

Research Article

Business Green Shift based on Innovation Concepts

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Abstract: This study is a rapid communication in hypothesis model development format; to discuss a conceptual model, based on qualitative research methods. In this study elements of business green shift are modeled and highlighted. The structure of the model incorporates green managerial innovation, green process innovation and green product innovation. The developed model probes the interaction among the three elements. Lastly, suggestions for further research are listed to guide scholars to further develop the conceptual model.

Keywords: Conceptual modeling, further studies, green business, innovation

INTRODUCTION

As purchasers, the general public and governments from across the globe become more concerned with environmental issues; corporations are developing new programs and products that are “green” and environmentally friendly. (For example green products, green running technologies and environmentally sensitive designs) (Yung *et al.*, 2011). For this study, the utilization of green product and process innovation and green managerial innovation comprises the business green shift. During this time of a growing consciousness for environmental impact, suppliers are being pressured by customers to offer materials and products which have been evaluated for their environmental impact. A review of the current literature leads us to see that the business green shift is also having a beneficial influence on competitive advantage (Chen *et al.*, 2006; Chen, 2008).

Green shift was organized into three key classes which comprised of green product innovation, green managerial innovation and green process innovation (Chen, 2008). It is particularly noted by Chen *et al.* (2006) that green manufacturing process and green product innovations provided corporation with a competitive advantage. Chen’s (2008) research then focused on the notion of core competencies. This study reported how green core competencies, summed up as the capabilities and collective learning about environmental management and business green shift, were influential in a positive way on an organization’s capabilities in developing green process and product innovations. Coincidentally, this allows the business to further enhance its green image and consequently, it will lead to a competitive advantage.

MODEL DEVELOPMENT

The purpose of this study is to formulate a conceptual interrelationship among all of the business green shift elements (green product, process and managerial innovation) in order to define the most probable implementation of green shift practices. Our proposed model which is shown in Fig. 1 is based on the need of the business green shift to green product innovation, green managerial innovation and green process innovation.

In the following conceptual model, we draw three concepts of green shift; these are green managerial innovation, green process innovation and green product innovation. The model then highlights the interaction (direct and indirect relationship) of these three factors on each other and also the green shift alignment based on these three factors.

The developed model was tested in an e-survey by sending the model through an e-mail to green business academic experts who were asked to judge the model. The list of experts was selected from academic staff of the graduate school of management in University Putra Malaysia (GSO, 2012). We copied our Green Shift Model with a brief explanation in an Email and send it to all listed experts of our chosen university. In the body of Email we explained the idea and the literature supports our idea, then we asked their help to share their knowledge and experience regarding to accept or reject our model. In the first phase (first week after sending the Email) we received some feed backs. For the second phase (week two) we send a reminder to those who didn’t reply our Email and after a week we repeat this reminder Email again as third phase of research (week three). The received feedbacks from all

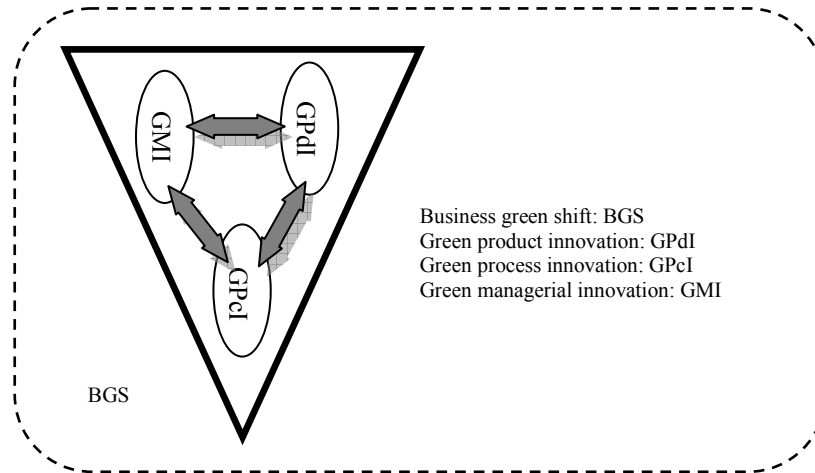


Fig. 1: Green shift model

three phases of our research supported our hypothesized conceptual model.

As Sorooshian (2012) discusses in his study; graphical conceptual models can be shown in mathematical style of modeling, based on interrelationships between the model variables. Base on above explanation, this study model can be presented mathematically, as it follows:

$$\begin{aligned}
 BGS &= f(GPdI, GPcI, GMI) \\
 &= \alpha(GPdI) + \beta(GPcI) + \gamma(GMI) + \varepsilon_0
 \end{aligned}$$

where,

$$\begin{aligned}
 \alpha, \beta, \gamma &\neq 0 \\
 GPdI &= f(GPcI, GMI) + \varepsilon_1 \\
 GPcI &= f(GPdI, GMI) + \varepsilon_2 \\
 GMI &= f(GPdI, GPcI) + \varepsilon_3
 \end{aligned}$$

Here we continue developing the BGS model to find the interrelationship between the model elements, using Decision Making Trial and Evaluation Laboratory (DEMATEL). DEMATEL in part of multi criteria decision making methods uses digraphs to categorize the influencing factors into groups of effect and cause. Yusefi *et al.* (2012) mention that “DEMATEL can turn the relations between the causative and affective elements into an understandable structural model of the system”.

Using DEMATEL, five experts from University Putra Malaysia were asked to weight the interrelationship effect of the BGS elements, as the gathered data sent for analysis phase. Outsourcing the DEMATEL analysis, asking DEMATEL expert to analyse the data brings following result. GPdI was categorized in effect group and GPcI and GMI are categorized in cause group.

CONCLUSION

This study highlights the interactions and alignment between green managerial innovation, green

process innovation and green product innovation; and determines the most effective method in green shift practice. The proposed model which can define an effective method for industries/organizations to achieve their goals from green shift practices is expected. It is hoped an implementation of this model will increased align potential of green shift. Following the developed conceptual model may lead organization to optimize the green shift practice productivity, effectiveness and efficiency. This model can be tested in further studies using statistical methods and analytical models by case studies of surveys.

Also from feedbacks of the E-survey, we found the potential of improving the green shift model by work more on the innovation literature. Experts of our E-survey suggest adding more exogenous from innovation literature. Also they suggest some methodologies to analyses and prove our conceptual model. So base on our developed conceptual model; further research suggestion for scholars, are:

- To quantify the role of green shift practice to improvement of company performance and vice versa.
- To mathematically model the interrelationship of green process innovation, green managerial innovation and green product innovation.
- To measure the role of green product innovation, green process innovation and green managerial innovation to improvement of company performance.
- To classify green product innovations, green process innovations and green managerial innovations.

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