

The Effects of Coping Mechanism, Gender and Shift to Stress Risk Levels of Inbound Call Center

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Abstract

The call center industry is one of the biggest and fastest growing industries not only in the Philippines, but also, all over the world. By the nature of work in this industry, stress becomes inherent to the call center agents. Previous researches done on occupational stress studied separately the causes and effects of stress to inbound call center agents' job performance and not considering interaction with the coping mechanisms, gender and shift work of the agents. Furthermore, no specific stress management plans were established. Therefore, the study aimed to identify significant stress risk factors present in inbound call centers, their effects to health, psychological condition and job performance risk levels considering coping mechanism, gender and shift, and to rank stress risk levels in order to create a stress management plan. Data were gathered from 180 inbound call center agents who worked in three shifts. Significant causes and effects of stress were identified considering coping mechanism, gender and shift type of agents. Results showed that the opening and closing shifts were not different in terms of stress risk factors. As such, two stress risk management plans were created for the opening and the closing shift and another for the middle shift.

Keywords

Coping mechanism, stress risk level, inbound call centers, risk management plan

1. Introduction

The call center industry is one of the biggest and fastest growing industries not only in the Philippines, but also, all over the world. Today, the Philippines is the number one player of the business process outsourcing industry in the global scale. In the year 2010, the IBM Global Locations Trend said in its report that the Philippines had already overtaken India as the world's number 1 country for shared services and business process outsourcing (Dizon, 2010).

The United Nations' International Labor Organization has defined occupational stress as a "global epidemic". The physical effects of excessive stress have long been recognized -- from heart attacks and strokes to ulcers and other gastrointestinal disorders. Psychologically, stress can lead to depression, anxiety and even panic attacks. While the physical effects of this epidemic are often emphasized, the economic consequences also are alarming. In general, sixty percent of lost workdays each year can be attributed to stress. In addition, an estimated 75 to 90 percent of visits to health care providers are due to stress-related conditions, costing employers in increased health care costs (Maxon, 1999).

Moreover, the news in the magazines and newspapers depict that call center employees are facing a lot of problems like excessive workload, unreachable targets, and pressurizing and abusive customers. Above all, continuous night shifts create biological imbalance in them and finally makes them stressful. So stress is an important problem encountered by the call center employees (Latha and Panchanatham, 2010).

Previous researches discussed on the effects of shift work on productivity and health (Dela Cuesta, 2004), on absenteeism and productivity (Co, 2009), and on stress levels (Gyes, 2006), (Sharma et al, 2011). Results indicated that there were significant effects of shift work on the various factors such as productivity and health, absenteeism and productivity, and on stress levels. Other studies look into the role of stress and its effect on job performance and job satisfaction (De Ruyter et al, 2001) and relationship of job stress on job satisfaction (Ahsan et al, 2009) and productivity (Subbulaxmi, 2002). The results found that particularly the autonomy dimension of empowerment has a role-stress-reducing effect which has also direct positive effects on job satisfaction, showed that job stress has a

negative relationship on job satisfaction, and stress has direct relationship to productivity. A study on issues of occupational stress (Indranil, 2010) showed that significant difference in stress and mental health were observed with respect to both genders from domestic call centers. Moreover, male employees from both international and domestic call centers differed significantly on stress scores. These researchers used statistical tools such as correlation, analysis of variance in order to conclude about the strength and the direction of relationship between sources of stress and its consequences. Other studies focused on formulating risk assessment and risk management frameworks especially for occupational stress assessment and management (Biron, 2006).

Although a lot of researches were done on occupational stress in the call center industry, the following areas were left for further research: the effect of occupational stress to inbound call center agents' job performance, in terms of average handling time and absenteeism, health and psychological condition, considering not only the stressors identified, but also, the coping mechanisms, gender and shift type of the agents; and, the stress of call center agents coming from work schedule, along with the social life disruption, domestic life disruption, irregular sleep, performance demands, irregular mealtimes, and workplace relationships, were not incorporated together and interacted with the coping mechanism of the agents in past studies. Lastly, previous studies suggested that it is imperative that organizations have stress management programs but none showed actual action plans.

In this regard, the study aimed to: a) identify the causes and effects of stress in inbound call centers; b) identify significant stress risk factors present in inbound call centers; c) determine the effect of the significant risk factors to health, psychological condition and job performance risk levels considering coping mechanism, gender and shift; d) determine whether the risk levels calculated is the same per cluster; and, and e) create a stress risk management plan.

2. Methods

The causes and effects of stress in inbound call centers were identified through the review of related literature and studies and conduct of interviews. Surveys were administered to 180 inbound call center agents, with 60 agents for each shift. Moreover, the performance and attendance records of call center agents were gathered. The company data collected covered the months of July to December 2012. The company data and the survey results were transformed into a standardized range of 1 to 10 in order to normalize the data.

A Multiple Regression analysis was used to identify significant stress risk factors present in inbound call centers using the identified causes and the result of the stress scale. In order to determine the effect of the significant risk factors to health, psychological condition and job performance risk levels considering coping mechanism, gender and shift, Correlation analysis, K-Means Cluster Analysis, Joining (Tree Clustering) Analysis, Overall Health Risk Level Calculation and Correlation Analysis between the Interactive Effect of Exposure and Coping (ExK) and Performance were undertaken. In addition to this, the Analysis of Variance (ANOVA) and pairwise comparison on the differences of means using the Tukey's Test were utilized using the overall health risk levels per cluster to determine whether the risk levels calculated for each cluster is significantly different. These health risk factors were ranked per cluster. Finally, the results of the overall health ranking and the correlation of interactive effect of exposure and coping (ExK) and job performance were taken into consideration in recommending a stress management plan comprised of suggested interventions for the top five risk factors for both the overall health and job performance per cluster.

3. Results

3.1 Causes of Stress

The causes of stress are categorized as individual difference (gender), work schedule (shift rotation and number of rest days), stressors for shift workers (social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, and workplace relationships), and environmental factors (lighting condition, noise level, workplace temperature, and physical setup). The results of the multiple regression analysis of the causes of stress are shown in Table 1.

Table 1
Regression Coefficients of Causes of Stress

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-5.881	-12.609	5.36E-26
Gender	-0.066	-0.636	0.525522241
Shift Rotation	0.264	9.221	1.30E-16
Number of Rest Days	0.208	7.899	3.66E-13
Social Life Disruption	0.194	6.688	3.30E-10
Domestic Life Disruption	0.189	8.12	1.00E-13
Irregular Sleep	0.238	9.304	7.80E-17
Performance Demand	0.213	8.379	2.17E-14
Irregular Mealtimes	0.158	5.055	1.13E-06
Workplace Relationships	0.283	10.318	1.35E-19
Lighting Condition	-0.032	-1.128	0.260822106
Noise Level	0.151	5.736	4.48E-08
Workplace Temperature	0.114	5.142	7.60E-07
Physical Setup	0.218	8.494	1.08E-14

At a significance level of $\alpha = 0.05$, the multiple regression coefficient (R) value was 0.95786 which indicated a very strong relationship. The adjusted R^2 resulted to 0.91126 revealing that 91.13 % of the variation was accounted by these factors. Furthermore the ANOVA results indicated that these factors showed significant difference with a significance $F < 0.00$. It showed that the gender and lighting conditions seemed not significant which, therefore, were not considered as causes of stress. Only 11 factors of causes of stress were considered such as shift rotation, number of rest days, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, workplace temperature, and physical set-up for further evaluation.

3.2 Effects of Stress

The effects of stress comprised of the health consequences (physical health and mental health), psychological effects (depression, anxiety, and job satisfaction), and job performance (average handling time (AHT) and attendance). A correlation analysis was

The effects of stress and the call center agent's stress level were subjected to a correlation analysis and the results are shown in Table 2.

Table 2
Correlation Coefficient of the Effects of Stress on the Stress Level

Effects of Stress	R	R²
Physical Health	0.9149	0.8370
Mental Health	0.9688	0.9387
Depression	0.4903	0.2404
Anxiety	0.9278	0.8608
Job Satisfaction	-0.0778	0.0061
Performance (AHT)	0.9566	0.9150
Absence	0.0705	0.0050

As shown in Table 2, only physical health, mental health, anxiety and performance have coefficient correlation (r) values of 0.9149, 0.9688, 0.9278, and 0.9566, respectively. This seemed to indicate strong correlation relationships with stress. Moreover, these four effects of stress have coefficient of determination (r^2) values of 0.8370, 0.9387,

0.8608 and, 0.9150, respectively. This also indicated that these effects of stress have a good fit to the stress level. Meanwhile, the correlation of job satisfaction and absence to stress level are negligible. Depression, although it has moderate correlation with stress level, its r^2 value of 0.2404 showed that it is not a good predictor of the stress level. For these reasons, only physical health, mental health, anxiety and performance were considered as the effects of stress.

3.3 Cluster Analyses

Cluster analyses, both K-means and Joining (Tree) Clustering were done in order to consider shift in the determination the effect of the significant risk factors to health, psychological condition and job performance risk levels. Based on the results on the results of K-means Clustering, there were three clusters in the data and cluster one is composed of the closing shift (3:30am-12:30pm), cluster two is composed of the middle shift (10:00pm-7:00am) and cluster three is composed of the opening shift (8:00pm-5:00am). Joining (Tree) Clustering verified this result.

Figure 1 shows the mean values of the identified factors affecting stress per cluster. Below are the discussions on these identified factors per cluster.

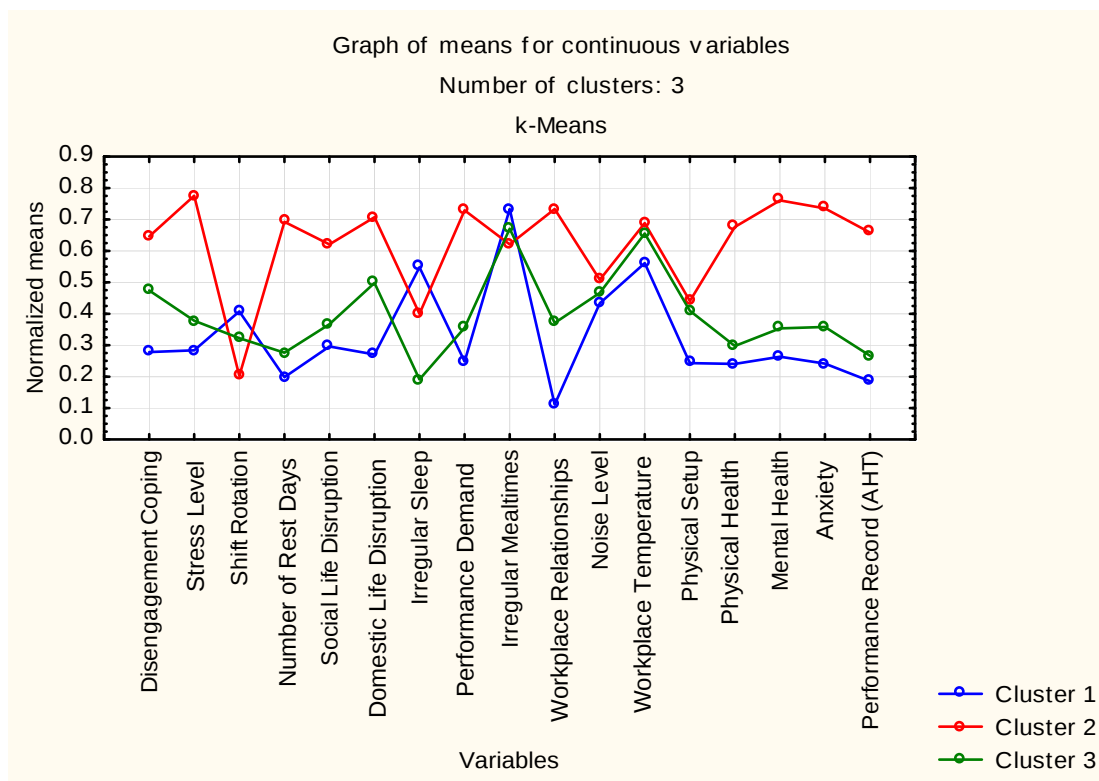


Figure 1. Means of Factors Per Cluster

Cluster 1: Closing Shift. This shift starts are 3:30 am and last until 12:30 pm. The graph of the cluster 1 is denoted by the blue line. At a glance, it can easily be deduced that this cluster uses disengagement coping the least and has the least stress level among the three clusters. The disengagement coping value is 3, which means that agents from this shift avoid thinking or doing anything about the situation; wish the situation would go away somehow or be over with; criticize themselves for what is happening; and spend more time alone rarely. This cluster's stress level is 4, which indicated that this cluster experiences mild stress from work.

As for the stressors, compared to the other clusters, workers from this cluster are the most affected by shift rotation, irregular sleep, and irregular mealtimes. The cluster's shift rotation has a value of 5, which means that agents from this cluster find changes in shift type or rotating shifts stressful. On the other hand, irregular and irregular mealtime got a rating of 6 and 8, respectively. This means that agents in this cluster find irregular sleep a lot stressful and

irregular mealtime very stressful. Members of this cluster perceived workplace relationships very slightly stressful; number of rest days, domestic life disruption, performance demand, and physical setup slightly stressful; social life disruption quite a bit stressful; workplace temperature a lot stressful; and, noise level quite a lot stressful.

As for the effects of stress, it can be inferred, by looking at the graph, that agents from this cluster, suffer adverse effects of stress in physical health, mental health, anxiety and job performance the least. The physical health, mental health, anxiety and job performance have ratings of 3, 3, 3 and 2, respectively. This means that agents from this cluster are slightly unhealthy physically and mentally, has bordering moderate anxiety and has a performance level that exceeds requirements of the call center company.

Cluster 2: Middle Shift. This shift starts are 10:00 pm and ends at 7:00 am. The graph of the cluster 2 is shown by the red line. It can easily be extrapolated that this cluster uses disengagement coping the most and has the most stress level among the three clusters. The disengagement coping value is 7, which means that agents from this shift avoid thinking or doing anything about the situation; wish the situation would go away somehow or be over with; criticize themselves for what is happening; and spend more time alone very frequently. This cluster's stress level is 8, which indicated that this cluster experiences severe stress.

As for the stressors, compared to the other clusters, workers from this cluster were the most affected by number of rest days, social life disruption, domestic life disruption, performance demand, workplace relationships, noise level, workplace temperature, and physical setup. The number of workdays, along with social life disruption, has a value of 7, which shows that agents from this cluster find the allotted rest days of the company insufficient and finds it quite a lot stressful and that agents from this cluster finds lack of social life a lot stressful. Performance demand and workplace relationships have a value of 8, which means that the performance demand and relationships in the workplace are perceived by members of this cluster as very stressful. Domestic life disruption, irregular mealtimes, noise level and workplace temperature have a value of 7, respectively, which indicated that members of this cluster perceive the aforementioned stressors as quite a lot stressful. And, physical setup have a value of 5, which means the physical setup of the workplace in terms of space, design and orderliness are found to be stressful. Members of this cluster perceive shift rotation as slightly stressful and irregular sleep as stressful.

As for the effects of stress, it can be inferred from the graph, that agents from this cluster suffer adverse effects of stress in physical health, mental health, anxiety and job performance the most. The physical health has a value of 6, and mental health, anxiety and job performance have values of 8, 7 and 6 respectively. This means that agents from this cluster are unhealthy physically, very unhealthy mentally, has extremely severe anxiety and has a performance level that needs improvement for call center company.

Cluster 3: Opening Shift. This shift begins at 8 pm and ends at 5 am. The graph under this cluster is a green line. This cluster uses disengagement coping more than the first cluster (closing shift) but less than the second cluster (middle shift) and has a stress level that is generally in between the first cluster and the second cluster. The disengagement coping value is 5, which means that agents from this shift avoid thinking or doing anything about the situation; wish the situation would go away somehow or be over with; criticize themselves for what is happening; and spend more time alone to a considerable degree. This cluster's stress level is 4, which shows that this cluster experiences mild stress, which is above normal.

As for the stressors, compared to the other clusters, workers from this cluster are the least affected by irregular sleep. The irregular sleep has a value of 3. This means that irregular sleep due to work is perceived by members of this cluster as slightly stressful. Members of this cluster perceive number of rest days as slightly stressful; shift rotation, performance demand and workplace relationships as quite a bit stressful; social life disruption, domestic life disruption, physical setup as stressful; and, irregular mealtimes, noise level and workplace temperature as quite a lot stressful.

As for the effects of stress, it seemed that agents from this cluster, suffer adverse effects of stress in physical health, mental health, anxiety and job performance more than cluster 1 (closing shift) but less than cluster 2 (middle shift). The physical health has a value of 3, and mental health, anxiety and job performance have values of 4, 4 and 3, respectively. This means that agents from this cluster are slightly unhealthy physically, bordering quite unhealthy mentally, has moderate anxiety and has a performance level that meets the requirements of call center company.

3.4 Overall Health Risk Level Calculations and Correlation Analysis

Risk level calculations were done per cluster. This was based on Biron, et al's framework (2006) and risk levels were calculated using the following equation.

$$\text{Risk Level} = \text{Exposure (E)} \times \text{Disengagement Coping (K)} \times \text{Consequence (C)} \quad (1)$$

This equation was used in order to consider coping mechanism in the determination of the effect of the significant risk factors to health, psychological condition and job performance risk levels. However, since the framework was designed only for health risks calculations, only the health risks were considered as consequences. The results of the calculations of risk levels for the health risks were summarized in Table 3.

Table 3
Overall Health Risk Level Per Cluster

Risk Factors	Cluster 1: Closing	Cluster 2: Middle	Cluster 3: Opening
Shift rotation	9.68	5.78	5.85
Number of Rest Days	1.76	25.27	7.24
Social Life Disruption	7.67	24.70	11.36
Domestic Life Disruption	3.57	24.69	5.68
Irregular Sleep	9.66	16.27	3.82
Performance Demand	3.52	22.15	6.63
Irregular Mealtimes	11.95	24.90	22.80
Workplace Relationships	3.63	27.13	7.82
Noise Level	13.11	24.55	17.62
Workplace Temperature	12.03	21.90	9.76
Physical Setup	5.62	13.96	14.28

A correlation analysis was undertaken in order to consider coping mechanism in the determination of the effect of the significant risk factors to job performance. The results were summarized in Table 4.

Table 4
Correlation Analysis between the Interactive Effect of Exposure and Coping (ExK) and Performance

Risk Factors	Cluster 1: Closing	Cluster 2: Middle	Cluster 3: Opening
Shift rotation	0.7205	0.5974	0.5194
Number of Rest Days	0.4200	0.6792	0.5550
Social Life Disruption	0.6448	0.7388	0.6613
Domestic Life Disruption	0.4184	0.6314	0.4782
Irregular Sleep	0.5360	0.7089	0.4524
Performance Demand	0.4473	0.7312	0.6518
Irregular Mealtimes	0.6316	0.7218	0.7973
Workplace Relationships	0.5449	0.6609	0.5296
Noise Level	0.6585	0.6922	0.7209
Workplace Temperature	0.6390	0.7064	0.5141
Physical Setup	0.5555	0.6951	0.7286

Cluster 1: Closing Shift. This shift begins at 3:30 am and ends at 12:30 pm. Considering coping, it can be seen under the cluster 1 column that shift rotation is strongly correlated ($0.70 \leq r < 0.90$) to performance. While the number of rest days, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, workplace temperature, and physical setup are moderately correlated ($0.40 \leq r < 0.70$) to performance. . This means that only shift rotation, considering coping, has a strong linear relationship with performance and the rest of the risk factors share a moderate linear relationship with performance.

Focusing on the r^2 values, it can be inferred that shift rotation, social life disruption, irregular sleep, irregular mealtimes, workplace relationships, noise level, workplace temperature and physical setup, considering coping, are

moderate ($0.25 \leq r^2 < 0.80$) predictors of performance in terms of AHT; and, number of rest days, domestic life disruption and performance demand, considering coping, are poor ($0 \leq r^2 < 0.25$) predictors of performance.

Cluster 2: Middle Shift. This shift starts at 10:00 pm and lasts until 7:00 am. The r values of the risk factors under cluster 2 showed that social life disruption, irregular sleep, performance demand, irregular mealtimes and workplace temperature, considering coping, are strongly correlated ($0.70 \leq r \leq 0.90$) to performance; and, shift rotation, number of rest days, domestic life disruption, workplace relationships, noise level, and physical setup, considering coping, are moderately correlated ($0.40 \leq r < 0.70$) to performance.

With regard to the r^2 values of the risk factor under cluster 2, it was evident that shift rotation, number of rest days, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, workplace temperature and physical setup are moderate ($0.25 \leq r < 0.80$) predictors of performance in terms of AHT.

Cluster 3: Opening Shift. This shift is from 8:00 pm to 5:00 am. Under the Cluster 3, it indicated that irregular mealtimes, noise level and physical setup, considering coping, are strongly ($0.70 \leq r < 0.90$) correlated to performance; and shift rotation, number of rest days, social life, domestic life disruption, irregular sleep, performance demand, workplace relationships, and workplace temperature, considering coping, are moderately ($0.40 \leq r < 0.70$) correlated to performance.

Looking at the r^2 values of the risk factors under Cluster 3, the shift rotation, number of rest days, social life disruption, performance demand, irregular mealtimes, workplace relationships, noise levels, workplace temperature, physical setup, considering coping, are moderate ($0.25 \leq r < 0.80$) predictors of performance in terms of AHT, and, domestic life disruption and irregular sleep, considering coping, are poor ($0 \leq r < 0.25$) predictors of performance.

3.5 ANOVA and Tukey's Test

One-Way ANOVA using the overall health risk levels of the three clusters was done in order to determine whether the risk levels calculated is the same per cluster. The p -value at significance level of 0.05 was 6.14506E-06 indicating that at least one of the overall health risk levels of a cluster is significantly different from the other clusters. Thus, Tukey's Test was used to determine which among the risk factors contributed to the significance of the model. The results are presented in Table 5.

Table 5
Tukey's Test Results on Difference Between Pairs of Means

Clusters	$ X_a - X_b $	$(q_{a,v,k})(S_x)$
1 & 2	13.55454545	5.826614083
2 & 3	10.76727273	5.826614083
1 & 3	2.787272727	5.826614083

Table 5 showed that absolute values of the difference of the means of clusters one and two and clusters two and three are both greater than the 5.8266; while, the absolute value of the difference of the means of clusters one and three is less than 5.8266. This means that clusters one and two and clusters two and three are significantly different from each other while cluster one and three are not significantly different from each other. With these, the risk levels for overall health considering coping, gender and shift were ranked. The ranks are presented on the table below.

As presented in Table 6, Clusters 1 and 3 showed irregular mealtimes, noise level, workplace temperature, physical setup, and social life disruption as the top 5 among the risk factors' risk levels. While Cluster 2's top 5 rank of risk factors were workplace relationships, number of rest days, and irregular mealtimes, social life disruption, and domestic life disruption. The ranks were based on the overall health risk factor.

Table 6
Overall Health Risk Factor Ranking

Risk Factors	Cluster 1 & 3: Closing & Opening		Cluster 2: Middle	
	Risk Level	Rank	Risk Level	Rank
Shift rotation	7.77	6	5.78	11
Number of Rest Days	4.50	11	25.27	2
Social Life Disruption	9.52	5	24.7	4
Domestic Life Disruption	4.63	10	24.69	5
Irregular Sleep	6.74	7	16.27	9
Performance Demand	5.08	9	22.15	7
Irregular Mealtimes	17.38	1	24.9	3
Workplace Relationships	5.73	8	27.13	1
Noise Level	15.37	2	24.55	6
Workplace Temperature	10.90	3	21.9	8
Physical Setup	9.95	4	13.96	10

On the other hand, Clusters 1 and 3 ranked irregular mealtimes, noise level, social disruption, physical setup, and shift rotations as the top 5 risks on job performance. Also, Cluster 2 ranked social life disruption, performance demand, irregular mealtimes, irregular sleep, and workplace relationships as the top 5 risks on job performance.

3.6 Stress Management Plans

Two stress management plans were developed based on the top 5 ranking on risk factors. One stress management plan was developed for Clusters 1 and 3 while the other stress management plan was developed for Cluster 2. Each of the two plans is composed of two sections, the first section consists of interventions for the top five overall health risk factors and the second section contains the interventions for the top five factors that affects job performance.

4. Conclusion

The following conclusions were generalized based on the results of the study as follows:

- The significant causes of stress were shift rotation, number of rest days, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, workplace temperature, and physical setup. Gender and lighting condition were both found to be insignificant causes of stress.
- The physical health, mental health, anxiety and performance (AHT) are all very strongly correlated to stress and were considered as significant outcomes of stress.
- There were three clusters found in the data, each cluster composed of 60 cases. Hence in each of the shifts the contribution of significant causes and effects of stress differ.
- Based on the Overall Health Risk Level Calculation for the closing shift, considering coping, shift rotation, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, and physical setup affect overall health consequences. While for middle shift, the factors that affect overall health consequences are the number of rest days, shift rotation, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, and physical setup; and, as for the opening shift, the number of rest days, shift rotation, social life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, and physical setup affect overall health consequences.
- For the Correlation Analysis between stressors and job performance of the closing shift, considering coping, it was found out that number of rest days, shift rotation, social life disruption, irregular sleep, irregular mealtimes, workplace relationships, noise level, and physical setup affect performance in terms of Average Handling Time

(AHT). While, for the middle shift, the factors that affect job performance are the number of rest days, shift rotation, social life disruption, domestic life disruption, irregular sleep, performance demand, irregular mealtimes, workplace relationships, noise level, and physical setup; and, for closing shift, number of rest days, shift rotation, social life disruption, performance demand, irregular mealtimes, workplace relationships, noise level, and physical setup affect performance in terms of Average Handling Time (AHT).

- f) Based on One-Way ANOVA and Tukey's Test, cluster 1 and 3 are not significantly different and they are both significantly different from cluster 2. So, the risk levels for clusters 1 and 3, closing and opening shifts respectively, were averaged and then ranked since the two are not significantly different. And, the risk levels for cluster 2, middle shift, were ranked also. These risk factors were the basis for developing the management plans for the two groups.
- g) Two different stress management action plans, one for clusters 1 (closing shift) and 3 (opening shift), and another one for the second cluster, the middle shift. The two management plans made is composed of some suggested interventions for the top 5 overall health risk factors as well as for the top 5 factors that affect job performance.

5. Recommendations

The paper intended to develop a stress risk management plan for inbound call centers and to further provide more insights on this topic, the following topics for further study are recommended:

- a) Implement and evaluate the stress management plan developed by this study to determine the effectiveness of the risk management plans developed.
- b) Incorporate more causes and effects of stress variables to provide more depth in the analysis of these variables.
- c) Increase the sample size and longer data collection in order to increase the accuracy of the research and provide more insights from respondents considering the high turnover rate of call center agents in companies.

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