

A STUDY OF CONSUMER PERCEPTION
ON NANOTECHNOLOGY IN COSMETIC PRODUCTS
IN MELAKA

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adalah memadai dari segi skop dan kualiti untuk tujuan penganugerahan
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**Potong yang tidak berkenaan*

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Laporan ini dikemukakan sebagai
memenuhi sebahagian daripada syarat penganugerahan
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“Saya akui laporan ini adalah hasil kerja saya sendiri kecuali ringkasan dan petikan yang
tiap-tiap satunya saya telah jelaskan sumbernya”

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DEDICATION

I would like to dedicate the appreciation for my beloved families, lecturers and friends.

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ABSTRAK

Pada masa kini, inovasi penting untuk mendapatkan kelebihan daya saing dan membezakan produk dengan yang lain. Begitu juga bagi industri kosmetik yang sedang menghadapi keadaan yang sama iaitu industri kosmetik mengaplikasikan nanoteknologi dalam produk. Ini telah menimbulkan ketidakpastian kerana produk kosmetik yang berinovasi adalah kurang kajian dan pembangunan dijalankan di atasnya. Oleh itu, kajian ini adalah untuk menilai pengetahuan pengguna dan persepsi pengguna terhadap nanoteknologi dalam kosmetik produk dengan menggunakan teori tindakan alasan (theory reasoned action) yang disokong oleh Fishbein dan Ajzen (1975). Kajian ini merupakan kajian deskriptif dan menggunakan strategi kajian untuk mengumpul data primer. Soal selidik telah diedarkan secara rawak kepada 150 orang responden dan data yang dikumpulkan dianalisis secara kuantitatif. Sebagai kesimpulannya, pengetahuan pengguna, sikap terhadap tingkah lakuan dan norma subjektif telah menunjukkan hubungan langsung terhadap persepi nanoteknologi dalam produk kosmetik. Ini bermakna bahawa pengguna mempunyai pengetahuan pada produk nanoteknologi kosmetik dan mereka mempunyai sikap yang baik dan norma subjektif terhadap produk nanoteknologi kosmetik.

Kata Kunci: Persepsi Pengguna, Pengetahuan Pengguna, Teori Tindakan Alasan, Nanoteknologi

ABSTRACT

Nowadays, innovation is important in order to gain competitive advantage and differentiate product by each others. This condition is same to the cosmetic industry which cosmetic industry has applied nanotechnology in product. This raises some uncertainties due to innovated cosmetic product is lack of research and development conducted on it. Hence, this research was wanted to evaluate consumer knowledge and consumer perception on nanotechnology in cosmetic products by using theory reasoned action (TRA) advocated by Fishbein and Ajzen (1975). This was a descriptive research and using survey strategy to collecting primary data. Questionnaire was distributed to a 150 respondents randomly and data collected were analysed quantitatively. As a conclusion, consumer knowledge, attitude towards behavior and subjective norm were showed significant relationship towards perception nanotechnology in cosmetic product. This means that consumer has knowledge on the nanotechnology cosmetic product and they have good attitude and subjective norm towards nanotechnology cosmetic product.

Key word: Consumer Perception, Consumer Knowledge, Theory of Reasoned Action, Nanotechnology

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LIST OF ABBREVIATION

DV	Dependent variable
IV	Independent Variable
SCCP	Scientific Committee on Consumer Product
TRA	Theory of Reasoned Reaction
UV	UltraViolet

LIST OF SYMBOL

H_0	Null Hypothesis
H_1	Alternative Hypothesis
nm	Nanometer

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Cosmetic products do refer those products that are applied to the human body for beautifying, preserving, or altering the appearance or for cleansing, coloring, conditioning, or protecting the skin, hair, nails, lips, eyes, or teeth (Eze, Tan and Yeo, 2012). Total trading figures of cosmetic market in Malaysia had hit RM 1.269 trillion in 2011 which is up 8.7 percent on the previous year (Mcdougall, 2012). Due to increasing of population and increasing self-awareness through education level, the cosmetic market is growing rapidly in Malaysia. Follow by increasing of market size, many cosmetic manufacturers have to search new method in order to distinct with other products and also to fulfill the market needs.

Nowadays, nanotechnology is recognized as a new technology which it is able to shape the future. Nanotechnology can lead to a wealth of innovation new technology across a vast array of fields including agriculture, healthcare, information technology energy production and utilization, homeland security and national defense, biotechnology, food and agriculture, aerospace, materials manufacturing and environment improvement (Jurutera, 2010). According to Kumar, Massie and Dumonceaux (2006), they believed that innovation is the key to success in the cosmetics

industry. Hence, many cosmetic companies are investing in science and promoting nanotechnology to entice consumers (Falaschetti, 2012).

In cosmetic products, nanotechnology manipulates materials on an incredibly tiny scale, therefore nano materials are used to give products the new characteristics. Since the nanotechnology still is a new technology, thus, there is a gap of uncertainty appears. Consumer knowledge and perception towards the new technology applied in cosmetic products should be evaluated because it is important to find out how the public at large respond to the nanotechnology applied in cosmetic product.

1.2 Problem Statement

Nanotechnology is still a new technology and there is lack of research and development within the area, and hence, there are some places which haven't been explore by other researcher, for instance, health and safety concerns. Despite its enhanced performance, some manufacturer still resistance it because this is a particularly crucial issue in cosmetics, as the products are directly applied to human skin.

For some consumers, they randomly picked products to be used without thoroughly investigating the usefulness and the negative outcomes of the usage. They are lack of product knowledge or they do not understand the effect of ingredient used on their skin (Mansor, Ali, and Yaacob, 2010). This seems that consumers are lack of knowledge about the issues or effect of cosmetic product. Therefore, this study was conducted to evaluate consumers' knowledge and perception towards nanotechnology cosmetic product.

1.3 Research Questions

The research questions for the research are as follow:

- a. What is the consumer knowledge towards nanotechnology applied in cosmetic products?
- b. What is the consumer perception towards nanotechnology applied in cosmetics products?

1.4 Research Objectives

The research objectives for the research are as follow:

- a. To evaluate the consumer knowledge on nanotechnology applied in cosmetic products.
- b. To evaluate the consumer perception on nanotechnology applied in cosmetic products.

1.5 Scope of Study and Limitations

The scope of research was to explore the issue rising within nanotechnology cosmetic products and pros and cons of nanotechnology cosmetic product. Besides that, consumer knowledge and consumer perception on the issue also evaluated. The research was conducted in Melaka, Malaysia and targeted respondent was 18 years old and above.

The age be fixed in the research was because researcher assumed respondents were able to provide their own opinions without rely on parent beside to avoid biases information.

Among the limitations the research included in the research which was self-funded, thus the area of covered should be within the town of Melaka, Malaysia. Furthermore, assumption for the respondents were honest and understandable during having survey was also made.

1.6 Importance of Study

The research was beneficial for manufacturers as a reference to improve their product by adopting the perception of consumers. Manufacturers should able to adopt the perception of consumer and therefore, able to improve the quality of cosmetic products which will reduce harmful to healthy.

Besides that, the research was able to expose consumers' knowledge towards the perception in nanotechnology cosmetic product. The awareness of consumers towards the issue should be created and hence, during making purchasing decision, consideration of the ingredients using was evaluated by consumers.

Furthermore, the research provided data to related government agencies, to further formulated their policy related to nanotechnology applied in cosmetic product. Related government agencies should able to formulate their policy in order to ensure that consumer can take advantages of the benefits nanotechnology offered consumer products without being put at unnecessary risk.

1.7 Summary

This chapter had included background of the study, problem statement, research questions, and research objectives, scope of study and limitations and importance of study. The further chapter discussed about literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter discussed about nanotechnology in cosmetic product, consumer perception and knowledge on nanotechnology in cosmetic. Definition of nanotechnology, functions, examples and benefits and issues on nanotechnology in cosmetic products were discussed in section 2.2 of overview of nanotechnology in cosmetic product. Section 2.3 was discussed about consumer perception on risk perception and section 2.4 was discussed the consumer knowledge. Follow by theoretical framework and hypotheses also showed in this chapter.

2.2 Overview of Nanotechnology in Cosmetic Products

During the nineteenth century, chemicals were used to replace more expensive natural ingredients making the cosmetics more widely use (Dimitrova et al, 2009). Nanotechnology was started invested in cosmetic product since 2000 year and the first use was in sunscreen product (Punter, 2008).

It was found that a lot of companies that had using nanotechnology in their various products. L’Oreal had invested to nano patents and had patented the use of dozens of “nanosome particles” (Raj et al, 2012).

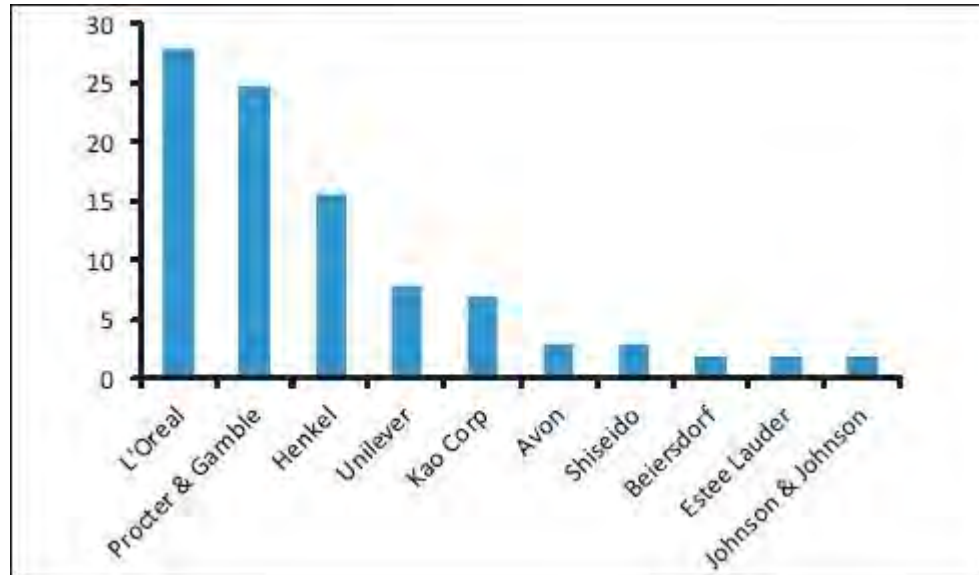


Figure 2.1: Ranking of Top 10 Beauty Companies In Terms of Number of Nano-related Patents.

(Source: Raj, Jose, Sumod and Sabitha, 2012.)

Based on the figure 2.1, some of the companies listed were quite famous within Malaysia, such as L’Oreal Procter & Gamble, Shiseido and Johnson & Johnson were companies that invested in nanotechnology. However, not all cosmetic products were promoted based on nanotechnology and some of them were not revealed it.

2.2.1 Nanotechnology in Cosmetic Product

According to Scientific Committee on Consumer Product (SCCP), 2007, nanotechnology is a sub-classification of technology in colloidal science, biology, physics, chemistry involving the study of phenomena and manipulation of material at the