Impact of Organizational Stress on Behavioural Symptoms of Engineering Work Teams

Wijeyathunga, W.M.A.S. [1] and Rathnasiri, R.A[2*]

[1]*Department of Business Management, Wayamba University of Sri Lanka*
[2]*Department of Banking and Finance, Wayamba University of Sri Lanka*

**Corresponding Author:*
Email: ranasingher76@gmail.com

ABSTRACT

It has been empirically found that excessive organizational stress can cause a decrease in employee performance in terms of psychological, behavioural, and physical deviations. Organizational stress in the public service-providing sector could be the host of adverse outcomes for both employees and the organization. By way of a critical review of the literature, the researcher has identified organizational stressors; role stressors, task stressors, and interpersonal stressors as the independent variables of the study, while behavioural symptoms were identified as the dependent variable of the study. This study follows positivist philosophy and analytical framework is based on a deductive approach. This study is based on both primary and secondary data. Primary data were collected from 134 employees who belong to the engineering team in the Ceylon Electricity Board. Data was collected through a self-administered structured questionnaire. With the collected data, the study tested four hypotheses using multiple regression analysis. Accordingly, it has been statistically and empirically proven that there is a significant impact from organizational stressors and their components, role stressors, task stressors and interpersonal stressors on the behavioural symptoms of the engineering team in Ceylon Electricity Board. Furthermore, analysis of the study has revealed that the established model of the study explains more of the variations of behavioural symptoms of the selected sample while there can be some other factors also which influence the behavioural symptoms.

KEYWORDS: Behavioural symptoms, Organizational stressors, Ceylon electricity board

Introduction

The electricity industry has been identified as one of the essential infrastructure service-providing industries. It's evident that with the development of Modern Technology, households & industries tend to invent more and more equipment with automated systems to ease the users from manual operations. Therefore, electricity has caused to diversify and enhance the lifestyles of households. Meanwhile, the Overall Economy of a country could not be developed without a strong Electricity Power system. As a developing country, the main foreign income sources are the tourism industry and export manufacturing. According to the Central Bank Annual Report 2019, the growth of usage in Electricity in the Industrial Sector and Hotel Sector is 6% and 5.8% respectively.

To cater to the increasing electricity demand Sri Lankan electricity sector has increased its total installed capacity & generation capacity by 20% and 13% respectively within the last five years.

The Ceylon Electricity Board (CEB) is a body established by Act No. 17 of 1969. It is empowered to generate electrical energy and transmit and distribute it among all the categories of consumers. The mission of CEB is to maintain an efficient, coordinated, and economical system of electricity supply to the whole of Sri Lanka, while adhering to the core values of CEB; Quality, Service to the Nation, Efficiency and Effectiveness, Commitment, Safety, Professionalism, and Sustainability, towards its Vision "Enrich Life through Power". With the established mission, CEB mainly operates under nine divisions including Generation Division, Transmission Division, Four Distribution Divisions, Project Division, Asset Management Division, and the Corporate Strategy Division. Key Roles in the CEB are handled by the Generation division, transmission division, and the four distribution divisions. In the present study, the researcher has mainly focused on the distribution divisions. The Distribution Divisions of the CEB are responsible for over 88% of the electricity distribution (by sales volume) in the country with the rest taken care of by Lanka Electricity Company Ltd. (LECO), a subsidiary of the CEB. The main objective of forming the four divisions was to achieve benchmark competition that can improve the efficiency and the quality of supply to the customers.

Distribution Divisions are operated in a decentralized organizational structure. Each Distribution division was headed by an Additional General Manager who reports directly to the General Manager. These distribution divisions are divided into provinces. Each unit is responsible to handle a province where it is headed by a Deputy General Manager. A province is subdivided into several areas, which were managed by Area Chief Electrical Engineers or Area Electrical Engineers. An area unit was further subdivided into several Consumer Service Centers (CSC) each headed by an Electrical Superintendent. Distribution Divisions act like the customer interfaces among the above-mentioned Divisions as they do the distribution of Electricity to the Customers' Doorstep.

With the increased electrification up to 98.5% level, CEB has started to focus on winning the mind and heart share of the customer by providing high-quality service. To instigate the transformation of CEB to be a more customer-friendly organization, a list of novel customer service initiatives was identified. This list included many mobile and Internet-based services, aimed at the IT-savvy and busy modern-day consumer.

Research Problem

Behavioural symptoms are the major determinant of overall organizational performance. Therefore, it has been a major concern of top management teams and policymakers in the business world. Behavioural Symptoms can be categorized as Productivity, Absenteeism, and Turnover (Robbins and Judge, 2015). Besides, many internal and external factors affect behavioural symptoms and their components.

For instance, the skill level of the employees, training, job satisfaction, management standards, and the demographic background of the employee have been caused to affect components of behavioural symptoms (Dahkoul, 2018; De Silva, 2018). Among these factors, employee stress has been identified as one of the major reasons. Even though, up to some amount of stress is beneficial and healthy it stimulates employees to achieve their given targets and to perform in a better way (Farler and Broady-Preston, 2012). But, Human Resources losses a hundred million working days every year as a result of excessive amounts of stress and it was affirmed by the study conducted European agency for health and safety reveals that around seventy percent of modern diseases are related to stress which accounts for 28 percent of employees (Treven and Potocan, 2005).

Therefore, organizations are now experiencing the harmful effects of stress in terms of many behavioural symptoms among employees. This was affirmed by Andre Arsenault and Dolan (1983), by stating that Stress has been recognized as a factor that potentially hinders organizational effectiveness by contributing to lower employee performance and causing employee withdrawal behaviour such as absenteeism, tardiness, turnover, etc. And job-related stress adversely affects employee performances and their health too (Fernando, et al., 2010).

CEB has provided employment opportunities for more than 25000 employees by 2018 (Ceylon Electricity Board, 2018). From all the employees' engineers play a vital role in achieving organizational goals and objectives. Engineering Teams are comprised of Engineers, Engineering Assistants, Electrical Superintendents, and Field Staff. And according to the internal records of the CEB (2020), there are 881 Engineers, 52 Engineering Assistants and 1386 Electrical Superintendents, in the CEB.

As a government organization, CEB provides essential services to the general public. Hence management teams of the CEB strive to increase their service quality throughout the operations. In that process, CEB has not recorded favourable overall organizational performance along with decreasing profit margins and an increase in customer complaints (Ceylon Electricity Board, 2018). As well as the unfavourable financial performance Overall Employee performance is increasing at a decreasing rate. Though CEB has spent millions on paying bonuses and incentive payments to the employees, the Level of absenteeism and the productivity level has not shifted upward as a result of that (Rajitha and Kumari, 2021). Though organizations provide many financial benefits to employees, employees may explore behavioural symptoms due to excessive organizational stress (Assella and Arachchi, 2020). Every Function or Job role is subjected to stress up to some extent. It varies from the nature of the occupation and the organization they are working in.

As CEB is extending its operation, all the customer services rendered by CEB need the involvement of more and more Engineering Staff. As engineers are major technical staff who plan and handle operations, the complexity and variety of the provided services have increased the workload of Engineering Work Teams even more.

However, the performance provided by the Engineering Teams is not up to the expected level during the recent period.

It is further confirmed by a large number of complaints have been placed about electricity supplies by consumers (Fault reports; CEB Regional Control Centers) (Figure 1). Delaying of new line constructions and envisaging maintenance and so on at the times of maintenance review meetings (Executive Meeting Minutes – Western Province North) and at the times of group meetings and even inclusive of progress review meetings (Progress meeting minutes) (CEB, 2017). Internal reports have continuously discussed that the job scope of Engineering Employees is undefined and ambiguous and task overloaded.

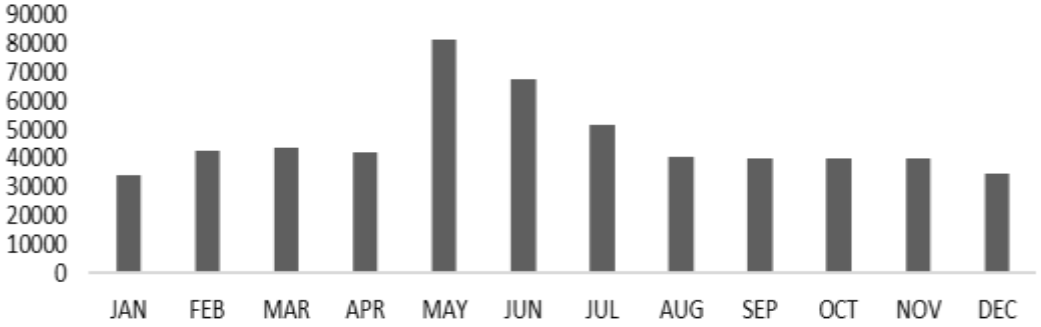

Figure 1: Inquiries Received Through Call Centre-Central Province 2016

Source: (CEB, 2017)

There were limited studies carried out on the occupational stress of employees in CEB, compared to that there were very few studies on the impact of organizational stressors on behavioural symptoms. Also, the consideration of the previous research studies towards the stress & behavioural symptoms of engineering teams in the Ceylon electricity board was comparatively low. Therefore, there was an empirical literature gap to be addressed on the selected phenomena. Accordingly, this research is carried out to investigate "How the organizational stressors impact the behavioural symptoms of engineering teams of Ceylon Electricity Board".

Primarily, the researcher intended to examine the impact of organizational stressors on the behavioural symptoms of engineering teams in the Ceylon electricity board. Besides, the researcher intended to examine the impact of the main components of organizational stressors (role stressors, task stressors, interpersonal stressors). Researchers anticipated offering recommendations to Policy Makers of CEB on which factors they should focus on to reduce Organizational Stress to Improve the Performance of Engineering Work-Teams.

This study will help corporate-level managers and policymakers to evaluate & redefine the organizational policies, programs, and procedures to enhance the level of organizational performance. It will also help to maintain the Industrial Peace of the Organization, by providing recommendations to minimize Occupational Stress. Subsequently, this study will be useful for business-level managers and operational-level managers to take effective decisions in maintaining an optimal level of stress in the organization to get the maximum output from the engineering teams in the CEB.

The structure of this research paper is developed as follows. The first section of this article attempts to introduce the issue of this research and the aim of the study highlighting the significance of analyzing it. The second section summarizes the critical review of the literature. The third section explains the design of the study with methodological aspects. The fourth section explores the analytical data results. The final section explains the conclusions and recommendations of the study.

Literature Review

Behavioural symptoms have been identified as the major consequences of experiencing stress in the workplace in addition to psychological and physiological symptoms (Robbins and Judge 2015). Commonly behavioural symptoms are measured in terms of the level of absenteeism, reduced effectiveness, increased conflict, turnover, Tardiness, and poor communication (Arsenault,1983; Michie, 2002; Robbins and Judge, 2015).

The concept of stress has been broadly discussed over the decades. McGrath (1978) has broadly explained stress based on the conditions necessary for stress. There is a potential for stress when an environmental situation is perceived as presenting a demand that threatens to exceed the person's capabilities and resources for meeting it, under conditions where he expects a substantial differential in the rewards and costs from meeting the demand versus not meeting it (p. 1,352). Challenge stress improves employee performance in a supportive work environment in terms of effectiveness and productivity while hindrance stress negatively affects job performance in all types of working environments (Hunter and Thatcher, 2007; Christian, et al., 2009; Robbins and Judge, 2015). Moderate workplace stress stimulates employees to perform their assigned tasks in a better way, but when excessive stress is placed it will result in a decrease in performance in terms of behavioural symptoms (Muse, et al., 2003). With various views on the concept of stress, Taylor (1995), has identified five major types of stress namely work stress, chronic stress, acute stress, Traumatic stress, and episodic acute stress. Occupational stress is not solely determined by organizational stress, but it is also affected by individual stressors (Cooper and Marshal,1976; Robbins and Judge 2015) personality characteristics (Kahn, et al.,1964; Lazarus,1966; Lyons,1971), and environmental factors (Mcgrath,1976; Robbins and Judge 2015). Organizational stress has been identified as one of the main causes of occupational stress among employees (Robbins and Judge 2015). Organizational Stress can be defined as the psychological stress or distress consequence of exposure to organizational stressors in the working environment which can be a threat to an individual's well-being or safety (Cooper and Marshal, 1976). Many scholars have evidenced that organizational stressors hinder organizational performance on the other hand promoting avoidance behaviour (Cooper and Marshal, 1976; Maslach et. al., 2001; Bourbonnais, et al.,2007; Taxman and Gordon, 2009). It has been disclosed that occupational stress is caused not only to behavioural changes of the employees but also affects their physical health (high blood pressure and mental health (depression, job dissatisfaction) also (Huber,1986; Robbins and Judge 2015).

In the stress management discipline, The Negative Linear Theory, The Positive Linear Theory, and The Inverted-U Theory are considered the main theories to study and understand stress. In addition to those theories, in the present study researcher has referred to the stress model of Parker and Decostiis (1983), the Stress Model by Murphy (1995), the Stress Model by Arsenault and Dolan (1983), The Stress Model by Michie (2002), and the Stress Model by Robbins and Judge (2015) to extensively understand the causes of stress and its consequences.

Most of the models have broadly explained the causes of job stress in terms of work-related stressors) and the role of individual stressors & personal characteristics (Arsenault and Dolan, 1983; Murphy,1995; Michie, 2002). And the stress model developed by Robbins and Judge (2015), summarized the factors caused to stress and the moderating effect of individual differences when determining the consequences of excessive stress. In that model, Robbins and Judge (2015) suggest a compact category for work-related stress as organizational stressors where it explains all the aspects of work-related stressors deeply. Further, Organizational stressors in the Stress model of Robbins and judge (2015) have combined many factors and indicators which were used by the previous models. Mainly under the categories of roles stressors, task stressors, interpersonal stressors organizational stressors are being discussed. Therefore, in the present study, the researcher has also used the same factors to understand and examine the impact of organizational stressors on the behavioural dimensions in the CEB; where comprises most of the dimensions which were empirically affirmed that impacted the behavioural symptoms of employees.

Methodology

The present research has followed the positivism philosophy. The researcher followed the deductive approach when conducting this study. The researcher has tested the hypothesis that has been developed based on the conceptual model with the aid of empirical evidence as the researcher has studied the causal relationship between organizational stressors and behavioural symptoms. The purpose of the study is identified as explanatory. The research strategy is the survey strategy usually associated with the deductive approach. Therefore, the researcher collected data through an administered questionnaire. Another fundamental section of the research design is research choice. Research choice is associated with the number of methods used for data analysis and the data collection of the study. Since the current study is quantitative, the researcher has used Multi-Method Quantitative studies.

The main data collection technique used to address the established research questions based on administering a questionnaire, and for analyzing the collected data researcher has used the quantitative data analysis method, to address the current research questions, the researcher has decided to gather data just once to capture the current situation of the scenario. Therefore, this study followed the cross-sectional time horizon. As explained earlier, the researcher has collected data through the selected sample of engineers to address the established research questions.

The researcher has done this investigation in a normal situation, whether the organizational environment is natural in general. Therefore, the research interference was minimal in the current study.

Population & Sample

The Population considered in the research is all the Engineers, Engineering Assistants and Electrical Superintendents in CEB Distribution Divisions. There are 1178 engineering team employees approximately in the four distribution divisions in CEB. And each provincial CEB unit is operating as a separate administrative unit. Therefore, the Stratified sampling method was selected. And each provincial CEB unit has been considered a spate stratum. Therefore, as the sample of the study, 145 engineering team members were proportionally & randomly selected from the selected strata.

Data Collection

The present study was based on mainly primary data and also on secondary data. The researcher has administered a structured questionnaire to collect the required primary data to measure the impact of organizational stressors on the behavioural symptoms of the engineering teams. The Questionnaire was designed to gather information on the demographic background of the respondents and also to ensure the main variables in the study (Role Stressors, Task Stressors, Interpersonal Stressors, and behavioural symptoms). Besides, to measure the main variables of the study, the researcher has adopted positive statement kind of questions where the answers range in the five-point Likert scale. Five-point Likert scale questions are ranging from strongly agree to strongly agree in the present study.

Conceptual Framework

The researcher has developed the conceptual model of the study based on a critical review of the literature (Figure 2).

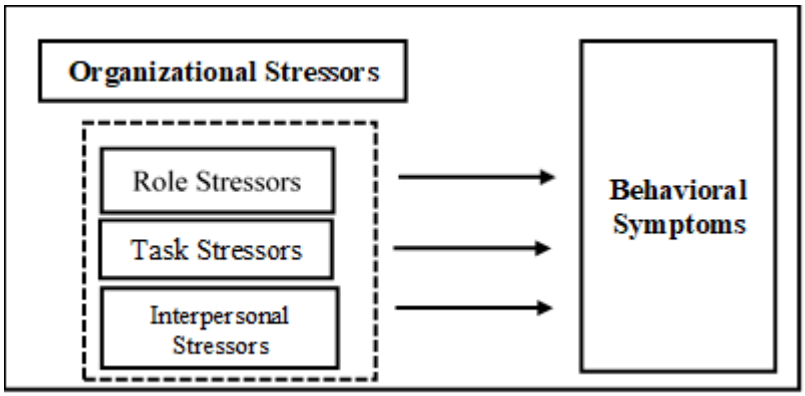

Figure 2: Conceptual Framework

Hypotheses

Based on the conceptual framework and objective of the study following hypotheses are developed.

H1: Role Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB

H2: Task Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB

H3: Interpersonal Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB

Measurement Indicators

Organizational Stressors have been identified as the main independent variable of the present study. And the organizational stressors were measured from the sub-components which were introduced by Robbins and Judge (2015) in the stress model they developed. Therefore, role stressors, task stressors, and interpersonal stressors were identified as the main measurement components of organizational stressors. Besides, Role stressors were operationalized in terms of role ambiguity, role conflict, and role overload (Parker and Decotiis,1983; Cullen, et al., 1985; Michie,2002; Castle, 2008; Summerlin, et al., 2010; Mirela and Mădălina-Adriana,2011).

Task stressors were measured in terms of seven dimensions, Namely Job responsibility, work Overload, Working Conditions, Degree of autonomy, Task Variety, Degree of automation, and physical working environment (Andre Arsenault 1983; Murphy, 1995; Michie, 2002; Jain, et al.,2007; Koçel, 2007; Summerlin, et al., 2010; Hudek-Knezevic, et al., 2011; Finney, et al., 2013; Zaniboni, et al., 2013; McShane and Glinow, 2015; Robbins and Judge, 2015). The third main independent variable of the study is interpersonal stressors. And Poor relations with Superiors, Subordinates, and peers; Difficulties in Delegation; Personal Differences (Perception & Expectation); Information Deficiencies; Role incompatibility; Environment Stress have been used to measure interpersonal stressors (Sutherland and Davidson, 1989; Michie, 2002; Robbins and Judge, 2015; Nappo, 2020). And the behavioural symptoms of the engineers have been identified as the dependent variable of the study. Employee effectiveness; Tardiness; Absenteeism; Turnover have been used to measure the behavioural symptoms in the present study. (Arsenault and Dolan 1983; Murphy, 1995; Michie, 2002; Robbins and Judge 2015). More details are given in the following operationalization table (Table 1)

Table 1: **Operationalization**

Variable	Dimensions	Reference to Questionnaire
Behavioural Symptom	Employee effectiveness Tardiness Absenteeism Turnover	Q1 to Q 4
Role Stressors	Role Ambiguity Role Conflict Role Overload	Q5 to Q15
Task Stressors	Job Responsibility Work Overload Working conditions Autonomy Task Variety Degree of Automation Work Environment	Q16 to Q26
Interpersonal Stressors	Relationships Difficulties in Delegation Personal Differences Information Deficiencies Role Incompatibility Environmental Stress	Q27 to Q36

Source: Based on Survey Data, 2021

Data Analyzing Techniques

For Analyzing the data in the present study, the Researcher has used software packages SPSS (20.0) and Microsoft Excel. As the basic requirement, the researcher has tested the reliability of the questionnaire based on Cronbach's Alpha Values. This method is one of the most commonly used internal consistency evaluation methods. Further Researcher has utilized various descriptive analysis techniques and inferential statistics to analyze the collected data. The researcher has used appropriate charts, tables, and figures to explain the data collected in the first part of the questionnaire (demographic information). In addition to that normal distribution of the main variables was tested before analyzing the regression and correlation. This has been tested by using histograms and normal curves as graphical methods. And also, skewness and the kurtosis values have been used as numerical methods to test whether data are normally distributed or not. Under Descriptive Statistics, Mean, Median, Standard Deviation, Maximum & Minimum Values were used to describe both independent and dependent variables. As the main inferential statistics, correlation analysis and regression analysis have been used.

In addition to that Heteroscedasticity, Auto Correlation was used to examine the linearity of the regression models while Multicollinearity was used to test the correlation among independent variables in the present study. And for the Hypothesis testing researcher has used multiple regression analysis.

Results and Discussion

The researcher was able to correctly fill out 134 questionnaires from the selected sample. Almost all of the samples are aged 30 years, while more than three fourth of the sample is in the age range of 30-50 years. Around 80% of the sample was male engineering team staff while the rest of the sample was female engineering staff. Around 85% of the sample has been in the CEB for more than 10 years. The reliability test results of the study revealed that the Questionnaire which is the research instrument used in the study is Good in the level of is Reliability and will give credible results (Table 2). Also, according to histograms, Skewness, and Kurtosis values data for all the independent and dependent variables were normally distributed. As the VIF value was favourable (less than 5) there was no multicollinearity among the independent variables.

Table 2: Result of Reliability Analysis

Measure	Alpha	Sig.
Behavioural Symptoms	0.71	0.00
Role Stressors	0.87	0.00
Task Stressors	0.77	0.00
Interpersonal Stressors	0.88	0.00

Correlational Analysis

To examine the nature of the relationship between independent variables and the dependent variable, the researcher has utilized correlation analysis. Test results of the correlational analysis depict that all the independent variables have a significant and positive relationship towards the behavioural symptoms of engineering work teams in the CEB (Table 3). Further, results of the correlational analysis revealed that all the components of organizational stressors namely, task stressors, role stressors & interpersonal stressors have a significant positive relationship with behavioural symptoms of engineering work teams in CEB.

Table 3: Results of Correlational Analysis

		Role Stressors	Task Stressors	Interpersonal Stressors	Behavioural Symptoms
Behavioural Symptoms	Pearson Correlation	0.67**	0.49**	0.68**	
	Sig. (2-tailed)	0.00	0.00	0.00	
	N	134	134	134	134

Source: Authors Calculation based on Survey Data, 2021

Multiple Regression Analysis

To measure the simultaneous effect of independent variables in the study; role stressors, task stressors, and interpersonal stressors on the dependent variable (behavioural symptoms), multiple regressions were used. The Residuals of this model are normally distributed and the data is homoscedastic. Therefore, the researcher has assumed that the variables in the regression model have a linear relationship. And the VIF values are less than 5. Therefore, it is presumed that there is no multicollinearity between independent variables in the present study. Therefore, Data that were collected through primary data collection reveals that the model explains the variation of the dependent variable by 55%. It indicates that organizational stressors explained the behavioural symptoms of the engineering team in the CEB by 55%. And the rest of the 46% is explained by any other factors which were not concerned in the current study. Moreover, organizational stressors have a strong positive relationship with behavioural symptoms ($R=0.740$, $P<0.00$). Table 4 shows the multiple regression model summary and table 5 shows the regression coefficients.

Table 4: Multiple Regression Model Summary-Model 1

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
				R Square Change	F Change	df1	df2	
0.74[a]	0.55	0.54	0.65	0.55	47.61	3	131	2.21

Source: Authors Calculation based on Survey Data, 2021

The multiple regression model explores the predictability of the behavioural symptoms of engineering work teams based on the simultaneous impact of organizational stressors.

$$BS = -0.201 + 0.430\ RS + 0.302\ TS + 0.450\ IS + 0.652 \quad [1]$$

Where,

BS: Behavioral Symptoms
RS: Role Stressors
TS: Task Stressors
IS: Interpersonal Stressors

Table 5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-0.20	0.39		-0.52	0.40
Role Stressors	0.43	0.10	0.37	4.14	0.00
Task Stressors	0.30	0.13	0.29	3.92	0.00
Interpersonal Stressors	0.45	0.10	0.40	4.70	0.00

a. Dependent Variable: Behavioural Symptoms
Source: Authors Calculation based on Survey Data, 2021

Hypothesis Testing

The primary objective of the present study is to examine the impact of organizational stressors on the behavioural symptoms of the engineering work teams in the CEB. Therefore, hypotheses were developed following the conceptual model to assess the impact of independent variables on the dependent variable. For this purpose, the Researcher has followed the two-tailed test to investigate the impact of organizational stressors and behavioural symptoms.

H1: Role Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB.

In accordance with, the above-stated hypothesis following the null hypothesis and alternative hypothesis can be framed.

H0: $\beta = 0$
H1: $\beta > 0$

The statistical test results explore that data does provide sufficient evidence to accept the null hypothesis ($B=0.430$, $P<0.05$). Therefore, the null hypothesis was rejected while the alternative hypothesis was accepted. Based on the tested hypothesis, role stressors have a significant impact on the behavioural symptoms of engineering work teams in the CEB.

H2: Task Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB.

In accordance with, the above-stated hypothesis following the null hypothesis and alternative hypothesis can be framed.

H0: $\beta = 0$
H2: $\beta > 0$

The statistical test results explore that data does provide sufficient evidence to accept the null hypothesis ($B=0.302$, $P<0.05$).

Therefore, the null hypothesis was rejected while the alternative hypothesis was accepted. Based on the tested hypothesis, Task Stressors have a significant impact on the behavioural symptoms of engineering work teams in the CEB.

H3: Interpersonal Stressors have a significant impact on behavioural symptoms of engineering work teams in the CEB.

In accordance with, the above-stated hypothesis following the null hypothesis and alternative hypothesis can be framed.

H0: $\beta = 0$
H2: $\beta > 0$

The statistical test results explore that data does provide sufficient evidence to accept the null hypothesis (B=0.450, P<0.05). Therefore, the null hypothesis was rejected while the alternative hypothesis was accepted. Based on the tested hypothesis, Interpersonal Stressors have a significant impact on the behavioural symptoms of engineering work teams in the CEB.

It has been empirically evidenced that excessive job stress incurs implicit and explicit costs to both employees and employers. Besides, empirical evidence affirms that these organizational stressors also cause decreased employee performance in terms of physical, behavioural, and psychological aspects of the employees. And the level of experienced stress and the impact of stress depends on the nature of the job and the nature of the industry that particular employee is working in. And organizational stress is also proven as a cause of behavioural, physical, and psychological symptoms in employees. And has identified roles stressors, task stressors, and interpersonal stressors as the major determinants of organizational stress. Therefore, research hypotheses were formulated to address the research objectives of the current study. With the analyzed data, hypotheses were tested to examine whether there is a significant impact from the independent variables on the determined dependent variable.

The sample was a majority of engineering staff the age of 30-40 years (48%), And more than 80% of the sample was male respondents while around 70% of the sample has 10-20 years of experience in the Ceylon electricity board. The reliability test indicates that Cronbach alpha values for all the variables met the accepted alpha values. With the normality test, it is to be said that collected data for all the considered variables were normally distributed and there was no Multicollinearity among independent variables.

The correlation coefficient of the independent variables has shown a significant relationship with the dependent variable.Specifically, Role Stressors (R= 0.671; P <0.000); Task Stressors (R=0.486; P <0.000) and interpersonal stressors (R= 0.675; P <0.000) have a positive and significant relationship with behavioral symptoms of the engineering work teams in the CEB.

Besides, among all the independent variables, interpersonal stressors have the strongest relationship with the behavioural symptoms of the engineering teams followed by role stressors.

And the simple regression results for all the distinctive independent variables express that, Role Stressors have a 45% sole impact on Behavioral Symptoms (R2 =0.450; P <0.000). Task Stressors have a 24% sole impact on Behavioral Symptoms (R2 =0.236; P <0.000).). Interpersonal Stressors have a 46% sole impact on Behavioral Symptoms (R2 =0.456; P <0.000). Furthermore, it explores that role stressors, task stressors, and interpersonal stressors explain the variation of behavioural symptoms of engineering working teams solely by 45%; 23%, and 46% respectively.

Results of the multiple regression analysis indicate (Table 03), the simultaneous effect of independent variables on the Behavioral Symptoms. The Block / Enter method of multiple regression analysis was utilized to assess the direct effect of all independent variables on the dependent variable. Residuals of this model are normally distributed and the data is homoscedastic. The researcher has assumed that the variables in the regression model have a linear relationship. And the VIF values are less than 5. There is no multicollinearity between predictor variables. Therefore, Data that were collected through primary data collection reveals that the model explains the variation of dependent variables by 55% (R2=0.548; P<0.000). It indicates that accepted independent variables (roles stressors, task stressors, interpersonal stressors) explained the behavioural symptoms of the engineering team in the CEB by 55%. And the rest of the 45% is explained by any other factors which were not a concern in the current study. Besides, It reveals that Organizational Stressors have a significant, strong positive relationship with behavioural symptoms (R=0.740, P<0.00) Where, it explains that when there is an increase in organizational stress in terms of role, task, or interpersonal stressors; behavioural symptoms of engineers will also be increased as a result of that.

Discussion

Based on the previous literature, Role stressors have been identified as one of the most influential factors in determining the behavioural symptoms of employees. Therefore, the researcher has chosen role stressors to test the impact it has on the behavioural symptoms among the engineering team in the Ceylon electricity board. Many scholars have evidenced that role stressors and their indicators are significantly associated with behavioural symptoms and later on, will result in physical and mental illnesses (Parker and Decotiis, 1983; Armstrong and Griffin, 2004; Castle,2008; Robbins and Judge, 2015). Meanwhile, Castle and Martin (2006) with their findings reveal that role stressors do not significantly affect the behavioural symptoms of employees. According to the primary research findings, it has been statically proven that Role Stressors have a significant impact on behavioural symptoms (P <0.005). Engineering Teams are professional employees who are more affluent in technical and conceptual skills. As CEB is a public service sector organization, CEB is trying to provide the fullest customer service with the expected quality electricity supply.

In that scenario, engineering staff has to deal with different roles within the limited frame. And as their expertise is not easily delegated or decentralized, they have to appear for all of the situations by themselves.

And with the given resources (human, machinery) seldom they are facing conflicts in achieving the given task and objectives. As being incorporated with some other semi-government companies also, CEB internal engineers also have to work with external parties too. That makes their roles more complicated since not being defining the roles & responsibilities accurately sometimes. Though engineers try their best to perform well in the given job roles, in these situations sometimes their effectiveness, productivity, and overall performance have been negatively affected. Accordingly, it can be stated that role stressors have a strong positive relationship with the behavioural symptoms of the engineering team in the Ceylon electricity board. While role stressors have around 45% impact on the behavioural symptoms of the engineering team in the Sri Lankan electricity board.

According to the previous literature Task Stressors and their sub-components (Job Responsibility, Work overload, Working Condition, Degree of autonomy, Task Variety, Degree of Automation, and Physical work environment) are deemed to be more influential on the behavioural symptoms. Besides, Andre Arsenault,1983; Michie,2002; Summerlin, et al., 2010; Finney, et al.,2013 have evidenced that role stressors are significant in determining the behavioural symptoms of employees. According to primary research findings, It has been statistically proven that Task Stressors have a significant impact on behavioural symptoms ($P < 0.005$). Engineering Teams in the CEB are responsible to handle all customer-rendered technical services. As in, they have to handle more tasks and responsibilities than they are capable of daily. Also, these tasks vary mostly from one to another.

Therefore, engineers have to put more effort to address each concern. The tasks assigned to engineers are more conceptual & technical than automated or systemized. On the other hand, engineering teams are not deemed to stay in the office room for the whole day, they have to visit fields upon special request as well as they have to handle the internal office works too. It was affirmed by Teichmann and Ilvest (2010) state that task stressors including workload and working conditions are the main source of organizational stress among engineering teams. With this kind of scenario, engineers have not been able to perform well in the given job roles all the time. Accordingly, it can be stated that task stressors have a moderate positive relationship with the behavioural symptoms of the engineering team in the Ceylon electricity board. And task stressors have around 24% impact on the behavioural symptoms of the engineering team in the Sri Lankan electricity board.

Parker and Decotiis,1983; Michie,2002; Robbins and Judge, 2015; Nappo, 2020 have evidenced that Interpersonal Stressors have a significant impact on behavioural symptoms. According to primary research findings, it has been statically proven that Interpersonal Stressors have a significant impact on behavioural symptoms ($P < 0.005$).

Engineering teams in the CEB have to deal with various kinds of people in their operations; field-level employees, supervisor-level employees, office staff, and senior management. Therefore, they may have different personal backgrounds with different attitudes, educational backgrounds, and personalities. Therefore, sometimes working with diversified teams has been stressful with the roles of the engineers. And with some contingency situations (natural disasters, pandemic situations) engineers have to work more effectively and that makes them stressed at the same time. Teichmann and Ilvest (2010) have affirmed that interpersonal stressors including poor peer relationships and hassles were found to be majorly influenced by the stress level of employees and it affects negatively their performance too. Accordingly, it can be concluded that Interpersonal Stressors have a moderate positive relationship with the behavioural symptoms of the engineering team in the Ceylon electricity board. And task stressors have around 46% impact on the behavioural symptoms of the engineering team in the Sri Lankan electricity board.

Conclusion and Recommendations

Empirical evidence endorses that organizational stress leads to an increase in the behavioural symptoms of employees. Therefore, Organizational stress should be carefully managed within the organization irrespectively to the industry. Engineering work teams have not met the expected level of performance in recent years in the CEB. As employee performance depends on many other factors it can be caused by various factors. Therefore, the main objective of the present study was to examine the extent of the impact of organizational stressors on the behavioural symptoms of engineering work teams in the CEB. This study was based on both primary and secondary data. Primary data collection was done through a structured questionnaire distributed among the sample. Required secondary data were collected through journal articles, internal reports, and websites.

The population of the present study consists of all the engineering work team members in the distribution divisions in the CEB. The researcher has used the cluster sampling method and the simple random sampling method to select the sample from the population. Therefore, the researcher has chosen 145 team members as the sample of the study. To analyze data, the researcher utilized SPSS statistical software and Microsoft Excel. Further, the researcher used descriptive statistics and inferential statistics as the basic data analyzing techniques. With the critical review of the literature, the researcher has chosen roles stressors, task stressors, and interpersonal stressors as the independent variables of the study while behavioural symptoms were identified as the dependent variable study. In all three studies organizational stressors, role stressors, task stressors, and interpersonal stressors had a significant impact on the behavioural symptoms of engineering working teams. Besides, all these independent variables had a positive and significant relationship with behavioural symptoms while interpersonal stressors had the comparatively strongest relationship with behavioural symptoms.

As an overall model, it indicates that organizational stressors have explained the behavioural symptoms of engineers in the CEB by 55%. And the rest of the 45% is explained by any other factors which were not a concern in the current study.

Recommendations

Organizational stress cannot be fully eliminated, because of its nature. Besides, a moderate level of stress is crucial to encourage employees to achieve their work goals and objectives. There are at least five groups, who will benefit from a mentally healthy workforce: the public, the employers, the workers, and their families, and the insurance companies too (Dewa, et al., 2007). Therefore, with the primary research findings, the researcher has suggested some recommendations to policymakers and the engineering teams in the Ceylon electricity board.

CEB should pay some consideration to the engineer's job design to develop a job design that provides simulation and which creates opportunities to use their skills. Work schedules should be compatible with the demands and responsibilities that the engineer has to handle outside the job. And workload given to each engineer should be carefully monitored to ensure it is in line with their capabilities and resources. CEB should promote more job autonomy among employees. As engineers are the experts in their field, they are hard to delegate their authority to someone who doesn't have the skills and capacity to handle those tasks. Therefore, CEB should consider recruiting more skilled and qualified subordinates. Therefore, engineers can delegate their authority to get the required task done reliably.

CEB should promote a strong communication approach within the organization. Having an open and clear communications system increases the awareness of the common goals of the organization while improving the engagement of organizational structure and organizational climate of the employee. And roles & responsibilities should be defined to mitigate ambiguity among the engineers. Maintaining a work-friendly environment is critical to improving the mental health of employees. Therefore, CEB should promote positive & flexible workplace culture while considering the physical working conditions controls too. Physical work conditions should be monitored daily to maintain consistency and avoid distractions. Besides, the Physical working environment can be improved to a pleasant working environment with the adoption of productivity concepts such as 5S, Kaizen, and Six Sigma. In addition to that, CEB should adopt a strong IT infrastructure system to avoid distractions that can cause bottlenecks and stress among employees. Therefore, prompt actions should be taken to improve it to use it as a productivity tool instead.

Currently, CEB Provides several welfare facilities to the employees. In addition to that, CEB should consider more about engineers' welfare needs more. Since unsatisfied welfare needs also can influence the stress level of employees. For instance, the provision of educational facilities, rewards for performance, medical facilities, etc. Besides, CEB should promote employee engagement activities within the branches. For instance, workplace parties, employee games, training, sports events, and team-building activities.

With these engagement programs, relationships among employees would be strengthened while their team-building skills also improved at the same time. In addition to these organizational contributions, CEB can organize programs to help engineering teams to manage their stress. For instance, employee counselling programs, career coaching programs, and self-management training for engineering teams can be arranged. From these kinds of programs, engineers will be able to manage their stress while enhancing their coping capacity.

CEB should conduct Stress evaluation surveys among engineering teams periodically. Therefore, CEB can understand the current situation and relevant strategies to control stress. Besides, CEB Should establish monitoring systems to review and monitor the progress of the establishment of strategies & to maintain track records in minimizing negative consequences of stress. To build strong interpersonal relationships among engineers and subordinates, and peers, CEB should arrange training programs to develop the human skills of managers, supervisors, and also engineers. As engineers are more into technical and conceptual skills, they should be trained to build up soft skills such as their listening and understanding skills of subordinates' problems and customer handling.

CEB should establish a proper complaint-handling mechanism within the organization to regulate them effectively. Where there should be separate teams to handle the customers and they can act as an intermediary team between customers and engineering teams rather than engineering teams themselves are frequently exposed to customers which will cause them unnecessary stress. Engineers can be involved in the process of critical scenarios. Besides, CEB should review its internal policies about authority delegation to avoid conflicts. And the CEB should improve its transparency in the performance evaluation process. With the increased transparency and introduction of specific, measurable, realistic performance indicators employees will be informed about the organization's requirements and they can assess themselves to identify their weaknesses and strengths to perform better and to mitigate stress.

References

Arsenault, A., & Dolan, S. (1983). The Role of Personality, Occupation and Organization in Understanding the Relationship Between Job Stress, Performance and Absenteeism. *Journal of Occupational Psychology, 56*(1), 227-240.

Armstrong, G. S., & Griffin, M. L. (2004). Does the Job Matter? Comparing Correlates of Stress Among Treatment and Correctional Staff in Prisons. *Journal Criminal Justice, 32*(6), 577-592.

Assella, A. P. N., & Arachchi, R. S. S. W. (2020). Relationship Between Job Role Stress and Performance of Non-Managerial Employees in Travel Agencies in Sri Lanka. *Journal of Tourism Economics and Applied Research, 4*(1), 27-37.

Bourbonnais, R., Jauvin , N., Dussault , J., & Vezina , M. (2007). Psychosocial Work Environment, Interpersonal Violence at Work and Mental Health Among Correctional Officers. *International Journal of Law and Psychiatry, 30*(1), 355- 368.

Castle, T. (2008). Satisfied in Jail? Exploring the Predictors of Job Satisfaction Among Jail Officers. *Crim Justice, 33*(1), 48-63.

Castle , T. L., & Martin , J. S. (2006). Occupational Hazard: Predictors Of Stress Among Jail Correctional Officers. *Am J Crim Justice, 62*(2), 65-80.

Central Bank of Sri Lanka (2018). Annual Report, Central Bank of Sri Lanka, Colombo.

Ceylon Electricity Board (2018). Annual Report, Ceylon Electricity Board, Sri Lanka.

Christian, M. S., Wallace, J. C., Bradley, J. C., & Burke, M. J. (2009). Workplace Safety: A Meta-Analysis of The Roles of Person and Situation Factors. *Journal of Applied Psychology, 94*(5), 1103-1127.

Cooper, C. L., & Marshal, J. (1976). Occupational Sources of Stress: A Review of The Literature Relating to Coronary Heart Diseases and Mental Ill Health. *Occupational Psychology, 49*(1), 11-28.

Cullen, F. T., Link, B. G., Wolfe, N. T., & Frank, J. (1985). The Social Dimensions of Correctional Officer Stress. Justice Quarterly.

Dahkoul, Z. M. (2018). The Determinants of Employee Performance in Jordanian Organizati. *Journal of Economics, Finance and Accounting, 5*(1), 11-17.

De Silva, T. H. Y. Y. P. (2018). Factors Compelling for High Level of Absenteeism Among Operational Level Employees in Apparel Industry. *Research Gate*.

Dewa CS, Lin E, Kooehoorn M, Goldner E (2007) Association of Chronic Work Stress, Psychiatric Disorders, and Chronic Physical Conditions with Disability among Workers. *Psychiatr Serv* 58(5):652–658

Farler, L., & Broady-Preston, J. (2012). Workplace Stress in Library: A Case Study, Aslib Proceedings. New Information Perspectives.

Fernando, W. R. P. K., Selvam, M., & Bennet, E. (2010). Exhaustion and Stress: An Empirical Study Among Workers in Apparel Industry of Sri Lanka

Finney, C., Stergiopoulos, E., Hensel, J., Bonato, S., & Dewa, C. S. (2013). Organizational Stressors Associated with Job Stress and Burnout in Correctional Officers: A System Review. *Bmc Public Health*.

Huber, V. L. (1986). Managerial Applications of Judgmental Biases and Heuristics

Hudek-Knezevic, J., Maglica, B. K., & Krapić, N. (2011). Personality, Organizational Stress, And Attitudes Toward Work as Prospective Predictors of Professional Burnout in Hospital Nurses. *Croatian Medical Journal, 52*(4), 528-549.

Hunter, L. W., & Thatcher, S. M. B. (2007). Feeling the Heat: Effects of Stress, Commitment, And Job Experience on Job Performance. *Academy of Management Journal, 50*(4), 953-968.

Jain, K. K., Jabeen, F., Mishra, V., & Gupta, N. (2007). Job Satisfaction as Related to Organisational Climate and Occupational Stress: A Case Study of Indian Oi. *International Review of Business Research Papers, 3*(5), 193-208.

Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational Stress: Studies in Role Conflict and Ambiguity: John Wiley.

Koçel, T. (2007). Işletme Yöneticiliği, Istanbul: Arıkan Basım Yayın

Lambert , E., Hogan , N., & Altheimer. (2010). An Exploratory Examination of The Consequences of Burnout In Terms Of Life Satisfaction, Turnover Intent, And Absenteeism Among Private Correctional Staff. *The Prison Journal, 49*(1), 94-114.

Lazarus, R. S. (1966). Psychological Stress and The Coping Process: Mcgraw-Hill.

Lyons, T. F. (1971). Role Clarity, Need for Clarity, Satisfaction, Tension, And Withdrawal. *Organizational Behavior and Human Performance, 6*(1), 99-110.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job Burnout. *Annual Review of Psychology, 52*(1), 397-422.

Mcgrath , J. (1978). Small Group Research. *American Behavioral Scientist, 21*(5), 651-674.

McGrath, J. E. (1976). Stress and Behavior in Organizations. In M. D.Dunnette (Ed.), Handbook of Industrial and Organizational Psychology. Chicago, IL: Rand McNally

Mcshane, S. L., & Glinow, M. A. V. (2015). Workplace Emotions,Attitudes, And Stress. In 8 (Ed.), Organizational Behvaiour (Pp. 90-120). Penn Plaza, New York,: Mcgraw-Hill Education.

Michie, S. (2002). Causes and Management of Stress at Work. *Occupational and Environmental Medicine*, 67-72.

Mirela, B., & Mădălina-Adriana, C. (2011). Organizational Stress and Its Impact on Work Performance.

Murphy, L. R. (1995). An Employee Assistance/Human Resource Management Partnership. *Managing Job Stress, 24*(1), 41-50.

Muse, L. A., Harris, S. G., & Field, H. S. (2003). Has the Inverted-U Theory of Stress and Job Performance Had A Fair Test?". *Human Performance, 16*(4), 349-364.

Nappo, N. (2020). Job Stress and Interpersonal Relationships Cross Country Evidence from The Eu15: A Correlation Analysis. *Bmc Public Health, 20*(1), 1-11.

Pamela Braboy Jackson, Peggy A. Thoits, Howard F. Taylor (1995). Composition of the Workplace and Psychological Well-Being: The Effects of Tokenism on America's Black Elite*, Social Forces*, 74(2),543–557, https://doi.org/10.1093/sf/74.2.543

Parker, D. E., & Decotiis, T. A. (1983). Organizational Determinants of Job Stress. *Organizational Behavior and Human Performance, 32*, 160-177.

Rajitha , R., & Kumari , D. A. T. (2021). The Impact of Performance Evaluation and Reward System on The Employee Performance in The State Electricity Sector in Sri Lanka. *International Journal of Asian Social Science, 11*(4), 209-229.

Robbins, S. P., & Judge, T. A. (2015). Organizational Behavior (16th ed.). Pearson Education, Inc

Summerlin , Z., Oehme , K., Stern , N., & Valentine , C. (2010). Disparate Levels of Stress in Police and Correctional Officers: Preliminary Evidence from A Pilot Study on Domestic Violence. *Journal of Human Behav Soc Environment, 20*(6), 762-777.

Taxman, F. S., & Gordon, J. A. (2009). Do Fairness and Equity Matter?: An Examination of Organizational Justice among Correctional Officers in Adult Prisons. *Criminal Justice and Behavior*, 36(7), 695–711.

Teichmann M, Ilvest Jr J. (2010). Sources of Occupational Stress in Technical University Academics. *Latest Trends on Engineering Education,* 448-453

Treven, S., & Potocan, V. (2005). Training Programmes for Stress Management in Small Businesses. *Education & Training*, 47(8-9),640–652.