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### paper text:

**WORKING SHIFT DIFFERENCES AND THEIR EFFECTS ON EMPLOYEES' JOB FATIGUE LEVELS: AN EMPIRICAL EVIDENCE FROM HOTEL INDUSTRY IN SURABAYA** Priscillia Alvionita. Ch Frederica Angelina. T Serli

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**Bisnis pada sektor jasa memiliki keunikan tersendiri dalam pengelolaan karyawannya. Pembagian jam kerja yang sesuai menentukan tingkat kualitas dari bisnis tersebut. Studi ini meneliti pengaruh perbedaan shift kerja terhadap tingkat kelelahan karyawan pada industri perhotelan di Surabaya. Metode penelitian yang digunakan adalah ANOVA. Hasil analisis memperlihatkan bahwa responden yang bekerja pada shift pagi dan siang menunjukkan tingkat kelelahan kerja yang berbeda secara signifikan dibandingkan dengan mereka yang bekerja pada shift malam, khususnya dalam hal kelelahan emosional, kelelahan umum dan kelelahan keterampilan. Kata Kunci: shift kerja, kelelahan kerja, hotel, Surabaya.**

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1. INTRODUCTION Hotel business operates for 24 hours seven days throughout the year, therefore, working in shift system is inevitable. Employees play a crucial role in delivering excellent service to the guests. Working shift system is defined as the system that allocates human resource in an organisation to work together into groups of working hours (Akerstedt, 1990). In the hotel business operation, it is common to divide working system into three different shifts that are morning, afternoon, and night shifts. Shift work system brings various impacts on employees. Previous studies have revealed that health and safety issues arose due to shift work system. Wijaya & Suparmiati (2006) in Revalicha & Sami'an (2013) state that working shift has led to employee' sleep disorder, physical and psychological disorder (fatigue), social and also family life disturbance. In addition, Widiastuti's study (2013) at a 24-hours manufacturing company found that changes of working shift had influences on employees' level of fatigue. Her research revealed that the rate of employees' job fatigue on morning shift was 23,2%, afternoon shift was 18,8%, and night shift was 26,9%. A research by Hestya (2012) conducted at Dr. Sayidiman General Hospital Magetan Central Java also found that nurses who worked at shift system had a chance of experiencing fatigue 1,125 times more than nurses who did not worked at shift system. For

**nurses who worked in shifts, this research revealed that the level of**

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job fatigue on the morning shift (36,36%) was bigger than on night shift (27,28%). It was because although morning shift dan shorter working hours, but the number of activities performed were greater than night shift. The foregoing discussions have shown that there are differences of the research results found on how working shift brings influence on employee's fatigue. In her study, Widiastuti (2013) explained that the highest level of job fatigue was experienced by the night shift employees, while Hestya (2012) found that morning shift employees had the highest level of job fatigue. Given the facts that these two research were conducted in 24-hours service industry, it is therefore interesting to investigate whether the same phenomenon, would be found in the hotel industry which applying shift work system too. Further, literature has indicated that the number of study that specifically examined the level of employees job fatigue who

work in shifts at hotel industry in Indonesia is still limited. This research aimed to examine the significance of different working shifts in affecting job fatigue levels of the hotel operational employees. It also explored various types of job fatigue experienced by hotel employees at 3 different shifts. For the purpose of this study, the paper will be organised as follows. First, the concepts of shift work and employee's job fatigue will be elaborated from the literature. Second, the method of how this study was approached is described. Third, the findings will be illustrated and discussed accordingly. The last section of the paper will contain the conclusion of the study and its implications for management and

**further research. 2. LITERATURE REVIEW AND HYPOTHESES  
DEVELOPMENT 2.1.**

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Shift Work Muchinsky (1999) defines shift work as the division of working hours based on a particular time. Shift system is a working arrangement system that gives a chance to utilize the whole time available to operate the job. Work shift system is used as a way to fulfill the increasing demands of goods production. Kuswadi (1997) divides shift work in general into morning shift, afternoon shift, and night shift where each employee will experience the same eight hours of working time for 24 hours.

1. Morning Shift The morning shift starts from 6 AM until 2 PM. But there are some company that operates from 7 AM until 3 PM. Working on the morning shift brings positive impacts on employees because it is considered to give more free time to spend with friends and family.
2. Afternoon Shift The Afternoon shift starts from 2 PM until 10 PM. For company which morning shift starts from 7 AM, the afternoon shift will start at 3 PM until 11 PM. Employees who works in the afternoon shift will not have a good social life. Meanwhile, going home on night will put employees' safety in danger, especially if the hotel is located in big cities that has a great number of criminality.
3. Night Shift For companies which afternoon shift ends at 10 PM, the night shift will start from 10 PM until 6 AM, while company which afternoon shift ends at 11 PM, the night shift starts from 11 PM until 7 AM. Employees who work on night shift will have problems with their social and family life, sleeping disorder, and limited free time.

Coleman (1995) state that there are three different impact that employee can experience when working in shift system, they are:

1. Job Performance Job performance is the achievement of result in performing a specific task. The physical condition of employees can really affect their job performance. It is very impossible to perform the task well with exhausted body condition. Adjustment of the body towards the change of work schedule often make the human body difficult to adapt, therefore sometimes it brings impact on excessive sleepiness. Excessive sleepiness will lead employees to bad performance and job fatigue. Job fatigue itself has significant impact on job performance, such as job fatigue can lead to operational error, working accident, and the decreasing of production quality.
2. Personal Health Working in shifts has negative impact on employees' health which is the inability to get the right amount of sleep and excessive sleepiness during working hours. Other negative impacts of working in shifts are physical and mental health disturbance, such as depression, anxiety, sleep disorder, weakening of memory, high blood pressure, heart disease, and also obesity.
3. Social and Domestic Factors The division of shift work can cause an employee with family or female employee to face a difficulty in dividing their time to socialize, communicate with other family member and doing religious activity.

### 2.2. Job Fatigue Concept

Wignjosoebroto (2000) states that job fatigue is the decreasing of efficiency, job performance, and the decreasing of physical endurance to perform an activity or a task. Similar to this, Schuler (1999) argues that the impact of job fatigue is that employees who experience job fatigue would tend to have poorer performance compared to those who are full spirited; tend to worsen the relationship amongst employees. Additionally, job fatigue can encourage people to do an action that can cause the declining of the quality of ones household. Schultz & Schultz (1998) divide the effect of job fatigue into two, that is, the psychological

fatigue which is similar to boredom; and physiological fatigue which caused by the derivation of performance that caused errors, accidents, and employees absence. By adapting fatigue classification theories from Muchinsky (1999) and Grandjean (1988), job fatigue in this study was categorised into two main groups where each group has different kinds of job fatigue. First, the psychological fatigue that consists of mental fatigue and emotional fatigue. Second, the physiological fatigue that contains muscular fatigue, general fatigue and skills fatigue.

1. Mental Fatigue Muchinsky (1999) states that mental fatigue is linked with boredom that is caused by activities in work that are monotonous. This type of fatigue can make a person loses control over their minds and feelings and can make a person less friendly to other people.
2. Emotional Fatigue Emotional fatigue occurs as a result of acute stress and normally characterized by the decreasing of emotional response. Usually companies can handle this type of fatigue by giving counselling sessions for their employees so that their emotional fatigue can be reduced and their job performance can increase again.
3. Muscular Fatigue According to Grandjean (1988), muscular fatigue is a symptom of acute pain in muscle parts that are caused by the excessive use of muscles. Muscular fatigue is characterized by the declining of power and slowing of movement, that caused a person's performance to dropped.
4. General Fatigue It is a sign of fatigue that are characterized with laziness, unwillingness to perform a task and also drowsiness (Grandjean, 1988).
5. Skills Fatigue As defined by Muchinsky (1999), skills fatigue is linked with the declining of attention towards specific tasks, such as airline pilot task or air traffic controllers' task. In this type of fatigue, accuracy standard and job performance decrease progressively.

3. RESEARCH METHOD This research applied an explanative comparative method with quantitative approach. Explanation format is aimed to explain the differences of each variable (Bungin, 2006, p. 38). Meanwhile, comparative research has character to compare (Sugiyono, 2008). This research was a quantitative research because the data used to test the hypothesis were a calculated numeric data. The population of this research was all of the operational hotel employees at hotels in Surabaya. By using purposive sampling, the sample of this research was 120 operational employees at hotels in Surabaya who worked at front office, housekeeping, and food and beverage (service, kitchen, and pastry) department on the morning, afternoon, and night shift with one year minimum working period. Singarimbun & Effendi (1995) urge that to provide a guide to conduct how variables being measured it is crucial to establish the operational definition of the examined variables. Below is the operational definition applied to each variable in this study:

- a. Variable: Shift Work In this research, shift work was defined as a time period that required employees to be at work place regularly, where was done in group in 24 hours. Shift work was divided into three namely: morning shift (6 am-3 pm), afternoon shift (2 pm - 11 pm), and night shift (10 pm - 7 am).
- b. Variable: Job Fatigue The operational definition of job fatigue is the decrease of body condition that will lead into decrease body endurance, efficiency, and working productivity. Literature has shown that there are two dimensions of job fatigue: 1) psychological job fatigue and 2) physiological job fatigue.

Job Fatigue: Psychological fatigue Psychological fatigue was operationally defined as a fatigue which is similar to boredom. It can lead to poor concentration, poor think clearly, and working inefficiently. Psychological fatigue has two sub-variables, they are mental fatigue and emotional fatigue.

Job Fatigue: Psychological fatigue – Mental Fatigue The operational variable of mental fatigue is fatigue that concerns with boredom because of monotonous activities. Mental fatigue has five empirical indicators namely:

1. Respondent feels has cynical attitude towards guests during work.
2. Respondent feels has cynical attitude towards co-workers during work.
3. Respondent feels unsatisfied with their work result.
4. Respondent feels bored with his/her monotonous activity.
5. Respondent often feels incompetent to perform his/her task during work.

Job Fatigue: Psychological fatigue – Emotional Fatigue It is operationally defined as a fatigue as a result of severe stress and generally has a decrease emotional symptoms. Emotional fatigue has six empirical indicators, they are:

1. Respondent gives up easily when having problem with their work.
2. Respondent easily offended and angry because of co-workers' word and action.
3. Respondent feels suppressed of

work's demand. 4. Respondent often loses his/ her motivation during work. 5. Respondent often uncaring towards guests. 6. Respondent often uncaring towards their colleague. Job Fatigue: Physiological fatigue Physiological fatigue is operationally defined as a fatigue that caused by the excessive use of muscle, beside that strenuous activity that happens for a period of time can cause physiological fatigue.

Physiological fatigue have three sub-variables that are: Job Fatigue: Physiological fatigue – Muscular Fatigue The operational definition of muscular fatigue is a type of fatigue that linked with biochemical change of human body and accute pain on muscles. Five empirical indicators of muscular fatigue are: 1. Respondent feels stiff at shoulders during work. 2. Respondent feels pain in their waist during work. 3. Respondent feels tired in their feet so that they always feel like sitting during work. 4. Respondent feels tired in their whole body after work. 5. Respondent experiences trembling in their hands while working.

Job Fatigue: Physiological fatigue – General Fatigue It is operationally defined as signs of fatigue characterised by laziness, unwillingness to perform a task and also drowsiness. Six empirical indicators of general fatigue are: 1. Respondent experienced sleep disorder after work. 2. Respondent experienced eating disorder 3. Respondent always feel sleepy while working 4. Respondent experienced exhaustion in their eyes during work 5. Respondent often experienced strong twitch on their eyelids during work. 6. Respondent often yawn during work.

Job Fatigue: Physiological fatigue – Skill Fatigue The operational definision of skill fatigue is the type of fatigue that linked with the declining of attention towards specific tasks that caused accuracy standard and job performance to decrease progressively. Four empirical indicators of skills fatigue are: 1. Respondent becomes less dexterous after few hours of working. 2. Respondent finds it hard to focus after a few hours of working. 3. Respondent becomes forgetful when having a lot of task to do. 4. Respondent's movement becomes stiff after a few hours of working. For the purpose of this study, descriptive statistic analysis was applied to provide the general overview about the demographic profiles of the participants.

Following this, One-way Analysis of Variances (One-way ANOVA) technique was employed as a comparative statistic analysis tool identify the characteristics or performance between observed groups.

4. FINDINGS AND DISCUSSIONS 4.1. Profile of Respondents In total, there were 120 hotel employees who participated in this study. The majority of respondents who worked in the morning shift were from the group of age of 26-33 years old, single, and work in the housekeeping department with working experiences from 1-3 years. For respondents that worked at the afternoon shift, the majority of respondents were in the group of age of 18-25 years old, single, and have worked at housekeeping department for a period of time of 1-3 years. While the majority of respondents on the night shift was in the group of age of 26-33 years old, single, and worked in the front office and restaurant (service) and have been working in the industry for between 1-3 years.

4.2. Decriptive of Employees' Job Fatigue Level: Morning, Afternoon, and Night Shifts

The following discussion contain the result of descriptive statistical analysis of the job fatigue levels from respondents working at each shift at hotels as portrayed in Table 1. Table 1. Psychological Fatigue (Mental Fatigue) No Indicator Morning shift Afternoon Shift Night Shift Mean SD Mean SD Mean SD 1 Respondent feels bored with his/her monotonous activity. 2.28 0.93 2 Respondent feels unsatisfied with their work result 2.23 1.03 3 Respondent often feels incompetent to perform his/her 2.10 0.78 task during work 4

Respondent feels has cynical attitude towards guests 1.58 0.50 during work 5 Respondent feels has cynical attitude towards co-workers 1.72 0.75 during work 2.05 0.90 1.95 0.71 1.78 0.62 1.58 1.65 0.68 0.66 2.82

1.24 2.55 1.01 2.43 1.01 2.07 1.00 2.03 0.39 Table 1 shows that night shift was the shift with the highest level of mental fatigue. It is shown by the mean values of the indicators from the night shift that were always higher than those in the morning and also afternoon shift. On the contrary, the afternoon shift were the shift with the lowest in the level of mental fatigue, shown by the mean values of number 2, 4, 5 indicators (from five indicators) that were lower than other shifts. Table 2. Psychological Fatigue (Emotional Fatigue) No Indicator Morning Shift Afternoon Shift Night Shift Mean SD Mean SD Mean SD 1 Respondent gives up easily when having problem with 1.72 0.53 their work 2 Respondent easily offended and angry because of

co- 2.07 0.89 workers' word and action 3 Respondent feels suppressed of work's demand 2.28 0.96 4 Respondent often uncaring towards guests 1.75 0.63 5 Respondent often uncaring towards their colleague 1.85 0.66 6 Respondent often loses his/ her motivation during work 1.90 0.74 1.95 0.75 2.23 2.25 1.75 1.90 1.95 1.01 0.95 0.84 0.84 0.88 2.32 1.02 2.25 0.93 2.50 1.18 2.33 1.14 2.15 1.05 2.33 1.33 It can be seen from Table 2 that night shift was the shift with the highest level of emotional fatigue. It is shown by the mean values of the indicators from the night shift that were always higher than those in the morning and also afternoon shift. On the opposite, from the six indicators shown above, the morning shift has four indicators (number 1, 2, 5, 6) with mean values that were lower than the afternoon and night shift. So it can be said that the morning shift is the shift with the lowest level of emotional fatigue.

Table 3. Physiological Fatigue (Muscular Fatigue)

No Indicator	Morning Shift	Afternoon Shift	Night Shift	Mean	SD	Mean	SD	Mean	SD
1 Respondent feels stiff at shoulders during work	2.73	0.85	2	2.68	0.92	3 Respondent feels pain in their waist during work	2.58	0.93	4 Respondent feels tired in their feet so that they always feel like sitting during work
2 Respondent feels tired in their whole body after work.	2.85	1.03	2.63	1.06	2.60	0.93	2.73	1.06	2.68
3 Respondent feels tired in their whole body after work.	3.10	1.08	2.90	1.06	3.02	1.21	3.28	1.13	

Similar to previous tables, Table 3 also illustrates that night shift was the shift with the highest level of muscular fatigue. It is shown by the mean values of the indicators from the night shift that were always higher than those

**in the morning and also afternoon shift. In contrast, the afternoon shift**

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were the shift with the lowest in the level of muscular fatigue, shown by the mean values of indicators 1, 2, 4 were lower than other shifts.

Table 4. Physiological Fatigue (General Fatigue)

No Indicator	Morning shift	Afternoon shift	Night shift	Mean	SD	Mean	SD	Mean	SD
1 Respondent experienced sleep disorder after work	2.30	0.82	2	2.40	0.93	3 Respondent always feel sleepy while working	2.40	0.98	4 Respondent experienced exhaustion in their eyes during work
2 Respondent experienced eating disorder	2.40	0.98	4	2.45	0.93	5 Respondent often experienced strong twitch on their eyelids during work	2.00	0.91	6 Respondent often yawns during work
3 Respondent always feel sleepy while working	2.45	0.90	2.68	1.10	2.63	1.03	2.45	0.96	2.33
4 Respondent experienced exhaustion in their eyes during work	2.33	0.94	2.18	2.53	1.04	0.96	3.37	1.28	3.15
5 Respondent often experienced strong twitch on their eyelids during work	3.32	1.02	2.77	1.21	3.45	1.04			

It is shown in Table 4 that night shift was the shift with the highest level in general fatigue. It is shown by the mean values of the indicators from the night shift that were always higher than those in the morning and also afternoon shift. On the opposite, from the six indicators shown above, the morning shift has five indicators (number 1, 2, 3, 5, 6) with mean values that were lower than the afternoon and night shift. So it can be said that the morning shift is the shift with the lowest level of general fatigue.

Table 5. Physiological Fatigue (Skill Fatigue)

No Indicator	Morning shift	Afternoon shift	Night shift	Mean	SD	Mean	SD	Mean	SD
1 Respondent becomes less dexterous after few hours of working	2.10	0.71	2	2.23	0.77	3 Respondent becomes forgetful when having a lot of task to do	2.33	0.86	4 Respondent's movement becomes stiff after a few hours of working
2 Respondent finds it hard to focus after a few hours of working	2.35	0.89	2.33	2.30	2.33	0.75	0.85	0.86	3.12
3 Respondent becomes forgetful when having a lot of task to do	2.33	0.86	2.33	2.30	2.33	0.75	0.85	0.86	3.12
4 Respondent's movement becomes stiff after a few hours of working	2.35	0.89	2.33	2.30	2.33	0.75	0.85	0.86	3.12

Table 5 shows that night shift was the shift with the highest level of skill fatigue. It is shown by the mean values of the indicators from the night shift that were always higher than those in the morning and also afternoon shift. On the contrary, the morning shift were the shift with the lowest in the level of skill fatigue, shown by the mean values of indicators number 1, 2, 4 were lower than other shifts. To find out more about the different level of job fatigue in each shift, significance test for each shift was completed and portrayed in Table 6 below.

Table 6. One-Way ANOVA

Mean	Std Deviation	F Value	Sig. Value	Hypotheses	Differences
Mental Fatigue Morning Shift	1.9800	1.8000	2.3800	2.0533	0.55985
Afternoon Shift	1.9800	1.8000	2.3800	2.0533	0.55985
Night Shift	1.9800	1.8000	2.3800	2.0533	0.55985
Total	1.9800	1.8000	2.3800	2.0533	0.55985
Emotional Fatigue Morning Shift	1.9375	2.0042	2.3125	2.0847	0.56575
Afternoon Shift	1.9375	2.0042	2.3125	2.0847	0.56575
Night Shift	1.9375	2.0042	2.3125	2.0847	0.56575
Total	1.9375	2.0042	2.3125	2.0847	0.56575

H1 accepted Significant Emotional Fatigue Morning Shift Afternoon Shift Night Shift Total 1.9375 2.0042 2.3125 2.0847 0.56575 0.70659 0.92926 0.76055 2.854 0.062 H0

accepted Insignificant Muscular Fatigue Morning Shift Afternoon Shift Night Shift Total 2.7063 2.6563 3.0750 2.8125 0.80640 0.76730 0.93233 0.85212 2.977 0.055 H0 accepted Insignificant General Fatigue Morning Shift Afternoon Shift Night Shift Total 2.3333 2.4625 3.2125 2.6694 0.67621 0.77578 0.75767 0.82869 16.558 0.000 H1 accepted Significant Skill Fatigue Morning Shift Afternoon Shift Night Shift Total 2.2250 2.3250 3.0063 2.5188 0.60922 0.67273 0.85576 0.79465 13.939 0.000 H1 accepted Significant As illustrated in Table 6, mental fatigue, general fatigue, and skill fatigue show significant differences in their level of job fatigue, whilst the emotional fatigue and muscular fatigue show no significant differences in their level of job fatigue. Mental fatigue, general fatigue, and skill fatigue all had F value that were bigger than the F-table value (3.07) that worth 8.926, 16.558, and 13.939 respectively. This has led to the decision that H1 was accepted meaning that different work shift has significant effect on the employees' job fatigue level related to mental, general, and skill fatigue. On the contrary, emotional fatigue and muscular fatigue shown in Table 6 did not have significant differences. Both emotional fatigue and muscular fatigue had F value lower than the F-table value that worth 2.854 and 2.977, that caused H0 to be accepted (there is no significant difference found). In other words, different work shift has no significant effect on the employees' job fatigue level related to emotional and muscular fatigue. The consecutive step in ANOVA is to conduct the Post-Hoc Test to find out in more detail about which work shift (either morning, afternoon, or night) that significantly different in three types of job fatigue. For the psychological fatigue that had heterogeneous variances, Games-Howell method in the Post-Hoc Test was selected, while for the physiological fatigue that has homogeneous variables, Tukey method in the Post-Hoc Test is chosen. Table 7 reveals the result of the Post-Hoc analysis. Table 7. Job Fatigue Level Post-Hoc Test Analysis Dependent Variable (I) Work Shift Mean Significant Value (J) Work Shift Difference (I-J) Tukey Games- Howell There are / there are no significant differences Mental Fatigue General Fatigue Skill Fatigue

**Morning Afternoon Night Morning Afternoon Night Morning Afternoon** 2  
**Night Afternoon** .18000 .297 **Night** -.40000\* .028 **Morning** -.18000 .297  
**Night** -.58000\* .001 **Morning** .40000\* .028 **Afternoon**

.58000\* .001 Afternoon -.12917 .714 Night -.87917\* .000 Morning .12917 .714 Night -.75000\* .000 Morning .87917\* .000 Afternoon .75000\* .000 Afternoon -.10000 .809 Night -.78125\* .000 Morning .10000 .809 Night -.68125\* .000 Morning .78125\* .000 Afternoon .68125\* .000 No significant differences Significantly different No significant differences Significantly different Significantly different Significantly different

**No significant differences Significantly different No significant differences** 8

Significantly different Significantly different Significantly different

**No significant differences Significantly different No significant differences** 8

Significantly different Significantly different Significantly different \*. The

**mean difference is significant at the 0.05 level. Table 7** describes **the** 3

## Post-Hoc

Test analysis conducted with two different methods, that are Tukey and Games-Howell. After conducting both Post-Hoc Test, the values obtained were the mean differences and the significant value from the comparison of three work shifts in five sub-variables. The starred number in the mean differences indicates that there are significant differences between both shifts. For the significant value, if the significant value from the comparison is bigger than 0.05, it means that there are no significant difference from both variables, while in contrast, the significant value that scores lower than 0.05 means

that there are significant difference in the level of

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job fatigue from two variables. According to the result of Post-Hoc Test from table 7, there were no significant difference between the morning shift and afternoon shift on the level of fatigue in mental, general, and skill fatigue. This can be seen from their significant values that are higher than 0.05, which means that there are no significant difference. On the other hand, between the morning and night shift and also between the afternoon and night shifts, there are a significant differences marked with their significant values that are lower than 0.05. As a result, it can be said that the level of job fatigue experienced by the participants who worked at night shift is different from those working at morning and afternoon shifts.

#### 4.3. Discussions

The foregoing discussions have shown that participants who worked at night shift had the highest level of job fatigue (night shift had the highest mean value compared with morning and afternoon shift). This result is aligned with previous study by Widiastuti (2013) whereby her result found that night shift also had the highest job fatigue level. By contrast, in this research, morning shift was shift work with the lowest level of job fatigue. This result had opposite result with Widiastuti's (2013) which the result was morning shift had the second highest level of job fatigue, and also had an opposite result from Hestya's study (2012) that was conducted at the hospital context where the result was morning shift had the highest level of job fatigue. It can be explained that the reason why Hestya's study found that nurses who work at the morning shift had the higher job fatigue level than those on the night shift was that the work load that nurses need to carry at morning shift. Whereas according to Widiastuti (2013) who had conducted a research at a manufacturing company with shift work employees as the subject, morning shift had the second highest level of job fatigue after night shift, due to the work load at morning shift was greater than the other shift's, and also morning shift had unsure working hours which employees sometimes could work more than eight hours. In addition, the result of One-Way ANOVA revealed that there was a significant difference of job fatigue level on three types of job fatigue: 1). mental psychological fatigue; 2) general fatigue; and 3) skill fatigue. This result was not fully equal to early hypothesis formulated in this study, which had assumption that there was a significant difference of job fatigue level at all types of job fatigue. It was because the other researches only measured the level of job fatigue in total, they did not breakdown it for each sub-variable. This result could be a fascinating and usefull information for company management to think some strategies to manage its human resources in a better way more specifically relevant to job fatigue and shift work. The post-hoc test analysis shows that employees' mental fatigue, general fatigue and skill fatigue at night shift had significant difference compared to those who worked at morning and afternoon shifts. However, this result is a little bit contradicted with the facts occur in the hospitality industry. During night shift at the hotel, the work load is usually less than those which are at morning and afternoon shifts. Hotel operations such as check-in/check-out activities, breakfast activities, business function (meetings, seminars, conferences) as well as guest interactions with hotel employees are also happening at morning



or afternoon shift. However, working on night shift makes circadian rhythm distracted. Human body, which has adapted to work on morning and afternoon, and take a rest on night is forced to adapt more when working on night shift. This adaptation will make body feels more tired. During morning and afternoon times, light and noise are considered as apparent evidence of noise often refrain employees to have rest at these times. As a result, night shift employees would feel more tired.

5. CONCLUSION As shown in Tables 1-5, it can be known that night shift had the highest level of job fatigue where each indicator of night shift always had the highest mean value compared to the other two shifts. Out of 25 job fatigue indicators examined, participants who worked at afternoon shift had higher mean value of job fatigue than those who worked at morning shift (13 indicators versus 10 indicators, respectively). It is therefore can be stated that job fatigue level for the participants who worked at morning was the lowest one. The result of One-Way ANOVA shown that different work shift affects significantly on three types of job fatigue namely: mental psychological fatigue, general and skill physiological fatigue. On the other hand, different work shift has no significant effect on employees' emotional and muscular job fatigue level. Further, it can be known that night shift had the highest of job fatigue level on five sub-variables, and morning shift had the lowest of job fatigue level of three sub-variables. Overall, although it was proven which shift work had the highest and the lowest of job fatigue, it turned out that only three sub-variables that significantly different, they were mental psychological fatigue, general and skill physiological fatigue. The results of this research offers several implications for the management of the hotel. First, it is important for the hotel to provide safety and comfortable working environment. To do this, the management could establish work rotation program periodically between the same or different departments to avoid the boredom. employees, conduct holiday and recreation program for its employees periodically. Second, hotels could give adequate breaking time with supporting facilities and resting place for its employees, such as providing sofa or bed to lie down, providing television as recreation, and keeping the cantin area always clean. In addition, hotel could also give assistance in form of motivation, such as giving reward toward employees who succeed achieving hotel's target. This study only measured the level of operational employee's job fatigue who work at different shifts of the hotel without looking at more detail the causes of job fatigue. Therefore, further research could be done to seek out the cause why night shift had the highest level of job fatigue. Different method such as qualitative approach could be applied to allow deeper information obtained. Meanwhile, further research could also include other variables such as age, sex, working period, etc, as control variables since these variables might have influence on employees' job fatigue level.

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