Electronic Word-of-Mouth (E-WOM), Brand Image and Consumer Purchase Intention on Healthcare Products

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Abstract

Objective – Malaysia is ranked sixth in the Asia Pacific region for obesity and diabetes and it is ranked the first among the Southeast Asian countries. Obesity and diabetes can cause serious non-communicable diseases such as heart disease and hypertension. Buying habit and eating habit are strongly correlated and these habits are very much influenced by the e-word-of-mouth (e-WOM). However, lack of studies in this aspect creates difficulties in making a consensus on the relationships between the variables concerned. The purpose of this study was to examine the relationship between e-WOM and consumer purchase intention among Malaysian dietary supplement products’ consumers.

Design/methodology – The brand image was introduced as a moderating variable between the e-WOM (quality, quantity and sender expertise) and customer purchase intention. The Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to analyse 213 usable sets of questionnaire.

Results – The results indicate that e-WOM quality, e-WOM quantity and sender’s expertise have significant relationship with consumer purchase intention. However, brand image had no moderating effect in the association between e-WOM quality, e-WOM quantity as well sender’s expertise and consumer purchase intention. This study provides new insights into the e-WOM field of study, which in turn affects consumer purchase intention.

Keywords: Brand Image, Dietary Supplementary, e-WOM, Purchase Intention, PLS-SEM.

1. Introduction

Dietary supplement is now a timely discussion in the areas of medical, industrial, and legal research. The use of these products by all ethnic groups is high, with the increase of age, education level and physical activity. Word-of-mouth communication is said to be a highly trusted source of information between consumers (Breazeal, 2009). Word-of-mouth (WOM) is regarded as an interpersonal source of information, it connects consumers, and pulls them away from the power of marketers. In addition, it is also considered as one of the most influential elements in the consumer decision making process (Cheung, Lee, & Rabjohn, 2008). Nevertheless, it is more credible and highly trustworthy because the power of WOM stems from its independence from any commercial influence (Bickart & Schindler, 2001).

According to the World Intellectual Property Report (2013), the image of a brand has a tendency to impact the earnings of the company, the intention of consumers to buy and the success of the company’s marketing efforts, all of which will therefore have a long-term impact on their sustainability. The image of a brand can be reinforced or ruined by WOM or vice versa. Now, with the advancement of technology and the widespread use of social media, the emergence of e-WOM has enhanced the role of e-WOM in influencing consumers’ purchase intention especially regarding the purchase of dietary supplement products. Positive or negative brand image held by consumers regarding the dietary supplement products is expected to strengthen or weaken the connection between e-WOM and consumer purchase intention. However, all these assumptions are lacking of supporting evidence, thus making this study a timely
endeavour to close the existing gap.

This study is expected to provide some implications to existing knowledge, and the marketers. For the existing knowledge, the findings of the study can provide additional empirical evidence on the relationship between e-WOM and consumers’ purchase intention. This evidence will assist future researchers in constructing a more cohesive research framework addressing the issue of consumer purchase intention especially with regard to dietary supplement products. For marketers, there are a lot of factors that influence consumer purchase intention and one of them is e-WOM. However, due to lack of empirical evidence, using mere assumptions will risk the success of their marketing strategies. Therefore, the findings from this study are beneficial for their marketing strategies on dietary supplement products.

The concept of maintaining a healthy and nutritious diet is well rooted in the minds of the majority of Malaysians. However, dramatic changes in urban lifestyles have created health and nutrition problems, which have resulted in a rapid increase in obesity cases, hypertension, diabetes, and coronary heart disease rates, and other serious health problems. The introduction of dietary supplement products has given consumers the option to reduce the possibility of having health related problems. However, studies are limited in the healthcare industry and not many have investigated on the role of word-of-mouth (WOM) or electronic word-of-mouth (e-WOM) in influencing consumers’ purchase intention of dietary supplement products (Kofoed, Christensen, Dragsted, Tjønneland, & Roswall, 2015). Therefore, the main focus of this study is to produce supporting evidence on the factors of e-WOM influencing consumers’ intention to purchase dietary supplement products. The lack of studies in the area can be inferred from the claim made by Kraus (2015) where little research has been done by researchers in this aspect in which only a few studies have investigated the role of e-WOM in influencing consumer purchase intention, and this phenomenon has motivated this research to be conducted. Additionally, this study intends to examine the moderating role of brand image on the relationship between e-WOM and purchase intention.

2. Literature Review

e-WOM is one of the subjects that researchers and marketers have studied extensively in the past and will be continued to be studied for a long time in the future as long as the Internet technology is in existence. Researchers have demonstrated varying explanations on why other scientists and analysts have struggled to find a common agreement on consumer behaviours. Purchasing dietary supplement products is on the rise although there is lack of scientific evidence to support customers’ health needs. It is expected that e-WOM has played a significant role in influencing consumers’ purchase intention. Therefore, the aim of this cross-sectional study is to examine the relationship between the e-WOM and consumer purchase intention of dietary supplement products.

Due to fierce competition in healthcare industry in Malaysia, some researchers suggest that understanding positive WOM has become extremely important. It is meant to differentiate those who can leverage from those who cannot on the knowledge of WOM in their product promotion. For those who can leverage the knowledge, they can potentially gain greater success and increase the market share of dietary supplement products. Those who are unable to capture and use the knowledge will be left behind and most probably will be swept away from the competition. Therefore, due to the importance of e-WOM, this study will examine the role of the independent variables that comprise e-WOM dimensions in influencing consumer intention to purchase dietary supplement products.

Purchase Intention
Purchase intention is the possibility of consumers to purchase a product and their behavioural tendency is created after receiving the advertising messages (Dodds, Monroe, & Grewal, 1991). In another research conducted by Thuy (2016), purchase intention is defined as an individual’s conscious plan to make an effort to purchase a brand. Within the scope of this research, the author only discusses about the purchase intention whereas purchase decision is excluded. Product preference and purchase intention are not always identical with the actual purchase decision because these two factors have different sets of antecedents, such as the attitude of the others or the unexpected situation (Bakti et al., 2020; Kotler & Armstrong, 2010).

Customer’s preference is influenced by experience, which afterward affects customer’s purchase decision (Cornford & Pupat, 2019; Fan, Miao, Fang, & Lin, 2013). Lu, Zhao, & Wang (2010) stated that rational consumers’ purchase decision-making processes follow the three stages of requirement cognition, information gathering and the purchase behaviour. They believe that today, virtual communities have profoundly changed consumers’ purchase decision-making process. According to them, many people nowadays examine the other consumers’ reviews and experiences posted in virtual communities before purchasing new products (Zeinab & Seyedeh, 2012). Therefore, purchase intention is influenced by e-WOM that will be discussed in the following section.

Electronic Word-of-Mouth (E-WOM)

Munnukka, Karjaluoto, & Tikkanen (2015) affirmed that e-WOM is considered by consumers as one of the most useful information sources as it consists of peer opinions and experiences instead of company generated information. On the other hand, Soares, Pinho, & Nobre (2012) delineate e-WOM as any positive or negative statement made by potential, actual, or former customers about a product or a company, which is made available to a multitude of people and institutions via the Internet.

The use of the Internet allows the emergence of a new form of communication platform which can lead to the empowerment between the providers and consumers, allowing them to share information and good opinion of Business-to-Consumer, and of Consumer-to-Consumer (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). There are two general forms of WOM; the first one is related to the company’s effort to promote the products or the company and the second one is concerning the sharing of opinion and experience of other consumers on the products of the company. In this research, the second area of e-WOM is focused on as consumers have trusted words of the other consumers more than those from the company.

According to Cheung (2008), many consumers can influence other consumers’ ideas related to product information through social networks. In this context, it is stated that e-WOM permits consumers to share ideas and experiences and provide a variety of opportunities and perspectives to other consumers (Balakrishnan, Mohd, & Wong, 2014). It is a norm in today’s customers’ practice whereby most of them will refer to reviews and ratings of other consumers before deciding on the products or services to purchase. They will proceed with the transaction if the reviews are favourable and withdraw if the reviews are negative. Thus, what makes e-WOM so powerful to influence consumers’ purchase decision? The following sections will discuss on the dimensions of e-WOM in detail.

E-WOM Quality

Quality of e-WOM refers to the persuasive strength of comments embedded in an informational message (Bhattacherjee, 2006). Studies have revealed that as a type of information, the quantity or volume of WOM can influence the cognition of consumers receiving such information (Liu, 2006). The consumer buying decision can be based on some criteria or requirements that meet their needs and their willingness to buy is based on their perception on the quality of information they received (Cheung, 2008). If they perceived that the information received is of high quality, the customers

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are more likely to engage in buying behaviour. Therefore, it is important to determine consumers’ perception of information quality as an element in assessing their potential buying decision.

According to Delone & Mclean (1992), the user can begin to determine whether the information, the review or the analysis is worth reading once the e-WOM on the site receives customer attention where it has been established at an early stage that the quality of the information is a significant indicator of the performance of the information system. However, correctness and usefulness are what consumers care about, as well as good content quality will increase their willingness to trust e-WOM (Teng, Khong, Goh, & Chong, 2014). Internet features allow users to share their experiences and opinion with relative freedom, which may affect the quality of information (Xu & Yao, 2015). E-WOM quality is important in the online environment; the content of the review should be sufficiently broad and comprehensiv Nelson, Todd, & Wixom (2005) and provide useful and quality information for facilitating purchasing decision (Fillier, 2015).

**E-WOM Quantity**

The quantity of e-WOM amount refers to the total number of comments posted (Cheung & Thadani, 2010). The amount of online feedback dictates the product’s popularity, which may reflect the product’s market success (Lin, Wu, & Chen, 2013). A product’s recognition is determined by the amount of reviews, comments, and online discussion on that product. The product is said to be highly recognized when it receives greater amount of reviews and comments. And, the reverse is true when the product receives less reviews and comments. Therefore, quantity of e-WOM could represent the market performance, consumer awareness and quality of the product concerned.

The quantity of e-WOM is an important dimension because it demonstrates the popularity of information that consumers can explore, which bring them confidence and reduce uncertainty while making purchase intention (Maeyer, 2012). It is likely to help consumers make a more rationalized purchasing decision by telling themselves that many other people have also purchased the product. Recent work has based its attention on revising the quantity with the impact of popularity. The number of e-WOM is an important factor influencing the consumers’ evaluation of information and the recommended products because it represents the product’s popularity. When consumers lack of knowledge on a product and its outcome, they frequently try to gather more information to reduce the uncertainty and eliminate risks (Cheung & Thadani, 2010; Jeong & Koo, 2015).

The huge amount of text-based e-WOM messages online have given researchers and managers both opportunities and challenges. One possibility is the free access to voluminous, accurate customer information. Researchers and managers can obtain customers’ information for research and business purposes. On the other hand, the vast amount of unstructured textual knowledge can be difficult to be properly used (Kunja & Gvrk, 2018), because it would not be easy to review this huge amount of data and it is quite challenging to find a specific pattern due to not having a specific information structure (Dahka, Hajiheydari, & Nastaran, 2020). However, with the emergence of new data analysis software, it has become possible to leverage the information for the benefits of researchers and managers.

**Sender’s Expertise**

Sender’s expertise refers to the credibility of senders as perceived by the other customers. When the senders are perceived as having professional knowledge, the consumers usually believe in them (Alba & Hutchinson, 1987). Furthermore, expertise is aptitude, required training and experience and is a domain specific. On the other hand, expertise can be viewed as “authoritativeness,” “competence,” and “expertness”
(Lin et al., 2013). It is considered that the senders are experts when they make comments and review in a professional manner and support the claims with facts and figures. These comments and reviews will attract other users to adopt the information and plan to purchase the products.

Within the online environment, the consumers hardly touch the product or recognize the e-WOM sender. Therefore, source credibility or the expertise is a vital predictor in the early stage of the consumer buying process, and it contributes to the perceived credibility of messages on the site (Dou, Walden, Lee, & Lee, 2012). So, consumer-perceived credibility of e-WOM can be referred to as the extent to which one perceives that the recommendation or review by the sender is true or factual (Fan et al., 2013). It is different from the traditional WOM where the credibility emanates from a sender who is known to the receiver; therefore, the sender’s and the message credibility can easily be established (Cheung & Thadani, 2010). But, in e-WOM the sender must first establish his credibility before developing customers’ trust by showing his prominence in certain areas or topics. Therefore, this study proposes that:

H1a: The quality of e-WOM positively affects consumers’ purchasing intention.
H1b: The quantity of e-WOM positively affects consumers’ purchasing intention.
H1c: Sender’s expertise positively affects consumers’ purchasing intention.

Brand Image

In representing the overall picture of customers’ experiences, brand image is crucial because through this approach, brand image can create consumer’s cognitive, emotional, and behavioural responses as the outcome (Padgett & Allen, 1997). According to Kazmi & Mehmood (2016), there are about three stages of the product lifecycle, which starts with the entering of a new brand in the market that is known as the “registration” stage in which the brand introduces itself by its inimitable characteristics. In this second stage, it will have to compete with the competitor’s product or brand and must be adaptive to change in meeting the market requirement in order to stay in the market and gain a competitive edge. The third stage is the stage of image pronouncing where the brand needs to build its own value and perception in the mind of the potential customers so that they could differentiate it from the competitor’s product.

Not just that, brand image is also important for companies’ future profit and their long-term cash flow, companies’ coalition and acquisition decisions, their stock price, sustainable competitive advantage and their success in the market (Torlak, Ozkara, Tiltay, Cengiz, & Dulger, 2014). The brand image is referred as the sum of connotations accumulated by perceptions regarding a product that is formed in the consumers’ mind (Keller, 1993). For that reason, brand image includes consumers’ experience and evaluations related to the brand (Bian & Moutinho, 2011).

Brands have the capabilities of taking part in online conversations. Therefore, individuals put their comments and expect a response to their problems and questions. It makes the conversation intense, however, this is the only chance of exerting an effect on consumers and others who read a company’s contribution (Sharifpour, Khan, Alizadeh, Akhgarzadeh, & Mahmodi, 2016). In other words, brands influence consumers’ perceptions on e-WOM and subsequently affects the purchase intention. Positive brand image will strengthen the perceptions and negative brand image will dilute the positive perceptions that the customers have on the products. Therefore, this study proposes that:

H2a: Brand image moderates the relationship between quality of e-WOM and consumer purchase intention.
H2b: Brand image moderates the relationship between quantity of e-WOM and consumer purchase intention.
H2c: Brand image moderates the relationship between sender’s expertise and consumer purchase intention.
3. Methodology

This study was undertaken to investigate the connection between e-WOM and purchase intention as moderated by brand image among dietary supplement products’ consumers. Therefore, correlational research is adopted as the research design. This method describes the relationship between two variables. According to Sekaran & Bougie (2013), correlational research is conducted when the researcher is keen on depicting the factors that are related to the issue.

According to Crossman (2011), the unit of analysis refers to the major entity that is analysed in the study. Based on another assertion by Sekaran & Bougie (2013), the unit of analysis refers to the level of aggregation of the data collection during the subsequent data analysis stage. Hence, the unit of analysis that was used in this study is individual that refers to consumers who purchase dietary supplement products. Their individual responses on the studied variables were used to test and confirm the hypothesized relationships in the study.

A total of 384 respondents were involved in this study. The main instrument used in this study was questionnaire, which had been adapted and modified from previous studies. The questionnaire was specifically designed to match with the nature of the research and to answer the research questions of the study. The questionnaire was personally distributed to all respondents which constitute the consumers of dietary supplement products.

4. Result and Discussion

Respondents’ Profiles

A total of 384 sets of the questionnaire were distributed to Malaysian consumers who had consumed dietary supplement products and were collected to be analyzed as shown in Table 1.

| Table 1. Respondents’ Profile |
|--------------------------------|
| **Age** | **Frequencies** | **%** |
| 18-23 years | 63 | 29.6 |
| 24-29 years | 96 | 45.1 |
| 30-35 years | 24 | 11.3 |
| 36-49 years | 15 | 7.0 |
| 50 years and above | 15 | 7.0 |
| **Gender** | **Frequencies** | **%** |
| Male | 64 | 30.0 |
| Female | 149 | 70.0 |
| **Monthly Income** | **Frequencies** | **%** |
| Below RM2000 | 115 | 54.0 |
| RM2001-RM3000 | 33 | 15.5 |
| RM3001-RM4000 | 37 | 17.4 |
| RM4001-RM5000 | 7 | 3.3 |
| RM5001 and above | 21 | 9.9 |
| **Primary Reason of Using a Dietary Supplement** | **Frequencies** | **%** |
| As the primary treatment for my health condition(s). | 40 | 18.8 |
| In addition to my prescribed therapy. | 6 | 2.8 |
| As a supplement to improve my health. | 167 | 78.4 |

Convergent Analysis

As depicted in Table 2, the constructs of brand image (CR=0.923, AVE= 0.631), consumer purchase intention (CR=0.959, AVE= 0.663), quality (CR=0.936, AVE= 0.708), quantity (CR=0.906, AVE= 0.658) and sender expertise (CR=0.905, AVE=...
0.65) are highly reliable and consistent to be used in this study. The composite values are greater than the threshold value of 0.7 (Hair, Anderson, Tatham, & Black, 1998). Whilst, the average variance extracted, which reflects the overall amount of variance in the indicators exceeds the value of 0.5 (Hair et al., 1998).

Furthermore, discriminant validity indicates the cross loadings of the construct and the other constructs meet the assumption that the value of the construct should be greater than the value of another construct using (Fornell & Larcker, 1981). A Fornell & Larcker’s criterion explained that if the square root of AVE of a variable is greater than the correlation value between a variable and the other variables, then the discriminant validity is confirmed. As shown in table 3, the AVE values are greater than the correlation values, so the variables in this study can be considered as having an acceptable discriminant validity.

| Constructs         | Composite Reliability | Average Variance Extracted (AVE) |
|-------------------|-----------------------|---------------------------------|
| Brand Image       | 0.923                 | 0.631                           |
| Consumer Purchase Intention | 0.959 | 0.663                           |
| Quality           | 0.936                 | 0.708                           |
| Quantity          | 0.906                 | 0.658                           |
| Sender Expertise  | 0.905                 | 0.657                           |

Table 2. Convergent Analysis

Table 3. Discriminant Analysis

Structural Model

In a structural model, table 4 showed the R square (R2) value of 0.604 which suggests that 60.4 percent of the variance in consumer purchase intention is explained by quality, quantity and sender expertise. This result as depicted in table 4 indicates that all the three determinants can highly predict consumer intention to purchase dietary supplement products. Moreover, table 5 explained the T-values are greater than the threshold value of 1.96 which means that the constructs of quality (t-values = 2.474), quantity (t-values = 4.41), and sender expertise (t-values = 2.469) are significant to influence consumer purchase intention of dietary supplement products. However, the effect size of the relationship is small. This is referring to the suggestion of Cohen (1988) that the effect size of less than 0.2 indicates there is a small effect size. Hence, three hypotheses of H1, H2 and H3 are supported in this study.

Moderating Effects

Brand image was introduced as a moderating variable that was assumed to influence the relationship between the three independent variables (quality, quantity and sender expert) and the dependent variable (customer purchase intention). When brand image was added into the relationship, the R2 value changed from 0.604 to 0.690 suggesting that the increase of 8.6 percent of the variance in customer purchase intention was explained by quantity, quality and sender expertise.

However, after the moderating variable was added into the model, the relationships between the three independent variables and the dependent variable were not significant. The t-values were less than 1.96 and this confirms brand image does not moderate the relationship between the three independent variables (quality, quantity and sender expertise) and customer purchase intention. Hence, the hypotheses H4, H5 and H6 are not supported for this study. The results are presented in figure 1.
The Implications of the Study

By identifying the features of e-WOM that enhance consumer purchase intention, this study helps retailers understand which area of e-WOM that will lead to consumer purchase intention and that should be given serious attention. Marketers are therefore encouraged to promote the products before the point-of-sale stage through such activities as product testing, with the aim of initiating a favourable e-WOM communication so that consumers can create positive impressions on the product. In addition, the results also indicate that brand image does not moderate the relationship between e-WOM and consumer purchase intention of dietary supplement products. This finding proves that brand image should not be considered by marketers by analysing the role of e-WOM in affecting purchase intention. Consumers’ perception on e-WOM alone will determine their purchase intention. Another implication is that the finding provides additional empirical evidence that can be used to enrich the existing work on the relationship between e-WOM and consumer purchase intention. Future researchers can use the findings to explore further on the role of e-WOM in influencing other consumer behavioural outcome.

Table 4. R Square Analysis

| Constructs                        | R Square before moderating | Before | Adjusted | After | Adjusted |
|-----------------------------------|---------------------------|--------|----------|-------|----------|
| Consumer Purchase Intention       | 0.604                     | 0.598  | 0.69     | 0.684 |

Table 5. Structural Model

| Correlations                        | Beta Values | SE Value | T-Value | F-Values | P Values | Result       |
|-------------------------------------|-------------|----------|---------|----------|----------|--------------|
| Brand Image -> Consumer Purchase Intention | 0.375       | 0.066    | 5.639   | 0.280    | 0.000    | Supported    |
| Quality > Brand Image -> Consumer Purchase Intention | -0.079      | 0.098    | 0.810   | 0.048    | 0.418    | Not Supported |
| Quantity -> Brand Image -> Consumer Purchase Intention | -0.048      | 0.092    | 0.518   | 0.106    | 0.605    | Not Supported |
| Sender Expertise -> Brand Image -> Consumer Purchase Intention | 0.070       | 0.117    | 0.601   | 0.028    | 0.548    | Not Supported |
| Quality -> Consumer Purchase Intention | 0.162       | 0.066    | 2.474   | 0.029    | 0.014    | Supported    |
| Quantity -> Consumer Purchase Intention | 0.311       | 0.070    | 4.410   | 0.211    | 0.000    | Supported    |
| Sender Expertise -> Consumer Purchase Intention | 0.140       | 0.057    | 2.469   | 0.080    | 0.014    | Supported    |

Figure 1. Structural Model

R Square before moderating

Before

Adjusted

After

Adjusted
5. Conclusions, Limitations, and Suggestions

This study was intended to address the existing gap in the literature by providing the empirical evidence on the role of e-WOM in influencing consumer purchase intention of dietary supplement products. Data analysis was conducted for the three dimensions of e-WOM, namely e-WOM quality, e-WOM quantity and sender expertise. The study found that the three hypotheses on the relationship between e-WOM dimensions and consumer purchase intention were supported. The results of the study have some important implications. The findings indicate that e-WOM communication is important to dietary supplement manufacturers as it can lead to consumers’ purchase intention. The use of technology in promoting favourable e-WOM is an important factor that can change the consumers’ decision to purchase the products. By reading favourable online reviews of products prior to purchase, the e-WOM can influence the consumers’ decision making to purchase dietary supplement products.

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