ENVIRONMENTAL FRIENDLY AS A NEW DIMENSION OF PRODUCT QUALITY FROM CONSUMERS' PERSPECTIVE

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Dedicated to my dear mother and father, who are the biggest reason why I reached this academic level and to my beloved family specially Ali and Leila.

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ABSTRACT

This research is an effort to extend the dimensions of product quality to cover the ecological phenomena and solve the environmental issues by adding a new dimension, environmental friendly, to other dimensions of product quality. Furthermore this research examines the most important motivators for buying green products and impact of price on environmental friendly products' buyers. A comprehensive literature review on product quality, buying behavior, normal product motivating factors and also green products motivators have been discussed. In addition, the importance of price on buying behavior particularly in relation to green product has been elaborated as well. Data collection method for this research is questionnaire and data analysis method consists of factor analysis, T test and descriptive analysis. The result of this study shows that environmental friendly has potential to be a new dimension of product quality. It has shown that Environmental concern, perceived consumer effectiveness, consumer knowledge, promotional tools, and laws and regulations are underlying factors which are motivating the customers for buying green products while the Reference Group is not motivating factor for buying environmental friendly products despite it defined as an underlying factor for buying green products. The result also indicates the buyers have been accepted to buy environmental friendly products in comparison with non-environmental friendly products. It is also remarkable that the customers had different reactions regarding to different percentage of price with respect to three categories of products.

ABSTRAK

Kajian ini membincangkan keperluan untuk memperluas dimensi kualiti produk yang meliputi fenomena ekologi dalam menyelesaikan isu-isu alam sekitar dengan menambah satu dimensi baru iaitu mesra alam, terhadap kualiti produk. Selain itu, penyelidikan ini mengkaji faktor pendorong yang paling penting dalam pembelian produk hijau serta implikasi harga kepada pembeli produk mesra alam. Kajian literatur yang menyeluruh berhubung isu kualiti produk, mesra alam, tingkah laku pembeli, faktor pendorong pembelian produk hijau dan produk biasa telah dilakukan. Selain daripada itu, faktor harga turut dibincangkan khusus berkaitan kesan harga terhadap tabiat pembelian. terutamanya kesan harga terhadap produk hijau. Kaedah pengumpulan data untuk penyelidikan ini adalah soal selidik dan kaedah analisis data yang digunakan adalah analisis faktor, ujian T dan analisis diskriptif. Hasil kajian ini menunjukkan bahawa elemen mesra alam mempunyai potensi untuk menjadi satu dimensi baru dalam kualiti produk. Ia telah menunjukkan bahawa keprihatinan terhadap alam sekitar, penerimaan terhadap keberkesanan pengguna, pengetahuan pengguna, teknik promosi, dan kuat kuasa undang-undang dan peraturan, menjadi faktor penting yang mendorong pelanggan untuk membeli produk hijau, manakala kumpulan rujukan tidak bertindak sebagai faktor pendorong untuk membeli produk mesra alam walaupun telah ditakrifkan sebagai faktor asas untuk membeli produk hijau. Hasil kajian juga menunjukkan persetujuan pembeli untuk membeli produk mesra alam berbandingan dengan produk tidak mesra alam adalah berbeza bagi peratusan harga yang berbeza pada ketiga-tiga kategori produk.

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CHAPTER 1

RESEARCH OVERVIEW

1.1 Introduction

Production has been the trend since old times, while the awareness about adverse environmental effects was absent. Since of the beginning and during the different ages, people have produced many different kinds of technology and products and they still are exploring new technologies for producing new facilities and products for making a convenience and easy life for human. Since 1800 innovation accelerate by invention of steam engine. In the mid of 1850 the new wave of technology started to be generalized which is named rail way steel. After these two technology waves, next wave appeared in the area of electrical engineering and chemistry. Subsequently two additional technologies have been developed those are shown in figure 1.1(KondratievTechnologic waves). Technologic waves explain the different waves of technology and their lifecycles, the time they established and the time and the reason of they change to another form of technology. Whenever the previous technology collapsed, an innovation has been needed to improve the weaknesses of that specific technology which leads that collapse to a new starting point for the next wave. The technology waves have been a good evidence for human's activities, during the history. It explains what they have invented and which kind of technology do they have produced. Simultaneously it has the potential to show that there is no attention to environmental issues which causes a huge lack of

resources, energy, and also environmental pollutions (Kondratiev, 1925). The following statistical statements are just a few effects of mentioned scenario.

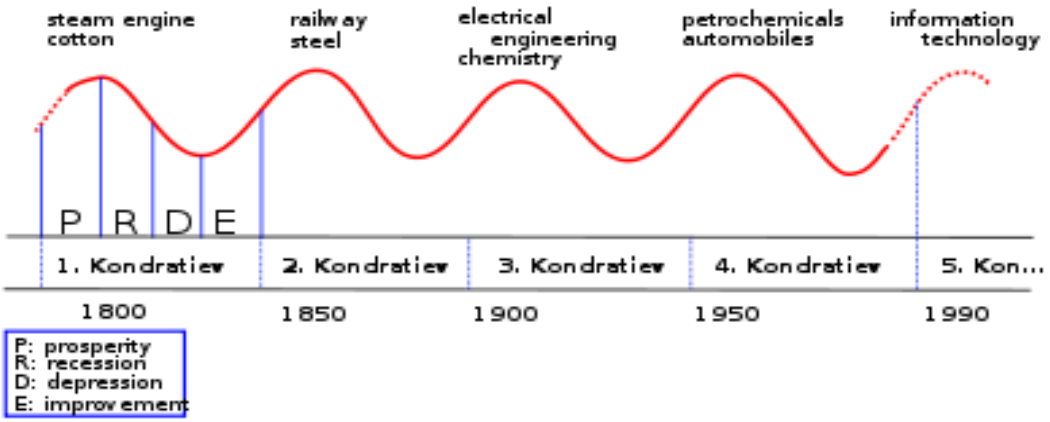

Figure 1.1: Technologic waves-Kondratiev (Kondratiev, 1925)

Statistical surveys demonstrate that nowadays, air pollution becomes a key environmental risk to the people's health and have been predicted that it is the reason of approximately more than 2 million premature deaths across the world annually. (i.e., Low water quality makes a big risk to human health)

Another problem in developing countries is climate change and will yield declines for the most important crops. The South Asia is affected mainly by this phenomenon.

Climate change phenomena has a big impact on irrigated yields through regions, but irrigated yields for all crops in South Asia would experience huge declines. Climate change can result in more price increases for massive agricultural crops, rice wheat, maize, and soy beans. In addition, higher food prices will end in higher meat prices. Climate change will decrease the meat consumption slightly and result a more fall in cereals consumption. Thus, a huge amount of agricultural productivity investments is needed to increase calorie consumption sufficient to balance the negative influences of climate change on the health and well-being of children (WHO, 2011).

The U.N.'s Intergovernmental Panel on Climate Change assessed that if global temperatures increase more than two or three degrees in Fahrenheit compare to current level which is quite possible, and existing trends in carbon emissions, up to one-third of the species on Earth would be extinct (WHO, 2011).

The technologic waves and lack of attention to environmental phenomena causes above mentioned conditions. During the technology revolution ages, human, companies, manufacturers, governments, and customers have used and produced the products that were harmful to environment. They just think about human needs, thus quality dimensions have been used just for satisfying the needs of people but not environment. It is linked to human satisfaction and human life quality and health, finally. Negligence to environment caused that harmful products have been produced by manufacturers more and more and caused damages of the environment.

Enhancement of attention to environmental quality and prevention of catastrophic events is not possible unless a new dimension added to previous dimensions of quality (and product quality) by considering the prevention of producing the non-environmental goods and increasing the efforts toward producing high quality products, compatible with the environment.

Quality management and product quality are two important management's tools that can help prepare for environmental issues. Currently, Product quality includes eight different dimensions that finally can satisfy the customers. These eight dimensions just emphasize on quality of products for customer's usage without any attention to side effects of products that can harm the environment. Product quality has been responsible for customers' needs in the field of quality since it was introduced, and also like technology waves, it has a life cycle. If the current dimensions could not be responsible for further needs of human and even the human's life environment it would be useless. For near future, most important concern for human is environment. So an appropriate effort is necessary for equipping the product quality with a new dimension. It can help to increase the

quality of environment and decrease the side effects made by products and producing the environmental friendly products as well.

1.2 Problem Background

Our planet population is increasing dramatically and we would experience climate change, food shortage, lack of resources, and air pollution. This catastrophic situation is happening because of lack of attention to environmental issues during the different steps of producing products such as: producing raw material, processing, usage by customers and after finishing life cycle of products. There are three main players in responding to environmental problems:

- **Producers:** All the companies and firms that producing goods and they are assumed as a starting point of supply chain.
- **Government:** The governments are usually responsible about the environment and recycling and they are role makers, spectators and controllers.
- **Users (consumers):** The consumers are the last chain of the supply chains and their demands determine the market and products quality dimensions. That is the reason of why they are very important in this research.

Considering these three main players, it is obvious that climate change has been accelerated and they have never paid enough attention to the environmental needs as much as they paid attention to the other human needs.

Mainly the problem magnifies when the players are not emphasizing on their responsibilities about making a better environmental condition. For instance, the governments do not have proper benchmark or standard of product quality which can be matched with environment's needs, or if there are some predetermined standards;

there is no solid support or rules for applying to the products. In spite of the fact that there are some products with this function, they are not completely environmental friendly. On the other hand, companies are not interested to participate in solving the environmental issues unless they feel that they will gain consumer satisfaction and profit. Based on the discussion, this is significant to understand that how it is possible to make a new approach and persuade the role players to emphasize more on environmental friendly product.

People always want to buy the products which make them satisfy with a high quality and value for themselves, but seldom they think about products with a good quality and harmless for nature and their living environment. When these three players talk about products quality they just think about quality in relation human needs for a short time not the environmental hazardous which later can impact them.

1.3 Problem Statement

Many researchers, companies and marketers have worked on the topics such as products quality, customer expectation and satisfaction, and so on. Product quality tries to enhance the customer satisfaction by increasing the quality of products in eight dimensions which are proposed by different authors. Many other researchers have also tried to use these dimensions to analyze and understand the meaning of quality by customers on different goods. They brought many arguments based on customer needs but they have never paid attention enough to environment, resources and waste management. Currently there is no solid idea of product quality that inducts the environmental dimension into it. Thus, a research integrates the issues of environment in product quality dimensions is deem very important. The integration between these two fields of science (quality management and environmental sciences) can make a powerful synergy in producing high quality products which eventually affects the quality of life and environment. As additional information, recently new efforts have established to improve the quality of environment.

Furthermore, in different fields of science, the scientists try to find a better way to produce the products. For instance, in car manufacturing companies, scientists have found the new way of producing car with an economical grade of fuel consumption, they try to produce the new hybrid car and recently they got successes of building electrical cars. In the other fields, like chemistry, scientists try to find the alternatives to use instead of plastic which has a long lifecycle. For instance they mixed up the natural fiber with plastic to decrease the lifecycle and convert them to a fast degradable material which can help the environment.

Experimental results have shown that, needs are the basement for any movement. Maslow tries to make it clear in his theory of motivation. Therefore, whenever the customers feel that they should buy environmental friendly products, they automatically would purchase them (Maslow, 1943). So it is important to understand which factors motivate customers to buy a product with added dimension of environmental friendly. For such a reason, it is needed to examine different motivators related to the product quality dimensions, then to examine those motivators in relation to the proposed dimension (environmental friendly) for different products, and finally to come up with the main motivators related to the environmental friendly. This would be reviewed and achieved in literature review latter.

When people want to buy something, price is the most important element for them to consider and analyze. According to the importance of price, in this dissertation, the price will consider as a different element. For example the car manufacturers (e.g. Cadillac) apply a gap between environmental-friendly and non-environmental friendly types of cars. People will response differently for buying a normal rather than environmental friendly product. Usually, price is one of the most important indicators in buying environmental friendly products, but most of users think that environmental friendly products belong to the luxury products category. So they are not interested to buy these kinds of products in comparing to the normal one. Therefore it will be useful to clarify that how much or how many percentage would be acceptable for the people to pay for buying environmental friendly products.

According to the problems mentioned above, the research questions are as follows:

1. Does environmental friendliness become one of the product quality dimensions from consumers' perspective?
2. What are the motivators of buying environmental friendly products for consumers?
3. What is the reflection of the buyers about environmental friendly products in different levels of price?

1.4 Research Objectives

The objectives of this research are as follows:

- To demonstrate the environmental friendly as a new dimension of product quality management.
- To examine the motivators that would persuade a customer for choosing environmental friendly product rather than other products.
- To show the significant role of price on environmental friendly buyers.

1.5 Research Scope

Customers are the main decision makers in all area of products and services, and there will be no company and factory to respond if lack of demand exists. In the other words, customers' demands would make the market and that's why this dissertation emphasizes on costumers demands.

Quality Management is divided into different areas such as Product quality and service quality. This dissertation focuses on product quality.

1.6 Research Importance

This research will introduce environmental friendly as a new dimension of product quality. It would be extracted from customer expectation and perception to motivate the firms and companies to consider environmental friendly as one of the product quality dimensions. So it highlights the role of quality dimensions and their impacts on the environment and will adopt the producers and costumers to new quality dimensions (environmental friendly). In fact, the costumer will be the voice of environment to encourage companies to add this new dimension to the product quality in responding the environmental needs. This research would be important for a broad readership who is interested in environment and the researchers who are working in quality of product and even in TQM fields. This can provide an integration of managerial science and environmental knowledge to achieve a new approach of life quality with special attention to environmental issues.

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