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Effect of Behavioral, Cognitive and Physiological Strategies of Self-Leadership on Innovative Work Behavior

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ABSTRACT

Drawing on prior literature of personal antecedent on innovative behavior, the purpose of this research is to study empirically the influence of individual self-leadership strategies on their innovative behavior. As existing studies mostly explore the behavioral and cognitive approach of self-leadership strategies in influencing innovative behaviors, the aim of the current study is to investigate the physiological approach, called it as physical vitality-focused as a new form of self-leadership in affecting innovative behavior. Data were collected from 485 engineers as the respondents from 18 electrical and electronics (E&E) manufacturing companies in Malacca, Malaysia. Data were analysis by using IBM SPSS 19 statistical program. The results indicate that all the four of self-leadership strategies (behavior-focused, constructive thought pattern, natural reward and physical vitality-focused) were significantly and positively associated with engineer's innovative behavior. However, for regression result, the analysis showed that only strategies that focus on behavior-focused and physical vitality have strong significant and positive path coefficients towards innovative behavior. For constructive thought pattern and natural reward strategies, both showed a small and insignificant positive relationship with innovative behavior. As a conclusion, engineers with higher self-leadership exhibit higher levels of innovative behavior at their workplace.

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INTRODUCTION

Innovation plays an important role in organization's environment nowadays. To cope with the market place, the organizations have to increase their flexibility, responsiveness and efficiency, amounting to the necessity for continuous innovation of products and internal processes (Dorenbosch, Engen, & Verhagen, 2005). Innovative organizations can gain a competitive advantages over their less innovative competitors (Jafri, 2010) in terms of profit and economic gains. However, the root of innovation is depending on individual innovativeness. As found by Getz and Robinson (2003) in their study, they noticed that employees contribute the most contribution in terms of source of improvement ideas compare to planned innovation with 80% ratio of 20%. Logically, employees will move on all of the innovation activities planned by the organization. They help in defining and shaping work contexts through their initiation and implementation of ideas. As a conclusion, innovation is a driving force in economic activity and often considered essential for organizational health and growth; therefore, a better understanding of the employee innovative work behavior, be very beneficial.

Innovative behavior is defined as employee activities in improving their work environment or system begins with recognition of problems, generation of ideas, build a support for the ideas and apply the ideas in the real work environment. However, it is not a fixed process but rather than as a multistage process with different activities and different individual behaviors necessary at each stage (Scott & Bruce, 1994). Innovative behavior is different from creative behavior because in innovative behavior, the ideas must be implemented in the real work process. So, concept of innovative behavior is more likely defined as the initiation of ideas and implementation of ideas. Innovative behavior is suggested to be important for organizations seeking to improve the overall efficiency and effectiveness of organizational processes (Xerri & Brunetto, 2011).

Innovative behavior can be applied by anybody but engineer is the most job group that have to apply innovative behavior within work process especially in industrial organization (Menzel, Aaltio, & Ulijn, 2007). In terms of organization processes especially in manufacturing field, innovative behavior among engineers is very important. Innovative behavior among engineer is important because engineers who are employed in high-

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technology firm work in design and develop electrical components and system that need them to be more innovative than others employees. It is because they have to come out with a new idea to create or improve their product in order to provide the best possible values for money goods and to offer the most suitable range of products for their customers. Explaining about the important of innovative behavior to organizations and employees especially engineers, thus, the study of factors that motivate or enables innovative behavior is critical.

In terms of individual factor, since people prefer to manage and control themselves for personal improvement, self-leadership strategies are believed to be the best factor in influencing innovative behavior. Self-leadership are strategies that involves the influence people exert over themselves to achieve the self-motivation and self-direction needed to behave in desirable ways (Hauschildt, 2012) with specific behavioral and cognitive strategies designed. Three distinct but complementary strategies of self-leadership have been hypothesized by previous scholars which are behavior-focused strategies, constructive thought pattern strategies and natural reward strategies (Neck & Houghton, 2006). Behavior-focused strategies concern on encouraging the positive and pleasant behavior while suppressing the negative and undesirable behavior to lead to successful outcomes. Constructive thought pattern strategies create positive habitual ways of thinking in order to change thinking pattern from negative to positive approaches. Meanwhile, natural reward strategies more focus on build pleasant and enjoyable features into a certain task to get intrinsic motivation by the tasks themselves (Manz & Neck, 2004).

However Muller, Georgianna and Roux (2010) in their study, suggested that strategies focusing on physical well-being also represent an independent category of self-leadership called as vitality-focused self-leadership covered up on physiological, bodily and energetic resources. Many studies have been done to study about self-leadership strategies and innovative behavior but the research only covered up behavior-focused, constructive thought and natural reward strategies in predicting innovative behavior. While the rapidly growing body of literature significantly contributes to our understanding of the role of behavior and cognitive of self leadership processes underlying innovative behavior, very little attention has been given to the vitality factor. Thus, this research is interested to study between the existed three form of self-leadership (behavior-focused, constructive thought and natural reward) and the new form of strategy (physical vitality) by self-leadership with innovative behavior.

Given the sociopolitical nature of innovation processes, employees' willingness to actually invest in innovative activities may depend upon the extent autonomy given in the workplace. When they believe they have influence on their own work, employees are more likely to put effort into generating, promoting and realizing innovative ideas for change than when they feel they are unlikely to make a difference owing to a lack of influence. Research by Hoegl and Parboteeah (2003) have suggested that team with behaviour-focused on goal-setting behaviour has positive effects on team innovative performance in innovative projects. For teams with innovative tasks such as developing new software solutions, self-goal setting are provided clearer direction and therefore are better able to determine appropriate procedures, allocates tasks and focus their efforts on getting the job done. Similarly, study by Shalley (1995) also found that the highest creativity occurred when individuals had a creativity behaviour-focused on goal-setting and worked under expected evaluations. They create their goals or what they are expected to get and also the way to achieve the goals.

On the other hand, Van der Panne, Van Beer and Kleinknecht (2003) contended that innovator's knowledge of the market and feeling of future successful market developments are major factors influencing entrepreneur engagement in innovative behaviour. Entrepreneurs potentially enhance their innovativeness by visualizing the successful market before they actually begin by experiencing a greater success in planning and analysis. Followed by a study from Carmeli, Meitar and Weisberg (2006), they found that constructive thought pattern is essential during the recognizing problem and generating new ideas and solutions in innovation among employees and their supervisors who is working in six organizations in Israel. They further note that individuals who utilize constructive thought pattern strategies are able to tackle and suggest solutions more effectively.

In addition, Chen, Wu and Chen (2010) in their study to understand the relationship among marine tourism employee's personality traits, work motivation and innovative behaviour have found that employees with higher intrinsic motivation (natural reward) are more likely to generate innovative behaviour. It is because they will exhibit more innovative behaviour if personnel have more enjoyment and challenges in their content of the work. Personnel often chase delightful or suitable works to fulfil self-actualized. Positive correlation also found in the relationship between intrinsic motivation and innovative behaviour in the pharmaceutical industry (Sundgren, Dimenas, Gustafsson, & Selart, 2005).

It is very important to give attention about vitality factor with innovative behavior since vitality in works is an important phenomenon because workers' energy is the 'fuel' that enables successful operations and promotes performance in organizations (Neck & Cooper, 2000). Besides, vitality also represents people's ongoing state of psychological wellness with positive feelings of aliveness, spirit and energy. How can vitality give effect to innovative behavior can be explain within two approaches. Firstly, from the perspectives of innovative behaviors' job demands. Innovative behavior is often a response to uncertainties or high levels of demand in the

environment (West, 2002). Innovative behavior requires change, and the attention the group has to devote to articulating, planning and implementing the changes is likely to represent an increase over the normal levels of attention they give to work with endless meetings and extremely long working hours. Increased workload may well lead to lower levels of satisfaction, well-being and long-term viability of the group, which in turn may threaten its long-term effectiveness. In another situation, other workers in the work environment may tend to resist those changes because of the insecurity and uncertainty they may bring. It is because habits and preferences for familiar practices and actions are 'hard to break' because people have a built-in tendency to return to their original behaviors. Convincing resistant workers of the benefits of innovation can be difficult and emotionally taxing. Given its demanding nature, innovative behavior can be conceived as a potential stressor that may give rise to stress reactions. It is believed that individual who can enjoy good vitality will be able to handle these demands and stresses more efficiently and perform better because individuals who are healthy are less likely to become obese, possess higher levels of energy and enjoy enhanced feelings of well-being. They can do work tasks without undue fatigue.

Secondly, it can be seen from the perspectives of mental performances. Innovative behaviors are known to generate and promote the new ideas within work environment. Thus, it requires an individual to have a good mental performance in order to come out with a good ideas. Healthy and active people process data faster and experience a slower decline in information-processing speed than inactive people because vitality helps in promoting concentration and stimulates mental capacities with increasing the mental aptitude and performance. All of the exercises and good nutrition will help our body to reduce levels of homocysteine, an amino acid which, if present in the body it can be a risk factor for memory loss and cognitive decline. Based on the all previous research and explanation above, current research suggested that:

H1: Behavior-focused strategies of self-leadership positively related with innovative behavior.

H2: Constructive thought pattern strategies of self-leadership positively related with innovative behaviour.

H3: Natural reward strategies of self-leadership positively related with innovative behaviour.

H4: Physical vitality strategies of self-leadership positively related with innovative behavior.

MATERIAL AND METHOD

In this study, the researcher utilizes descriptive study design with cross-sectional approach. The survey of this study was conducted among engineers in Electronics and Electricals (E&E) factories in Malacca, Malaysia. In the survey, the participating organizations fulfilling the criteria that registered with the Federation of Malaysian Manufacturers. About 24 companies were contacted via phone or email and informed about the research. However, only 18 companies are confirmed to give cooperation within this study and six companies are rejected based on confidential issues. Questionnaires are given to the person in charge mostly the company Human Resources Officer and they distributed the questionnaires among engineers from all the company departments. About 745 set of questionnaires are given to the participated companies but only 485 set of questionnaires are given back to the researcher. Data obtained were analyzed through the IBM SPSS 19 statistical program and the proposed relations were tested through correlation analyses.

Revised Self-Leadership Questionnaires (RSLQ) was used to measure employee's self-leadership strategies. It consists of 35 items in nine distinct sub-scales representing the three primary self-leadership dimensions with 5-point response scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The behaviour-focused dimension is represented by five sub-scales labelled self-goal setting (5 items), self-reward (3 items), self-punishment (4 items), self-observation (4 items) and self-cueing (2 items). The constructive thought dimension is represented by three sub-scales labelled visualizing successful performance (5 items), evaluating beliefs and assumptions (4 items) and self-talk (3 items). A single sub-scale consisting of five items represents the natural rewards dimensions which focusing thoughts on natural rewards. All the questionnaire items are positive question. Strategies that focus on physical vitality were measured by eight items from Muller, Georgianna and Roux (2010). All of the items represented the strategies that address physiological states and processes which included the dimension of health program, physical activities and healthy nutrition. The scale had an acceptable internal consistency and a good test-retest reliability ($\alpha = .70$; test-retest = .76) (Muller, et al., 2010). Responses were given in 4-point scales ranging from 'describe me very imprecisely' at one end and 'describes me very precisely' at the other. For individual's innovative behaviours, this research uses the ten items from Jong and Hartog (2008) questionnaire related with opportunity exploration, idea generation, idea championing and implementation/application dimension of innovative behaviour. Responses were given in 5-point scales ranging from 'never' at one end and 'always' at the other. All the questionnaire items are positive question.

Results:**Demographic Survey Results:**

Table 1 represents the demographic characteristics of the study and the data represents only the people who have responded to the survey. A total of 485 completed questionnaires were received. Demographic survey included the information about gender distribution, age, ethnicity, education level, monthly income and length of work service.

Table 1: Demographic characteristics data.

Personal Characteristics	Mean or % (n=485)
Gender	
Male	55.3%
Female	44.7%
Age	29.72
Ethnicity	
Malay	65.4%
Chinese	24.3%
Indian	6.8%
Other	3.5%
Education	
Bachelor Degree	55.5%
Master	7.0%
Doctor of Philosophy	0.6%
Other	36.7%
Monthly income	
RM 2001 – RM 3000	54.6%
RM 3001 – RM 4000	28.5%
RM 4001 – RM 5000	10.9%
RM 5001 – RM 6000	2.9%
>RM 6000	3.1%
Service	
< 2 years	47.4%
>2 year - < 4 years	24.1%
>4 years - < 6 years	14.2%
>6 years	14.2%

Correlation data of main study variables:

Table 2 presents descriptive statistics: the means, standard deviations and correlations among the research variables. The statements regarding innovative behavior was used as the dependent variable and self-leadership strategies which consist of four strategies; behavior-focused, constructive thought pattern, natural reward and physical vitality were used as the independent variables. As theoretically suggested, three form of self-leadership strategies (behavior-focused, constructive thought pattern and natural reward) were significantly and positively associated with engineer's innovative behavior ($r = 0.659, p < 0.01$; $r = 0.589, p < 0.01$; $r = 0.570, p < 0.01$, respectively). Pearson's correlation coefficient for the extended strategy of self-leadership which is physical vitality was also found having positive correlation with engineer's innovative behavior ($r = 0.643, p < 0.01$).

Table 2: Means, standard deviation and correlation of main variables.

Variables	Mean	S.D	1	2	3	4
1-Behavior-focused	3.65	0.506				
2-Constructive thought	3.56	0.573	0.833**			
3-Natural reward	3.70	0.553	0.836**	0.736**		
4-Physical Vitality	2.82	0.536	0.655**	0.615**	0.551**	
5-Innovative Behavior	4.09	0.849	0.659**	0.589**	0.570**	0.643**

N = 485, *p < 0.05, **p < 0.01

Regression analysis:

Table 3 presents standardized regression weights, standardized beta coefficients, representing beta weights of self-leadership strategies on innovative behavior. Considering the standardized regression coefficients, strategies that focus on behavior-focused and physical vitality have strong significant and positive path coefficients towards innovative behavior except from constructive thought pattern and natural reward strategies. The standard regression weight of behavior-focused strategies for innovative is 0.342, $p < 0.001$ which means the increase in behavior-focused strategies by 1 is responsible for increase in innovative behavior by 0.342 and vice versa. This has proved the first hypothesis true that behavior-focused has a positive relationship with innovative behavior. For the hypothesis 4 also has been supported by data as standardized effect on innovative behavior by physical vitality is 0.365, $p < 0.001$. It shows that when physical vitality goes up by 1 standard deviation, innovative behavior goes up by 0.365 standard deviation. However, hypothesis 2 (direct positive effect of constructive thought pattern on innovative behavior) and hypothesis 3 (direct positive effect of natural reward

on innovative behavior) are concerned that data did not support the hypothesis. The standardized path coefficient of constructive thought pattern for innovative behavior is 0.039 at $p=0.504$, meanwhile coefficient for natural reward for innovative behavior is 0.053 at $p=0.362$, which are a small and insignificant positive relationship between the both.

Table 3: Regression analysis.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	-.152	.200		-.759	.448
Behavior-focused	.575	.125	.342	4.596	.000
Constructive thought	.058	.087	.039	.668	.504
Natural reward	.082	.090	.053	.912	.362
Physical vitality	.580	.068	.365	8.558	.000

a. Predictors: (Constant), Behavior-focused, Constructive thought, Natural reward, Physical vitality

b. Dependent Variable: Innovative Behavior

Discussion:

Innovation is required to cope with the business environment today. An organizational member with high ability to generate new and useful ideas and applied it, is more likely to create their own innovation, which in turn contributes to organizational innovation. The present study proposed and tested the links between four forms of self-leadership strategies with engineers' innovative behavior. After conducting correlation and regression analysis, strategies on behavior-focused and physical vitality were found strong predictors of innovative behavior in Malacca electrical and electronics manufacturing organization. A strong positive and significant direct effect of behavior-focused strategies suggested that individuals with higher level focus on self-goal setting, self-reward, self-punishment, self-observation and self-cueing are more likely to make innovative. Similarly, individuals with higher level discipline on health program, physical activities and healthy nutrition are more encouraging to do innovative work supporting the hypothesis that 'healthy body brain brainy'. This finding is crucial because health and motivated employees are the foundation of a healthy organization. Vital employees are less often sick, more productive, feel committed and become an important factor in organization success. It is because those who feel good and healthy can work longer and with more enjoyment. On the other hand, data did not support the positive effect of constructive thought pattern and natural reward strategies on innovative behavior. It was found that both strategies had a small positive relationship with innovative behavior but the effect was not statistically significant.

Conclusion:

This study has highlighted the importance of engineers' self-leadership and innovative behavior. In all, the study helped to improve the understanding of how self-leadership effecting innovative behavior. It also provided important insights into engineers' self-leadership which could be utilized to raise engineers' innovative behavior at the workplace. As a conclusion, engineers with higher self-leadership exhibit higher levels of innovative behavior at their workplace. Within this scope, organizations need to create a kind of atmosphere or offer some training to increase their employees' usage of self-leadership strategies and innovative behavior so that employees feel comfortable and have the chance to apply the strategies and produce new ideas and present them accordingly. Besides, this study offers a contribution to the self-leadership literature by offering a unique perspective on physical vitality strategies as a new form of self-leadership. Changing to a healthy lifestyle ultimately begins with the employee himself. However, employer and colleagues can play a supporting and motivating role in this situation. Employees become more motivated and productive when they know that their employer cares about their total quality of life such as wellness, emotional, financial and social health. Companies can encourage their employees to adopt a healthy lifestyle by setting up a few approach related to employee's wellness. For example, setting up a company football team, doing daily exercise in the morning before start the work operation, offering healthy food in the company canteen.

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