Human Factor in Green Supply Chain

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***Abstract*— Implementation of green supply chain is an important in leading a firm, organization or company to gaining competitive advantage. In this research study, the variables have influence towards the implementation of green supply chain are identified, they are human factor. Human factor that researcher have used in this study is safety and health, attitude, personal factor and workload which was used as independent variables in this study. Total of 105 sample size has been taken from third year student who taking International Business course as respondents. Study survey has been conducted through random sampling. A total 110 questionnaires have been distributed to the sample of chosen consists the four independent variables of human factor, that are safety and health, attitude, personal factor and workload, while green supply chain is the dependent variable. Quantitative survey had been used for this study. From regression analysis result showed all hypotheses supported with significant value. The result concludes that all the independent variable in this study give a significant impact to the implementation of green supply chain.**

Keywords: Green Supply Chain, Human Factor, Safety and Health, Attitude, Personal Factor

1. Introduction

Many countries have spent lots of time and effort to implementing green supply chain in the flow of information in management that include regular line management. Over several periods, these efforts tend to produce slight efficiency in management. However, there still have some part of factor appears to be stubbornly resistant to implement it. According to [1], there are companies yet to adopt green supply chain management concept in their operation. The resistance toward integrate supply chain green practices has been caused by the high cost of adopting such practices [2].

According to [3], each country is facing with different particularly where environmental issues are concerned Based on [4],manufacturing industries are significantly responsible for the consumption of a huge amount of resources and waste generation globally. Manufacturing sector responsible for emission of 36% of carbon dioxide (CO2) in the world [5]. Therefore, a renewed focus on impact of industries' stakeholders such as the regulatory makers, shareholders, customers, and employees have been requiring organization to be more responsible toward the environments with respect to their products and the process [6]. Due to this impediment, the establishment of KeTTHA on 9th April 2009 has encouraged business organization to take up green cultures in their business operation as well as to promote green practices. According to [7], to make sure efficient integration of the entire supply chain process. Green supply chain management practices ae needed to be applied synchronously rather than in solo.

The delay of implementation of green supply chain one of the major critical issue that occur in organization especially for company or school implementing it in flow of information in management. According to [8], incomplete conceptualization have generated inconclusive results about the relationship between green supply chain and firm's sustainable performance.

These situations result an unpredictable cost to organization and it might make more serious and worse image of the organization if there have no any action or step is taken for solution. Therefore, it is necessary to identify whether the human factors are the major factor to influencing implementation of green supply chain in flow of information in organization. By identifying all the elements, the in human factor, it is essential to investigate the relationship all the element and considering the degree of influencing in implementation of green supply chain.

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2. Literature Review

Human factor typically takes a hierarchical approach where environmental design to fit the human is the precedence, and selecting people to suit the environment or training people to suit the system, there can be implementing in any system such as supply chain system. The system can be a work system (where human is a worker and the environment is the work environment) or a product/ service system (where the human is a product user or person who receives a service and the environment is the environment where the product is used or where the service is received, human factor focuses on systems in which human effects intermission with their environment is complex and consists of the physical environment, the organizational environment and the social [9], [10].

2.1 SAFETY AND HEALTH

Safety and health management is by prepared a good and safe condition work environment to its employees. Health, in general, is a larger term than the security. By work in this place, effective management arrangement that ensures the well-being of every staff and potential to minimize the adverse impact, losses either to individuals or industry from ill health, accident, and injury cases. According to [11], A better rated places to work and have higher satisfied, productive employees who less likely to change and turnover their jobs in the workplace with active and visible safety leadership.

[12] defined that safety behavior as a measurement of the attitudes and perception towards health and safety issues. According to [13], Mearns also defined that the concept of safety culture was developed in response to major organizations accident and it have being widely applied now to explain accident at the individual level.

=-Occupational health refers to not to be disposed of occupational diseases, to avoid from fatigue during working, to avoid anti-aging and to ensure a qualitative living level of employees. In other words, its objective is to ensure that the employees are working in healthy and completely well-being. Occupational health and safety risk factors can divide into two, direct and indirect effects on levels of organizational commitment, job satisfaction, job productivity and performance of staff.

2.2 ATTITUDE

Attitude refers to which range of an individual has a munificent and appraisal assessment of behavior [15]. Attitude also can be referred perceived desirability, and it can be form by evaluative implication of relative information which being keep in human memory [16]. Attitudes can also can be defined as level of the captivating or allurement of a behavior [17]. According to [18], attitudes behavior can be either positive or negative evaluation of an individual, it can be influenced by total behavioral belief. Attitudes are personal characteristic, but attitude is more flexible, and it is the reason attitude can be transforms or amend.

The meaning of attitude to behavior "is a person's determination that performs the behavior is reputable on bad, that he is in favor of or to perfume the behavior". Attitude is an individual behavior resolved by the valuation of the desirability of the effect and important view regarding the result of that behavior [15].

Attitude can be either roseate or negatively valuation of an individual does in behavior. For those people who have a high and strong attitude to behavior are tending to increase in the intention to perform that behavior [19]. [20][21], detailed that the stronger or higher individual's attitude, means that the brawnier of the behavioral predisposition.

In dimension of work attitude, a study shown a in which questionnaire framed by [22] [23] was used to measured work attitude. [22] operationalize job attitude as a set of defined evaluations that comprise how human perception regarding one's job, the way how an employee's attach in his/her working reflected the degree of belief in his/her job. Factors like employees, organization commitment and job involvement are the critical factors to decide job attitude. Even more, majority of the questionnaires were based on a Likert 5-point scale, which is refer to the answer ranging from "strongly disagree", "disagree", "neutral", agree", and "strongly agree". The Cronbach's α of the original questionnaire was 0.72 which shows a reasonable test validity. This is the following questions include in the questionnaire:

• Most of my hobbies are related to my job

• I can fully exercise my strength by working in this organization.

• To me, my workplace reputation is my own reputation too.

• I can happily accept any task or responsibility assigned to me.

• I feel honored when I tell others that I work in this organization.

• I feel that my organization's goals are like my personal goals.

2.3 PERSONAL FACTOR

Based on the Health Promotion Model, personal factors can be categorized as biological, psychological or sociocultural [24]. Personal factor also can be categorized into constitution, personality and character, communication skills and sense a self. Constitution refers to the person's physical state such as health condition. Then, if someone have any syndrome, disorder or condition, it may impact on person's behavior.

Personality and character can affect the behavior of a person and it can also detect that if the person is an extrovert or introvert. Communication skills here include a person's ability to understand and act on the communication of others and to communicate their own thoughts, feelings and needs to those they are with. Lastly, sense a self-related to self-esteem, self-knowledge, cultural, religious and others. Based symptoms may be affecting the health unconsciously. Indeed, stress symptoms can affect body, thoughts and feeling, and behavior. Unrestrained stress may contribute to health nuisance such as high blood pressure, heart disease and obesity [25], the conflict between home and work and the work impact on personal relationship is stressful. Besides, stress may also affect emotional and behaviors. [26] reported that emotion work and the experience of emotional exhaustion are related, and emotional dissonance is negatively correlated with job satisfaction, which is derived from the job stress.

2.4 WORKLOAD

According to [27], workload refers to all activities either directly and indirectly that involving staffs; time with professional duties, responsibilities and interests. Workload refers to the amount of time spent by staff to work in the firm, the time assorted for the completion of a project, whether in firm or after working hours. Workload is a a responsibility that compulsory to implemented by staff although it is not inciting. According to [28] workload refers to responsibility given to staffs either in or outside of the firm.

2.5 THE RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN AND SAFETY AND HEALTH

According to [14], who carried the study of safety behavior in the passenger ferry context, safety behavior is defined into two part, (1) safety compliance as entrenching to safety procedures and the (2) participating in safety meetings, including setting safety goals, providing safety suggestion within organization, and expanding effort with purposely to improve and strengthen workplace safety. Regarding their third finding studies indicated that safety training and emergency preparedness are positively associated with safety behavior, including safety compliance and safety participation in any organization's implementation policy. However, there has a positive relationship between safety

communication and organization's implementation policy. But it is not significant influence on safety compliance. He also suggested that the workplace accident can reducing by the greater safety climate and leading to better safety behavior.

2.6 THE RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN AND ATTITUDE

[29] have distinguished the significant of attitude is determinant in implementation of organization policy or systems. Who state that attitude is the critical variable that necessary in the studying technology acceptance. As recommended by [30], attitude should be the first initial to be accepted before technology. Attitude was the precedent to use which has a strong linkage to considered appropriate. Moreover, [31] declare that attitude towards behavior is the major determinant of behavioral intention. Which is result from the behavior pointers to result that individual has been evaluated. And their research has recognized that with the objective of stimulate behavioral intention, a favorable attitude is compulsory to made. An extra favorable is attitude, the higher the behavioral intention, and the additional possible is the performance is behavior in the implementation of certain system such as green supply chain.

2.7 THE RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN AND PERSONAL FACTOR

[26] reported that emotion work and the experience of emotional exhaustion are related, and emotional dissonance is strongly correlated with the organization's plan, system, structure and policy changes. Green supply chain also can be one of the system that employees be the determinant to implement it.

2.8 THE RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN AND WORKLOAD

Performance of an implementation on particular system can also be influenced by the workload is too high or too low [32]. However, several models are used in studies regarding teacher workload and one of them is the Priority Model [33].Workload can be measured by the amount taken for the completion of the task given.

3.0 Methodology

The research design of this study is based in several criteria as suggested by [34]) such as ; (i) the degree suit between research objectives and methodological choices available to the researcher, and appropriate type of data required to achieve those objectives, (ii) the scope to which findings are comparable to those of previous studies focusing similar or quite similar questions, (iii) appreciation of possibility to yield unanticipated findings, and (vi) practical issue like time constraints and available resources.

A questionnaire survey is used to investigate the relationship between green supply chain and human factor in the organization, it gets information from respondent who are the academic students from School of Business Innovation and Technopreneurship of University Malaysia Perlis and as a quantitative research. The questionnaire consists of variety of both previously validated instruments and measures developed specifically for the study as well as to answer the research questions.

According to [35], systematic random sampling involves six steps. First, define the population. In this study, the population is 198. Second, determine the desired sample size. The sample size for this study is 100. Third, obtain a list of the population. The list was obtained from the respective departments in Academic Management Division. Forth, determine the K by dividing population by desired sample size. In this study, K is equal to 2 (198/105=1.89). Fifth, determine the total respondent for each of the department. Sixth, researcher will pick a random number from the list of students as the starting number**.**

4.0 Findings

4.1 Safety and Health

For component one, safety and health, the total number of questionnaires are five and based on the reliability of the instrument, the Cronbach's Alpha reliability is 0.771, and the Cronbach's Alpha reliability for pilot test shown 0. 760.This has ensured that the instrument is reliable.

4.2 Attitude

For the second component, attitude, the total numbers of questionnaires are five. Reliability of the instrument revealed that Cronbach's Alpha value is 0.760 and Cronbach's Alpha value for pilot test is 0.760. Thus, which proved that the instrument is reliable, and no item needs to be left out.

4.3 Personal Factor

For the third component is personal factor, the total numbers of questionnaires are five. Reliability of the instrument have revealed the Cronbach's Alpha value is 0.760 while the Cronbach's Alpha value for pilot test at 0.760 which proved that the instrument is reliable, and no items needs to be deleted.

4.4 Workload

Workload is the forth component, the total number of questionnaires are five and based on the reliability of the instrument, the Cronbach's Alpha reliability coefficient is 0.760 and the Cronbach's Alpha reliability for pilot test shown 0.760. This has confirmed that the instrument is reliable, and no item needs to be deleted.

More than half of the gender of respondents was female, which was 62.9% (66 persons) while the make has 37.1% (39 persons). And almost of the student was in 21 to 25 years old, it is stand by 100 persons out of 105, (95.2%). While the rest was in

26 to 30 years old have 4 persons, (3.8%), and only one person (1%) was 30 years and above.

Among the respondents, Malay have stand for highest, 45.7% (48 persons), followed by Chinese, it is 37.1% (39 persons). While, there have 11.4% (12 persons) of Indian respondents. And the rest of 5.7% (6 persons) are others, example, international student come from Somalia, Yamen, Nigeria and others. Besides, there are 100% of respondents are student, which have 105 of students.

5.0 Conclusion

5.1 Attitude

Universities in Malaysia should help to develop the notification and realization among student to influence the attitude towards implementation of green supply chain. The management of the university can help to enhance the activities which related to attitude individually. There are a lot of activities can be conducted in the university such as Know Yourself Well by introduce a lot of psychological test and assessment that involved every student by individually.

5.2 Personal Factor

Put a mirror at the place of working like on the table, lift, or set up mirror as a wall. The purpose to do it is to control the personal factor. The face expression will be reflected on the mirror and it might the best self-reminder to controlling personal factor. Example, a person saw his face was anger due on the problem facing, he might know his anger face is unpleased others. So, in a short moment, he can take a deep breath after he saw his anger expression on the mirror. It can prevent and reducing many unnecessary rudeness, stress situation, suffering to happen. In another, self-management will be works effectively after a mirror is placed surround someone.

5.3 Workload

Specific job description is set. Reasonable benefits and rewards introduce to reward based on the workload. Effectiveness of top management is very essential to ensure the lower management are engaged in workload with a comfortable situation

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