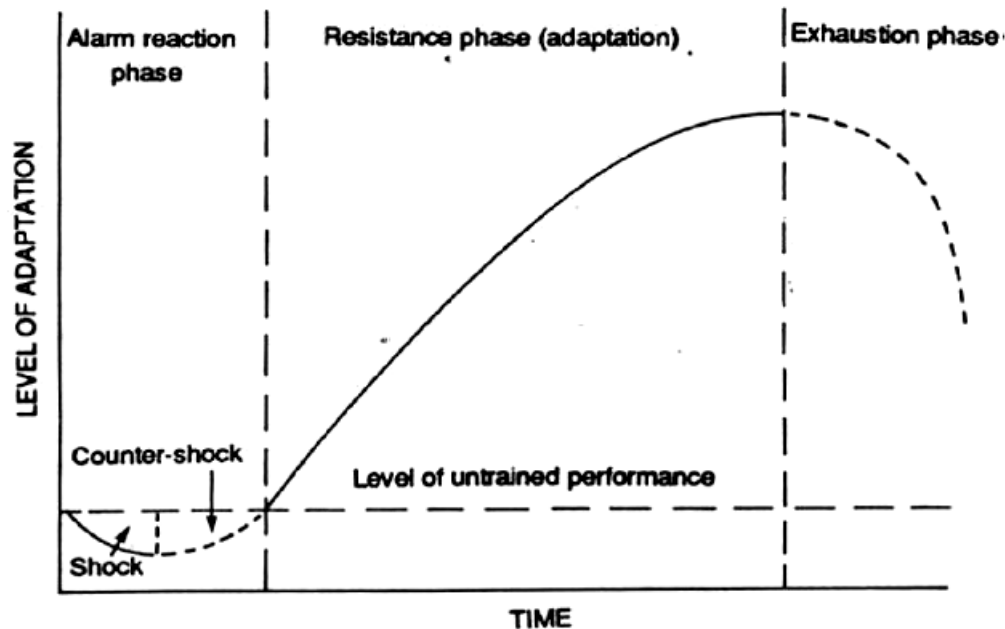
3.1 Alarm Reaction Phase

According to Dr. Seyle when the brain detects a threat or a demanding situation, it

sends a type of biochemical massage to various parts of the human body. During this phase,

the neurological system will be generally stimulated. Muscle tone will decline as well as

hypotension and hypothermia. Depending on the type of stressor and the individual's frame

of mind and this period could last just a few seconds to several hours. Extreme shocks may

cause a person to die or become incapacitated in unusual circumstances.

3.2 Resistance Phase

During the second phase numerous physiological, psychological, and behavioural

mechanisms of the body are active and a person's ability to cope with demanding conditions

grows above that of the usual state. As a result, the alarm response is dramatically reduced as

stressor resistance is built. Higher levels of adrenaline during this stage provide the person a certain amount of strength to deal with or get rid of the stressor.

3.3 Exhaustion Phase

Individuals can only resist stress to a certain extent. If the stress persists, this ability to resist will deteriorate and the person will get closer to exhaustion. In some circumstances, the person may withdraw from the demanding environment and then come back when they have more energy. People who frequently experience general adaption syndrome run the risk of experiencing psychological and physical harm.

4. SYMPTOMS OF STRESS

The symptoms of stress can manifest in various ways and vary from person to person. They can affect individuals on multiple levels, including emotional, physical, behavioral, mental, and even overall health. By recognizing and addressing these symptoms, individuals can gain insights into their own stress levels and take appropriate steps to manage and mitigate its effects. Symptoms of stress are grouped in five categories viz., emotional, physical, behavioural, mental and health Cohen, 2002). The symptoms of stress are detailed in the following diagram.

Figure 2

Symptoms of Stress
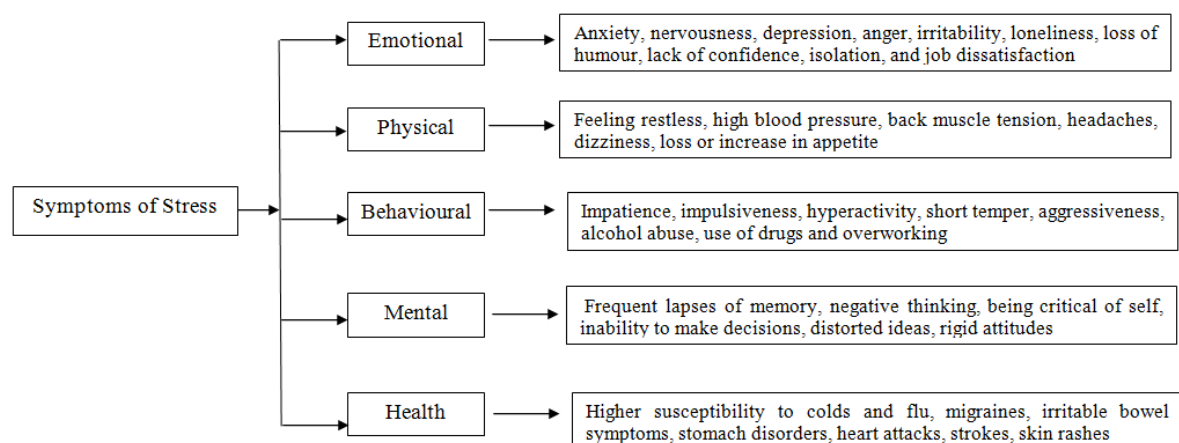
Emotional symptoms of stress include feelings of irritability, mood swings, anxiety, depression, and a sense of being overwhelmed. Individuals experiencing stress may find themselves more easily agitated or frustrated, and they may struggle to manage their emotions effectively. These emotional symptoms can significantly impact relationships, both personal and professional, and contribute to a decreased sense of well-being.

Physical symptoms of stress can manifest as headaches, muscle tension, fatigue, sleep disturbances, changes in appetite, and gastrointestinal issues. The body's response to stress can result in physical discomfort and disruptions to normal bodily functions. These symptoms can range from mild to severe and can interfere with an individual's ability to carry out daily activities.

Behavioral symptoms of stress often include changes in behavior patterns and coping mechanisms. Individuals may engage in unhealthy behaviour such as overeating, excessive alcohol or drug use, withdrawal from social activities, and decreased productivity. Stress can also impact an individual's ability to concentrate, make decisions, and engage in effective problem-solving.

Mental symptoms of stress refer to the cognitive effects that stress can have on individuals' mental processes. These symptoms may include racing thoughts, difficulty focusing or concentrating, memory problems, and a sense of being mentally overwhelmed. Stress can impair cognitive functioning and make it challenging to perform tasks that require mental clarity and sharpness.

Lastly, stress can have a significant impact on overall health. Prolonged or chronic stress has been associated with an increased risk of various health issues, including cardiovascular problems, weakened immune system, digestive disorders, and chronic pain. The physiological response to stress can put a strain on the body's systems, leading to long-term health consequences if left unaddressed.

5. RATIONALE OF THE STUDY

In the present day, almost half of workers in India experience a certain type of stress (Bhattacharyya and Basu, 2018). These days, it is common to find high levels of occupational stress across all firms (Chaudhary and Lodhwal, 2017). People can handle a certain amount of stress (Pestonjee, 1987). Employees at the Regional Transport Office, like those in other service industries, are vulnerable to stress. Nowadays, stress is a reality for workers and their health will be impacted if stress is not appropriately managed at the individual and organisational levels. The study will be useful for management and policy makers as they develop measures for managing stress and preserving the mental health of the RTO staff.

6. CONCEPTUAL MODEL

Based on the review of the conceptual framework of stress and review of earlier studies in the area of the effect of demographic variables on stress level, a conceptual model is developed and presented in the following diagram. This study explores the impact of age, marital status, work experience, education and distance commuted every day on their stress level.

Figure 3

Conceptual Model of the Study


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┌─────────────────────────────┐
│   Demographic Variables     │
│                             │                    ┌──────────────────────┐
│  Age                        │                    │    Stress Level       │
│  Marital Status             │                    │                      │
│  Work Experience            │────────────────▶   │  High Stress          │
│  Education                  │                    │  Moderate Stress      │
│  Distance Commuted Everyday │                    │  Low Stress           │
│                             │                    └──────────────────────┘
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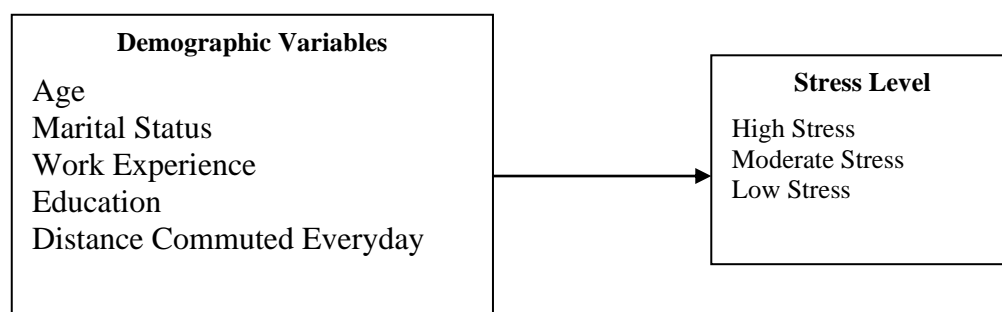
7.   REVIEW OF EARLIER STUDIES

A study was conducted with the aim of examining the association among five different variables namely, emotional intelligence, demographic characteristics, job stress, job satisfaction, and intention to quit the company. This research presents the findings from a survey of scholarly studies published between 1950 and 2012 that addressed emotional intelligence, demographic characteristics, job stress, job satisfaction, and variables connected to intention to leave. According to demographic data, the major findings of numerous research studies show that emotional intelligence significantly influences how much job stress is managed, how satisfied employees are with their jobs, and how likely they are to stay with an organisation (Shukla and Srivastava, 2016).

A study was conducted among employees working in 30 different four star and five star hotels in Istanbul, Turkey. Data for the study was collected from 379 respondents using a structured questionnaire The objective of this study was to examine the association between gender, marital status, age, tenure, department, education level and job stress factors. The results of the study show that female employees are more affected by the various stress factors compared to male employees, also married employees are often more stressed than single ones. The demanding nature of the hotel and tourism industries puts its employees through many stressful situations (Aydin, 2018).

In a cross sectional study conducted among 155 nurses working in critical care units in Iran. Data collected was analysed using percentage analysis, mean and standard deviation t-test, One-way ANOVA and correlation analysis. It was found in the study that the occupational stress for over half of the respondents was moderate to high. It was found in the study that gender, educational qualification and work experience did not had statistically significant association with level of occupation stress (Faraji,*et al,* 2019).

A study was conducted to determine the impact of socio and demographic factors on perceived stress and coping strategies among 377 third year undergraduate nursing students in Australia. According to the findings of the study, a considerable portion of students doing an undergraduate nursing course are under moderate amounts of stress. Additionally, the participants' demographic characteristics have an impact on perceived stress and coping strategies were used. Some students may experience more stress due to their diverse backgrounds because they may have immigrated alone, without family or support systems (Asturias, *et al,* 2021).

8. METHODOLOGY

In this study, a descriptive research design was employed to assess the stress levels of the respondents. The target population for the study consisted of employees working in various Regional Transport Offices across Tamil Nadu state in India. To select the respondents for the survey, a judgmental sampling technique was utilized. This approach allowed for the inclusion of individuals who were considered knowledgeable and experienced in their respective roles within the Regional Transport Offices. A total of 65 questionnaires were distributed to the selected respondents. After reminders and follow-ups, a total of 56 questionnaires were received, of which 49 were considered complete and suitable for analysis. Hence, the final sample size of the study was determined to be 49 respondents. The primary data for the study was collected through a well-structured questionnaire. The questionnaire was designed based on relevant literature and aimed to capture information about the stress levels of the participants. The perceived stress levels of the respondents were measured using the Perceived Stress Scale 4 (ohnurses.org, 2022). The collected data were processed and analyzed using the statistical software SPSS 20. This software facilitated the organization, manipulation, and statistical analysis of the gathered data. By utilizing SPSS,

the researchers were able to derive meaningful insights and draw conclusions based on the responses received from the participants.

9. RESULTS AND DISCUSSION

The demographic variables of the employees of regional transport office employees may or may not be associated with their level of stress. The demographic profile variables taken for the study are age, marital status, work experience. The demographic profile of the respondents is presented in the following table.

Table 1

Profile of the respondents

Age (in years)	Frequency	Percentage
Below 25 years	1	2.04
25 years – 35 years	17	34.69
36 years – 45 years	18	36.74
46 years – 55 years	11	22.45
Above 55 years	2	4.08
Gender	**Frequency**	**Percentage**
Female	14	28.57
Male	35	71.43
Marital Status	**Frequency**	**Percentage**
Single	3	6.12
Married	41	83.67
Others	5	10.20
Work Experience	**Frequency**	**Percentage**
Less than 5 Years	1	2.04
5 – 10 years	22	44.90
11 – 15 years	17	34.69
16 – 20 years	8	16.33
21 – 25 years	1	2.04
Above 25 years	-	-
Education	**Frequency**	**Percentage**
Bachelor's degree	37	75.51
Master's degree	12	24.49
Distance travelled everyday	**Frequency**	**Percentage**

Less than 10 KM	36	73.47
11 - 20 KM	6	12.25
21 - 30 KM	5	10.20
Above 31 KM	2	4.08

In terms of age, the respondents were distributed across various age groups. The majority of respondents fell within the age range of 25 to 45 years, with 34.69% in the 25-35 years category and 36.74% in the 36-45 years category. The distribution also included respondents above and below these age ranges. Regarding gender, the sample consisted of 71.43% male respondents and 28.57% female respondents, indicating a higher representation of males in the study. In terms of marital status, the majority of respondents (83.67%) were married, while a smaller percentage (6.12%) were single, and 10.20% fell into the "Others" category, which may include individuals who are divorced or widowed. The work experience of the respondents varied, with the largest group (44.90%) having 5-10 years of experience. Other categories included 11-15 years (34.69%), 16-20 years (16.33%), and less than 5 years (2.04%). There was also a small percentage (2.04%) of respondents with 21-25 years of work experience. In terms of education, the majority of respondents (75.51%) held a bachelor's degree, while a smaller percentage (24.49%) had a master's degree. The distance travelled by the respondents every day varied as well. The largest group (73.47%) travelled less than 10 kilometres, followed by 11-20 kilometers (12.25%), 21-30 kilometres (10.20%), and above 31 kilometres (4.08%).

The stress level of the respondents was measured using Perceived Stress Scale 4. There are four statements in the scale, viz.

1. In the last month, how often have you felt that you were unable to control the important things in your life?

2. In the last month, how often have you felt confident about your ability to handle your personal problems?

3. In the last month, how often have you felt that things were going your way?

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

The respondents were asked to give their answers to the above questions on a five point Likert's scale never, almost, never, sometimes, fairly often and very often. Scoring for first and fourth statements are 0 is assigned for never, 1 for almost never, 2 for sometimes, 3 for fairly often and 4 for very often. Scoring for second and third statements are 4 is assigned for never, 3 for almost never, 2 for sometimes, 1 for fairly often and 0 for very often.

The total scores will range from 0 to 16. If the total score is less than 4 the respondent is placed in the stress level category low stress, if the total score is between 5 and 10 moderate stress level category and if the total score is between 11 and 16 the respondent is placed in high level stress category. The distribution of respondents on the basis of their stress level is presented in the following table.

Table 2

Stress level of the respondents

Stress Level	Frequency	Percentage
Low Stress	15	30.61
Moderate Stress	30	61.23
High Stress	4	8.16

The stress levels were categorized into three categories: low stress, moderate stress, and high stress. Among the respondents, 30.61% reported experiencing low stress levels, indicating that they perceived relatively lower levels of stress in their lives. The majority of the respondents (61.23%) reported moderate stress levels, suggesting that they experienced a moderate degree of stress in their daily lives. A smaller percentage of respondents (8.16%) reported high stress levels, indicating that they perceived a significant level of stress in their lives. This information provides insights into the stress levels of the respondents and

highlights the prevalence of moderate stress among Regional Transport Office employees in Tamil Nadu. Understanding the distribution of stress levels is essential for identifying the scope and intensity of stress experienced by individuals in this particular context.

10 IMPACT OF PROFILE VARIABLE ON STRESS LEVEL

The profile variable Age, Marital Status, Work Experience, Education and Distance Commuted Everyday are used as inputs in regression analysis to identify predictors of stress level.

Table 3

Multiple Regression Model for Stress Level based on Profile Variables

Independent variables	Unstandardized Coefficients		Standardized Coefficients			Statistical inference	
	B	Std. Error	Beta	T	Sig		F value
Constant	.318	.415		.767	.447	R = 0.7489	8.965*
Age	.554	.153	.859	3.630	.001*	R^2 = 0.562	
Gender	.085	.135	.066	.633	.530	Adjusted R^2 = 0.499	
Marital Status	-.067	.164	-.046	-.409	.684		
Work Experience	-.419	.167	-.602	-2.506	.016*		
Educational	.291	.152	.216	1.920	.062		

Qualification							
Distance travelled everyday	.418	.073	.601	5.719	.000*		

* Significant at 1% level

Table 3 presents the results of the multiple regression model for stress level based on the profile variables of the respondents. The table provides information about the unstandardized coefficients, standardized coefficients, statistical inference, and significance levels for each independent variable. The independent variables included in the model are age, gender, marital status, work experience, educational qualification, and distance travelled every day. The dependent variable is the stress level. The constant term in the model is 0.318, indicating the expected stress level when all the independent variables are zero. However, it is not statistically significant at the 1% level.

The age variable shows a positive relationship with stress levels, as indicated by the positive coefficient of 0.554. This means that as age increases, stress levels tend to increase as well. The relationship is statistically significant at the 1% level, with a t-value of 3.630. Gender, marital status, and educational qualification variables do not have a statistically significant impact on stress levels, as their coefficients are not significant at the 1% level. Work experience shows a negative relationship with stress levels, as indicated by the coefficient of -0.419. This suggests that individuals with more work experience tend to have lower stress levels. The relationship is statistically significant at the 5% level, with a t-value of -2.506.

Distance travelled every day shows a positive relationship with stress levels, as indicated by the coefficient of 0.418. This implies that individuals who have to travel longer

distances every day tend to experience higher stress levels. The relationship is statistically significant at the 1% level, with a t-value of 5.719.. The unstandardised coefficients B column, gives the coefficients of independent variables in the regression equation.

$$Y = .318 + 0.554 X_1 - .085 X_2 - .067 X_3 - .419 X_4 + .291 X_5 + .418 X_6$$

11 CONCLUSION

The study found that a significant proportion of the respondents fall in the age group of 25-45 years, indicating that organizations need to focus on managing the needs and expectations of this age group. This could involve providing appropriate training and development opportunities, flexible work arrangements, and recognition programs that cater to the needs of this demographic. The findings suggest that a majority of employees experience lower levels of stress. While this is positive news, organizations still need to be vigilant and monitor employee stress levels regularly to prevent stress levels from escalating. This could involve implementing regular employee surveys, providing training on stress management, and promoting a culture of open communication to enable employees to raise any concerns or issues related to stress.

12. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Despite the valuable findings and contributions of this research, there are several limitations that should be acknowledged. The study utilized a cross-sectional design, which provides a snapshot of stress levels at a specific point in time. This design limits our ability to draw causal conclusions or understand how stress levels may change over time. Future research could employ longitudinal designs to capture the dynamic nature of stress and examine how it evolves and impacts individuals' well-being over an extended period. Also, the study relied on self-report measures to assess stress levels, which are subject to subjective interpretation and potential response bias. Using objective measures or incorporating

physiological indicators of stress, such as cortisol levels or heart rate variability, could

provide a more comprehensive and accurate assessment of stress.

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