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THE ERGONOMIC INFLUENCE ON ACADEMIC STAFF PERFORMANCE IN PHEI (PRIVATE HIGHER EDUCATION INSTITUTION)

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ABSTRACT

Cultivating productivity and leading business towards sustainability is the key objective of business today and to achieve this employee wellbeing should be concerned. The (European Network for Workplace Health Promotion, 2005; Black, 2008; European Agency for Safety and Health at Work, 2010), claimed workplace as the key contributor towards health and well-being among the working age globally (Dickson, et.al, 2014). Apparently, lack of ergonomic awareness and concern in the physical environment setting has triggered the rise in cost, injuries, illness and discomfort that may lead to poor work quality and employee performance. Relatively, many organizations disregards, ignores due to time, cost factor and consider it as a complex battlefield for management with the recent economic conditions. Hence, with proper planning and ergonomic concern the above risk could be reduced, therefore this paper focuses on the relationship between physical environment setting and academician performance in the PHEI (Private Higher Education Institution). Using a formulated questionnaire, total of 250 samples aimed and only 183 completed and were gathered among academicians from numerous Private Colleges and Universities in the area of Subang Jaya. Through findings and discussion, this research found that physical environment factors such building aesthetic, furniture arrangement, facilities and ventilation are considered essential but facilities aiding staff considered important which contributes 41% to employee performance. This paper discusses the implication, recommendations and direction for future research.

Keywords: ergonomics, physical environment, employee performance

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The future of a country relies on its nation and the future of an organization depends on its employee and it applies the same in any field of business. The usual notion is employee performance are driven by a personality trait, reward, superior subordinate relationship and the task itself, apparently there are other contributing factors that affects employee performance. Moreover, employee offers effortless time, creativity and loyalty, hence the organization should ensure sufficient concern is given over safety and comfort of an employee. Modern theories and researchers on ergonomics have suggested ways to encourage stress-free patterns of posture and movement. Many interior and exterior aesthetic designers expressed profound interest in Feng-Shui, Vastu Shasta and other ancient philosopher for ideas and ways to redirect the flow of energy through for better and peaceful work environment. University or tertiary education plays vital role in human capital development and is regarded as the national asset and should be continuously safeguarded (Sirat M., 2009), this is line with the Ministry of Higher Education in Malaysia (MOHE) in ensuring nation movement towards K-Economy or knowledge economy in human capital development.

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A survey by a research firm in America revealed workers that have safe working conditions were the top priority for worker's, and salary dropped from 1st place to 11th place with ethical corporate behavior taking 2nd place (Rowan and Wright, 1995). Even if the salary is relatively satisfactory it is not the number one priority. But this have changed over the years, there are also other factors associated to staff performance. Leblebici (2012) claimed, better workplace environment motivates employee performance and leads to job efficiency. In fact, different people tend to have a different workplace related preference (Rothe et.al., 2011). Therefore, a total of 183 formulated questionnaire distributed and gathered from (PHEI) Private Higher Education Institution in the area of Subang.

1.2 Problem Statement

Ergonomics is disregarded by many, ignored due to time, cost and considered as a complex and a battlefield for management with the recent economic conditions. Several research being carried out in the past pertaining to staff performance and ergonomic influence and its consequences in a multi-disciplinary field. In fact, studies were carried on educational ergonomics, on the influence of educational system design over student performance. The ergonomics influence among academic staff in PHEI has not been explored and it stays undiscovered. Therefore, this study will examine the need for thoughtful concern in physical environment setting to boost staff performance. Maslow's (1954), hierarchy of needs theory rationalizes that organization should reflect the fact that employees physiological and security needs is contented, therefore when an organization focuses in fulfilling in employee needs, it is believed that staff performance improves tremendously (Jerome, 2013). Moreover, Hameed (2009) suggested that organization could enhance their productivity by improving workplace design. The National Safety Council survey results that on an average work day at least about one million employee are absent due to job stress (Gutnick, 2007). Through the application of ergonomics principles in the workplace, it is believed to increase worker productivity and quality, improve health and workers safety, lower workers compensation claims, compliance with government regulations (eg.OSHA standards), job satisfaction, lower worker turnover, lower lost time at work, improves morale of workers and decrease absenteeism rate (Fernandez, 1995). Furthermore, the application ergonomic in actual environment requires knowledge through practice, experience and an empirical study with hypothesis and testing (Wilson, 2000).

1.3 Objective of the study

1.3.1 To examine the relationship between factors of the physical environment towards academic staff performance.

1.3.2 To identify the impact of physical environment over academic staff performance.

1.4 Research Question

1.4.1 Is there a significant relationship between factors of physical environment and academic staff performance?

1.4.2 Which factor of physical environment affects to academic staff performance?

1.5 Research Hypotheses

H1: There is significant relationship between building aesthetics and academic staff performance.

H2: There is significant relationship between furniture arrangement and academic staff performance.

in PHEI.

H3: There is significant relationship between facilities and academic staff performance.

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H4: There is significant relationship between ventilation and academic staff performance.

H5: There is significant relationship between lighting and academic staff performance.

H6: There is significant relationship between noise and academic staff performance.

1.6 Significance of study

Ljungblad et.al. (2014), believes workplace health promotion (WHP) interventions makes an important contribution to employee health. Employee health or well-being is linked to ergonomic concern. According to Kroemer and Kroemer (2001), office ergonomics hubs human centered work design which requires knowledge in understanding employees' capabilities, wellbeing and preferences. Since employees are the eventual user of the workplace environment, therefore employer should consider designing and equipping the workplace setting to suit staff needs. The physical environment must be designed to appeal and inspire employee who works within the premise (Stoessel, 2001). Substantially, the PHEI should adopt the ergonomic concern to attract, retain competent staff and stimulate their performance. With the involvement of HRM/HRD (Human Resource Management/Development) in planning an adequate physical work environment, apparently this may aid organization in retaining high performers and talented individuals to meet the present and future demands of the organization (Nilsson and Ellstrom, 2011) towards sustainability. In fact the success of an organization is associated with how well it is managed.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This section reviews the body of literature by providing an understanding on ergonomic influence over employee performance. The International Ergonomics Association (IEA) classified three domains of ergonomics (i) physical ergonomics, (ii) cognitive ergonomics and (iii) organizational ergonomics (Karwowski, 2001). However, this research concentrates on the "physical ergonomic" primarily building aesthetics, furniture arrangement, facilities, ventilation, lighting and noise towards academic staff performance.

2.1.1 Ergonomics

The word ergonomics comes from the Greek word "ergo" means work, and "nomos" means laws (Rooney, 1994). Ergonomics is defined as the design of workplace, equipment, machine, tool, product, environment and system, taking into consideration the human's physical, physiological capabilities and optimizing the effectiveness and productivity of work system while assuring the safety, health and wellbeing of the workers (Jeffrey, 1995).

2.1.2 Theories related to Ergonomics

In early studies theorist Gilberts urbanized the laws of human motion from which evolved the principles of motion economy. It was they who coined the term 'motion study' to cover the field of research and ways of distinguishing it

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from those involved in 'time study. The Gilberts reported to study fatigue in order to attack the waste of human energy that workers were all too often compelled to endure (Dean, 1997). Another theorist, Taylor believed that it was the management's responsibility, not the worker's responsibility to design the job to ensure safety and comfort towards higher levels of productivity (Tietjen and, 1998). Taylor also believed that one of the best ways to do something is to ascertain it, then coupled it with the right selection of people and tools for a direct pathway to efficiently in productivity (Hartley, 2006). While Gilberts define fatigue as being "due to a secretion in the blood" of the work itself, meanwhile Munsterberg described monotony in terms of unpleasant feelings due to tiresome tasks (Wright, 2006).

2.2.3 The concept of Employee Performance

Competitive advantage and accomplishment of organization's goal is achieved through high performing staff. Therefore, accomplishment by this high performing staff might lead to high level of staff satisfaction. Many researchers concluded that employee performance relates to job satisfaction. While Sonnentag (2002), differentiates the differences between action (behavior) and outcome as the performance. However, Holman (2003) posits that working environment increases anxiety and depression among employees, which relatively affect their performance. Meanwhile, Al-Anzi (2009) claimed that there are two factors that influence employee performance that is (i) management driven factor containing organization planning in staff responsibilities, administrative support/tools, working patterns/hours, health and safety policies, training etc. (ii) factor that arises from workplace and premise design such as furniture, workspace, lighting, ventilation, noise level, premise hygiene and facilities that effect staff performance.

2.4 The influence of Physical environment towards employee performance

Environmental condition includes heat, humidity, noise, smell, light and dust (Kahya, 2007) facilities may influence staff psychological factor. Building design is important to set the mood of a person who enters the building (Attaran and Wargo, 1999). Certain auspicious colors such as red and yellow/gold may also be used (Hobson, 1994) in some culture, it is associated with prosperity, luck and religion (Singh, 2006). Appropriate ventilation removes impurities present in the air, creating a dust-free, more pleasant and healthier environment (Rooney, 1994). Furthermore, lighting surrounds the workplace apparently influences staff performances, where increased illumination changes from fluorescent tubes installed and windows placed for outside light might create discomfort (Govindaraju, et.al., 2000), as human eye cannot adjust quickly between two level lights (Rooney, 1994). In fact, the floor tiling, walls and blinds should be integrated into a comprehensive plan. Furniture should not only be designed and arranged for practical in use, but essentially comfortable and pleasing to the eyes.

In addition, The Springer Inc. (1986) stated insurance company exposed that staff performance improved by 10 to 15 % with the best ergonomic setting (Hameed and Amjad, 2009). Technology opens up opportunities for flexible work arrangements by enabling people to work away from a centralized workplace and with physically restricted workplace movement (Cooper, 2013). The cause of poor productivity, poor quality, accidents is due to human error, which can be directly attributed from deprived ergonomics (Cooper and Kleiner, 2001), similarly this applicable to office layout and cafeteria setting. Menus in the cafeteria feature healthy foods with high protein and fiber, low in salt and calories impulses good health and renewed performance. Basically, tensions arise, when there is no staff restroom or a sick bay to retreat and for quiet respite.

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2.5 The impact of ergonomic on staff performance

However, physical environment gives an impression over the working environment, as one enters the building it either boosts or decreases staff performance. Employees will accept their share of responsibility for health if the company shows its willingness to do the same (Schofield, 1998). Ergonomic seek to maximize safety, efficiency and comfort in the work environment with staff capabilities (Kogi and Kawakami, 1997). People react intensively towards stress, turnover, absenteeism, errors, accidents, dissatisfaction, poor performance and a significant loss of investment in human capital (Brooks, 1998). Lastly, look after people, and the rest will look after itself.

2.6 Theoretical Framework

Theoretical framework as in Figure 1, has been developed based on review of literature and Leblebici (2012) assumption that describes the physical component of the environment. This study is a correlation cross sectional study, which emphasizes the physical environment factors such as building aesthetic, facilities, furniture, ventilation, lighting and noise. The dependent variable in this study is employee performance.

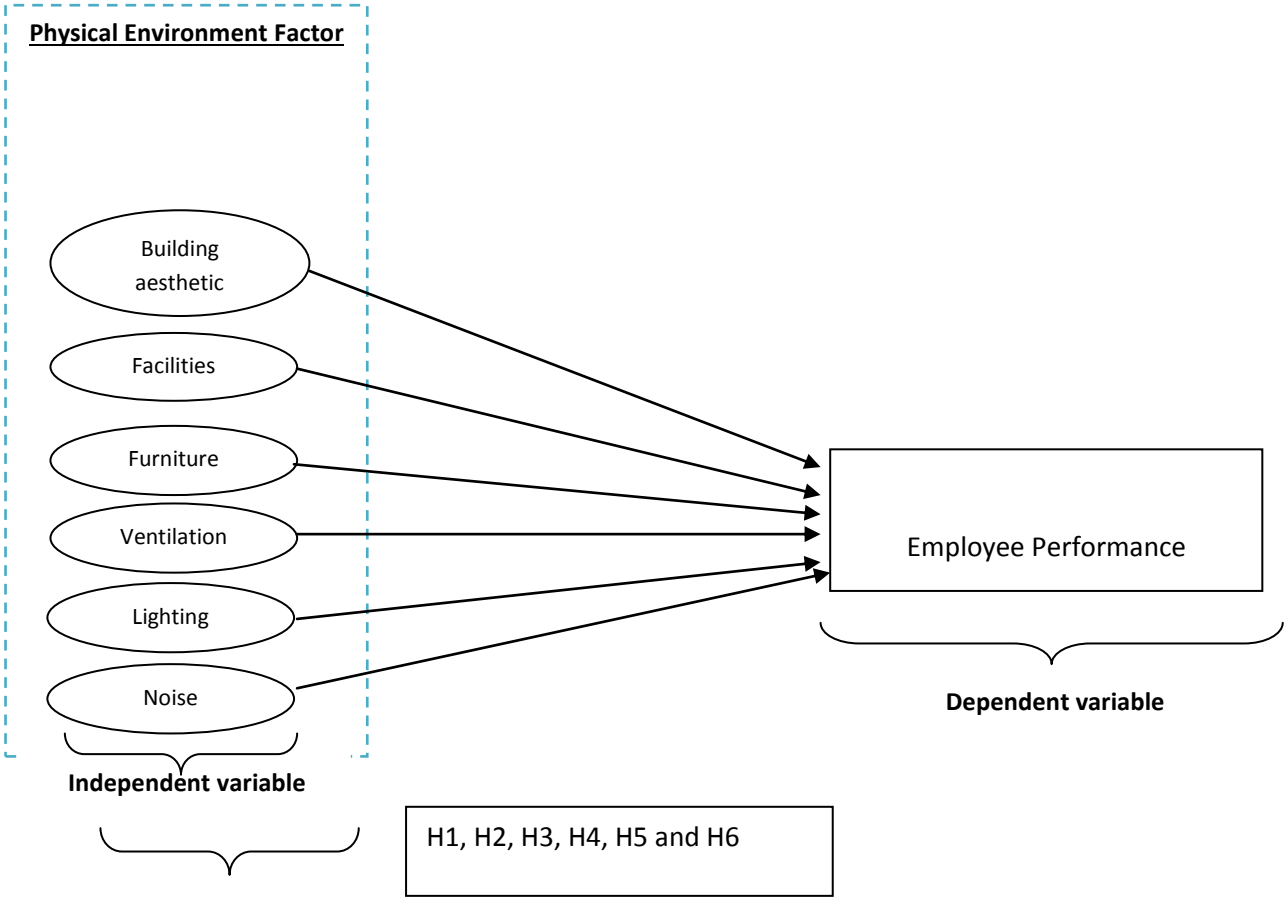

Figure 1: Theoretical Framework on the relationship between physical environment factor and employee performance

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Methodology is defined as "a way of doing anything". A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used Mallette and Duke (2004).

3.2 Research Design

This research is a correlation research that analyzes the relationship between the independent and dependent variable through quantitative approach. Using survey method the data were collected in the area of Subang Jaya, as this place hub fairly a number of private colleges and universities around.

3.3 Sampling and Population

A total of 250 samples aimed and only 183 completed and useable. Hair (2006) suggested that too small or large sample may have a negative impact on the statistical result. This study focuses on employee who is a full time academician working in various private colleges and universities. Kitchenham (2002) described simple random sampling as a method where every member of the target population may have an equal chance being selected.

3.4 Instrument and Measurement

Structured questionnaire were used as an instrument to gather the primary data. Questions attained from Dul and Weerdmeester (1993) checklist to reflect the practical situation in the field of ergonomics. Likert scales to measure variables which require the respondents to choose statement ranging from strongly agree to strongly disagree (Zikmund, 2003). Through the questionnaire the collected data were used to discover the respondents' feedback Cresswell (2012) and questionnaire should be organized by placing a similar question in the same category for respondent to easily follow and understand (Sounders, Lewis and Thornhill, 2009).

3.6 Data Collection

Apart from using the questionnaire, direct observation was carried out in selected Private Colleges and Universities on a random basis. Collected data will be analyzed to make sense and to reach certain finding that surrounds the study (Field, 2009). Some senior academicians were selected for the unstructured interview to gain in-depth information. Secondary data, such as journals, books, magazines and newspaper both online and offline have too contributed to the review of the literature.

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3.8 Data Analysis

SPSS (Statistical Packages of the Social Science) version 22 used to enter and analyze the data. The reliability indicates the consistency of the findings (Sounders, Lewis and Thornhill, 2009), the consistency scale for reliability is Cronbach Alpha coefficient normally range between 0 to 1, with no actual limit, hence 1.0 or greater shows, internal consistency of the item within the scale (Hair et.al., 1998 and Pallant, 2007). Besides, George and Mallery (2003) provided the following rule of thumb, Scale >.9, Excellent >.8, Good >.7, Acceptable >.6, Questionable >.5, Poor and <.5 Unacceptable.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

In this section, the findings are presented in the following analysis (1) response rate and demographic analysis (2) Reliability Test (3) Descriptive analysis -mean and standard deviations (4) Inferential analysis the Pearson Correlation, and (5) Multiple Regression (Summary Model).

4.1.1 Response rate and demographic analysis

A total of 250 questionnaires distributed and 183 finalized. The rate of response is 73%. The respondents are from various PHEI in the area of Subang Jaya. The respondents' demography includes gender, years of service and the faculties or department. As shown in Table 1, the gender distribution of female lecturers is more than the male with the percentage of 60.2% female and 39.8% male respondents. In terms of years of service, the highest is between 2 to 5 years with 34.9%, the second highest 22.4% with 6 to 10 years and barely a year of service 17.5% and 18.1% with 11to15 years and remaining of 7.1% with more than 16 years of service.

Based on the collected data respondents are from various faculties as follows, School of Business and Accountancy ranked the highest 25.6% with the total of 47 lecturers, School of Early Childhood with 16.9%, School of Health and Allied Science 7.1%. While, School of Engineering 12.6%, School of Information Technology with 14.2%, and the School of Culinary with 13.1% and finally the School of Arts & Design with the total 10.4%.

Variable	**Frequency**	**Percentage (%)**
Gender		
Male	73	39.8

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Female	110	60.2
Total	**183**	**100**
Years of Service		
<1 year	32	17.5
2-5 years	64	34.9
6-10 years	41	22.4
11-15 years	33	18.1
>16 years	13	7.10
Total	**183**	**100**
Faculties/ Schools		
School of Business and Accountancy	47	25.6
School of Early Childhood	31	16.9
School of Health and Allied Science	13	7.1
School of Engineering	23	12.6
School of Information Technology	26	14.2
School of Culinary	24	13.1
School of Arts & Design	19	10.4
Total	**183**	**100**

Table 1: Demographic of respondents

4.2 Analysis and Findings

4.2.1 Reliability Test

Below is the summarized Cronbach Alpha's Coefficient, using George and Mallery (2003) rule of thumb any items with a value of less than 0.5 would be unacceptable, where physical environment scale has demonstrated acceptable internal consistency reliability that with obtaining 0.8 "good" or 0.7 rather sufficiently reliable and 0.6 questionable. Moreover Nunnally (1978) reasoned that variable value approaching to 1.00 is reliable. Based on the summarized Cronbach alpha coefficient in Table 2, it shows most of the variable have exceeded the acceptable level respectively suggesting a good interim reliability.

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Variable	Number of items	Cronbach's Alpha
Physical Environment		
Building Aesthetics	5	0.751
Furniture arrangement	5	0.741
Facilities	5	0.807
Ventilation	5	0.803
Lighting	5	0.737
Noise	5	0.770
Employee Performance	5	0.753

Table 2: Cronbach Alpha coefficients summary

4.2.2 Descriptive Analysis

Table 3 tabulates the mean and standard deviation for physical environment factors. Facilities have the highest mean score 3.86 and followed by mean score 3.69 for building aesthetic as the second highest with close range with furniture arrangement 3.68 and sequenced by noise, ventilation and lighting. Facilities provided should be physically apt and contented and facilities are categorized as cafeteria serving healthy food, appropriate placement of the projector and PC's for teaching usage, sharing multifunctional printer and sick bay and staff lounge for staff to unwind. The average mean score is 3.51 where the physical environment concern in PHEI is on the moderate level.

Variable	**Mean**	**Avg. Mean**	**Std. deviation**
Building Aesthetics	3.69		0.631
Furniture arrangement	3.68		0.621
Facilities	3.86	**3.51**	0.441
Ventilation	3.23		0.668
Lighting	3.21		0.671
Noise	3.41		0.631

Table 3: Physical environment - Mean and Standard Deviation

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4.2.3 Inferential Analysis - Pearson Correlation

Table 4: Correlation between physical environment and employee performance

Items	Pearson Correlation (r)	Significance (2-tailed)
Building Aesthetics	.793	.023
Furniture arrangement	.623	.000
Facilities	-.981	.000
Ventilation	-.713	.000
Lighting	.272	.021
Noise	.306	.029

**Correlation is significant at the 0.05 level (2-tailed)

Pearson Correlation used to determine the relationship between the independent and dependent variable. Desired level significant is 0.05. Based on table 4, the result indicates positive correlation between building aesthetic and employee performance (r=0.793) significant at 0.05. Where else furniture arrangement (r=0.623) significant at 0.05. There is a negative correlation between facilities (r=-0.981) significant at 0.05. Similarly, ventilation (r=-0.713) significant at 0.05. Lightings (r=0.272) with significant at 0.05, and noise (r=0.306) significant at 0.05.

4.2.4 Multi regression result model

The R value measures the strength associated between independent variable and dependent variable. The R square value is 0.565 which suggest 56% of the variation in job performance that explained by the independent variable and the remaining 44 percent may be influenced by other variables that is not included in this study. Meanwhile, results of ANOVA presented in table 6. The F (6,177) =25.81 and p <0.05. This means that at least one of the 6 independent variables can be used to explain employee performance in the PHEI.

Table 5: Multi regression analysis on physical environment factors and employee performance

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.643(a)	.565	.395	.5432

a. Predictors: (Constant), building aesthetics, furniture arrangement, facilities, ventilation, lighting and noise

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Table 6: ANOVA of Physical environment and employee performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.712	6	7.103	25.807	.000(a)
	Residual	26.273	177	.275		
	Total	62.000	183			

a. Predictors: (Constant), building aesthetics, furniture arrangement, facilities, ventilation, lighting and noise

b. Dependent variable: Employee Performance

The below Table 7, depicts the correlation between the physical environment variables and employee performance. There is a significant relationship between facilities and employee performance (B=0.138, p<0.05), furniture arrangement and employee performance (B=0.052, p<0.05), building aesthetics (B=0.077, p<0.05), Ventilation and employee performance (B=0.076, p<0.05), Lighting (B=0.006, p>0.05) and noise and employee performance (B=0.133, p>0.05) are not significant. Hence, H1, H2, H3, H4 are accepted and H5 and H6 are rejected.

Table 7 : Coefficients * relationship physical environment variable and employee performance

Model	B	Std. Error	Beta	t	sig.
(constant)	0.671	0.317		2.130	0.032
Building Aesthetics	0.077	0.017	.013	0.141	0.009
Furniture arrangement	0.052	0.026	.235	1.997	0.006
Facilities	0.138	0.027	.334	2.961	0.000
Ventilation	0.076	0.018	.067	0.667	0.009
Lighting	0.006	0.025	.023	0.253	0.561
Noise	0.133	0.032	.506	4.510	0.616

*Dependent variable: Employee Performance

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Table 8 : Model summary for stepwise method

Model	R	RSquare	Adjusted R Square	Std.Error of the Estimate
1.	.612(a)	.410	.408	.55527
2	.672(b)	.461	.458	.54266

a.Predictors: (Constant), facilities

b.Predictors: (Constant), facilities, furniture arrangement, building aesthetics, ventilation

Table 8(Model Summary), shows the result of the multiple regression analysis between physical environment factors and employee performance using stepwise model. It indicates that the facilities are the most significant predictor towards employee performance which is contributes 41%. This is followed by the other factors such as furniture arrangement, building aesthetics and ventilation contributing 46% to employee performance. Hence, it can be concluded that the four physical environment factors such as facilities, furniture arrangement, building aesthetics and ventilation are the significant predictors of employee performance in PHEI.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This section will discuss the overall findings from the analyzed data.

5.2 Discussion

It clearly demonstrates that ergonomics problems lead to the deterioration of staff performance, which ultimately leads deficiencies job quality and commitment. The study reveals that the physical environment has a significant impact on employee performance. Moreover the female is relatively higher with 60.2% as compared to the male with 39.8, hence female employee tend to be more concern about workplace surrounding than the male employees. The mean score is 3.51 where the physical environment concern among academicians in PHEI is at a moderate level and confirms that physical environment deficiencies impacts negatively on academician performance in PHEI. Conducive work environment can be attained through a clear understanding on how the employee perceives about their own working environment (Rasila, 2012).

The mean and standard deviation score indicate facilities scored the highest 3.86, example sharing multifunctional printer and if the printer is embedded with photocopier and shared by more than 5 employees, it will cause chaotic at work. Cafeteria serving unhealthy food without much variety may cause employee to feel undernourished and

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weariness. The unavailability of projector or personal computer in classrooms, requiring academician to bring or carry the equipment's to the classrooms which may cause exhaustion and affects their performance.

Using Pearson Correlation used to determine the relationship between the independent and dependent variable. Desired level significant is 0.05. Based on table 4, the result indicates positive correlation between building aesthetic and employee performance (r=0. 793) significantly at 0.05, which means when the aesthetic setting is uncomfortable and not pleasing it will affect the employee performance. Where else furniture arrangement (r=0.623) is significant at 0.05, if the arrangement of furniture is it too congested and cramped may lead to poor performance. The negative correlation between facilities (r=-0.981), means poor facilitation decreases the employee performance. Similarly, ventilation (r=-0.713), means poor ventilation plan possibly will lead to escalation in uneasiness and restless among employee and which will lead to poor performances. The lighting (r=0.272), and noise (r=0.306), both factors are not strongly correlated with employee performance, but increase or decrease in the both factors may relate to employee performance. Basically, lighting is always a concern for the organization and it will be immediately resolved as it comes within the maintenance cost.

The Multi regression used to analysis the data collected and the physical environment factor such as building aesthetic, furniture arrangement, facilities, ventilation, lighting and noise was found to contribute a total of 56% of employee performance, where it suggest that variables other than physical environment factors could contribute towards employee performance. Based on the Model Summary, the four physical environment factors were found to be significant predictors towards employee performance contributing 46.1%. The paramount predictor towards the employee performance is facilities which contribute 41%. Therefore, environmental factors should be considered carefully, as this creates an impact upon employee commitment (Gyekye, 2006).

5.3 Conclusion

The success of an organization is assessed by the employee performance. Academician is also an employee in the education sector, they transfers knowledge, attitude and skills to their students. The role of academician is quiet crucial and their performance should be assessed and maintained periodically through various measures. Despite, it is vital to identify other factors that influences their work performance. Organization that have an adequate work environment may experience benefits such as increase in productivity, work quality, reduce employee turnover, absenteeism and increases morale. Practically, ergonomic concern in the physical environment setting should be attended, and organization should not hold on to the cowboy culture (Wilson, 2000), where anything will do and be. Consequently, bad ergonomics creates psychological stress, physical discomfort and poor work quality. In this situation the discomfort would be escalated to academician teaching performance.

5.6 Recommendation

In addition, Stewart (2010) claims that norms, values and belief have a strong effect on employee performance. It is possible through adopting ancient philosophies of Feng-Shui and Vastu Shasta in physical environment settings based on appropriateness that may help to rejuvenate a positive energy for a better workplace. Many Asians, particularly the Chinese believe a water fountain fronting the main entrances to the compound symbolize the continuous flow of wealth and good chi (energy) to the people who work in the building (Ling, Sim and Zainudin, 2007). So, culture alone doesn't help but with a concern towards workplace safety and comfort it does. On the other hand, effective Human Resource

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strategies with positive support and concern towards the safety and well being of the employee may help to achieve better employee performance. Adapted from the survey conducted in Finland, contact centre by McQuire and McLaren (2009). They concluded their findings and recommended a checklist as follows:

- Employee to be given more control over their working environment
- Careful design over functional related issue
- More aesthetics decrease stress
- Employee given the autonomy
- Minimize hot desk.
- Fit the purpose equipment.
- Ability to influence change

The above checklist can be used as a guidance for the organization to make their planning in identifying the obvious physical environment constraint and make the appropriate measure to ensure employee comfort and safety is not neglected. In short, either we pay now or we pay a lot more later, in ergonomic changes and possibly sacrifice the quality of life our workers (Fernandez, 1995). Therefore, without management commitment, staff comfort and safety can never be enforced (Dodge, 2012).

5.7 Limitations and Future Research

This study has some limitations, where the respondent in this study was merely 183 and carried out in the area of Subang covering only the PHEI's, where future studies could consider and conduct with large sample size and with more choices of institution. The ergonomic factors actually covers three major area physical ergonomics, cognitive ergonomics and organizational ergonomics, due to time factor, the research concentrates only on physical ergonomic factor. Future research, could further investigate on the cognitive ergonomics and organizational ergonomics to gain an insight on employee performance.

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