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Examining Happiness: Towards Better Understanding of Performance Improvement

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Abstract

It is well accepted that happiness can provide immense motivation for someone to achieve higher performance. Generating happiness in the workplace is one way of empowerment to induce productivity. This empowerment has been widely studied and explored in many industry sectors but only limited studies have been done for construction industry. This research tries to enrich this topic by conducting study to engineers of construction firms. In the study, in addition to happiness, psychological well-being and stress were included to cover better understanding of the subject. For the performance side, two perspectives were considered: a self-performance assessment by the engineers and a performance assessment by engineer's supervisor (project manager). A total of 114 engineers and 21 project managers from 21 construction sites in Sri Lanka were surveyed for the purpose of this research. The result revealed that a significant positive strong relationship between psychological well-being and performance can be identified. The same also applied to happiness and performance, only at a lesser degree. As expected, stress had a negative association with performance; however, the degree was only weak and not statistically significant. The study also found that age, marital status, salary, and construction experience have similar and different roles in defining the level of happiness, psychological well-being, and stress at work. For example, single engineers are significantly happier and perform better in their work than married engineers. Meanwhile, years of experience are significantly associated with performance and stress but not with happiness and psychological well-being. Therefore, it is important to understand how happiness, psychological well-being, and stress levels are differently associated with the socio-economic and experience of engineers. Each factor may relate uniquely in defining the happiness, psychological well-being, and stress at work as different level of engineers has different concerns, and needs different motivational approach to improve their performance.

Keywords: happiness, empowerment, engineer, motivation, performance.

1. Introduction

Happiness is a vast topic which has been a foundation for many researches [1,2,3,4]. There are many definitions of happiness, however, the overall idea of happiness is how much you like what you have or do [1,2,5,6]. Therefore, even if two persons have everything equal, the happiness level may be different depending on how much each individual values what s/he has. It is acceptable to say that everyone who is alive pursues happiness. People would do a lot of things for happiness, which highlight the important of happiness as an immense motivation to higher performance. An individual would motivate to perform well to keep up the happiness s/he already has or to achieve more happiness.

When discussing happiness and performance, it is important to understand their association with stress and psychological well-being. Measuring psychological well-being and stress provide considerable indication about performance [5,7]. Meanwhile, when someone responds to emotional or mental pressure, stress starts to appear [8], which indicate the link between stress and happiness.

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In a construction project, the increase or decrease in the project expenditure depends on a set of factors, such as construction materials, equipment, construction techniques, labor force and management skills [9]. Construction engineers, who directly manage most, if not all, of these factors, have important roles in defining the cost of the project. Thus, having productive engineers will minimize the construction cost and also will increase the quality of the project. The question is: how to make engineers in construction industry perform well?

Even though there are many research studies on the relationship between happiness and performance of employees, most studies focus on industries other than construction. Therefore, it is interesting to explore this relationship for construction engineers as construction projects have unique nature than other industries, where each project has different location and may be far from the previous one, which demand mobility or temporary residence of engineers away from their homes to do their job. Construction engineers may need to work in a different environment from the previous assignment and deal with new members of the team in executing the work. These add challenges in their work and life. With the above uniqueness of construction industry, this study tries to enrich the literature by examining the factors that define happiness for construction engineers so proper empowerment approaches can be considered towards improving their performance at work.

2. Literature on happiness, performance, stress and psychological well-being

When the desire is to get higher performance, the first thing that comes up is money. There is more motivation power in money and giving money as a reward will increase workers performance individually [10]. But, is money the only thing which has motivation power? In a survey by Michael [2], half of the workers would like to change their job even if their salary is lower than what they have because it satisfies their needs. He also found that the top two reasons that a worker leaves his job are manager and dissatisfaction with the work content. This indicates that there are other things besides money satisfy worker's needs.

Findings from research studies have shown evidences to support that happiness has considerable relationship with performance [1,2,5,7]. An effect on worker's productivity, creativity, commitment and collegiality can be drawn from happiness [11]. Furthermore, when there is a good mood, which is a proxy for happiness, people will have more positive attitude towards each other's, provide greater helpfulness and generosity, and generate better and more original problem solving [2]. Happiness has specific domains, even though some have been described differently. The factors influencing happiness may vary depending on the scope of the study. Measurement of happiness for a whole country, such as the research on gross national happiness (GNH) index [12], where the measurement has nine domains with 33 indicators, may not be an efficient approach for measuring happiness of employee in certain industry or in a company.

When it comes to psychological well-being, comfort, pleasure, enthusiasm, vigor, and placidity can be used as indicators to measure the psychological well-being [5]. Research evidence has shown that a positive spirit of camaraderie improves comfort, pleasure and placidity of employees [5], which indicates that support in dealing with work difficulties and challenges, motivation from the group and good social relationship are important [13]. In the effort of increasing psychological well-being of enthusiasm and vigor, better opportunities for personal development and learning can be provided at work to empower employees and make them feel that their jobs are rewarding and motivating.

Someone is in stress when s/he is not capable to manage his/her job pressure [14]. Daniels and Guppy [15] found that employees with low level of job satisfaction and psychological well-being are mostly likely to be stressful at work. One study found that the absence of trust and creditability of the supervisor and the lack of balance between work and family seriously contribute to stress at work [5]. When supervisors do not provide enough support to employees by giving proper guidance and direction at work, this generates uncertainty in executing the work and increase stress [15]. Stress may not have direct influence to the performance, however, with lower psychological well-being due to stress; performance can be expected to decrease [5].

3. Methodology

A questionnaire survey was developed to measure the levels of happiness, psychological well-being, stress, and performance using five-point Likert scale. The questions to measure the levels were adapted mainly from two sources: Rego and Cunha [5] and Ura et al. [12]. A total of 10 domains (teamwork, trust and credibility of leaders, open and frank communication with leaders, opportunities for learning and personal development, standard of living, fairness/justice, work-family conciliation, good project, health, and time) consisting of 36 indicators were used to measure happiness of respondents. The importance of each domain was also asked to be used as a weight in calculating the happiness. The frequencies that respondent feels comfort, pleasure, enthusiasm, vigor and placidity in the last three months, which represent affective well-being, were used to determine the psychological well-being. The level of stress was assessed from three questions related to the job.

Measurement of performance was conducted from two perspectives. The first one is self-assessment of individual performance and the second one is assessment from supervisor. Three questions were designed to evaluate the self-reported individual performance and four questions were used for the assessment from supervisor. Questionnaires were distributed by hand to 116 engineers of 21 construction sites in Sri Lanka. Consequently, for the performance assessment, 21 project managers were requested to provide their assessment on the relevant engineers. This process was carried out when collecting questionnaires back from engineers to get their identifications. It is important to emphasize that none of assessment was disclosed to engineers as the purpose is solely for research. Two out of 116 returned questionnaires were found to be invalid so in total 114 responses were used for the analysis.

4. Results and discussions

Respondents of the survey were dominated with male engineers. There are slightly more married engineers than single engineers even though the portion of young engineers (30 years and below) are higher than engineers above 30 years old. Detailed characteristics of respondents are presented in Table 1. The sub-categories for age, salary, construction experience and current project experience were not the same as the original sub-categories in the questionnaire. Those shown in Table 1 were simplified from the original questionnaire by grouping some sub-categories into one so meaningful comparison between sub-categories can be statistically analyzed.

Table 1. Characteristics of respondents.

Category	Sub-category	Number	Percentage
Marital status	Single	53	46.5
	Married	61	53.5
Age	30 years and below	65	57
	Above 30 years old	49	43
Gender	Male	101	88.6
	Female	13	11.4
Salary	Low (Rs 50,000 and below)	44	38.6
	Middle and High (Above Rs 50,000)	70	61.4
Construction experience	2 years and below	45	39.47
	3-10 years	33	28.95
	Above 10 years	36	31.58
Current project experience	2 years and below	81	71.05
	Above 2 years	33	28.95

4.1. Relationships between happiness, performance, psychological well-being and stress

In analyzing the relationships between happiness, self-reported performance, performance assessment by supervisor (performance), psychological well-being, and stress, Pearson Correlation tests were carried out. The results are presented in Table 2.

Table 2. Correlations between happiness, performance, psychological well-being, and stress.

	Performance	Self-Reported Performance	Psychological Well-being	Stress
Happiness	$r = 0.478^{**}$ Moderate (+)	$r = 0.187^{*}$ Weak (+)	$r = 0.357^{**}$ Moderate (+)	$r = 0.006$ No relationship
Performance		$r = 0.329^{**}$ Moderate (+)	$r = 0.63^{**}$ Strong (+)	$r = -0.123$ Weak (-)
Self-Reported Performance			$r = 0.315^{**}$ Moderate (+)	$r = -0.119$ Weak (-)
Psychological Well-being				$r = -0.143$ Weak (-)

** Correlation is significant at the 0.01 level (2-tailed)

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

As shown in Table 2, performance has moderate positive correlation with happiness and strong positive correlation with psychological well-being. Both relationships are significant at the 0.01 level. This indicates that psychological well-being has more roles in defining performance than happiness. From the value of coefficient of determination, nearly 40% of the performance of engineers can be explained by their level of psychological well-being. Meanwhile, happiness can only explain less than 23% of the performance achieved by engineers. These findings are in line with the findings of Warr et al. [16] and Amabile and Kramer [11] in their research to employees of industries other than construction. Interestingly, even though happiness and psychological well-being also have significant relationships with self-reported performance, the degree of association is less than to performance.

The results also show that there is a significant positive relationship between happiness and psychological well-being with moderate degree of association. Psychological well-being can only explain less than 13% of happiness, which indicates that there are other factors that contribute more in defining happiness than psychological well-being. Surprisingly, this study reveals that although stress has negative relationships with psychological well-being and performance, which are reasonable, the relationships are not significant. It is also interesting to note that stress has no correlation with happiness in this study.

4.2 Effects of socio-economic factors and experience

For the purpose of having better understanding about happiness, psychological well-being, stress, and performance, it is important to analyze whether socio-economic and experience of engineer (please refer to Table 1) may contribute on defining the level of the above factors. With this understanding, it is expected that proper strategy and approach can be developed in the effort of increasing performance of engineers depending on their socio-economic and experience. Due to the space limitation, the test results are not provided in this paper.

4.2.1 Marital status of the engineers

In analyzing whether married and single engineers have difference perceptions on happiness, performance, psychological well-being, and stress, independent sample t-test was performed. The result shows that there is a statistically significant difference in happiness ($t=-2.462$, $p=0.015$) and performance ($t=-4.335$, $p=0.000$) between the married and single engineers at the 0.05 level, where single engineers are happier and consequently, perform better in their work than married engineers. When the confidence level is reduced to 90%, the difference is also significant for psychological well-being ($t=-1.722$, $p=0.088$) and stress ($t=1.668$, $p=0.098$). Again, with single engineers has higher level of psychological well-being and lower level of stress than married engineers, which are consistent with the findings from previous studies [17,18]

4.2.2 Age of engineers

The statistical test indicates that junior engineers (30 years and below) have significantly higher happiness ($t=3.195$, $p=0.002$) and performance ($t=3.508$, $p=0.001$) than senior engineers (above 30 years old) at the 0.05 level. In a similar case as the marital status, the psychological well-being is significantly different only at the 0.1 level with junior engineers show higher level of psychological well-being ($t=1.698$, $p=0.092$) than senior engineers. For the stress at work, junior engineers perceive significantly lower level of stress ($t=-2.281$, $p=0.024$) than senior engineers. It is acceptable to assume that young engineers, who most likely are still single, have less

responsibility than senior engineers. Additionally, due to the age, junior engineers may have higher working capacity than their senior, which is supported by the research of Kahneman [19].

4.2.3 Salary of engineers

In terms of salary, it is found that middle and high income salary engineers have significantly higher level of happiness ($t=-2.138$, $p=0.0350$), performance ($t=-4.021$, $p=0.000$), and psychological well-being ($t=-2.688$, $p=0.008$) than low income salary engineers. These findings support the study of McBride [1] where he found that money influences satisfaction (happiness) and this will lead to the increase of performance and psychological well-being. On the other hand, stress ($t=1.381$, $p=0.170$) does not take any side. Stress can happen to an engineer regardless s/he is a low income earner or a middle and high income earner. No significant difference can be detected.

4.2.4 Construction experience of engineers

Based on the years of experience in construction projects, respondents are classified into low (2 years and below), average (3-10 years), and high (above 10 years) for the comparison analysis. One way ANOVA test was conducted to analyze the difference and the result shows that there are significant differences among these three groups of engineers for performance ($F=4.910$, $p=0.009$) and stress ($F=3.166$, $p=0.046$).

Tukey post hoc test was applied to identify the difference among the groups. The test identifies significant difference in performance between engineers with low experience and high experience. Surprisingly, low experienced engineers received higher performance than high experienced engineers. This unexpected finding was intriguing. When the self-reported performance between these two groups was examined, the result was not consistent. For self-reported performance, the groups mean value indicates that high experienced engineers reported higher performance than low experienced engineers; even it is not significantly difference. As the performance was assessed by the project manager (PM) of the relevant engineers, they were inquired to find out the reasons. The responses confirmed the finding mainly because of the hard work nature of low experienced engineers due to their age and keenest to learn for their career. One of the project managers even commented that low experienced engineers work more than what is worth for their salary because they want to gain experience for their career.

The post hoc test also identified significant difference in the stress level between low and high experienced engineers. Engineers with high experience face more stress at work than low experienced engineers. Higher expectation and responsibility assigned to high experienced engineers may contribute to this finding.

5. Conclusions and recommendations

This study reveals that there are significant positive relationships between happiness, psychological well-being, and performance with the strongest relationship can be observed between psychological well-being and performance. Therefore, if a Sri Lankan construction company plans to improve its engineers' performance, the company management needs to focus on the factors that bring good psychological climate in the project site. The good news that can be concluded from this research is that stress experienced by engineers at work can be expected not to affect performance as the stress level has no significant association with happiness or psychological well-being.

Based on the socio-economic and experience analyses, performance is considerably influenced by marital status, age, salary, and construction experience. It is found that single engineers perform well than married engineers. Performance of engineers is also reflected in their salary where better performed engineers are associated with higher salary. One interesting finding is related to the performance of junior engineers who are identical to low experience that received significantly higher assessment than senior engineers, who are rich in experience. The spirit of learning new things in actual construction projects, supported by their age, has motivated junior engineers to work hard for their future. With this, as also suggested by one of the project managers who are respondents in the data collection of this research, hiring more junior engineers or trainee engineers, while keeping only a few senior engineers for technical aspects, may produce better performance for the success of the project. On the other hand, this indicates that solutions to improve performance of senior engineers need to be considered. For this purpose, factors that significantly define happiness and psychological well-being of senior engineers need to be analyzed before a recommendation can be proposed.

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