Partial Fulfilment

The Perceived Trustworthiness of Electronic Word of Mouth (eWOM) on Attitude towards Dietary Supplements, Purchase Intention and Behaviour for Dietary Supplements amongst Female Adolescents in Saudi Arabia

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Dedication

I dedicate this doctoral thesis is to my inspirational mother, my supportive father and my brothers Mohammed and Ahmed, who have always believed that I would reach my goals. Thank you very much for everyone who has been part of my life during this journey.

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First and foremost, the Name of the Nameless One, God of everything, the almighty, who enabled me to complete this doctoral thesis and to overcome this challenge in my life.

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Special thanks to my angelic supportive mother, my kind father and my supportive brothers Mohammed and Ahmed. I love you all.

Declaration

I, Hebah Jamal declare that:

• I am the only person responsible for the work submitted in the current thesis.

• I wrote this thesis by myself.

• All verbatim extracts have been featured and the sources acknowledged.

• I submitted some papers during my study period, which are listed below.

1) Jamal, H. K. (2016, June). *The role of perceived trustworthiness of eWOM on attitude towards dietary supplements, purchase intentions and behaviour among Saudi female adolescents*. Paper presented at the Middlesex University Student Summer Research Conference, Hendon.

2) Jamal, H. K. (2017, November). *The conceptual framework and theoretical rationale for the role of perceived trustworthiness of eWOM on attitude towards dietary supplements, purchase intention and behaviour among Saudi female adolescents*. Paper presented at the 1st AUE International Research Conference, Dubai.

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Date: _____18-05-2018_____

Abstract

Social networking sites (SNS) such as MySpace, Twitter and Facebook provide effective communication platforms that influence the purchase behaviour of brands for many age groups particularly adolescents. These platforms offer boards of online engagement by user-generated content to share, like and exchange their experience and opinions through electronic word of mouth (eWOM). The aim of this study is to investigate perceived trustworthiness of eWOM dimensions; volume, valence and perceived source expertise of eWOM influence on attitude, purchase intention and purchase behaviour towards dietary supplements amongst Saudi female adolescents. Due to rapid socio-economic changes in Saudi Arabia (SA), healthy food intake was replaced by high-calorie diet and sedentary behaviour. The proposed model for this study investigates purchase behaviour in social media by using the three dimensions of perceived trustworthiness of eWOM.

The sample size was 1,027, and a non-probability sampling technique was adopted. The targeted population ranged from 11-19 years old. The covariance-based structural equation modelling (CB-SEM) were performed by using AMOS software.

The findings reveal that the perceived trustworthiness of eWOM dimensions show a significant influence on attitude, purchase intention and actual purchase behaviour towards dietary supplements. Interestingly, the perceived body image and time spent on social media do not moderate the relationship between the perceived trustworthiness of eWOM and attitude towards dietary supplements.

This study contributes to marketers' strategy implementation through cooperation with social influencers. In food marketing, labelling should be provided including nutritional facts and re-branding healthy food. Moreover, Policy makers should seriously consider banning fast food from

schools and initiating social marketing campaigns. In order to control use of dietary supplements, it should be by prescription only and risk assessments should be introduced as well.

Key Words: eWOM, Trustworthiness, Attitude, Purchase Intention, Purchase Behaviour, Dietary Supplement, Female Adolescents, Saudi Arabia, perceived body image, time spent on social media.

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Chapter One: Introduction

1.1 Introduction

This chapter presents an explanation for this current research, and discusses the research background of one of the main topics which have attracted public concerns about the perceived trustworthiness of electronic word-of-mouth (eWOM) dimensions on attitudes towards dietary supplements, purchase intention and purchase behaviour amongst Generation Z Saudi female adolescents in marketing fields. It explores their interaction on social networking sites (SNS), and their perceived body image during the time they interact on SNS. This current chapter is divided into seven sections. In the first section the order of the chapters is presented. Following this, the next section presents the background to the study, where the research problem is highlighted and gaps are identified, where the researcher explains the aim, objectives and research questions in this study. Then, the theoretical, managerial and policy maker contributions are highlighted. Subsequently, the thesis structure is summarised, before the final conclusion chapter highlights the key research findings.

1.2 Background to the Problem

Social media is a dominant topic across the world. An essential part of social media is eWOM, which traditionally has been used to raise awareness, but which more recently has been used to shape consumer attitudes (Fosdick, 2012; López & Sicilia, 2014). Online engagement, as a result of user-generated social media has become a reality in the digital world, which has had a significant impact on attitudes and so purchase decisions (Godes & Mayzlin, 2004; Huanget et al. 2011; Kozinets 2002). eWOM has become an integral part of the promotional budgets of many firms,

and the role of eWOM cannot be underestimated for companies and brands (Mangold & Faulds, 2009; Nanda et al., 2018). Furthermore, this gives people more time to find interesting products to talk about and share. eWOM can also induce members to join groups or sign up for websites. Such campaigns have longer carryover effects than traditional marketing (Mishra & Satish, 2016).

Another feature of eWOM is that it offers opportunities to advertisers to remain anonymous and offer product suggestions in online communities (Mayzlin 2006). This point is crucial since it provides an opportunity to spread eWOM by female adolescents as well as a threat that negative eWOM might decrease the perceived trustworthiness of eWOM on adolescent consumption. In addition, marketers can explore adolescents' consumption and their purchase behaviour (Barefoot & Szabo 2010; Fosdick, 2012; Prasad et al., 2017).

User-generated content for eWOM has been increased by marketers, which has decreased the perceived trustworthiness of eWOM on user-generated content. Therefore, consumer perceived trustworthiness of eWOM has become a crucial topic for consumers and marketers alike, and requires attention (Abubakar et al., 2017; Doh, & Hwang, 2009; Mortazavi et al., 2014; Pan & Chiou, 2011; Zainal, et al., 2017). Consumer user-generated content of eWOM comes from different age groups and interests, with one of the largest age groups being Generation Z. There is a scant literature about this generation in marketing fields, and of the influence of eWOM on them (Priporas et al., 2017; Qi & Leung, 2018; Schlossberg, 2016).

As noted above, adolescent's use of social media is increasing, and they are regarded as one of the largest market segments on social media. Adolescents spend a considerable amount of time behind digital screens (Kanyinga et al., 2015; Larson et al., 2014). Social networking sites (SNS) such as Facebook, Twitter and MySpace are good virtual places for youth to interact and exchange information about healthy eating and active living messages. Sedentary screen time activity spent on SNS is correlated with unhealthy eating and obesity amongst adolescents (Al-Nakeeb et al., 2012; Lopez et al., 2008; Sampasa-Kanyinga et al., 2015). In particular, there is a scant literature about the influence of social media on female adolescents, and body image disturbance or dissatisfaction (Perloff, 2014; Tiggemann & Slater, 2013; Xiaojing, 2017).

Saudi Arabia, like other developing countries, has been through many rapid socio-economic changes in recent decades. These changes have greatly affected the lifestyle of the entire population. For instance, the traditional Saudi diet has been replaced by energy-dense Western diets, which have caused the increased prevalence of certain diseases, such as obesity, type 2 diabetes and hypertension (Al-Hazzaa et al., 2014; Khalaf et al., 2015; Musaiger & Zagzoog, 2013). Moreover, fast food consumption and increased caloric intake, combined with a sedentary lifestyle, is associated with rising rates of obesity in Saudi society (Musaiger, 2004; Musaiger et al., 2016; Lopez et al., 2008). Saudi adolescents in particular have been vulnerable to intense marketing efforts by manufacturing companies promoting unhealthy snacks, since they represent future adult consumers (Al-Faris et al., 2015; Al-Hazzaa et al., 2011; Al-Nakeeb et al., 2012).

The most recent annual report of the Saudi General Authority for Statistics shows that 68% of the total population are below the age of 35, with 27% of the total population being adolescents (SGAS, 2018). Saudi adolescent girls are one of the main groups exposed to and affected by high fast food consumption behaviours in the region (Alfaris et al., 2015). According to Zaghloul (2011), 71% of Saudi female adolescents are either overweight or obese. Clearly, this explains the high prevalence of dietary supplement use amongst females in Saudi Arabia.

Alfawaz et al. (2017) found that the prevalence of dietary supplement use was high among Saudi female adolescents, and furthermore that it was significantly associated with sociodemographic and lifestyle factors. This prevalence of dietary supplement use was supported by the very significant expansion of the pharmaceutical market in Saudi Arabia. According to the Saudi Pharmaceutical Sales Forecast for 2018, industry products are expected to surpass US$7 billion , compared to US$4 billion in 2012, out of which the supplement market accounts for 4% of total pharmaceutical market sales.

Since TRA is widely used in consumer purchase behaviour (Belleau et al, 2007; Erkan and Evans, 2016; Simbolon, 2015), this research fills the gap of the perceived trustworthiness of eWOM and the related components from the TRA model for Saudi female adolescents' usage of dietary supplements. Figure 1.1 below shows the difference in social media use between females and males.

Female Users and Male Users of Social Media Sites pages
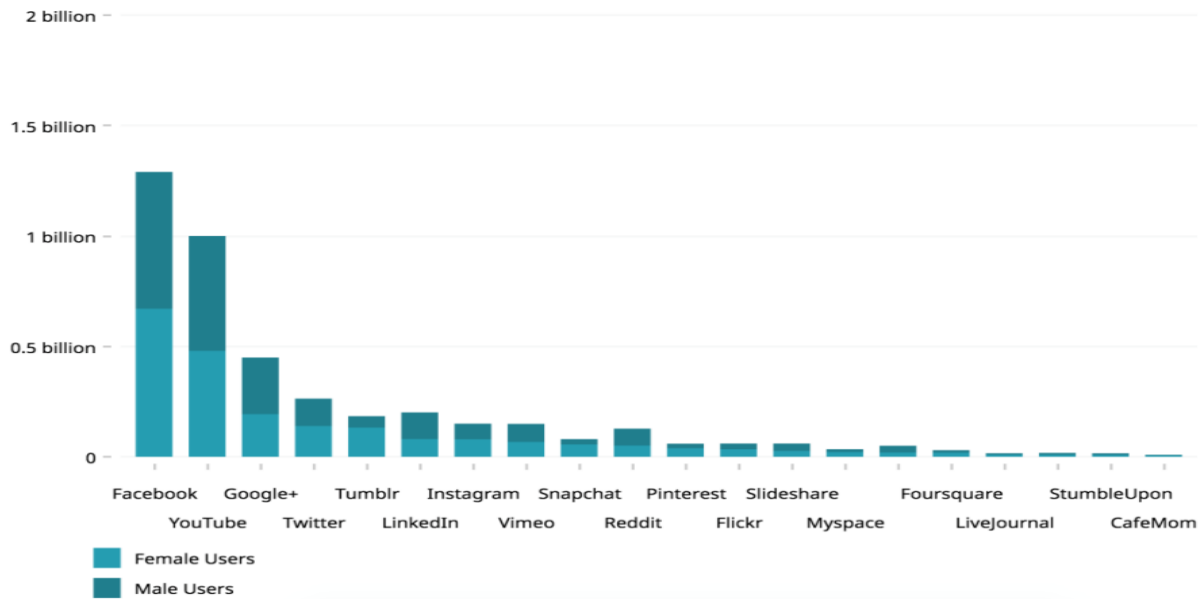
Figure 1.1: Female and Male Users on Social Media

Source: Brand Watch (2018)

Based on the study conducted by Brand Watch (2018), it seems that the majority of users on SNS are female. Global research was conducted in order to explore the ratio of male and female users on the internet. As figure 1.1 shows, 22% of women are active compared to 15% of men. In addition, on Facebook, the ratio of women to men is 71% to 29%. As such, it is clear that women are more likely to use SNS and share their reviews about products and services. This has also been illustrated in previous studies, such as Song, Kim, and Lee (2016), Augusto and Torres (2018), and Kim, Kandampully, and Bilgihan (2018). Collectively, these studies show that women are influenced by SNS more than men. Given this, according to Warner and DeFleur (1969), Wang, Cunningham, and Eastin (2015), Song, Kim, and Lee (2016), Augusto and Torres (2018), and

Kim, Kandampully, and Bilgihan (2018), SNS have developed the attitude of a consumer, which in turn has further shaped consumer behaviour. This is defined as the global predisposition, which can be either for or against undertaking certain behaviour.

1.3 Research Rationale

1.3.1 Perceived Trustworthiness of eWOM

Previous studies have addressed valence as a dimension of eWOM influence on trustworthiness (Jin & Phua, 2014; Koo, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan et al. 2015). Other studies have investigated the role of volume as a dimension of eWOM on trust (Chua and Banerjee, 2015; Liu, 2006; Mitchell & Khazanchi, 2010; Yang et al., 2012). Moreover, other researchers have looked at the role of source expertise of eWOM on trustworthiness (Ismagilova et al., 2017; Li & Du 2011; Schiffman, 2015). According to Flanagin and Metzger (2013), who investigated the influence of volume and perceived source expertise of eWOM on perceived trustworthiness of eWOM, future studies should combine these two dimensions with valence.

As such, this present research investigates the three dimensions for perceived trustworthiness of eWOM together, namely the volume of eWOM, the valence of eWOM and the perceived expertise source of eWOM. The justification for this is provided in the research rationale section in chapter one.

1.3.2 Saudi Female Adolescent Consumers

Previous studies have investigated obesity in Saudi adolescents in terms of their consumption of fast food and energy drinks, their lack of breakfast, and their minimal intake of fruit and vegetables.

Many studies have shown that obesity levels in female adolescents were higher than in male adolescents (Al-Faris, et al., 2015; Al-Hazzaa et al., 2010; Al-Hazzaa et al., 2011; Al-Hazzaa et al., 2014). Other studies have focused on adolescents' sedentary behaviour, the time spent in front of screens, and their use of social media, all of which increase the incidence of obesity and diseases (Al-Kutbe et al., 2017; Al-Nakeeb et al., 2012; Mahfouz et al., 2011). No study has been conducted about the perceived trustworthiness of eWOM in SNS. The model that is here proposed and tested will develop understanding of attitudes towards dietary supplements, purchase intentions and purchase behaviour in the light of TRA model, whilst also adding the perceived trustworthiness of eWOM dimensions (i.e. the perceived source expertise of eWOM, the valence of eWOM, and the volume of eWOM). In addition, there is an identified research gap in the influence of SNS on Saudi female adolescents towards their body image from this exposure. In marketing research there is a scant literature about Generation Z, which is the age group target of this study. There has been little written about Generation Z in terms of their attitude, purchase intention and purchase behaviour from the influence of eWOM (Qi & Leung, 2018; Priporas et al., 2017; Schlossberg, 2016; Southgate 2017; Stavrianea & Kamenidou, 2017).

Dietary supplements are a key product which female adolescents use for different reasons. Often, normal diet and exercise is replaced by these harmful measures, which can result in side effects such as those found in studies by Ashar et al. (2003) and Blanck et al. (2007). Other studies have investigated the marketing of dietary supplements through social media, including the illegal marketing of some of these dietary supplements (weight loss supplements) which are not approved by the FDA (Ferrell & Ferrell, 2012; Glenn, 2011; Pillitteri et al., 2008). Previous studies (Andrew,

Tiggemann & Clark, 2016; Clark & Tiggemann 2008; Neighbors et al., 2008; Rayner et al., 2013) articulated a series of ideas and a framework to guide research on the effects of SNS on body image disturbance of young female adolescents (Perloff, 2014). The interactive format and content features of social networking sites, such as the exchange of images as well as the strong peer presence, suggest that SNS, working via negative social comparisons, can significantly influence body image concerns (Perloff, 2014).

In addition, Saudi society has its traditions and customs. According to (Hofstede, 1997) the cultural dimension has a strong impact on a person's behaviour. Indeed, it determines the purchasing attitude towards any product or services. Saudi Arabian culture is collectivist, conservative and based on family orientation. Women are more likely to make decisions based on their family values and culture. Family members of Saudi women may make the decisions about their education, marriage, employment and all other main decisions (Hofstede,1997). Saudi Arabian women are more likely to face issues of anorexia, binge eating and bulimia, which often lead towards obesity. The studies conducted by Trusov et al. (2009), Leung et al. (2013), Sweeney et al. (2014), Lee (2016), and Purnawirawan et al. (2015) show that people who live in a collective society are more likely to eat freely due to socialising with either family or friends. They often get involved in a number of eating episodes since eating can become an obsession. Given this, culture plays an essential role in determining the eating habits of people, and this affects their attitude towards eating healthily or unhealthily.

1.3.3 Use of Dietary Supplements

A number of studies have investigated dietary supplements, with the outcomes of many of those studies found in medical journals and very few located in the marketing literature, despite the fact that they are marketed in social media (Raghupathi & Fogel, 2013; Geller et al., 2015; Cohen,

2014). Normal diet and exercise are replaced by these harmful measures, as per the studies by Ashar et al. (2003) and Blanck et al. (2007). Other studies, however, have investigated the marketing of dietary supplements on social media using eWOM (Ferrell & Ferrell, 2012; Glenn, 2011; Pillitteri et al., 2008).

To date, the majority of research focussed on the consumption of dietary supplements by Saudi female adolescents has concentrated on the perceived trustworthiness of eWOM. Kulkarni et al. (2016), for example, addressed the persuasive power of campaigns to increase corporate social responsibility so as to improve regulations and the safety of dietary supplements, and that greater change would be engendered if efforts were pursued simultaneously in the legislative and executive branches of government, which have jurisdiction over consumer protection. Given this, the current research investigates the use of dietary supplements in SA female adolescents, which means that a significant effort is required by the Saudi Ministry of Health to raise awareness of those products and to disseminate essential information to this particular age group of adolescents (Darby & Karni, 1973; Girard & Dion, 2010; Sunyansanoa, Farquhar & Czarnecka, 2013). Copeland (1923) divided product categories into three, i.e. Convenience, Shopping, and Specialty (CSS) goods, a classification which has been dominant in marketing studies and books before the online medium started to become a predominant tool for purchasing. This point is explained in more detail in section 2.5.4.1. Moreover, for 'credence products', the relevant attribute information is available neither before nor after the trial/use of the product for a considerable time (Darby and Karni, 1973).

No studies, to the best knowledge of this researcher, have investigated the role of perceived trustworthiness of eWOM influence on the attitude, purchase intention and purchase behaviour of Saudi female adolescents towards dietary supplements. The next section will clarify the specific aim, objectives and research questions of this study.

1.4 Aims, Objectives and Research Questions

1.4.1 Aim

This study aims to investigate the perceived trustworthiness of electronic word-of-mouth (eWOM) dimensions: volume, valence and perceived source expertise of eWOM in influencing the attitude, purchase intention and behaviour amongst Saudi female adolescents towards dietary supplements.

1.4.2 Objectives

1. To examine the dimensions of perceived trustworthiness of eWOM, namely the influence of perceived source expertise of eWOM, the volume of eWOM and the valence of eWOM on attitudes towards dietary supplements.

2. To analyse the role of perceived trustworthiness of eWOM and how this affects attitudes towards purchase intention.

3. To examine the conversion of purchase intention to actual purchase behaviour.

4. To test the attitudes towards dietary supplements that mediates the relationship between the trustworthiness of eWOM and customers' purchase intentions.

5. To test attitude and purchase intentions towards dietary supplements that mediate the relationship between the perceived trustworthiness of eWOM and purchase behaviour.

6. To examine the moderating effect of perceived body image and time spent on social media on the relationship between the perceived trustworthiness of eWOM and attitude towards dietary supplements.

1.4.3 Research Questions

The research question was divided into three questions:

1. What is the role of the perceived trustworthiness of eWOM on the attitude towards dietary supplements amongst female adolescents in Saudi Arabia?

2. What is the role of the perceived trustworthiness of eWOM on purchase intention towards dietary supplements amongst female adolescents in Saudi Arabia?

3. What is the role of the perceived trustworthiness of eWOM on purchase behaviour towards dietary supplements amongst female adolescents in Saudi Arabia?

1.5 Expected Research Contributions

1.5.1 Theoretical Contribution

The study contributes to the literature of the perceived trustworthiness of eWOM dimensions (i.e. the volume of eWOM, the valence of eWOM and the perceived source expertise of eWOM), attitudes towards dietary supplements and the purchase intention and purchase behaviour of Saudi female adolescents, especially with regards to the life pattern of unhealthy food intake and sedentary behaviour which is increasing obesity via SNS. Furthermore, this current study focuses on Generation Z in marketing research and practices since the literature about this generation is

scant and more attention is required. This study also enhances the literature for dietary supplements (weight loss supplements) since dietary supplements have a scant literature, especially regarding purchase behaviour towards this product.

A model has been proposed and has tested the purchase behaviour (attitude towards dietary supplements, purchase intention and behaviour) in terms of the perceived trustworthiness of eWOM amongst Saudi female adolescents. The current study proposed and tested a model for the perceived trustworthiness of eWOM on SNS and in terms of consumer purchase behaviour. The present research focus on the three dimensions of perceived trustworthiness of eWOM, namely the perceived source expertise of eWOM, the volume of eWOM and the valence of eWOM, as well as the purchase behaviour constructs, which are attitude, purchase intention and purchase behaviour - constructs which derive from the Theory of Reasoned Action model (TRA) (Fishbien & Ajzen, 1975). A model was tested and proposed by the researcher which included constructs borrowed from the TRA model (attitude, intentions and behaviour), the rationale for which is explained in the literature review chapter in detail. This model also adds the construct of perceived trustworthiness of eWOM with dimensions, i.e. the perceived source expertise of eWOM, the volume of eWOM and the valence of eWOM.

The model of study reconciles predications from the model which has the dimensions of perceived trustworthiness of eWOM; volume, valence and perceived source expertise of eWOM and borrow three constructs from the Theory of Reasoned Action and the TRA is a model that examine the consumer purchase behaviour with the dimensions of perceived trustworthiness of eWOM. In terms of theory, this research contributes towards identifying the prevailing factors which have a

significant influence on the purchase behaviour of dietary supplements. The dimensions of perceived trustworthiness of eWOM on the attitude, purchase intension and purchase behaviour of Saudi adolescent females were examined in this research.

This study model follows several studies (To and Ho, 2014; Kim, Lee and Yoon, 2015; Goh, Ho and Jiang, 2015; Erkan and Evans 2016) addressing that the social networking sites are considered as appropriate platforms that aim to promote eWOM to enhance the behavioral intention of users. Erkan and Evans (2016), in an empirical study conceptually justified the determinants of eWOM that influence the consumer purchasing intention only. That model was introduced by the authors named as Information Acceptance Model (IACM), that was the integrated model of two theories, namely, The Theory of Reasoned Action (TRA) and Information Adoption Model (IAM). The model developed by Erkan and Evans (2016) illustrated the influence of eWOM on social media, which is not only dependent upon eWOM characteristics such as credibility and quality of information. Erkan and Evans (2016) only borrow the relative constructs to build their model. According to a previous study, the current study followed the same technique to build a model that borrows attitude, purchase intentions and actual purchase behavior to the dimensions of perceived trustworthiness of eWOM.

1.5.2 Managerial Contribution

Marketer stakeholders, such as dietary supplement or pharmaceutical marketers or, or social marketing managers for obesity or related health products, may try to identify "social influencers" or "market mavens" on SNS. Having done this, they may try to encourage them to interact with user-generated-content, especially product information about particular brands which is based on

a solid understanding of consumer attitudes and behaviour in the social media sphere. Market mavens can help promote health product and dietary supplement companies by posting discount codes to their followers which can be used to purchase products for a healthy lifestyle. This not only increases awareness about those companies, but also increases sales. Moreover, companies can design social marketing strategies to reach Generation Z adolescents by encouraging their existing adolescent consumers to spread eWOM to their social media friends, as this will demonstrate the perceived trustworthiness of eWOM.

1.5.3 Policy Maker Contribution

Social media influencers play a significant role in inspiring user perception. Social media influencers are one of the most significant mechanisms by which potential customers can be reached. Health care professionals and health care organisations can develop influencer marketing practices to increase the awareness about how to avoid obesity in adolescents. They can build relationships by reaching users through SNS. In addition, several activities which can be used to enhance awareness by policy makers are explained in the conclusion chapter. The study will advance the conceptualisation of the perceived trustworthiness of eWOM in relationship to consumer purchase behaviour.

1.6 Chapter summary

This chapter has presented the background to the problem. The research rationale was pinpointed, followed by the research aim, objectives and research questions. Moreover, the expected research

contributions, as well as the theoretical managerial and policy maker contributions were given. The final section presents the research structure for this study.

1.7 Definitions of Constructs and Concepts

The perceived trustworthiness of electronic word of mouth: the trustworthiness that an individual develops towards the information shared through online reviews (Munzel, Meyer & Feigl, 2017).

Word of mouth (WOM): the act of exchanging marketing information between consumers (Lang & Hyde, 2013).

Electronic word of mouth (eWOM): any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet (Hennig-Thurau et al., 2004, p. 39).

Volume of eWOM: the amount (quantity) of information shared online regarding any specific product or service that helps in directing consumer behaviour (Baek & Ahn, 2015).

Valence of eWOM: the positive and negative WOM created by consumers by using the product or service (Qiu, Pang, & Lim, 2012).

Source expertise of eWOM: the extent to which a source is believed to be capable of making valid assertions (Hovland, Janis, & Kelley, 1953).

Generation X: Robinson (2015), the owner, author, and creator of Career Planner.com, defined Generation X as the generation born after the Western post-World War II 'Baby Boom', whose birth dates range from 1961-1981, and so whose current ages are between 34 and 54. Miller (2014) noted that the generation includes 84 million people in the United States. Generation X is associated with a variety of terms including Gen X, Gen X'ers, Post-Boomers, Twenty-Somethings, and Baby Busters.

Generation Y: Generation Y is also referred to as Gen Y, Echo Boomers, Millenniums or Millennials, Generation We, Internet Generation, connect 24/7, and Leave No One Behind (Schroer, 2015). Born in the 1980-1990s, Gen Y number 71 million and constitute the largest generational cohort group since the Boomers.

Generation Z: the first generation born into a digital world. Its members, born since 1995, are highly educated, technologically savvy, innovative and creative (Priporas et al., 2017).

Adolescents: a transitional phase of growth and development between childhood and adulthood, people who are between 11 and 19 years of age. This age range falls within the World Health Organisation's definition of young people, which refers to individuals between ages 10 and 24. In

many societies, however, adolescence is narrowly equated with puberty and the cycle of physical changes culminating in reproductive maturity. In other societies adolescence is understood in broader terms, encompassing psychological, social, and moral terrain as well as the strictly physical aspects of maturation.

Dietary supplements: a product taken by mouth that contains a dietary ingredient intended to supplement the diet. This may include one or any combination of substances such as vitamins, minerals, herbs, or other botanicals, amino acids, and substances such as enzymes, organ tissues, glandulars, and metabolites, according to the 1994 Dietary Supplement Health and Education Act (www.fda.gov). Dietary supplements are placed in a special category under the umbrella of foods as opposed to drugs. The term "supplement" means "something that completes or makes an addition" (Merriam-Webster Online, 2013), suggesting that a dietary supplement may be part of a complementary food product that one consumes where the aim is to maintain general good health. Therefore, the focus is on the product's intended use (e.g. as a nutrient supplement, a boost to the immune system, or as a weight gain or loss supplement,) rather than the product's content (e.g. vitamin, mineral, herbs,) (Neuhouser, 2003).

Market Mavens: individuals who have information about many kinds of products, places to shop, and other aspects of the market, who initiate discussions with consumers and respond to requests from consumers for market information (Feick & Price, 1987).

Social Influencer: a type of independent third-party endorser who shapes audience attitudes through blogs, tweets, and the use of other social media (Freberg et al., 2011).

Perceived Body Image: "a person's perceptions, thoughts and feelings about his or her body" (Grogan, 2007, p.1).

Social media and the use of social networking sites: Internet applications that help consumers share opinions, insights, experiences and perspectives (Kaplan & Haenlein, 2009).

Attitude (in terms of consumer behaviour): favourableness and unfavourableness towards any purchasing intention. It involves the cues that an individual form in their mind towards certain situations or objects (Amaro & Duarte, 2015)

Purchase intention: consumer willingness to buy a certain product or service. It involves various aspects that influence consumer purchasing behaviour and intention such as price, quality, tangibility factor and convenience (Lu, Chang, & Chang, 2014).

Consumer buying behaviour or their purchasing behaviour: the sum of their intention, attitude, decision, and preference to buy a certain product or service (Fischer, 2017).

Subjective norms: the normative beliefs from the social environment that the individual is exposed to when performing a certain behaviour. This aspect especially applies to the perceived social pressure originating from people important to the individual (Montaño & Kasprzyk, 2008).

Self-monitoring: the extent to which an individual looks internally or externally for cues to appropriate behaviours in a given situation (Snyder, 1974).

1.8 Research structure

This thesis contains seven chapters, which are as follows:

Chapter 1. Introduction: This chapter provides the significance of the research, the research background, as well as the research problems, gaps, aims and objectives. In this chapter the increase in SNS usage by females in KSA has been explained, which provides a base for the research aim to be developed further.

Chapter 2. Literature Review: This chapter demonstrates the literature of perceived trustworthiness of eWOM dimensions and consequences. It also covers the power of eWOM on SNS in terms of female adolescent's attitudes towards the purchase of dietary supplements. In this chapter, attitude, eWOM, the role of consumer purchase intention, and adolescent buying behaviour are discussed through the exploration of previous studies.

Chapter 3. Conceptual Framework and the Hypotheses Development: This chapter presents the research framework and the research hypotheses. In this chapter the research variables are discussed in detail, along with the measurements. The theory used in the study is also discussed, and the integrated model of perceived trustworthiness of eWOM is presented.

Chapter 4. Methodology: This chapter covers the methodological approaches adopted in the present study, including the research design and setting. In addition, the rationale for the

quantitative study presented, followed by the evaluation in the pilot study questionnaire is given. Following this, the main data collection procedures are presented.

Chapter 5. Results and Analysis: The data analysis chapter gives the respondents' responses by employing SEM for Saudi female adolescents. In this chapter the data are analysed using statistical software and a standardised regression. In addition, path analysis is also performed.

Chapter 6. Discussion: The discussion chapter presents the overall discussion in terms of the findings, and evaluates the outcome of the research by aligning the primary information with secondary data.

Chapter 7. Conclusion, Limitations and Future Research: This chapter summaries the thesis outlines and results. Moreover, the theoretical, managerial and policy maker contributions are presented, alongside the limitations and further research avenues.

Chapter Two: Literature Review

2.1 Introduction

This chapter presents the literature concerning the perceived trustworthiness of eWOM and its dimensions on consumer attitudes towards dietary supplements, purchase intentions and purchase behaviour. This chapter is divided into eight sections. The first section provides the basic definitions of WOM and eWOM and highlights their role. The second part explains the influence of eWOM on the consumption of services and goods. The third section highlights the dimensions of perceived trustworthiness of eWOM (volume, valence and perceived source expertise of eWOM). The fourth section provides the theoretical justification of attitude-behaviour linkage and explains the role of attitude. The fifth section highlights consumer behaviour, specifically referring to female adolescent consumers. The sixth section explains the role of SNS and eWOM on Saudi female adolescents' purchase behaviour of dietary supplements. The seventh section provides the moderators of the study (i.e. perceived body image and time spent on SNS).

2.1.1 Defining WOM

WOM studies can be traced back to the 1960s, at which time several researchers began writing about personal influence (e.g. Arndt, 1967; Dichter, 1966). Earlier, Katz and Lazarsfeld (1955) had published a study where they introduced the concept of "personal influence", explaining how one person influences the product choices of others. Since this time, WOM has interested marketers, but the concept did not become widely popular until the 1990s. Whilst WOM remains an area of interest for researchers, many more are interested in its electronic version, as explained in the next section.

WOM refers to the act of exchanging marketing information between consumers (Lang & Hyde, 2013). WOM is typically defined as person to person oral communication, between a sender and a recipient, in which the sender delivers non-commercial information (Arndt, 1967). Since consumers frequently use WOM when seeking information about products, services, organisations and brands (Buttle, 1998; Verlegh et al., 2013), WOM is generally considered to be an essential information source which can influence consumer behaviour when selecting products (e.g. Engel, Kollat, & Blackwell, 1968). In the majority of cases, the information generated by marketers plays a significant role in developing consumer interest in various products, with WOM being recognised as the most powerful information source in terms of its impact on the likelihood of an actual purchase by consumers (Bataineh, 2015). Since the credibility of personal sources is generally perceived as greater than marketers, generating messages in the form of advertising (or other promotional aspects) via WOM is seen as more effective than traditional mass media. In particular, negative WOM travels much quicker than any other information (Laczniak, DeCarlo, & Ramaswami, 2001).

2.1.2 Moving from WOM to eWOM

The development of information technology has completely transformed the way consumers interact with each other, and has enabled consumers to share their opinions (Goldsmith, 2006; Scaraboto & Fischer, 2012). A number of definitions have been proposed for eWOM. According to Hennig-Thurau et al. (2004, p. 39) eWOM is "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet". Litvin et al. (2008, p. 461) put forward a

similar definition for eWOM, proposing that "all informal communications directed at consumers through Internet-based technology related to the usage or characteristics of particular goods and services, or their sellers". These definitions show that the sharing experience of the goods or services with other consumers is the central idea behind the generation of eWOM. This said, there is a distinction made between the generation of eWOM and its transmission in more recent times. Nevertheless, in earlier definitions the transmission of eWOM was not included. Because of dissemination by the Internet and information technology, the importance of opinion transmission has increased exponentially. For instance, an opinion received on any social media site can be easily transmitted to other consumers with only a "click". Similarly, received emails can be forwarded to other consumers without any effort, any post on Facebook can be liked or shared easily, and one can easily retweet a tweet. Therefore, it can be inferred that once a message has generated on social media it can be transmitted to other consumers with minimal effort.

It can be argued that the popularity of social media sites has boosted interpersonal communication amongst consumers. Social media sites allow people to create content using digital technology (Kaplan & Haenlein, 2010; Lamberton & Stephen, 2016). Thus, this is often reflected as a collective action. Adolescents, in particular, are very sensitive to social involvement. For instance, the increased use of SNS by teens has crucial implications for collective action in the form of a social group (Barnett, Park & Chung, 2016; Benkler, 2006; Seo and Thorson, 2012) because the creation and maintenance of friendship networks is considered to be critical (Hartup, 1996; Lenhart et al., 2016).

Research into the behavioural patterns of adolescents suggests that they generally interact positively, which results in a strong sense of social inclusion through sharing information (Hargittai & Hinnant, 2008; Hohlfeld et al., 2017). Correa et al., (2010) suggest that many adolescents tend to find that social media sites provide a place where they feel at home in terms of a personal and digital space to express themselves. The development and maintenance of relationships between adolescents through SNS influences identity formation (Lata & Singh, 2016; Steinfield et al., 2008) and generates social capital (Jun, Kim & Tang, 2016; Lin, 1999). In other words, using social media during adolescence can be seen as something crucial – a critical tool – in meeting current social trends and in developing identity for this generation. As such, this could be reflected in collective action such as consumption behaviour. Virtual communities are made of people who are united under one goal, namely enthusiasm towards and knowledge of a specific product (Solomon & Rabolt, 2004). Adolescent consumption patterns increase every year, as witnessed through the purchasing of items ranging from CDs to computers to TVs. Therefore, the current study investigates the purchasing behaviours of Saudi female adolescents, especially those associated with the perceived trustworthiness of eWOM and those which focus on dietary supplements.

Psychologists, and more so marketers, have attempted to study the relationship between attitude and purchase behaviour. Advertisers design persuasive messages to shape the attitudes of consumers towards products and to induce them to purchase (Boles et al., 2014). This was done historically through traditional media, but the emergence of the Internet and social media has given marketers options to use either paid media (online advertising), own media (websites), or user-

generated media (SNS) to influence the attitudes of the consumer (Djafarova & Rushworth, 2017; Erkan & Evans, 2016). Various new products and fads can now be easily advertised using SNS (Park, Ciampaglia & Ferrara, 2016). One such obesity-reducing fad is dietary supplements, which forms the context of this study, and how they are marketed using eWOM. This literature review assesses the relationship between the perceived trustworthiness of eWOM and purchase behaviours in general, and adolescents in particular. Starting by exploring the growing literature which attempts to understand the role of attitudes in driving purchase behaviour, the literature review will then move to understand the extant literature on the role of eWOM in shaping attitudes, and the consequent purchase behaviours.

2.1.3 eWOM influence on consumer behaviour

According to Shaikh, Siddiqui, Vasatkar, Jagtap, and Sankpal (2016), social media marketing is an ongoing interaction between consumers. It serves as the channel for the marketing activities, which includes factors such as customer relationship management, sales promotions and branding. A further study conducted by Ashley and Tuten (2015) argues that the main goal of social media campaigns is to influence users. It provides useful information to the customer and further benefits in terms of user-generated content. Finally, Chang, Yu and Lu (2015) justifies empirically that social media marketing is a type of influential marketing which affects user behaviour. Whilst these previous studies have extensively evaluated the impact of social media marketing, no study has yet been conducted which has looked into the purchase behaviour of and attitude towards dietary supplements on SNS.

SNS such as Instagram, Facebook and MySpace have become popular in recent years. In 2008, 580 million unique people across the world visited a social network site (Comscore.com, 2008). It is clear that the use of social media, particularly SNS (e.g. Facebook), photo sharing portals (e.g. Instagram), micro blogging portals (e.g. Twitter), video sharing portals (e.g. YouTube), and career-based portals (e.g. LinkedIn) play a very influential role in the daily lives of many people; as a result, they are changing their ways of thinking and routines (Thoumrungroje, 2014). This has made SNS platforms popular, and they have become a major source of communication, not just for users, but also marketers and other professions. Commonly, the influence towards any information is created based on positive or negative word-of-mouth (WOM) through social media (See-To & Ho, 2014). SNS, particularly Facebook, have become the fastest growing medium of communication. Approximately 20 million users like fan pages every day on Facebook, and more than 1.5 million businesses have created a fan page. The core purpose of those brands in creating a fan page is to encourage WOM, so as to expand the vision of their brand or product (Hu, Ha, Mo, & Xu, 2014).

Social media is a more powerful tool than traditional marketing, whereby media managers seed blogs with people who exert influence over others and who are looked up to for their opinions. The exchange of information between consumers and within a community leads to increased marketing content. Social media participation, meanwhile, involves interaction and the generation of content that benefits network members (Perloff, 2014). In social media, opinion leaders play an instrumental role in shaping attitudes and recommending products to online community members (Iyengar et al., 2011). For effective marketing, people with influence over others first need to be

identified, as argued by Aral (2011), before messages are then seeded towards them in the hope that eWOM will be generated.

Marketers are, therefore, increasingly using SNS as an essential element of their promotional mix, and to relay persuasive message to shape attitudes (Kietzmann et al., 2011). This is because of the power of user-generated content on SNS (Boles et al., 2014; López & Sicilia, 2014).

2.1.4 The Influence of eWOM on Purchase Behaviour

Despite the high spending by advertisers to connect with markets, consumers still place their highest levels of trust in the opinions of others (Nielsen, 2013). Moreover, this trust is not limited to friends and family, with over 87% of Internet shoppers reporting that in some situations they trust eWOM as much as recommendations by others (Statista, 2014). New media, in the form of online communities, SNS, blogs and video-sharing websites, has largely supplemented traditional media (Barefoot & Szabo 2010; Coulter et al., 2012; Glenn, 2011; Nadaraja & Yazdanifard, 2013). This diffusion of social media is not limited to the younger population, but encompasses all ages (Annisette & Lafreniere, 2017; Battenhall 2013), resulting in marketers increasingly paying more attention to social media and/or user-generated content. Social media (which can also be termed 'earned media' where the publicity is organic rather than paid) comes in the form of discussions about the company's products on professional blogs, eWOM, and posts amongst online communities in the form of status updates and online ratings and reviews (Lamberton & Stephen, 2017; Stephen & Galak, 2012). Paid search is generated by companies or their agents, but social media or earned media involves content generated by users (Burcher, 2012). Stephen and Galak

(2012) analyse the data of micro-lending firms over 14 months, and demonstrated that earned media is more powerful than paid media and can play significant role in shaping the attitudes in online communities.

The power of WOM or eWOM cannot be underestimated. The sheer speed, convenience, wider scope and interactivity offered by eWOM gives it an edge over traditional WOM (Cantallops & Salvi, 2014; Luo & Zhong, 2015). While WOM is normally based on interaction with known sources like family and friends, eWOM represents interaction with unknown people (Xie et al., 2011). The growing role of eWOM in product adoptions, in the form of reviews, ratings and recommendations, has led to an increased focus on studying the relationship between eWOM and purchasing behaviour.

eWOM has traditionally been used to raise awareness, but nowadays it is increasingly used to shape consumer attitudes (López & Sicilia, 2014). It has become an integral part of the promotional budgets of many firms (Mangold & Faulds 2009; Schivinski & Dabrowski, 2016) as customers acquired through eWOM are found to have greater long-term value than those acquired through paid advertising (Villanueva et al., 2008). In one study conducted by East et al. (2005), eWOM, in the form of product recommendations, was found to have the highest impact at 31% across 23 product categories, and that sought product recommendations were found to be 1.5 to 2 times more effective than unsolicited recommendations. The analysis by Berger and Iyengar (2013), based on extensive research, found that eWOM is more effective than WOM as people get more time to think, frame and then write their review due to the asynchronous nature of written

communications. Furthermore, this gives people more time to find interesting products to share via eWOM. eWOM can also induce members to join groups or sign up for websites, with such campaigns having longer effects than traditional marketing (Trusov et al., 2009).

Studying consumer behaviour with regards to social media has been the focus of several studies (e.g. Barefoot & Szabo, 2010; Fosdick, 2012; Mukherjee & Banerjee, 2017). This groups includes Algesheimer et al. (2005), who researched the European Car Club and found that engagement with the consumer affected both their intentions and ultimately the behaviour. eWOM in the online environment is known as reviews (Duverger, 2013), which are found to have a significant influence on purchase intentions and sales (Duverger, 2013; O'Connor, 2008; Ye et al., 2011). Users increasingly rely on consumer-generated ratings and reviews before making a purchase decision, a topic which has been the subject of several studies (Chevalier & Mayzlin 2006a; Chintagunta et al., 2010; Duan et al., 2008; Liu, 2006; Ye et al., 2011). However, most of these studies pertain to single use products like movies, books and video games, and they do not consider the social dynamics which moderate the attitudes of consumers towards ratings. Schlosser (2005) argued that the tendency of consumers was to adjust ratings and reviews by considering the multiple-audience faced in order to differentiate their reviews from others, but that when faced with an audience posting both negative and positive reviews, then the consumers tend to offer more balanced opinions (Mukherjee, Dutta & Weikum, 2016).

Moe and Trusov (2011) researched the effect of social dynamics on the online ratings of beauty products, something which is of more relevance to dietary supplements since they affect how

females look. The study found that the product ratings, with or without social dynamics, had a significant impact on sales, but that products with multiple audiences and a variety of opinions had a positive influence on behaviour and substantially higher sales. It seems that social dynamics do not have an immediate impact on purchasing behaviour, but rather than an indirect effect in the shape of influence on future rating behaviour. Furthermore, the study also found that a substantial increase in sales over a period of time, due to the accumulation of ratings, confirmed the influence of volume on purchasing behaviour. All those reviews, likes and dislikes for products by consumers or marketers confuse consumers as to which eWOM to trust. Given this, the next section will discuss the dimensions of perceived trustworthiness of eWOM.

2.2 Perceived Trustworthiness of the Dimensions of eWOM

2.2.1 Positive and Negative Valence of eWOM

Previous studies (Jin & Phua, 2014; Koo, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan et al., 2015) addressed valence as a dimension of eWOM influence on trustworthiness.

Valence (positive or negative) of eWOM in the form of product reviews, ratings and recommendations influences purchase behaviour on SNS (Siegrist & Cvetkovich, 2000; Skowronski & Carlston, 1989; Wilson, Giebelhausen & Brady, 2017). Positive reviews are found to influence the attitudes towards the brand while the absence of positive reviews does impact on brand image, and the brand is considered less impactful (Ladhari & Michaud, 2015; Lee et al., 2009; Sparks et al., 2013). As a result, consumers may change their perceptions about the brand

and avoid including the brand in their consideration set. In addition, Vermeulen and Seegers (2009) found that the presence of reviews leads to the inclusion of hotels in the consideration set of consumers, but positive reviews shape attitudes towards product adoptions. Furthermore, Ye et al. (2011) was able to quantify the impact of positive reviews, identifying that a 10% increase in hotel reviews resulted in a 4.4% increase in sales. Similar to this was the finding in another study that a 1% increase in positive ratings was found to increase sales by 2.6% (Öğüt & Onur Taş, 2012; Park and Nicolau, 2015).

Studying the impact of eWOM on sales, Park and Lee (2009), in an experimental environment, were able to posit that negative eWOM has more impact on purchase intentions than positive ones, and would result in lower sales volume. With the proliferation of products, consumers encounter a multitude of eWOM; as a result of this volume, they rely more on negative eWOM rather than positive eWOM in guiding their purchase intentions (Highhouse & Paese 1996; Verhagen et al., 2013). Furthermore, negative eWOM is perceived to be more informative and to provide insights about the product and service, and therefore has a greater negative impact on the purchase decisions (Lee et al., 2008a). On the other hand, Mauri and Minazzi (2013), while analysing web reviews in the hospitality industry, determined that even positive reviews had a considerable impact on purchase decisions. Positive reviews were helpful in building the expectations, which would determine the satisfaction from the stay and future purchase intentions; therefore, marketers need to monitor positive reviews in order to moderate the consumer's expectations (Zhang et al., 2010). The creation of higher expectations than the company is able to deliver can lead to dissatisfaction and affect repeat purchase behaviour.

Negative reviews, on the other hand, can work towards increased purchase likelihood due to the initiation of product awareness, as postulated by Berger et al. (2010) in a study of book reviews wherein negative reviews generated awareness. However, this might not be the case concerning dietary supplements since they might be perceived as harmful; therefore, the type of product moderates the relationship between eWOM and purchase behaviours (Park & Lee, 2009). Nevertheless, if the product is well known then the negative eWOM was found to be less effective. In another study, Zhang et al. (2014) discovered that inconsistent reviews were found to have a lower impact on purchase intentions when either the website was known or the brand was established. In one of the studies conducted within the hotel and tourism industry, Sparks et al. (2013) found that eWOM which had specific content was more persuasive than vague reviews.

2.2.2 Volume of eWOM

Previous studies have investigated the role of volume as a dimension of eWOM on trustworthiness (Chua & Banerjee, 2015; Liu, 2006; Mitchell & Khazanchi, 2010; Yang et al., 2012). Liu (2006) analysed the volume of eWOM in depth while researching the quantity and valence of eWOM and purchase behaviour with regards to movie tickets, finding that the quantity of eWOM plays a significant role in the purchase decision irrespective of valence (positive or negative). The quantity of eWOM is a critical driver in popularising the message, resulting in social contagion that would influence purchase intentions (Chua & Banerjee, 2015; Mitchell & Khazanchi, 2010). Explaining the phenomenon further, Godes and Mayzlin (2004) studied eWOM with regards to television shows, finding that the spread of eWOM in online communities is rapid, but that across communities it is limited due to weak intra-community ties.

In a similar vein, the effect of eWOM volume in the early stages of a product's life cycle on purchase behaviour was explained by Li and Hitt (2008), who postulated that the taste and preferences of early adopters, as indicated in their reviews and ratings, would be substantially different in comparison to later adopters, but that they would have an impact on purchase behaviour. The authors suggest that selecting the right consumer segments would influence eWOM and consequently the purchase intentions of later consumers. Aside from a number of posts and threads, Pan and Chiou (2011) found that community members easily trust negative information and recommendations, and consider it to be more reliable, irrespective of quantity. In a study on movies, Yang et al. (2012) found that volume has an impact for mass products in shaping purchase behaviour, but that valence would be more effective for niche products.

2.3.3 Perceived Source Expertise of eWOM

Previous studies have looked at the role of perceived source expertise of eWOM on trustworthiness (Ismagilova et al., 2017; Li and Du, 2011; Schiffman, 2015). The consumer behaviour literature explains that to create trust and credibility, it is crucial that opinion leaders are the perceived expert of the product (e.g. Schiffman, 2015). In the case of the online environment, the perceived expertise source of the eWOM generator may work differently from the WOM generator, who has a personal contact with the opinion receivers. According to Li and Du (2011), in WOM communication, opinion leaders are more interconnected with the recipients, and they have a higher social standing, which means they can communicate product-related information and provide recommendations. From a business point of view, opinion leaders who are considered product experts can provide professional knowledge to shape the marketing communication for

their products. WOM expertise can therefore be assessed more easily. However, in the online environment, it is not easy for an opinion leader to establish expertise. Feick and Higie (1992) are of the view that a person is considered to be an expert if he or she is perceived by the recipients as having experience and knowledge about the product. Ismagilova et al. (2017) argues that an opinion leader who has a greater level of perceived expertise is viewed as being more persuasive by the audience.

As such, in the following section, the effectiveness of eWOM in influencing attitudes and consequently behaviour will be discussed.

Authors and years	Purpose of the study	Methodology used	Contributions	Limitations
Sotiriadis & Van (2013)	• Is related to the use of SNS such as Facebook, Twitter and the influence on purchasing behaviour in the tourism industry.	• A quantitative method was selected. The questionnaire was based on 5-point Likert scale to evaluate various constructs in the research. • Sample size was 500 respondents who were users of the Twitter Platform.	• It proves the strong relationship between the social media and purchase behaviour of customers in the travel and tourism industry. • Additionally, the study proves that social media engages the users in direct end-communication, which is of lower cost and greater efficiency.	• The current study focused on the reader/recipient's perspective not the sender perspective. • The results cannot be extended to another SNS since this study addressed only Twitter and a comparative analysis study can enhance the findings. • This study focuses on Twitter but one of the weaknesses of this study is not looking into the similarities and difficulties on consumer purchase behaviour of consumers

Shabsogh, (2013)	• To explore the use of online communication amongst consumers in order to understand the communication platform between the two parties.	• Qualitative data • Interviews and sample size was four respondents.	• It argues that online communication between the customer and company enhances trust and that customers rely on using the products or services due to trustworthiness.	• The sample size was very small • The study did not study any SNS platform • There was no specific product or service to analyse
Ahrens, Coyle, & Strahilevitz (2013)	• Was to test multiple incentive strategies to attain new customers by e-WOM and e-referrals. • Investigated the magnitude and role of incentive offered to reliever.	• Experimental data collection technique was applied, and the respondents were divided into eight conditions. • The respondents were members of online shopping malls.	• Proved that the magnitude of incentives influences the e-WOM and referral rate, and that the increase in incentives increases the customer eWOM, and vice versa.	• It is likely that female influences ereferral behavior by WOM • Different demographic aspects than gender for example: nationality, age culture, family status since it might be influential in ereferral behaviour • Incentives have un ethical matter that can manipulate eWOM
Leung, Law, Van Hoof & Buhalis (2013)	• To explore the literature of social media in the tourism and hospitality industries.	• Secondary in nature. Published articles between 2007 and 2011 were studied. • Content analysis was used to analyse the articles from the supplier and consumer perspective.	• It proved the importance of social media in gaining competitiveness within the tourism industry. • e-commerce websites and other social networking platform are increasing the competitiveness within tourism sector because of knowledge sharing	• One of the limitations of this study is to analyse the progression and development of social media in hospitality and tourism. • Was only secondary data
Munar & Jacobsen (2013)	• To investigate the adoption of SNS and their power in the generation of ICT based on information.	• A quantitative research design was selected as the data collection instrument, and the questionnaire survey was conducted by customer within the tourism sector.	• Showed that social media allows engagement with tourists in the development and sharing of virtual content, which significantly attracts new customers.	• One of the limitations is to analyse hedonic and socialisation values social media. • Future studies can analyse the diversity of new media cultures of different sites

Sweeney, Soutar, & Mazzarol (2014)	• To examine the effects of service, product, interpersonal and message factors on eWOM.	• Quantitative data collection with a sample size of 496 customers	• Showed that positive WOM creates greater impact on customer buying behaviour, which strengthens the interpersonal, service and messages factors.	• The study was not applied in a product context only in the service sector. • The effect of other possible antecedents to perceived WOM influence was not explored
Hajli, Lin, Featherman, & Wang (2014)	• To examine consumer trustworthiness and its role in promoting new products or services within e-commerce industry.	• Quantitative data, and the questionnaire was closed-ended. The online questionnaire survey was conducted from users of online platforms.	• Proved that social media communication develops trust in consumers and that companies need to use social media platforms in order to share information to targeted customer regarding their products or services.	• Sample size of the study was 300 only and it is a small sample size. • Research did not use any product to generalise the results in an innovative discipline.
You, Vadakkepatt, & Joshi (2015)	• To present the meta-analysis on eWOM elasticity.	• 51 studies were gathered, including 339 volume and 271 valence. Primary data were also gathered regarding the variables such as durability, usage and trial ability.	• Proved that volume is higher for durable goods, whereas valence is greater for community-based platforms.	• This study was looking on one type of product only and it can be more than one type. • It would be worth investigate whether there are differences in the effectiveness of traditional media vs. broadcast influence
Lee (2016)	• To explore existing data regarding consumer behaviour based on eWOM in the hospitality sector by gathering data from published journals.	• Secondary sources including articles published in the previous five years were used to present the findings. Six different academic journals were used for data collection purposes.	• To facilitate readers regarding the baseline information related to eWOM and its role in consumer purchase intentions when booking a hotel.	• Future studies may examine the action plans contribute in managerial response when addressing negative vs. to positive reviews • Room rate and other factors that can influence hotel performance was not been examined
Purnawirawan et al. (2015)	• To investigate the influence of valence if reviews are positive or negative, on different dependent variables, on perceived	• Applying a meta-analysis has different advantages: the meta-analysis averages out sampling error deviations from correct values due to large samples and	• Valence has a significant influence on perceived usefulness when valence refers to experience (rather than search) products, and it has a significant	• Large sample has more chance of measurement error in a meta-analysis study

	usefulness of valence and attitude toward the brand or product.	repeated tests and corrects mean values for distortions due to measurement error • Moreover, a meta-analysis provides an opportunity to include a greater range of positive and negative valence that cannot be tested by a study only.	influence on attitude for unfamiliar (more than familiar) products or brands. • Influence of valence on recommendation intentions.	• This study focused on perceived usefulness of valence and attitude towards recommendation intentions but not on writing a review
Yu & Natalia (2013).	• To investigate the effect of user-generated video valence on purchase intention in Indonesia and Taiwan to explore how they use the YouTube.com website as an eWOM platform source.	• A questionnaire collected the primary data in Indonesia and Taiwan with a random sampling method. 500 respondents completed. • Structural Equation Modelling (SEM) was used	• The findings showed that eWOM adoption in user video context depends on the source credibility of the people who write video valence on YouTube.com, and also that source credibility is closely related with source expertise and source trustworthiness.	• The study focused only on one platform of SNS YouTube and it recommended to compare more SNS • A mixed method was one of the limitations of the study
Hsu et al. (2013)	• To explore if the blog reader's trust of the blogger is predominant in relation to the perceived usefulness of the blogger's eWOM; and how the blog reader's perceptions influence attitude and purchase behaviour.	A survey of 327 blog readers was analysed in this study to explore whether the usefulness of bloggers' valence and trusting beliefs had an influence on the consumers' attitudes and behavioural intentions when shopping online.	• Findings that saw the usefulness of bloggers' valence and trust. • A significant influence on blog users' attitude towards and intention to online shopping. • Moreover, the findings revealed that various determinants influence the users of perceived-high-reputation and perceived-low-reputation blogs.	• The actual purchase behaviour was not considered in this study • This study was investigating only blogs and did not look into SNS or comparing both to understand the differences • The sample size was small and a bigger sample size is recommended in future study
Yang et al. (2012)	• The researcher used a review dataset from an online forum to empirically	• The data were collected from different user reviews on seven main multiplayer online	• The findings revealed that, community members' valence is not impacted by their forum involvement.	• The study used only secondary data • The current study utilises a specific hedonic product and

	investigate social influence on reviewers' eWOM motives and readers' feedback (opinion leaders).	role-playing games in the market from Gamespot.com, a popular third-party website.	Their evaluations depend on product attributes. The valence from those who have greater expertise in the community generates more 'buzz' and more trust in online forum valence compared to reviewers with less expertise.	future study can study the influence of eWOM on search product.

Table 2.1: Key studies about the trustworthiness of eWOM (volume, valence, perceived expertise source of eWOM) towards purchase behaviour.

2.4 Effectiveness of eWOM Influence on Attitudes and Behaviour

Studies taking a different perspective have disputed the predominant role of eWOM in shaping attitudes and purchase intentions. For example, Eisingerich et al. (2014) examined the attitude of participants with regards to their favourite brands, finding that they were less willing to provide a positive eWOM when compared to a face-to-face conversation, due to the perceived social risk of a broad and heterogeneous audience. Therefore, marketers cannot always generate eWOM, which puts into question the effectiveness of SNS in terms of their ability to influence purchase behaviour.

Furthermore, any social interaction is moderated by culture, as elucidated by Van den Bulte and Stremersch (2004). In their study of social contagion, they examined Hofstede's typology in which culture was found to limit the effectiveness of eWOM on purchase intentions. It would not be a straightforward call to establish a causal link between eWOM and sales as proposed by Godes and Mayzlin (2004), where it is argued that further studies are needed in this direction.

Moreover, Trusov et al. (2009) addressed that while examining the effectiveness of eWOM, raised concern that if consumers realised that eWOM activity was generated by the firm then the effectiveness of eWOM would diminish. Duan et al. (2008) disputed the role of online reviews and product recommendations, limiting their role purely to increased awareness rather than product adoptions.

The effectiveness of eWOM is essential for learning more about products, as demonstrated by several studies noted here which have sought to evaluate eWOM with regards to valence, volume and opinion leaders. These studies have examined different types of products, both single and multiple use, and found the level of effectiveness of the eWOM differs across product categories. This leads to questions about the effectiveness of eWOM in driving the purchase behaviours of dietary supplements, since they are a different product category. The current research would fill this gap in the literature, and would try to understand how eWOM would influence obesity reducing fads like dietary supplements.

Furthermore, the above-cited studies provide mixed results concerning the effectiveness of eWOM on purchase behaviours. Therefore, it is crucial to study the attitudes and perceptions of consumers, which are the antecedents of purchase intentions. This will help us to investigate the phenomenon further and to establish a causal link between eWOM and purchase intentions. The following section explores the role of consumers' attitudes and their perceptions regarding purchase behaviour.
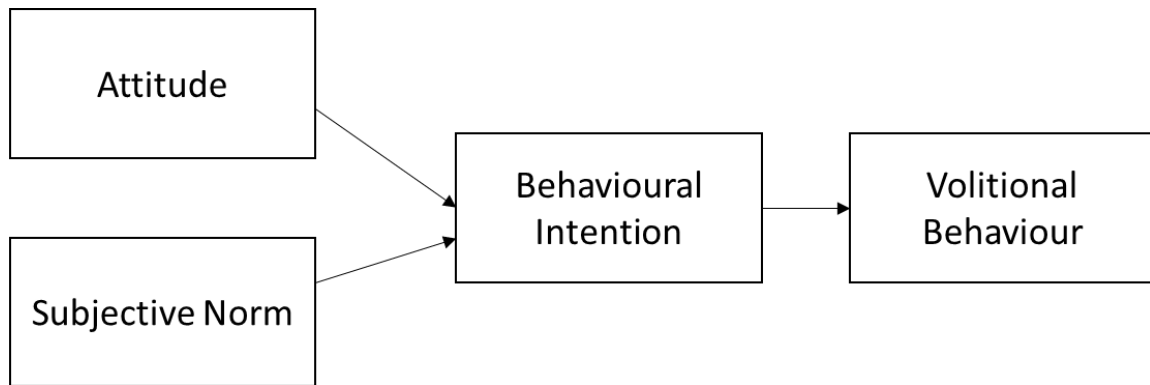
Figure 2.1: Theory of Reasoned Action Basic Components

Source: Hale, Householder & Greene (2002)

2.4.1 Attitude-Behaviour Relationship Amongst Adolescents

2.4.2 Attitudes as a Predictor of Purchase Behaviour

The effectiveness of an online marketing campaign is not determined by metrics like clicks or the scattered purchase of products. A structured campaign requires the measurement of attitudes towards products in order to determine whether purchase intentions – part of the buying process – are influenced by attitudes (Armstrong et al., 2014). The relationship between attitudes and behaviours have been the subject of study for many decades in trying to understand how attitude influences behaviour (Ajzen, 2001; Bargh et al., 1996; Fazio, 1990). Attitude has an emergent quality, which keeps evolving as new information is added, and it may not always be able to predict behaviour (Ajzen & Fishbein, 2000). Attitude is defined as a lasting general evaluation of self, people, objects or issues (Solomon et al., 2012). Attitudes themselves are dependent on beliefs

(Ajzen, 2001) which are developed through information received through a multitude of channels (Sichtmann, 2007) and include prior experiences and learning (Kim et al., 2008). In SNS, consumers form two distinct sets of attitudes that drive behaviour. First, attitudes towards the person relaying the message and eliciting the action, where the consumers consider the qualities and reliability of the person (Ajzen, 2012). Second, the attitude towards the behaviour itself, which is concerned with the valence (positive or negative) about the beliefs. In this section, a short review of attitude-behaviour relationships, its bases and its links to learning and memory will be presented.

Several researches concerning the role of attitude in predicting behaviour have been developed by Ajzen and Fishbein (e.g. Ajzen, 2001; Ajzen, 2012; Ajzen & Fishbein, 2000). Ajzen and Fishbein (2005) attempted to analyse the wide array of research on both sides of the spectrum on the issue of attitude-behaviour relationships, concluding that this is a complex phenomenon which is dependent on context and other moderating factors. The authors further point to the fact that to predict behaviour, the constructs must be specific to a group product rather than a general one.

Furthermore, for 25 years the demanding model in attitude research, inspired by Ajzen and Fishbein (1980), has been the Theory of Planned Behaviour (TPB), which hypothesised that attitudes, subjective norms and perceived behavioural control predict intentions (Ajzen, 1991). This is obvious regardless of the research discipline, be it consumer research (Ajzen & Driver, 1992; Bagozzi et al., 2003), healthcare (Bagozzi & Warshaw, 1990), entrepreneurship (Davidsson, 1990; Krueger et al., 2000) or psychology (Fazio & Williams, 1986; Liska, 1980; McBroom & Reed, 1992). Kroenung and Eckhardt (2015) have argued that the traditional view on dominating

models in attitude research, such as TPB, would not lead to a strong predictive power. Several studies note the Theory of Planned Behaviour and the perceived behaviour control construct is the main contribution to the Theory of Reasoned Action. Therefore, the researcher preferred to focus on the main theory since in the current study the perceived behavioural control is not the case.

2.4.3 Information Processing Model of Attitude-Behaviour Relationship

One of the early perspectives on attitude subscribed to the information-processing model, which implied that attitudes are based on information about the attitude object (Hovland et al., 1953; McGuire, 1972). The model was over-simplistic in assuming that any new information presented would alter the attitude. This model was later challenged by Ajzen (1992), who citing research on the subject opined that attitude is more dynamic than what the proponents of the information processing model prescribed. Based on this, the research has indicated that apart from presenting information that can influence the attitude and consequent behaviour, it is an information presentation method moderated by prior knowledge (Kardes et al., 2008) and experience (Kim et al., 2008; Yoon, 2002) which plays a significant role. Information presentation, therefore, must be carefully framed in order to shape attitude, as shown in Rucker et al. (2008). Consumers are confronted with a multitude of conflicting information, via eWOM, when exposed to SNS (Sen and Lerman, 2007); therefore, the persuasive effect of the eWOM is dependent on the message source, content, and context (Petty & Cacioppo, 1986; Sparks et al., 2013). Explaining this phenomenon, Sen and Lerman (2007) posit that consumers would form impressions about a product after reading online reviews irrespective of probing its accuracy. Apart from forming an impression about the product, consumers indulge in generating an overall impression by drawing extensive inferences about the source of the information, which goes far beyond the information

content (Ajzen & Fishbein, 2000). Therefore, attitudes are altered as to how the information is presented (message framing) to them (Sigala, 2011) or the source of the information (Dickinger, 2010; Sparks et al., 2013) wherein the user generated eWOM is considered to be more reliable, as compared to company-generated content.

2.4.4 Attitude Formation in Adolescents

Adolescents are different to adults in their development of their attitude formation because of cognitive, physical and social differences (Blakemore & Mills, 2014). They are more susceptible to cultural influences (Choudhury, 2009) and more sensitive to their social environment (Peper & Dahl, 2013), which renders the opinion of peers as being more important than the opinion of family members (Arnett, 2014). Compared to adults, adolescents are more accurate in making decisions which consider the perspective of others, as demonstrated in a study of 177 female participants by Dumontheil et al. (2010), thereby underlining the importance of social influence on adolescents. Moreover, SNS have emerged as an important platform of communication among other adolescents. The platform allows them to create and exchange content using digital technology (Kaplan & Haenlein, 2010). Since adolescents can achieve a sense of social inclusion through sharing information (Hargittai & Hinnant, 2008), this could increase their identification which results in the reduction of personal uncertainty (Hoff, 2000).

As postulated by the Theory of Reasoned Action, attitudes are the function of own beliefs and subjective norms (Cialdini et al., 1990). Subjective norms refer to "the normative beliefs from the social environment that the individual is exposed to when performing a certain behaviour. This

aspect especially applies to the perceived social pressure originating from people important to the individual" (Montaño & Kasprzyk, 2008).

Cialdini et al. (1990) further classifies subjective norms into those which are descriptive and injunctive. Adolescents are influenced more by behaviours that are acceptable (i.e. which ought to be done) in a group or society and amongst their peers (an injunctive norm) compared to the perceived widespread prevalence (i.e. which are commonly done) of a particular norm (a descriptive norm) (Brechwald & Prinstein, 2011; Crone & Dahl, 2012; Gibbons et al., 2012). The dominance of injunctive norms was confirmed in a message framing study conducted on adolescent participants where Cialdini et al. (2006) found that negative injunctive messages had a larger effect than a descriptive message. In the context of this study, this implies that a negatively worded eWOM emphasising the negative consequences of obesity, in achieving social acceptance, would be more effective. On the other hand, emphasising descriptive norms, stating what others are doing, would be less effective. The next section explores the rationale for eliminating subjective norms in this current research, despite the fact that it is one of the basic components of the Theory of Reasoned Action provided in figure 2.2. Therefore, it is crucial to explore the subjective norm construct of the TRA model as well as rationale for the elimination of subjective norms in this study.

2.4.5 Rationale for the Elimination of Subjective Norms

In the sphere of social media, the TRA plays an influential role in terms of attitude formation. It emphasises the cognitive component in the form of beliefs about an object, issue or person, but also stresses the role of subjective norms in the formation of attitude.

Subjective norms are defined as "the normative beliefs from the social environment that the individual is exposed to when performing a certain behaviour". In virtual communities, where eWOM plays a significant role, the attitude towards a message might be determined by the strength of subjective norms or social influence (Camarero & San José, 2011). In a study of consumers' attitudes towards fast food restaurants, Bagozzi et al. (2014) found that subjective norms played a significant role when consumers went with their friends and acted according to their previous experience when by themselves. These results were obtained from four cultural groups (Italian, America, China, and Japanese), which indicates that subjective norms have a significantly different role in different cultures. Subjective norms arise from two basic underlying factors: the normative beliefs of the consumer associated with influential referents, and the motivation to act according to these people's desires. Moreover, intention and behaviour as well the role of gender differences in subjective influence is analysed next.

There is substantial research which analyses the differences in role played by women in society. For example, women have less impressive jobs than men (Rudman & Glick, 2012; Svarstad et al., 2004), are paid less for the same job (Grönlund & Magnusson, 2013), get paid less even with the same level of education (Dinovitzer et al., 2009; Fényes 2012), and can be prejudiced and discriminated against (Rudman & Glick, 2012). It can, therefore, be inferred that females are more

susceptible to social influences and therefore conform to subjective norms in comparison to men, and therefore they are more likely to use dietary supplements (Conner et al., 2001).

Self-monitoring refers to "self-observation and self-control to notice situational cues for socially appropriate behaviour to modify one's behaviour" (Snyder, 1974). In other words, ''self-monitoring refers to the extent to which an individual looks internally or externally for cues to appropriate behaviours in a given situation'' (Snyder, 1974). Self-monitoring as a moderator of attitude has been the subject of several studies, which indicates that the need for self-expression and the tendency towards self-monitoring can lead to the adoption of products, which would indicate their beliefs (Grewal et al., 2004; Shavitt, 1989; Wilcox et al., 2009a). The need for self-monitoring and self-enhancement is the driving force behind the consumption of fashion, beauty and dietary products. In a study about Indian consumers, Kumar et al. (2009) postulated that emotional drivers play a key role in attitude formation towards American brands, which underlines the importance of the affective component of attitude, primarily due to feelings of self-enhancement. Lee et al. (2008b) found that the predominant role of emotional value towards fashion brands amongst Mexican students. This might be one reason why consumers are willing to pay a higher price for luxury goods, namely to fit in with their environment and social setting. This is further demonstrated in Bian and Forsythe (2012) with regards to both Chinese and US consumers. This is not to deny the importance of affect in attitude formation. Therefore, product type is discussed in section 2.5.4.1. This said, Amin (2017) looked at female adolescents in three Arab Countries (Jordan, Iraq and Dubai), and found no influence from subjective norms. As such, subjective norms were excluded from the current study.

Authors and years	Purpose of the study	Methodology method used	Key findings	Limitations
Erkan, & Evans (2016)	• To investigate the influence of eWOM on consumers' purchase intentions.	• A conceptual model was presented based on the integration of the Information Adoption Model (IAM) and some relevant constructs borrowed from the Theory of Reasoned Action (TRA). • The new model, the Information Acceptance Model (IACM), was validated by structural equation modelling (SEM) of 384 university students who use SNS.	• Addresses the fact that quality, credibility, usefulness and adoption of information requires information and attitude towards information, and that the key factors of eWOM in SNS are that they influence consumers' purchase intentions.	• This study focuses only on the university students and this does not reflect the whole population. • This study did not study a specific SNS platform or compare between SNS platforms
Zainal et al. (2017)	• This study investigates the influence of trusting eWOM sources available online and the attitude towards intention to follow eWOM in Malaysia amongst travellers.	• 280 questionnaires were collected from respondents via an online survey. • A quantitative method was used.	• The findings indicate that trust influence of eWOM sources has a predominant influence on attitude towards eWOM, as well as the intention to follow it. However, the results also reveal that attitude partially mediates the relationship between trust in the eWOM source and the intention to follow it.	• Tourism companies Can foster honesty and trust environment in SNS • Monitoring SNS by marketers is useful and marketers requires to do that and deal with consumers complaints
Mortazavi et al. (2014)	• To examine the characteristics of SNS and to understand their attributes, including those that influence flow experience.	• Using a questionnaire, the data ($n = 167$) are collected from two Iranian Internet SNS.	SNS influence trust and flow experience. Trust in a SNS environment influences users' flow experience and eWOM in SNS has a significant	• One of the limitations of the study is it was a cross-sectional study and a longitudinal study can enhance future study • The study was conducted from Iran SNS platforms

| | Trust and eWOM behaviours affecting users' purchase intentions, and to provide some strategic implications contributing to the online and eWOM marketing literature. | Hypothesised relationships are examined by SEM. | impact on users' purchase intentions.

• The findings revealed the level of education of a user affects how much s/he trusts the SNS. | only and a future study with International SNS platforms can help in generalising the study
• This study did not consider elements affecting eWOM such as homophily, receivers and ubiquity. |

Table 2.2: Key articles about purchase behaviour, attitude, and purchase intention, and their relationship with TRA

2.5 Adolescent Consumers and their Purchase Behaviour

This study aims to investigate the purchase behaviour of adolescents, particularly with reference to Saudi Arabian females. This section deals with specific aspects of this relationship with regards to social networking sites and eWOM. For example, Pempek, Yermolayeva, and Calvert (2009) found that, on average, adolescent users engage with Facebook 27.93 minutes per weekday. Facebook or other SNS have not just grasped adolescent attention, but have become an active component of their daily lives, interactions, and social commitments (Ellison et al., 2007).

Moreover, since SNS are essential for daily communication and interaction between adolescents, they are potential tool for developing adolescents' identities through self-exploration and relationships as social capital (Gee, 2008). Thus, it can be expected that the impact of eWOM on any kind of decision making could be greater than any other age groups, especially for purchase decision making.

Since this study is specifically about Saudi adolescent females, the data show that the Internet is used by the 93% of the whole population, meaning that almost every person in the country can access social networking sites (Statista, 2016). It is further emphasised that there is a need to understand the role which SNS play in the life of young Saudi girls (Mansour, 2016). This need will be enriched in the era of Prince Mohammed Bin Salaman. This study purports to fill the gap in understanding the influencing of perceived trustworthiness of eWOM influence, attitude, purchase intention and purchase behaviour in adolescent Saudi female consumers.

Many consumers, especially teenagers, use the Internet. In the USA, for example, 95% of teenagers use it (Statista, 2016). These young consumers constantly influence and are influenced by the information available online in the form of WOM or eWOM. Although an extant literature is available about the influence of eWOM on consumers, to fully understand online consumer behaviour there is a need to look at the way information available on SNS influences consumers (Wu & Lin, 2017).

According to Mishra et al. (2017), the influence of SNS may influence different men and women differently. For older generations, such as Generation Y, social influence used to come mostly from personal interaction with the reference groups and opinion leaders. Generation Z, however, are digital natives, and often highly educated, technologically savvy, innovative and creative (Priporas et al., 2017). Schlossberg (2016) asserts that Generation Z poses a challenge for marketers, since it appears that they behave in different ways in comparison to earlier generations, and this behaviour can lead to changes in consumer behaviour. Empirical studies on Generation Z

in the marketing fields are very limited (Priporas et al., 2017). They include Qi and Leung (2018), who researched how Chinese-Speaking members of Generation Z do their online travel planning; Priporas et al. (2017) explored Generation Z consumers' expectations of interactions in smart retailing; Silva et al. (2017) studied the influence of WOM and peer interaction in the decision-making process of Generation Z within the family; Southgate (2017) discussed the impact of Generation Z in advertising; and Stavrianea & Kamenidou (2017) investigated the impact of the economic crisis on Generation Z, and their attitudes and behaviour toward church and religion.

Until now, no study has researched the perceived trustworthiness of eWOM influence on attitude and purchase behaviour in terms of dietary supplements on Saudi female adolescents in Generation Z. The influence of Prince Mohammed Bin Salman on female adolescents will be covered in the next section, following a synopsis of Saudi adolescents in Generation Z.

Authors and years	Purpose of the study	Methodology method used	Key findings
Priporas et al. (2017)	• To investigate the perceptions of Generation Z consumers, their expectations and valence in terms of their future interactions in SNS contexts.	• A qualitative approach based on several semi-structured, in-depth interviews with 38 university students (consumers in the UK market).	• Smart technologies have a strong influence on Generation Z consumers' experiences.
Southgate (2017)	• To investigates Generation Z's attitudes and behaviours toward	• Mixed methods. • The qualitative survey used online discussion forums, which were conducted by	• The implications for Generation Z go well beyond their own spending power, via wealth or via pester

	traditional and digital advertising formats.	desktop and mobile devices in the United States, Germany, and China. There were 30 participants from each country. • Quantitative questionnaires were conducted in 39 countries in Africa, the Middle East, Asia-Pacific, Europe, and North America. 200 interviews with participants representing each of Generation Z, Y, and X cohorts (about 600 interviews per country). The total global sample was 23,907 interviews in total.	power, and can shape long-term strategic marketing decisions and attract them.

| Nanda et al. (2018) | • To explore how movie studios develop an integrated SM strategy to achieve box office revenues and eWOM.

• Departing from previous studies, which focus on single social media platforms.

• This study examines the role of integrated social media promotion strategy, using multiple social media platforms on movie successes in the Bollywood movie industry. | • An in-depth and comprehensive case study approach to examine the promotional strategies adopted by YouTube, Twitter and Facebook throughout the life cycle of the movie, and its impact on box office revenues and the overall success of the movie. | • The SNS promotional strategy was centred on developing content to enhance the characteristics of SNS platforms. While Facebook was used to connect audiences through organising entertaining events, Twitter was used to retweet the positive valence generated from the audience.

• The promotional strategy through SNS in the post-release stage of the movie was found to be as influential as the pre-release stage.

• SNS were used to develop an emotional connection with the audience by promoting the content through which the audience identified themselves with the main protagonist of this movie. |

Table 2.3: Key articles about Generation Z

2.5.1 Insights on Saudi Arabia and Female Adolescents

The Kingdom of Saudi Arabia (KSA) is located in the Middle East between the Red Sea and the Persian Gulf. Its land area stretches across 200 million KM^2. As per the government statistics, KSA has a population of nearly 32 million people, which makes it one of the largest in the Middle East (General Authority of Statistics, KSA, 2017). The KSA has the largest petroleum reserves in the world. The wealth generated through petroleum spurred rapid economic growth, which has

resulted in social transformation. This has helped to improve the health care facilities and overall health of the people in the kingdom. In 1954, the Saudi government established the Ministry of Health, the government agency responsible for Saudi Arabia's health-care system. Healthcare services in Saudi Arabia are universal, meaning it is accessible for all citizens.

Modern Saudi Arabia represents a unique and convergent blend of religious conservatism and technological modernisation. Crown Prince Mohammed Bin Salman has introduced new regulations, with decisive decisions regarding Saudi women's rights, in terms of enhancing female job opportunities and allowing women to drive from next month in Saudi Arabia. The Internet was introduced into KSA in 1999, initially in the universities and public agencies, later made available to the public via Internet service providers.

Previous studies have investigated obesity in Saudi adolescents in terms of fast food, energy drinks, skipping breakfast, and not eating fruit and vegetables. In addition, female adolescent obesity was higher compared to male adolescents (Al-Faris et al., 2015; Al-Hazzaa, et al., 2010; Al-Hazzaa et al., 2011; Al-Hazzaa et al., 2014). Other studies have focussed on sedentary behaviour and the time which Saudi adolescents spend in front of screens, as well as their usage of social media, which increases obesity and diseases (Al-Kutbe et al., 2017; Al-Nakeeb et al., 2012; Mahfouz et al., 2011). There is a scant literature about Generation Z, the age group of this current study (Priporas et al., 2017; Qi & Leung 2018; Schlossberg, 2016; Southgate 2017; Stavrianea & Kamenidou, 2017).

Before proceeding further to explain the rationale behind focussing on Saudi female adolescents in this study, it is necessary to define what adolescence is. Adolescence is a period of rapid physiological development and psychosocial maturation which is associated with changes in body perception (Ramberan et al., 2006). Adolescence is considered to be a crucial stage of life which brings many biological, neurocognitive, social, and behavioural changes (Gottlieb et al., 1998). Adolescence describes the transitional stage from childhood to adulthood. It has been defined by the Committee on the Rights of the Child (CRC) as "a life stage characterised by growing opportunities, capacities, aspirations, energy and creativity, but also significant vulnerability". More precisely, the World Health Organization (WHO) defines adolescents as those people between 11 and 19 years of age. Adolescence-related issues have interested researchers in recent years, who have focused on issues related to the use of dietary supplements. This rapidly growing field of research has gained importance because of the unique nature of this critical period of formative growth, in which development profoundly affects health and well-being.

Children in different regions may enter adolescence at different ages for biological reasons. Therefore, it is argued that adolescence is the age where the onset of physiologically normal puberty begins, and it ends when adult behaviour and identity is accepted. As per the recommendations of the Canadian Paediatric Society (2003), the age of adolescence is approximately between 11 and 19. A study on adolescent females conducted by Samara et al. (2015) used a sample of age groups between 18 and 22. Another study by Al-Hazza et al. (2014) defined the adolescent age group as being between 15 and 19. The latest annual report of the Saudi General Authority for Statistics shows that 68% of the total population are below the age of 35, in which 27% of the total population are adolescents (SGAS, 2018). Therefore, Saudi adolescents'

girls are one of the main groups exposed to and affected by high fast food consumption behaviours in the region (Alfaris et al, 2015). According to Zaghloul (2011), 71% of Saudi female adolescents are either overweight or obese. This, of course, explains the high prevalence of dietary supplement use amongst females in Saudi Arabia.

The population in KSA is not physically active, which has resulted in several health-related issues, especially obesity. According to Alahmed and Lobelo (2017), there is a high level of physical inactivity in different regions and population groups in Saudi Arabia. Population interventions are needed, especially those focusing on physical activity in free time. WHO data (2016) has shown that there is a tendency towards low physical inactivity in KSA for 68% of the population, with 87.5% of women being inactive, which has led to an increase in obesity. A comparative study conducted in 20 countries showed that the KSA was amongst the countries which reported the highest amounts of time spent sitting (Bauman et al., 2011). Because of sociocultural barriers, women have difficulties in moving around, meaning that physical inactivity is even worse in the KSA (Samara et al., 2015).

It has been observed that not only cultural barriers, but also social behaviours and lifestyles in the KSA have changed dramatically (Rawas, Yates, Windsor, and Clark, 2012). For example, the eating patterns of children and adolescents in the KSA have changed towards consuming high fat, high calorie, unhealthy food. This food consumption behaviour has resulted in an increased prevalence of obesity (Rawas et al., 2012). It can therefore be argued that due both to inactivity and unhealthy food patterns, KSA women are often obese, whereas the mainstream media exhibits

thin and lean models as the ideal body type. Due to strict dress codes in the KSA, there are limited opportunities for women to live an active life, with the opportunity to go to the gym being rare and expensive, meaning that dietary supplements can be the easier option. It should also be noted that adult women spend their time in looking after the house, taking care of the family, cooking food and other domestic chores, while adolescent women spend time using the Internet and social media.

It was noted earlier that historically there was little understanding in Saudi Arabia with regards to SNS, and that women were banned from driving. In addition, women in Saudi have been advised to wear the abaya, and job opportunities for women were less. However, the emergence of Prince Mohammed bin Salman's new regulations and strategies for empowering women in Saudi Arabia will have implications in KSA, and will enrich and enhance more researches in coming years where these changes will be explored.

2.5.1.3 The implications of how new regulations in 2018 by Crown Prince Mohammed Bin Salman will influence Saudi females

To the best of my knowledge, there are no academic articles related to the new regulations for women's rights in Saudi Arabia. Therefore, newspaper articles were used in this study. For example, a staff writer in the Al Arabiya English reported in April 2018 that Saudi Crown Prince Mohammed bin Salman had said "there was no difference between male and female in Islam, and that half of Saudi Arabia's population were made up of women, and that they were paid equally to their male counterparts in the public sector." Further reports on his views on women's rights in Saudi Arabia were addressed in his interview with The Atlantic's Editor-in-Chief Jeffrey Goldberg

on Monday, namely that "I support Saudi Arabia, and half of Saudi Arabia is women. So, I support women … in the Saudi government women are paid exactly like men. We have regulations like this that are going into the private sector. We don't want different treatment for different people."

Regarding the country's guardianship laws, which relate to women needing the written approval of male relatives to travel outside Saudi Arabia, the Crown Prince noted to The Atlantic that these laws did not exist before 1979:

> 'Before 1979 there were societal guardianship customs, but no guardianship laws in Saudi Arabia. It doesn't go back to the time of the Prophet Muhammad. In the 1960s women didn't travel with male guardians. But it happens now, and we want to move on it and figure out a way to treat this that doesn't harm families and doesn't harm the culture.'

The old regulations were changed to create new opportunities for Saudi women. Therefore, new regulations can have different implications, and should be considered in future studies.

2.5.2 Saudi female Adolescence and Obesity

Previous studies have investigated obesity in Saudi adolescents with regards to fast food and energy drinks. In addition, female adolescent obesity was higher than male adolescents (Al-Faris, et al., 2015; Al-Hazzaa et al., 2010; Al-Hazzaa, et al., 2011; Al-Hazzaa et al., 2014). Other studies have focused on the sedentary behaviour of Saudi adolescents, who spend excessive time in front of screens, and whose usage of social media increases obesity and diseases (Al-Kutbe et al., 2017; Al-Nakeeb et al., 2012; Mahfouz et al., 2011). There is a scant literature regarding Generation Z in marketing and social networking usage (Priporas et al., 2017; Qi & Leung 2018; Schlossberg,

2016; Southgate, 2017; Stavrianea & Kamenidou, 2017). This research aims to fill some of these gaps, and to explain certain aspects in marketing field.

Saudi culture has its effect on purchase behaviour and decision making. Hofstede defines culture as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980, p. 260). Many of the studies on the topic of culture focus on national culture, although Straub et al. (2002, p. 18) suggests that "an individual's values are influenced and modified by membership in other professional, organizational, ethnic, religious, and various other social groups, each of which has its own influence.

Within the context of various cultural aspects, Hofstede's dimensions are discussed below providing the 5 deep drivers in Saudi Arabia according to (Al-Gahtani et al., 2007).

Firstly, the dimension of power distance dealing with the fact that all individuals in societies are not equal where the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. Saudi Arabia counts high in this dimension meaning that people accept this hierarchical order of inherent inequalities where everybody has a place which needs no further justification because of centralisation.

Secondly, Saudi Arabia counts low in individualism of the degree of societal interdependence being a collectivist society where people belong to 'in groups' that take care of them in exchange for loyalty with close long-term commitment to the member 'group', fostering strong relationships where everyone takes responsibility for fellow members of their group.

Thirdly, masculinity is a feature of the Saudi Arabian society as people live in order to work; managers are expected to be decisive and assertive and the emphasis is on equity, competition and performance and conflicts are resolved by fighting them out.

Fourthly, uncertainty avoidance is to do with the way that a society deals with the fact that the future can never be known where ambiguity brings anxiety creating beliefs and institutions.

Saudi Arabia counts high in this particular dimension with societal rigid codes of belief and behaviour and members are intolerant of unorthodox behaviour and ideas.

Fifthly, long term orientation which deals with how every society has to maintain some links with its own past while dealing with the challenges of the present and future, yet take a more pragmatic approach towards areas such as modern education as a way to prepare for the future. Saudi Arabian society counts low with a strong concern of establishing the absolute truth where members are standardised in their thinking. They have great respect for traditions with a focus on achieving quick results.

2.5.3 eWOM Influence on Adolescents' Purchase Behaviour for Obesity Reducing Fads

A scant literature is available with regards to the relationship between social media and purchase behaviour of weight loss products amongst adolescents. The few studies which are available are found in unclassified journals, and the reliability of such journals is questionable from an academic perspective (Djafarova and Rushworth, 2017; Inge et al., 2016). Therefore, this study will bridge a critical gap in the literature with regards to the adoption of obesity reducing fads amongst Saudi female adolescents because of eWOM.

Weight loss and obesity reducing fads are often advertised in traditional media, but following the emergence of SNS means that this practice is now carried out through opinion leaders. Adolescent purchase behaviours on social media have attracted interest from the research community. One such study with regards to weight loss products was conducted by Raghupathi and Fogel (2014), who found that conformity with social norms and trustworthiness in opinion leaders leads to the adoption of weight loss products highlighting the role of social support with regards to weight loss related issues. In the European context, Wangberg et al. (2008) found that SNS was a popular medium used by adolescents with regards to health issues, and that they were influenced by the recommendations provided to them. The way in which the attitudes of adolescents are shaped via eWOM in the social media sphere is an emerging field of study where there is sparse research, meaning that empirical evidence is needed to expand our understanding.

2.5.4 The Influence of eWOM on Attitude-Behaviour Relationships

Attitude-behaviour models are not universally accepted across cultures, and there are variations in models when tested in a different culture (Hofstede 1980; Kirkman et al. 2006). Therefore, many studies have attempted to test attitude-behaviour comparatively across cultures in order to better understand the theories (Bagozzi et al., 2014; Bian & Forsythe, 2012; Chin-Lung et al., 2013; Rojas-Méndez et al., 2009). In a review which analysed the impact of cultural difference on cognition, emotion and motivation, Markus and Kitayama (1991) postulated that based on theories of psychology and anthropology, culture has an impact on the self-construal. Therefore, this study is based on the specific cultural context of Saudi Arabia.

With regards to this study of eWOM's influence on attitude and so purchase behaviour, given that Saudi Arabian culture is considered to be collectivist based on the Hofstede typology, it would be interesting to examine the application of the TRA on the use of dietary supplements by Saudi female adolescents. Opinion leadership is expected to exert significant influence in collectivist culture and, therefore, it would be appropriate to see whether eWOM emanates from those who are influential in a collectivist society. The following section will introduce the rationale of dietary supplements with regards to female obesity using the latest relevant statistics and percentages.

Authors and years	Purpose of the study	Methodology / method used	Key findings	Limitations
Al-Kutbe et al. (2017)	• Obesity rates in SA are amongst the highest worldwide. It is known that teenage girls are less active than teenage boys, but less is known about their food intake and activity patterns in female adolescents. • This study sought to investigate dietary intake and daily physical activity in girls aged 8-1 in Saudi Arabia.	• Dietary assessment using a four-day unweighted diet diary was undertaken with 136 participants. 134 agreed to monitor their physical activities for four days using an accelerometer. • A cross- sectional study in 7 schools in Makkah, where 30% of participants were classified overweight/obese. • A strong influence in the mean daily energy intake between BMI groups, where the obese group had the highest carbohydrate, fat and energy intake, was seen.	• Suggested that obesity in girls aged 8-11 years is related to high energy intake from all macronutrients and the majority of female adolescents in all weight categories are inactive.	• The study was conducted from one city in SA (Makkah) and the results does not reflect the whole population and therefore, it can not be generalised • The study was a cross sectional study and a longitudinal study is recommended in the future • The sample size is very small

• Musai ger et al. (2013)	• To investigate the differences in dietary habits and lifestyles between female adolescents in government and private schools in SA.	• A cross-sectional multistage stratified survey was carried out on female adolescents aged 12-19 years. • A sample of 512 girls (291 and 221 girls from government and private schools. • A questionnaire was used to collect the data.	• Private female adolescents were consuming less time watching television and using the internet daily compared to Saudi female adolescents in government schools. They also have a healthier diet than female adolescents from government schools	• This study did not consider the differences between socioeconomic groups and the food portion size • The questionnaire was validated in other countries which might weaken the outcomes
Mahfouz et al. (2011)	• To explore gender differences in obesity and related behaviour among adolescent school male and Saudi female adolescents in south-western SA.	• A cross-sectional study on a stratified sample of 1,249 adolescent males and 620 adolescent females was conducted in south-western SA.	• The obesity in this study amounted to 23.2% among adolescent males and 29.4% amongst adolescent females. • The risk factors identified were being a female and a lack of class physical exercise.	• The study was conducted from one region in SA (south-western) • Parents opinion was not included to enrich the findings. •

Table 2.4: Obesity in Saudi Arabia and sedentary behaviour

2.5.5 Dietary Supplements for Female Consumers

Studies such as Cohen (2014), Geller et al. (2015) and Raghupathi and Fogel (2013) investigated dietary supplements (weight loss supplements) and their positive outcomes, focusing on the demand by women to use dietary supplements to decrease their body weight and to achieve their

perceived body image. These harmful measures replace a normal diet and exercise, with potential side effects as described in Ashar et al. (2003) and Blanck et al. (2007). On the other hand, other studies have investigated the marketing of dietary supplements on social media and the illegal marketing of some dietary supplements (weight loss supplements) which are not approved by the FDA (Ferrell & Ferrell, 2012; Glenn, 2011; Pillitteri et al., 2008) According to Raghupathi and Fogel (2013), Facebook is intensively working for healthcare marketing purposes, with online social media providing platforms where users can create and share content in the form of videos, audio and text. About 50% of adults in the USA use social media platforms, and the study shows that social media usage is associated with changes in a person's health behaviour. The study presented a positive association between social contacts who are trying to lose weight. It can improve the user's access to health information and to make behavioural; changes, which may result in obesity, alcohol use, smoking, preventative care and health care utilisation.

Another study by Geller et al. (2015), highlighted that dietary supplements for muscle building and weight loss are having an adverse effect on health since they are prone to abuse customers who are vulnerable. Their study found adverse effects of a dietary supplement on overall health. Cohen (2014), meanwhile, proved the negative effects of dietary and nutritional supplements on consumer health, which signified that these products could create life-threatening consequences for people. All three studies examined dietary products and their outcome in terms of increasing weight loss.

2.5.5.1 The type of role of products on the relationship between the attitude towards dietary supplements and the perceived trustworthiness of eWOM

The marketing literature conventionally divides product categories into three, namely Convenience, Shopping, and Speciality (CSS) goods. This classification was put forward by Copeland (1923), and has been highly influential in marketing studies and textbooks until the online medium started to become an important tool for purchasing goods. The Internet has the capability to provide easy access to information, and is very convenient for shopping in almost all product categories, including products which are hard to find (Girard and Dion, 2010). Given this, a new product classification framework has been developed, which is generally referred to as search, experience and credence products (SEC). This SEC classification of products differentiates them on the basis of the availability of information about the product, uncertainty about the benefits, and the cost or difficulty level which consumers encounter in acquiring and evaluating them. For instance, a product is considered as a 'search products' when its relevant product attribute information (e.g., price, size, quality, colour, performance or style) can be easily obtained before the actual purchase. According to Nelson (1974), 'experience products' are those where the relevant attribute information cannot be known until a consumer uses the product. In the case of 'credence products', the relevant attribute information is available neither before nor after the trial/use of the product for a considerable length of time (Darby and Karni, 1973).

Marketing scientists, when studying consumer behaviour, cite several product types as credence products, such as anti-wrinkle cream, hair growth cream, stock market investments and herbal supplements (Girard and Dion, 2010). In another study, dietary supplements were also used as an example of a credence product (Sunyansanoa, Farquhar and Czarnecka, 2013). When it comes to evaluation, products can be either easy or difficult to evaluate, and as per Nelson information

asymmetry, products can be classified as search, experience and credence goods (Ford et al., 1988). Most physical products, such as clothing, for instance, can be classified as a search goods since information about them is not only available but also easy to evaluate (Hsieh et al., 2005). For search goods, information is easily available, easy to compare (Mudambi and Schuff, 2010) and can be acquired without actually consuming the product (Huang et al., 2009). On the other hand, experience goods (e.g. video games or tours) are generally intangible, and so cannot be evaluated unless they have been purchased and consumed (Hsieh et al., 2005), but this information tends to be subjective (Klein, 1998). The virtual environment allows some experience products to be converted to search goods, thereby reducing the perceived risk (Huang et al., 2011).

Some food, however, requires specialised knowledge, or a perceived source of expertise for eWOM (for example a dietitian or nutritionist) to evaluate the products. One of the attributes of credence products is that they cannot be judged by consumers, and so for Hsieh et al. (2005), dietary supplements are a credence product type. Therefore, the purchasing of credence products carries a much higher risk compared to experience goods. This study also identifies dietary supplements as a credence product. There is a scant literature about the relationship between the perceived trustworthiness of how eWOM dimensions influence attitude towards dietary supplements, purchase intention and behaviour amongst Saudi female adolescents with different products types. The present study, which focuses on Saudi female adolescents, who tend to demonstrate considerable interest in their physical shape, investigates the main factors that could have a large impact on the consumption of dietary supplement products. In general, adolescents are sensitive to their physical appearances, and sometimes it is a critical factor when they are not

satisfied with their body shape (e.g. being overweight or obese) when they are exposed to SNS. Participants who spent time on Facebook reported being in a more negative mood than those who spent time on the control website in Fardouly et al. (2015).

Perloff (2014) articulates a series of ideas as well as a framework to guide research on the effects of SNS on body image disturbance of young female adolescents. The interactive format and content features of SNS, such as the strong peer presence and the exchange of visual images, suggests that they work via negative social comparisons, and can significantly influence body image concerns. Being overweight contributes negatively to their self-esteem, and can expose them to criticism and social exclusion.

Body image is one of the most important aspects of an adolescent's self-esteem (Solomon and Rabolt, 2004). Dissatisfaction of body image might be influenced by body shape and body size overestimation (Cooper et al., 1987). External factors such as family, peers and the media play a crucial role in adolescents' perceived body image. Mass media and SNS endorse what an ideal body image looks like and the way in which this beauty ideal can be achieved. Dietary supplements (weight loss products) have been identified as one of the important contributors for creating a better body shape (Noor et al., 2014).

2.5.5.2 Obesity in adolescent females and dietary supplement usage in SA

It is postulated that eWOM would help reduce certain aspects of intangibility and credence associated with these products. Saudi Arabia, like other developing countries, has been through many rapid socio-economic changes in recent decades. Such changes have greatly affected the

lifestyle of the entire population. For instance, the traditional Saudi diet was replaced by energy-dense Western diets, which have caused an increased prevalence of some diseases such as obesity, type 2 diabetes and hypertension (Al-Hazzaa, 2011; Musaiger, 2013). Moreover, fast food consumption and increased caloric intake, in combination with a sedentary lifestyle, has seen rising rates of obesity in Saudi society (Musaiger, 2014).

According to the annual statistics of food consumed in the Gulf Cooperation Council (GCC), in 2014 Saudi Arabia was top of the list of GCC countries in terms of the amount of annual consumed food. In 2012, the amount of consumed food in the country totalled 25.8 million metric tons, compared to 29.6 million metric tons in 2014 (961.6 kilograms per capita). This is of particular relevance to the current study since adolescents have become especially vulnerable to intense marketing efforts by manufacturing companies to promote unhealthy snacks, since they represent future adult consumers (Al-Nakeeb, 2012). The latest annual report of the Saudi General Authority for Statistics shows that 68% of the total population are below the age of 35, of which 27% of the population are adolescents (SGAS, 2018). Therefore, Saudi adolescents' girls are the main groups exposed to and affected by the high fast food consumption behaviours in the region (Alfaris et al, 2015). According to Zaghloul (2011), 71% of Saudi females are either overweight or obese. This, of course, explains the high prevalence of dietary supplement use with females in Saudi Arabia. Alfawaz et al (2017) found that prevalence of dietary supplement use was high among Saudi female adolescence, and was significantly associated with sociodemographic and lifestyle factors.

The prevalence of dietary supplements has taken place alongside the expansion of the pharmaceutical market in Saudi Arabia. According to the Saudi Pharmaceutical Sales Forecast for

the current year (2018), industry products are expected to surpass US$7 billion by 2018, in comparison to US$4 billion in 2012, of which the supplement market accounts for 4% of the total pharmaceutical market sales. Dietary supplements are used widely in Saudi Arabia and are available in pharmacies and dietitian centres as well as online. It is essential to understand the concept of ideal body image as well as perceived body image, and that if people are exposed to social media or SNS, this may result in body image disturbance and body image dissatisfaction for female adolescents (Perloff, 2014; Tiggemann & Slater, 2013). This would be particularly true for Saudi female adolescents according to Khalaf et al. (2015). Therefore, perceived body image helps to moderate the relationship between the perceived trustworthiness of eWOM's dimensions and attitude towards dietary supplements. The next section will discuss the role of moderators within the model.

2.6. Mediation Rationale

As argued by Nyadzayo and Khajehzadeh (2016), the mediator variable is a variable which causes the mediation in the independent and the dependent variable. The complete mediation is explained as the process which is caused by complete intervention by the moderator variables. The result is that the initial variables do not affect the outcome variables (Baron & Kenny, 1986). The process of partial mediation can therefore be explained as a partial intervention. Sardeshmukh and Vandenberg (2017) argue that mediation occurs when the mediation variable is based upon the model of mediation. The mediation model has been developed on the assumption that there will be an effect on the outcome variables due to an intervention in the mediation variable. In Tu and Yang (2016), the mediator variable measures with less perfect consistency, meaning that it causes effects which are likely to be biased. Hayes (2017) noted that the mediator variable creates an effect which is underestimated, and that the impact of the independent variable on the dependent

variable is more likely to be overestimated. As such, the biases in the variations are due to the error in measurements, and the instrumental variable can be used to solve the problem, with the bias issues being in the variability of the mediator construct (Preacher, Rucker, and Hayes, 2007).

2.6.1 The Rationale for Moderators

According to Slimani, Chamari, Boudhiba and Chéour (2016), moderators in academic research within the conceptual framework act as a third variable in which the partitioned focal independent variables are in the subgroups. In this research, the moderator aims to establish a domain of maximal effectiveness with regard to the dependent variable, which is purchase behaviour. Windt, Zumbo, Sporer, MacDonald and Gabbett (2017) highlighted the nature of moderators, investigating in general terms that it is a qualitative variable which includes information about class, age, sex or race, and that it can also be a quantitative variable which depicts information about the level of reward, satisfaction and so on.

Similar to the moderator, as noted in Nyadzayo and Khajehzadeh (2016), the mediator variable is a variable which causes the mediation in the independent and the dependent variable. Complete mediation is explained as the process which is caused by the complete intervention by the moderator variables, which results in initial variables that do not affect the outcome variables (Baron and Kenny, 1986).

2.6.1.1 Perceived Body Image as a moderator

This concern for slim bodies is more prevalent amongst female adolescents, and has been the subject of several studies (Andrew, Tiggemann, and Clark, 2016; Bearman et al., 2006; Clark and

Tiggemann, 2008; Neighbors et al., 2008; Rayner et al., 2013) which have sought to explore perceptions of body image. Grogan (2007, p.1) defined body image as "a person's perceptions, thoughts and feelings about his or her body".

Social media has contributed to the perception of ideal body image (Perloff, 2014). It is argued that focus lies on presenting attractive people and thin models, which might have an effect an individual's body-image (Kubiak & Lindberg, 2016). There are growing concerns about female body weight in the KSA (Khalaf et al. 2015). It was found that there are discrepancies amongst Saudi females about their ideal and perceived body image which may lead to psychological and physical problems. This finding shows there is an agreement between actual, perceived, and ideal BI, and that it was found in only 23% of participants; this provides significant reasons which explain the desire to be thinner (Khalaf et al., 2015). According to Matute, Polo-Redondo, and Utrillas (2016), body image is the perception of one's body, and it is subject to distortions from internal elements such as moods, emotions, experiences and attitude. According to Mishra, Maheswarappa, Maity and Samu (2017), social media creates dissatisfaction towards body image. Women, especially young women, have increased concerns about the shape of their body, and can develop feelings of imperfection due to this perceived dissatisfaction.

However, there is a scant understanding about the role of perceived body image with regards to the influence of SNS. This study fills this gap by incorporating the perceived body image of Saudi female adolescents into the research framework. As such, one of the current study's objectives is to examine the moderating effect of perceived body image on the relationship between the

perceived trustworthiness of eWOM and attitude towards dietary supplements. Table 2.4 below

provides a synopsis of the key studies on body image and SNS for adolescents.

Authors and years	Purpose of the study	Methodology method used	Key findings	Limitations
Perloff, 2014	• Explores the online presence of female adolescents and their reliance on SNS. This is predominant in appreciating the ways that SNS can influence body image and body image disturbance.	• A model is tested to emphasise the impact of individual vulnerability characteristics, SM usage, and mediating psychological processes on body dissatisfaction and eating disorders. • Research-based ideas about the effects of SNS on female body image, intersections with ethnicity, and ameliorative strategies.	• Emphasises that SNS, working via negative social comparisons, and peer normative processes, can impact body image concerns.	• This study did not consider the influence of each SNS separately or compare them to each other • This study did not address the role of parents • This study was conducted on individualist culture a comparative study for collectivist culture can enhance the findings
Tiggemann& Slater (2013)	• To examine the relationship between Internet exposure and body image concerns in female adolescents, with a focus on Facebook.	• A sample of 1,087 females (13-15) who completed questionnaire measures of Internet consumption and body image concerns.	• Female adolescents (95.9%) had access to the SNS at home. • Time spent on SNS was significantly related to the internalisation of the 'thin ideal', and the drive for thinness. • Facebook users scored more highly on all body image concern measures than non-users.	• This study was conducted from young white Australian university students only • The experiment took place in a laboratory setting • The experiment was on 11 advertisement with warning label

Table 2.4: Key studies in body image and SNS for adolescents

2.6.1.2 Time spent on social media as a moderator

In addition to perceived body image, this study incorporates the level of user engagement on SNS

into the framework, and uses time spent the social media as a proxy for user engagement. It is

explained earlier that Internet usage has been increased many folds over the last decade, with

people spending much more time on SNS nowadays. However, there is a lack of understanding about the influence of the time spent on social media and consumption-related issues. According to Roy and Shekhar (2010), multiple technological characters and social media enables the spread of eWOM extremely rapidly within a short space of time. Social media users can contribute to outrage in just a few seconds. SNS exchange information in seconds, which creates challenges for businesses while also controlling damage and rebuilding their images. Reichelt, Sievert, and Jacob (2014) proved that time plays an important role in the effects of wear-out and wear-in of eWOM. Flanagin and Metzger (2013) note that consumers who spend a long time on SNS do develop a positive attitude because of reviews and posts. The population in KSA is not physically active, which has led to a number of health-related issues, especially obesity. According to Alahmed and Lobelo (2017), there is a high level of physical inactivity in various regions and population groups in the country. Population interventions are greatly needed, especially those focusing on physical activity in their leisure time. A comparative study conducted in 20 countries demonstrated that the KSA was amongst countries which reported the highest amount of time spent sitting (Bauman et al., 2011). Due to sociocultural barriers, women have difficulties in moving around, meaning that physical inactivity is even worse for women in the KSA (Samara et al., 2015).

It is observed that it is cultural barriers, social behaviours and lifestyles in the KSA which have changed dramatically (Rawas, Yates, Windsor, and Clark, 2012). Also, the eating patterns of children and adolescents in the KSA has changed towards high fat, high calorie, unhealth food. This food consumption behaviour has led to an increased prevalence of obesity (Rawas et al. 2012).

As such, due to both inactivity and unhealthy food patterns, women in the KSA can be overweight or obese, while the mainstream media presents thin and lean models as having the ideal body type. Due to the strict dress codes in the KSA and the limited opportunities for women to live an active life, women are generally inclined towards using dietary supplements to improve their body image. It should also be noted that adult women spend their time in house making, taking care of the family, cooking food and other domestic chores, with adolescent females spending relatively more time using the Internet and social media compared to adult women. It seems that Generation Z tend to spend more time on social media as well as their dietary habits, which includes the eating of junk food. Therefore, the inactivity and food habits have increased the chances of obesity in female adolescents.

A number of previous studies have shown the significance of time spent on social media and its influence on purchase behaviour. To date, however, no study has examined the moderating effect of time spent on social media on the relationship between the perceived trustworthiness of eWOM and attitudes towards dietary supplements.

2.7 Chapter Summary

This chapter has presented a literature review about the perceived trustworthiness of eWOM and its three dimensions (perceived source expertise of eWOM, volume of eWOM, and valence of eWOM) on consumer attitude, purchase intentions and purchase behaviour. This chapter was divided into several sections. The first section provided basic definitions of WOM and eWOM and highlighted their role. The second part explained the influence of eWOM on the consumption of

goods. The third section highlighted the dimensions of perceived trustworthiness of eWOM (volume, valence and perceived source expertise of eWOM). The fourth provided the theoretical justification of attitude-behaviour linkage and explained the role of attitude. The fifth highlighted the consumer behaviour of female adolescence consumers. The sixth explained the moderator's role and explored the role of the perceived trustworthiness of eWOM moderators' perceived body image and time spent on social media or social networking of eWOM on Saudi female adolescents' attitude, purchase intentions and purchase behaviour of dietary supplements. The rationale for targeting Saudi female adolescents was then given, using recent statistics for dietary supplements in Saudi Arabia, and Saudi female obesity and sedentary behaviours amongst this targeted group. The final section provided a conclusion of the current chapter.

In the next chapter, the conceptual framework and hypotheses formation will be given. One of the main contributions of the current research is to suggest the role of product types which moderate the relationship between the attitude towards dietary supplements and the perceived trustworthiness of eWOM. According to the previous literature, the role of product types differently influences the perceived trustworthiness of eWOM for different products. This could be considered for future research recommendations. Finally, two moderators for the current study were proposed, and the hypotheses development and a model were proposed and tested, which will be explored in the next chapter.

Chapter Three: Conceptual Framework and Hypotheses Development

3.1 Introduction

This chapter builds on the literature review conducted in the previous chapter by developing a suitable conceptual framework which can help to achieve the main objectives of this research, as stated in the introductory chapter. This chapter includes a conceptual framework based on the hypothesis proposed herein. These hypotheses are based on the literature. The context of the study – the perceived trustworthiness of eWOM – is an emerging phenomenon, and there are scant empirical studies on the topic with regards to the study of attitude, purchase intentions and purchase behaviour. This chapter has five sections. Starting with the conceptual model, the subsequent section seeks to assimilate the theoretical framework. The third section discusses the dimensions of perceived trustworthiness of eWOM in terms of conceptualisation and hypotheses. The fourth section conceptualises the perceived trustworthiness of eWOM dimensions (perceived trustworthiness of eWOM, volume of eWOM, valence of eWOM) before moving to the relationship between attitude towards purchase behaviour in the following sections. Moderators and the moderators' hypotheses are then discussed. One of the key sections is a discussion of the two mediators and two moderators hypothesised. The final section presents a summary.

3.2 Conceptual Framework and Hypothesis Development:

This section sets out all eight hypotheses, as shown in Figure 3.1, that were examined

for this study.

The researcher assumes the perceived trustworthiness of eWOM (PTOEM) to be a higher order construct composed of five dimensions. Here, a second-order factor structure in which the three distinct components are the manifestation of a broader, more general and more abstract higher order latent variable (PTOEM) is conceived. In such a second-order factorial structure, each factor can be considered a manifestation of PTOEM, and each item a manifestation of its respective factor. Based on this reasoning, the researcher proposed the following hypothesis: the first hypothesis examined the three dimensions of perceived trustworthiness of eWOM as a second order construct of the volume of eWOM, the valence eWOM and the perceived source expertise of eWOM.

The next hypothesis examined the effects of the dimensions of perceived trustworthiness of eWOM on the attitude towards dietary supplements. In addition, the third hypothesis examined how the attitude towards dietary supplements affected purchase intention. The next hypothesis focused on the first mediator, that is attitude towards dietary supplements that mediates the relationship between the trustworthiness of eWOM and the customers' purchase intentions. The following hypothesis examined the customers' purchase intentions and purchase behaviour. The following hypothesis examined the second mediator which is attitude and purchase intentions towards dietary supplements, which mediates the relationship between perceived trustworthiness of eWOM and purchase behaviour. The last two hypotheses examined the two moderators whereby the first moderator is focusing on perceived body image (negative or positive) that moderates the relationship between the perceived trustworthiness of eWOM and attitudes towards dietary

supplements, such that a negative body image will positively strengthen the relationship between perceived trustworthiness and attitude.

The second moderator is focusing on the time spent on social media, which moderates the relationship between the perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that a longer time will positively strengthen the relationship between perceived trustworthiness and attitude.

3.3 Conceptual Model
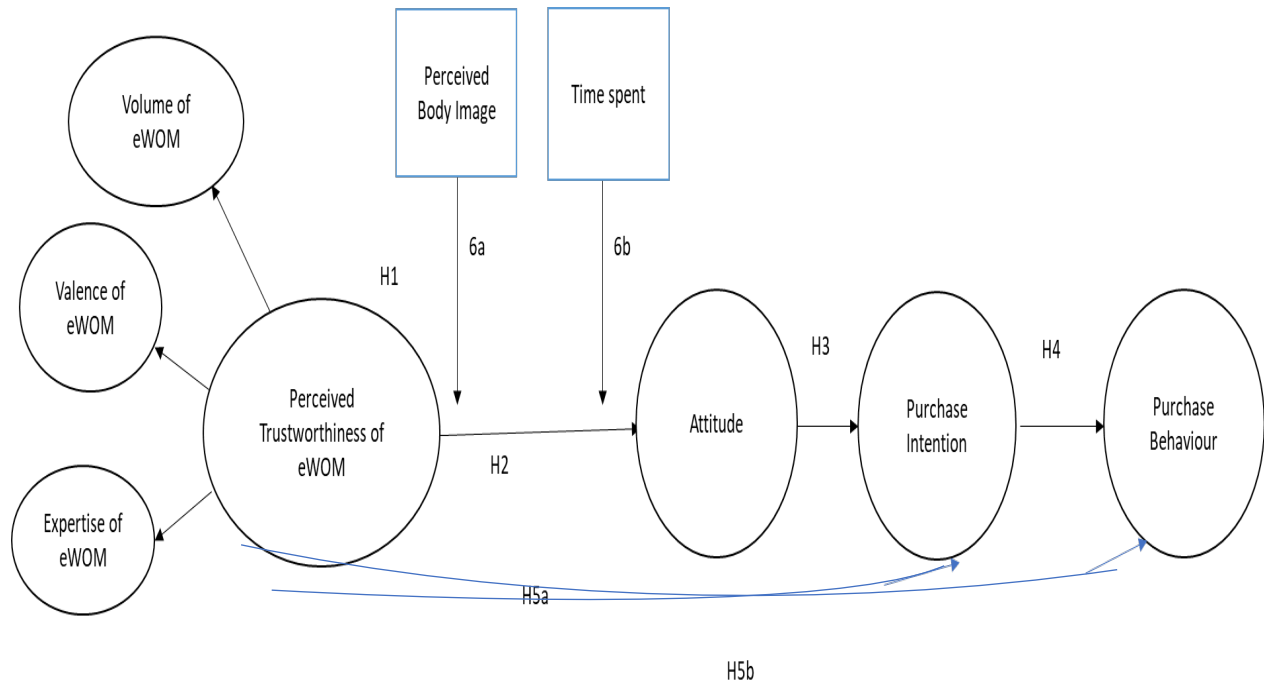
Figure3.1: Conceptual framework

3.4.1 The Theoretical Framework

This study aims to investigates the influence of perceived trustworthiness of eWOM on the attitude purchase behaviour of dietary supplements in Saudi female adolescents. It adds to the literature by introducing dimensions of the perceived trustworthiness of eWOM (volume, valence and perceived source expertise of eWOM). The study further explores the influence of how the perceived trustworthiness of eWOM mediates the relationship between the perceived trustworthiness of eWOM purchase intention and purchase behaviour. The study also adds to the literature by adding two moderators, perceived body image and time spent on SNS.

According to recent researches (Erkan and Evans, 2016; Goh, Ho, and Jiang, 2015; Kim, Lee and Yoon, 2015; To and Ho, 2014), SNS are considered to be appropriate platforms which aim to promote eWOM to enhance the behavioural intention of users. Communication through social media platforms accelerates the daily conversation between users and allows opinion leaders to promote their brand in order to increase online sales. Social media platforms allow people to share their views regarding specific brands and their usage through pictures, written comments, videos or other visual tools (Goh, Ho, and Jiang, 2015). In the context of dietary supplement products, social media platforms provide a place to consumers where they can share the details about dietary supplements' usage, effects, outcomes by reviews, posts, pictures and other visual tools. The visually enriched content makes eWOM more informative, appealing and enjoyable since it creates direct effects on the purchasing behaviour, in particular that of female adolescents.

Erkan and Evans (2016), in their empirical study, conceptually justified the determinants of eWOM which influence consumer purchasing intention. This new model was presented as the

information acceptance model (IACM), and integrated two theories, namely the TRA and IAM. This model illustrated the influence of eWOM on social media, which is not only dependent upon eWOM characteristics such as credibility and quality of information, but also upon consumer behaviour in relation to eWOM information. As such, considering past similar studies by several authors (Erkan & Evans 2016; Goh, Ho, & Jiang, 2015; Kim, Lee, & Yoon 2015) which are relevant to the conceptualisation of the new model, it is proposed that for this study to develop a unique conceptual model related to eWOM, attitude, purchase intention and purchase behaviour, this integrated framework must be adopted. In this study, the conceptualisation of purchase behaviour theory in social media (PBSM) is based on extracting the significant and most relevant construct from the Theory of Reasoned Action (TRA) and dimensions of perceived trustworthiness of eWOM.

In this study, the conceptualisation of purchase behaviour model in social media (PBSM) is based on extracting the significant and most relevant construct from the Theory of Reasoned Action (TRA) and dimensions of perceived trustworthiness of eWOM.

The TRA model hypothesises that within behavioural intention are the antecedents of behaviour, which are determined by subjective norms and attitude. TRA theory has been frequently used by a number of researchers (Choi & Chung, 2013; Erkan & Evans, 2016; Goh, Ho, & Jiang, 2015; Kim, Lee, & Yoon 2015; Özkan, Bindusara, & Hackney, 2010; Riffai, Grant, & Edgar, 2012; Shen, Cheung, & Lee, 2013; Xu, 2014), in determining the relationship between eWOM and consumer purchase intention. Similar to Erkan and Evans (2016), the present study also uses several constructs from the TRA, which includes attitude, purchase intention and purchase

behaviours. However, before discussing the TRA constructs, the reasons for selecting the TRA will be outlined. The literature concerning the attitude towards products and purchase behaviour intentions suggests that purchase intentions are influenced by attitude (e.g. Ajzen, 2000; Ferrell & Ferrell, 2012; Glenn, 2011; Lee & Yun, 2015; Park & Kim, 2008; Wirth et al., 2012; Zhang, 2017). Previous studies by Gunawan and Huarng (2015), Morwitz (2012), Kumar, Manrai, and Manrai (2017), Hajli, Sims, Zadeh, and Richard (2017) address the issue of purchase intentions converting to purchase behaviours and it is not always the case that purchase intentions convert to purchase behaviour.

The reason for using three constructs from the TRA is that they were the only relevant three constructs that explains the purchase consumer behaviour, with the fourth construct being not applicable in the context of this study (i.e. subjective norms). Attitude, intention and behaviour have been extracted from the TRA and deployed in the conceptual framework in the present research. Regarding behaviour construct, it aims to explore the influence of eWOM on the purchasing behaviour of dietary supplements among female adolescents in KSA.

Behaviour intention is considered to be the predecessor of actual behaviour, and is recognised in a significant number of theories such as The Theory of Planned Behaviour (TPB), the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM). The TAM model and theories were extended from the original TRA in order to provide behavioural insight (Zhang, Cheung, & Lee, 2014). According to Fishbein (1963), the attitude about object is the function of his or her beliefs. This was further explained by Fishbein and Ajzen (1975) in their expectancy-value model of attitudes, in which attitudes are developed reasonably from the beliefs people hold

about the object of the attitude. Therefore, it is difficult to say that attitudes and beliefs are two different entities.

However, in this study, the TAM model was eliminated as it was not suitable according to the framework construct. The core focus of the TAM is towards information systems rather than behavioural aspects (To & Ho, 2014). The current study aims to build a model regarding purchase behaviour in social media; thus, its foundations must be based on behavioural aspects. Hence, these behavioural aspects can be only studied through the application of the TRA in addition to the dimensions of perceived trustworthiness of eWOM (i.e. volume, valence and perceived source expertise of eWOM).

Within TRA theory, attitude is referred to as a personal evaluation regarding the consequence of performing the behaviour (King, Racherla, & Bush, 2014). On the other hand, the subjective norms are the belief of a person towards a specific group or individual. Subjective norms show the willingness and unwillingness of a person to perform a behaviour (Erkan & Evans, 2016; Goh, Ho, & Jiang, 2015; Kim, Lee, & Yoon 2015; Riffai, Grant, & Edgar, 2012; Shen, Cheung, & Lee 2013). A subjective norm was not suitable to construct the extant study since only three predictors were taken from the TRA, namely attitude, purchase intention and purchase behaviour. According to Ameen (2017), which undertook a study in three Arab countries (Jordan, Iraq and the UAE) and found that subjective norms had no influence. Therefore, this study has excluded subjective norms from the model. Previous studies have explained that the role of social influence is more significant when the system is new or when the user is new to the system. However, the use of social media

is not new in Saudi Arabia. In fact, people in Saudi Arabia are active users of social media. Previous studies have explained that there has been a possible shift in culture in Arab countries in terms of moving from collectivism to individualism (Ameen, 2017; Ameen & Willis, 2018).

Moreover, Armitage, and Conner, (2001) also viewed subjective norm as one of the weakest components of the TRA theory. The reason for the weakest position of subjective norms is that there is a difference in the actions driven based on the attitude and the actions that are driven based on the subjective norms. Hence, the actions, which are the result of the attitude and behaviour can be influenced by implicit factors, but when the influence of subjective norms is towards the attitude, then actions may be the result of explicit factors.

The relevancy of TRA towards the study was proven based on the justification presented by Gillholm, Erdeus, and Gärling, (2000) that TRA helps to investigate stronger and closely associated predictors of the behaviour of an individual. Based on this, intention is the key predictor towards purchase behaviour and attitude. Similarly, Khilji, (2016) asserted that attitude is formed based on the beliefs of individuals that lead to certain behaviour. Hence, attitude helps to investigate comprehensive behaviour objectives that derive towards consumer purchase intention. Therefore, the consumer who had positive and salient positive beliefs towards their behaviour tends to develop positive attitude, which helps in making the right decision.

Alsughayir, and Albarq, (2013) further asserted that the first determinant towards intention is attitude. Attitude towards specific behaviour is considered as the estimate of the negative as well as positive self-evaluation with respect to specific behaviour. In consumer purchase decision, the intention is specifically analysed because it reflects the attitude towards purchasing behaviour of

a consumer. Furthermore, the study emphasised on perceived trustworthiness towards eWOM as a contributing factor to examine attitude, behaviour and purchase intention.

Behaviour Intention (BI) is an indicator which proves that a person is ready to connect behaviour and intention (Ajzen & Fishbein, 1980 The behaviour intention within the TRA is the immediate predictor of behaviour, which is referred to as the process of individual readiness to execute certain behaviour which is in accordance with intention. Within the extant research context, the female adolescent attitude towards the purchase of dietary supplements can be developed based on the expertise, volume and valence of eWOM. Hence, in relation to this study the online reviews, discussion, communities and ratings influence the attitude of female adolescents towards purchase intention. The construct of attitude operationalises that the attitude towards the product is based on the perceived trustworthiness of eWOM, which further directs towards purchase intention and purchase behaviour.

As critiqued by Elwalda, Lü, and Ali (2016), purchasing intention within the TRA is open, and can be influenced by external forces such as income shift, inflation or unexpected promotions. Indeed, the consumer may not purchase any product or service even though they have purchase intention (Erkan & Evans, 2016; Goh, Ho, & Jiang, 2015; Kim, Lee, & Yoon, 2015; Kim, Sung, & Kang, 2014; Montano & Kasprzyk, 2015). This is because the purchase intention and actual purchasing behaviour are two distinctive but interlinked constructs (Yeo, Goh, & Rezaei, 2017). Therefore, the TRA model is used.

The Theory of Planned Behaviour (TPB) is a more advanced version of the theoretical work produced by Ajzen (1991). The main difference between TPB and TRA is the inclusion of the "perceived behavioural control" variable. According to Ajzen (1991), the perceived behavioural control (PBC) is not similar to the perceived self-efficacy, The PBC is an extrinsic factor. SE is an intrinsic factor, and a concept used by Bandura (1977, 1982) which "is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p.122). This study uses the purchase of dietary supplements by female Saudi adolescents. As far as the purchase of dietary supplements in the KSA is concerned, it is legal to buy them without prescription without any social stigma attached to it. For example, if one researches the purchase of contraceptives pills by Saudi female, the perceived behavioural control may be an important variable because young women in the KSA may have varying degrees of perceived behavioural control on buying supplements or medicine. Contraceptives pills, due to medical regulations in the SA and the social stigma attached to them, means that PBC in this case is different than in the case of dietary supplements since are sold widely in Saudi Arabian pharmacies as well as online. Therefore, this study excludes PBC from the current model and focuses on using the TRA instead of TPB.

In this study, the trustworthiness of eWOM, and attitude towards a product, purchase intention and purchase behaviour were used as interlinked constructs in order to achieve the third objective, which was to examine the 'conversion of purchase intention to actual purchase behaviour'. By using the integrated models of TRA (attitude, purchase intention and purchase behaviour, and perceived trustworthiness), the phenomenon of eWOM and its influence on attitude, purchase

intention and purchase behaviour of dietary supplements among female adolescents in Saudi Arabia could be tested empirically by the development of the purchase behaviour model on SNS.

According to Elwalda, Lü, and Ali (2016), social media users are either intentionally or unintentionally exposed to a high volume of eWOM, as noted in previous studies. In this study, the use of volume as a dimension of trustworthiness aims to study the sharing of information and knowledge assimilation by females. Hence, eWOM is influential on consumer behavioural intention and its effects on their purchase intention as they are exposed to information which can be beneficial for them to reduce weight. However, as asserted by Lis and Neßler (2014) and Lien and Cao (2014), the level and impact may vary from one person to another. The volume of eWOM in this research context reveals the quantity of online reviews regarding the dietary supplements on various forums and community sites. In addition, valence as a dimension of eWOM determines the willingness or unwillingness of a person to buy online dietary products. This is because of a negative or positive image, good or bad reviews, and previous experiences, which can be favourable or unfavourable. Therefore, by inducing the construct of valence within the conceptual model of (PBSM), it is possible to predict the purchasing behaviour of dietary supplements in female adolescents in Saudi Arabia.

Finally, the perceived source expertise of eWOM as the trustworthiness dimension determines the information regarding the product, which is developed through the use and reuse of product. The positive outcomes shared by users through eWOM positively influences the attitude and result of positive purchase behaviour. On the other hand, the negative outcome shared by users through

eWOM influence negatively on the attitude and results in a pessimistic view. Therefore, the volume, valence and perceived source expertise of eWOM are used as the dimensions of perceived trustworthiness of eWOM.

3.4.2 Dimensions of perceived trustworthiness of eWOM

The trustworthiness of eWOM has several dimensions. Perceived source expertise of eWOM is crucial in products involving risk in comparison to hubs, since people would be looking for content rather than connections or charisma (Iyengar et al., 2011). People with expertise are considered credible and reliable and so are used to endorse products (Lu et al., 2014; Ohanian, 1990b). In a study of 125 undergraduate students, Eastin (2001) found that sources with perceived expertise and knowledge were considered as credible. While the volume of eWOM in online discussion groups would provide social confirmation for perceived trustworthiness, the volume of eWOM serves as a social endorsement, acting as a proxy for credibility and reliability. For this reason, this study considers expertise of the eWOM source as being more crucial with regards to the perceived trustworthiness of eWOM. In an online environment with unknown people, it is difficult to assess personal integrity and benevolence of the eWOM source, and therefore consumers rely on cues to make judgments, tending to prefer volume and expertise as the dominant criteria (Beldad et al., 2010). Similar to this is the case for honesty and transparency, where making a judgment would be difficult.

eWOM valence is a critical dimension of perceived trustworthiness of eWOM since review inconsistency would create consumer confusion and therefore impact on purchase decision. On the

other hand, overly positive reviews might indicate the handiwork of the marketer (Berger et al., 2010; Lee et al., 2008). The construct of valence can help us understand consistency as a measure of perceived trustworthiness of eWOM. Subrahmanyam and Lin (2007) construed that for the acquisition of information and communication, adolescents can play pivotal role using social media to study different attitudes and behaviour. This is also consistent with the findings of Vaterlaus, Patten, Roche, and Young (2015) that adults spend much of their time using technology and SNS, and that this is the predominant stage of their age for establishing long-lasting attitudes and behaviours about their health, such as diet and exercise. Many of these supplements are marketed through social networking in the form of user-generated content or eWOM consisting of product recommendations, online reviews and personal blogs (Ferrell and Ferrell, 2012; Glenn, 2011).

3.4.2.1 Volume of eWOM messages

The mere presence of many reviews about a product can evoke perceived trustworthiness in eWOM (Chevalier & Mayzlin, 2006b; Duan et al., 2008; Liu, 2006; Weaver et al., 2007), which indicates that consumers use decision heuristics i.e. (popularity = correctness). eWOM which is endorsed by number of community members may be trusted irrespective of expertise (Chin-Lung et al., 2013). eWOM volume is defined by the amount (quantity)of information shared online regarding any specific product or service that helps in directing consumer behaviour (Baek and Ahn, 2015). The volume of messages also serves as social confirmation giving assimilative cues to group members that majority of the group has endorsed the product (Khare et al. 2011; Metzger et al. 2010). The volume of the eWOM generated by a particular source influences the perception of trustworthiness in these reviews (López and Sicilia 2014). However, voluminous overtly positive eWOM would have detrimental effect on trustworthiness (Lu et al. 2013).

The volume of as is the total number of messages regarding the brand or certain products on the Internet has been the focus of studies by a number of authors (Baek, Oh, Yang, & Ahn 2017; Barhorst & Wilson 2017; Harris and Prideaux, 2017). Nieto-García, Muñoz-Gallego, and González-Benito (2017), shows that volume of eWOM plays a significant role in consumer buying behaviour. When a consumer sees many messages by brand on social networking sites, they develop trust and a positive attitude towards buying. Cho and Chan (2017) shows that volume has a positive relationship with consumer selection decision. Baek, Oh, Yang and Ahn (2017) reveals that the volume of eWOM can be positive and negative words communicated by the customer regarding the brand. When the ratio of the positive volume is much more than negative volume, more customers are attracted.

Ismagilova, Dwivedi, Slade and Williams (2017) applied the Theory of Planned Behaviour in order to evaluate the volume of eWOM in buying behaviour, proving statistically that advertising is positively correlated with eWOM volume, and that price is negatively associated with eWOM volume. In addition, others authors tested whether eWOM volume helps in sharing posts, comments and stories in the form of reviews, blogs and articles which influence others (Baek et al., 2017; Barhorst and Wilson 2017; Lee and Choeh, 2018). Mohanty, Clements and Gupta (2018) recently argued that eWOM was not easily trustable at the initial stage, but after its development people are now more trusting of it, noting that the reason for lower levels of trust came from people belonging to Generation X. Customers from Generation X are less inclined towards technology since they prefer face-to-face interaction to share their views, whereas Generations Y and Z are

focused more on technology, and prefer to use SNS in order to share their views by virtual interaction through digital technology (Elaziz and Mayouf, 2017). Chatterjee (2001) found that the number of posts on SNS leads to increased referral propensity, arguing that "High share-of-post members are more likely to have deeper product knowledge and are more likely to know and influence consumers with similar product requirements" (Chatterjee, 2001). It was also found that a greater number of posts on social media leads to the increased trust of the readers in the message and increased sales (Amblee and Bui, 2011; Litvin, Goldsmith, and Pan, 2008; Melián-González et al., 2013).

3.4.2.2 Valence of eWOM

Past studies addressed valence as a dimension of perceived trustworthiness of eWOM. The valence of eWOM has a distinct impact on the perceived trustworthiness of eWOM (Jin & Phua, 2014; Koo, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan, et al. 2015). The valence of eWOM has been described as 'the positive and the negative WOM created by consumers by using the product or service' (Qiu, Pang, & Lim, 2012). The eWOM literature has identified an effect called negativity bias wherein negative information seems to be more trustworthy (Harris & Prideaux, 2017; Rozin & Royzman 2001). Similar studies have been carried out with respect to eWOM wherein it was found that people trust negative eWOM more easily than positive eWOM (Highhouse & Paese, 1996; Pan & Chiou, 2011; Park & Lee, 2009; Verhagen et al., 2013). Negative reviews are considered more trustworthy since they provide insight (Lee et al., 2008). However, several studies have found that positive reviews play a significant role in the perception of trustworthiness of eWOM (Vermeulen & Seegers, 2009; Ye et al., 2011).

According to Pan and Chiou (2011), product types have a significant influence on the perceived trustworthiness of eWOM (credence products vs experience goods), although it should be noted that this study is limited to only one experience product (i.e., hotel service) and one credence product (i.e., healthy food). These findings addressed the fact that negative valence is rarely seen as being more trustworthy than positive messages in the case of experience goods. This effect may occur because negative valence information may help consumers predict actual product performance more easily in the case of experience goods. Therefore, it is important for an experience goods marketer to monitor online information because seekers of information about experience goods trust negative information even if the information is from a group of strangers. Pan and Chiou (2011) further discovered that the effect of information perceived trustworthiness of eWOM on attitude is weaker in the credence goods group than in the experience goods group, possibly because it is more difficult for consumers to form an attitude toward credence goods based on online information even if they trust the information. These results confirm that attitudes formed via the peripheral route provide a less accurate prediction of behaviour and have less influence on attitudes formed via the central route. Therefore, marketers of credence goods should pay attention to the valence of their consumers when providing product information.

Several studies show the positive relationship between positive valence and eWOM (Chen, Hong, & Li 2017; De Keyzer, Dens, & De Pelsmacker, 2017; Moran and Muzellec, 2017; Ruiz-Mafe and Veloutsou, 2017). Yoon, Li, North, Ji, Hong, and Liu (2017) applied two message models in order to explore customer opinion and evaluation for online reviews. Their findings show that lower levels of interest to share views does affect the eWOM valence, whereas medium and stable

opinions develop positive valence. In addition, it has also been shown that valence is also positively or negatively associated with the satisfaction or dissatisfaction of a customer (Chen, Hong, and Li, 2017; Dahl, 2018; De Keyzer, Dens, & De Pelsmacker 2017; Ruiz-Mafe and Veloutsou, 2017). This can be measured as good or bad views about products or services which affect customer buying behaviour. Hence, as per Lin and Xu (2017) and Augusto and Torres (2018), it is noted that the valence dimension has been positively and negatively tested in recent researches to prove the satisfaction and dissatisfaction of customers. Studies by Kim and Lee (2017) and Park and Lee (2009) studied the negative and positive valence for search and experience products, finding that negative valence works differently for different types of products such that negative valence more strongly influences experience products, while for search products its influence was weaker.

3.4.2.3 Perceived source expertise of eWOM

People who are considered experts in their field are regarded as more credible compared to others. Some studies have disputed the fact that expertise is considered by eWOM users, such as Willemsen et al. (2012) who found that in the online environment it is difficult to assess expertise, and therefore laypersons are perceived as more credible than experts. Source expertise of eWOM refers to 'the extent to which a source is believed to be capable of making valid assertions' (Hovland, Janis, & Kelley 1953). This said, there are scores of studies (e.g. Ismagilova et al., 2017; Li & Du, 2011; Schiffman, 2015) which have designated expertise as a dimension of perceived trustworthiness of eWOM. Expertise of eWOM generation indicates the capability of the source to make valid judgements, which has been found to have an impact on the perception of trustworthiness (Ayeh et al., 2013; Iyengar et al., 2011; Metzger, 2007; Pan & Chiou, 2011; Xie et al., 2011).

Source expertise of eWOM refers to the extent to which a source is believed to be capable of making valid assertions (Hovland, Janis, & Kelley 1953). Expertise reflects the amount of knowledge an individual has about a particular domain. On SNS, an informant's name is usually presented together with a message, making it possible to judge the informant's expertise, particularly when multiple related messages, photos, and videos are presented on the informant's wall and profile page. Given that experts' eWOM reviews are more credible and reliable than those of non-experts, receivers are likely to agree more with experts and adjust their attitudes in accordance with expert opinions (Shen, Huang, Chu, & Liao, 2010).

eWOM expertise is also assessed by number of connections termed as 'hubs', 'influentials' or 'opinion leaders' (Goldenberg et al., 2009). Perception of trust can therefore be evoked as a result of the sheer number of followers or connections and the extensive number of posts generated by these influentials. The credibility of the source and its effect on perception of trustworthiness depends on the channel of information, wherein expertise matters on specialised websites but on layman discussion groups, homophily matters most (Wang et al., 2010). This study, therefore, includes both construct expertise and homophily to study the perception of trustworthiness by adolescents.

Recent studies (Kim & Lee, 2017; Shi, Hu, Lai, & Chen 2018) noted that perceived source expertise of eWOM contributed significantly to sale maximisation. One study (Mora and Muzellec, 2017), shows that eWOM is more complex and that in online communities'

conversations are more visible, which enhances the purchase decision of the customer. Another study shows that expertise can be judged based on the experiences of customers' identity and knowledge when it comes to physical expertise. On the other hand, Chen, Hong and Li (2017) argued that when it comes to SNS or the online environment, the customer evaluates expert advice. If the expert is a celebrity or a public figure then the customer develops a positive attitude due to the perceived trustworthiness, and they may plan to buy the product. It was found that the perception of trustworthiness of eWOM is the product or set of beliefs that cater to the integrity, benevolence and ability of the trusted party (Mayer and Davis, 1999).

In a study of the travel industry, frequent travellers accrue knowledge and hold perceived expertise from their experiences; these features may authorise consumers to affect others' adoptions with reference to destination associated options (Kerstetter & Cho, 2004). Consequently, information from an expert source is also more influential (Bansaal and Voyer, 2000) which is revealed in this study as there is greater purchase intention when the perceived expertise of users is high. Consistent with previous studies, information offered by trustworthy sources is more likely to be accepted with full confidence and without much scrutiny (Priester and Petty, 1995). A study by Ismagilova et al. (2017) addressed the persuasiveness of eWOM, noting that the perceived source expertise of eWOM is an important determinant of trustworthiness of eWOM. Similarly, Shoham and Ruvio (2008) argue that users look for reviews when they lack self-confidence, meaning they are influenced by WOM. These results are consistent with previous findings, for example Banerjee, Bhattacharyya, and Bose (2017), which argues that the perception of perceived expertise is an important factor in developing trust in the reviewers.

Yan Shan (2016) extends the literature by exploring the influence of perceived source expertise of eWOM on reviewers' perceived trustworthiness of eWOM as a dimension of source credibility of product reviews. These results suggest that perceived similarity has a positive effect on trustworthiness and a negative influence on expertise. Therefore, further research should investigate the robustness and generalisability of the results across multiple product categories on consumers' trustworthiness of eWOM. Other studies show that as per the offline theory, it is often difficult to determine whether the information source expertise is perceived as trustworthy or not (Pasternak, Veloutsou, & Morgan-Thomas, 2017; Ek, Styvén, & Foster, 2018). It seems appropriate to determine the perceived source expertise of eWOM and its influence on purchase.

This hypothesis is a second order construct, composed of three dimensions – dimensions which are the manifestation of a broader, more general and more abstract higher order latent variable. Henseler and Dijkstra (2015) discussed how a prevalent type of hierarchical construct – a second-order composite construct, with first-order reflective constructs as dimensions – should be specified and estimated using variance-based SEM to obtain consistent path coefficients and indicator weight estimates. Often, multidimensional constructs include combinations of composite and reflective measurement (Jarvis et al., 2003). This means that both for the first-order constructs and the second-order construct the type of measurement model can and should be determined separately. A particularly important configuration of second-order constructs is a composite of common factors. In a composite of common factors configuration, the first-order constructs employ a reflective measurement model, whereas the second-order construct is a composite

formed by the first-order constructs. This is the most frequently used approach in research in the social sciences (Ringle et al., 2012). Therefore, the following hypothesis was formed:

Hypothesis 1 (H1): Perceived trustworthiness of eWOM is a second order construct composed of three dimensions (volume of eWOM, valence of eWOM, perceived source expertise of eWOM).

3.4.2.4 Perceived trustworthiness of eWOM with attitude towards dietary supplements

Recommendations from consumers, in the form of eWOM, greatly influences the attitude of consumers, as proposed by the Theory of Reasoned Action (Ajzen, 2012; Ajzen & Fishbein 2005). The TRA was tested with regards to trust in normative recommendations (Komiak & Izak, 2006), the adoption of eWOM from bloggers (Chin-Lung et al., 2013) cultural and situational contingencies (Bagozzi et al., 2014), and the online sharing of content (Lee et al., 2013).

Trustworthiness as the major dimension of credibility which effects on the buying decision of the consumer, and is an issue which has been investigated by several authors (Baur & Nyström, 2017; Coursaris, Osch, & Albini, 2017). Kim, Kandampully, & Bilgihan (2018) show that trustworthiness is the consumer trust level of the brand, which influences customer attitude. The increase in trustworthiness increases customer purchase intention because of positive attitude. Kudeshia and Kumar (2017) argued that consumers act differently according to different levels of trust. If there is a high degree of risk associated with the purchase of product or service, then the customer has less trust in the brand. Reimer and Benkenstein (2018) statistically proved that the lower degree of risk associated with a product significantly influences the purchase decision. It

has been shown that when customers look for products, online reviews and the availability of information influences the trust factor (Baur & Nyström, 2017; Coursaris, Osch, & Albini, 2017).

eWOM in the form of reviews, ratings and discussion in online communities influences the attitude of consumers when they make purchase decisions (Chevalier & Mayzlin, 2006b; Chin-Lung et al., 2013; Ladhari & Michaud, 2015). Positive and negative comments on SNS was found to have a significant impact on attitude (Liu & Park, 2015; Mauri & Minazzi, 2013; O'Connor, 2008). eWOM was found to be a key driver in shaping consumer attitudes and behaviour intentions. For instance, Xiaofen and Yiling (2009) found that perceptions of eWOM have a direct impact on a consumer's willingness to buy. Similarly, Goldenberg et al. (2001) revealed that consumers' decision-making process is strongly and directly influenced by eWOM. Firstly, most previous researchers when looking at eWOM (e.g. Jin & Phua, 2014; Koo, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan et al., 2015) addressed one dimension (valence, volume and perceived source expertise) and its influence on attitude. Other researchers examined the role of perceived source expertise of eWOM on trustworthiness (Ismagilova et al., 2017; Li & Du, 2011; Schiffman, 2015). According to Flanagin and Metzger (2013), who investigated the influence of volume and perceived source expertise of eWOM on perceived trustworthiness of eWOM, future studies should combine the two dimensions and valence.

Therefore, one of the contributions of this study is to investigate the three dimensions all together, i.e. volume of eWOM, valence of eWOM, and perceived source expertise of eWOM source or generator. There were few studies which investigated dietary supplements and their outcomes

(Cohen, 2014; Geller et al., 2015; Raghupathi & Fogel, 2013). Normal diet and exercising are replaced by harmful measures, as per the study conducted by Ashar et al. (2003) and Blanck et al. (2007). On the other hand, other studies investigated the marketing of dietary supplements on social media or SNS using eWOM (Ferrell & Ferrell, 2012; Glenn, 2011; Pillitteri et al., 2008). To date, no study has investigated the consumption of dietary supplements by Saudi female adolescents with regards to the perceived trustworthiness of eWOM and the role of attitude and behaviour.

Therefore, it is hypothesised that:

*Hypothesis **2 (H2)**: Perceived Trustworthiness of eWOM positively affects attitude towards dietary supplements*

3.4.2.5 Relationship of attitude towards dietary supplements and purchase intentions

The relationship between attitudes and behavioural intention have been the subject of study for many decades in an attempt to understand how attitudes influence behaviours (Ajzen 2001; Bargh et al., 1996; Fazio, 1990). Attitude has an emergent quality and keeps evolving as new information is added; it might also not be able to always predict behaviour (Ajzen & Fishbein, 2000) as defined as the lasting general evaluations of self, people, objects or issues (Solomon et al., 2012).

On SNS, consumers form two distinct set of attitudes that drive behaviour. First, attitudes towards the person relaying the message and eliciting the action where the consumers consider the qualities and reliability of that person (Ajzen, 2012). Second is the attitude towards the behaviour itself that

is concerned with valence (positive or negative). In this section, a short review of attitude-behaviour relationships, its bases and its links to learning and memory is presented. The intention to act in a particular way can be predicted by the attitude towards that object (Ajzen, 2001), and the attitude-behaviour relationship has been firmly ingrained in the literature.

Attitudes are emergent when more information is added (Ajzen & Fishbein, 2000) through multiple channels (Sichtmann, 2007). In the current study, the eWOM has a critical influence on attitude towards purchase intentions and purchase behaviour. Extant studies (Bhandari & Rodgers, 2017; Kudeshia & Kumar, 2017) investigate whether consumer attitudes show the behavioural dimension of consumer buying decisions. The attitude of the consumer is enhanced by the product or service quality and the overall user experiences. eWOM develops positive feelings in the customer as it provides information to customers in less time. Zhang (2017) investigated the statistical relationship between eWOM and purchase intention, finding that attitude is a complex psychological construct which affects buying behaviour positively or negatively based on factors such as price, quality, quantity and product identity. Baur and Nyström (2017) prove that general judgments about a product and the evaluation of a product are based on attitude. Park and Kim, (2008) conducted a study on eWOM using cognitive fit theory. Their study focused on the persuasive effect of the type of eWOM on a consumer's attitude and purchase intention from the theory of cognitive fit perspective. Their results showed that the effect of cognitive fit (type of reviews) on purchase intention is greater for experts that for non-experts (i.e. novices), while the effect of number of reviews on purchase intention is stronger for novices than experts. Previous researches found that attitude has a positive relationship with consumers' purchase intentions of

dietary supplements. Pan (2014), for example, found that individual attitude towards advertisements and product involvement were yielded as a key predictor towards people's purchase intention of dietary supplements. However, more emphasis has been placed on the role of consumer networks and communities (Cova & Cova, 2002) which co-produce marketing content (Croft, 2013). Similar studies addressed the influence the relationship of attitude on dietary supplements (Jalilvand, Ebrahimi, & Samiei, 2013; Lidhari & Michaud, 2015) Therefore, the current study hypothesised that:

Hypothesis 3 (H3): *An attitude towards dietary supplements has a positive influence on customers' purchase intentions.*

3.4.2.6 Attitude and purchase behaviour relationship

The perception of trustworthiness of eWOM has been conceptualised in several studies identified above in the literature review. Trustworthiness is defined, in this study, as the extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another (McAllister, 1995). A number of studies have explained that trustworthiness of eWOM and the attitudes of adolescents influence the purchase intentions and purchase behaviour (Chin-Lung et al., 2013; Ladhari & Michaud, 2015). However, some researchers, such as Filieri, McLeay, and Tsui (2017) and Hsu, Chang, and Yansritakul (2017) have argued that the mechanism through which these purchase intentions are affected needs further justification. This study suggests the mediating role of attitude between perceived trustworthiness and the purchase intention. Attitude

and purchase intentions towards dietary supplements mediate the relationship between trustworthiness of eWOM and purchase behaviour.

According to Augusto and Torres (2018) and Filieri et al. (2017), attitude and consumer purchase intention are directly connected to each other. Consumer brand attitude has a significant impact on intention towards purchase. According to multiple studies, brand attitude is the most important dimension of purchase intention (Augutso and Torres, 2018; Filieri et al, 2017; Hsu et al, 2017). Porter (2017) notes that purchase intention is the implied promise made by the customer to purchase a product. The intention to purchase a product is determined by online reviews and recommendations made other regarding the product. Yao and Huang (2017) showed a statistical relationship between attitude and purchase intention by justifying a strong link between positive brand attitude and the positive purchase intention of the customer. Several studies relate the trustworthiness of eWOM to the attitudes of adolescents, and further associate attitudes with purchase intentions and actual purchase behaviour (e.g. Chevalier & Mayzlin, 2006; Chin-Lung et al., 2013; Ladhari and Michaud. 2015). However, the mechanism through which these purchase intentions are affected was the missing link in the literature (see e.g., Filieri et al, 2017; Hsu et al., 2017).

The beliefs-attitude-intentions hierarchy has been the subject of several attitude studies (Ajzen & Fishbein, 2005; Fazio, 1990; Glasman & Albarracín, 2006). The intention to act in a particular way can be predicted by the attitude towards that object (Ajzen, 2001). On receiving new information, attitudes are changed, which leads to behaviour based upon intentions. Sometimes

intentions play a vital role in shaping behaviour, and as regards dietary supplements if anything is not currently being purchased, it may be purchased in the future.

Attitude refers to "an individual's sustainable evaluations, sense of feeling, and intentions to like or dislike a certain object or an idea" (Kolter, 1997). Believing that a close connection is important between attitude and performance in behaviour, Ajzen and Fishbein (1980) argue that attitude is an individual's positive or negative evaluations for certain behaviour and potential behaviour. Etzel, Walker, and Stanton (1997) state that attitude is a learning Total Quality Management inclination which causes consumers to have consistently favourable or unfavourable responses to a certain object, or which can change their intention to purchase (Lee, Qu, & Kim, 2007). Punyatoya (2015) examines the effect of perceived brand environment-friendliness (PBE) on attitude to purchase behaviour. These findings showed that PBE is positively associated with perceived trustworthiness. High perceived trustworthiness leads to a favourable attitude towards the brand in terms of product purchase.

Felix and Braunsberger (2016) investigated the impact of intrinsic religious orientation (IRO) attitudes and green product purchases (GPP) in Mexico. These findings suggest that consumers with higher levels of IRO have a higher propensity to buy environmentally-friendly products, but they do not show more favourable attitudes towards the environment compared to less-religious consumers. Kim (2017), meanwhile, uses two sets of survey data collected in Korea and the United States to demonstrate that a model which integrated the value-attitude-behaviour hierarchy chain had the highest fit with both sets of data in comparison to other models of consumer environmental

attitudes and eco-friendly product purchase behaviour. Baur and Nyström (2017) suggest that when organisations use eWOM, it helps them target more customers, and that positive customer attitudes emerge from the availability of a wide range of information. However, organisations which are unable to use eWOM lack a positive customer attitude because less information is available. Therefore, the following hypothesis is developed.

Hypothesis 4 (H4) Customers' Purchase intentions is a significant predictor of purchase behaviour

Similar to the moderation, as noted by Nyadzayo and Khajehzadeh (2016), the mediator variable is a variable which causes mediation between the independent and the dependent variable. It explains the association between an independent variable, and complete mediation is explained as the process which is caused by complete intervention by the moderator variables. It results in the initial variables, which do not affect the outcome variables (Baron & Kenny, 1986).

3.4.2.6 Rationale for the influence of mediation
3.4.2.6.1.1 Rationale for mediation influence in the current research

The mediation relationship is a significant relationship, whether supported or partially supported. The process of partial mediation is explained as a partial intervention. Sardeshmukh and Vandenberg (2017) note that mediation occurs by the mediation variable and is based upon the model of mediation. The mediation model has been developed under the assumption that there will be an effect on the outcome variables due to intervention in the mediation variable. Tu and Yang (2016) show that the mediator variable measures with lesser perfect consistency then it causes the

effects, which are likely to be biased. Hayes (2017) notes that the mediator variable creates an effect which is underestimated, and that the impact of the independent variable on the dependent variable is more likely to be overestimated. Hence, the biases in the variations are due to the error in measurements, meaning that the instrumental variable is used to solve the problem concerning the bias issues in the variability of the mediator construct (Preacher, Rucker, & Hayes, 2007). Ngai, Tao, and Moon (2015), and Song, Kim, and Lee (2016) present two approaches to mediation, namely (i) the experimental-casual chain approach and (ii) the measurement-of-mediation approach. In the first approach the mediator is experimentally manipulated, and in the measurement of mediation the proposed variable is implemented in order to use statistical analysis (Hayes & Rockwood, 2017).

The purpose of the present study is to expand previous studies regarding the perceived trustworthiness of eWOM and purchase intention (Augusto, and Torres, 2018; Kim et al., 2018; Song et al., 2016; Wang, Cunningham, & Eastin, 2015). The attitude of customers towards the purchase of dietary supplements which mediates the relationship among perceived trustworthiness of eWOM and purchase intentions is examined. The attitude variable in this study aims to explore customer attitude towards dietary supplements and their purchase intentions (Shih, Lai, & Cheng, 2015). Hence, the variables in this study depict the statistical relationship and association by examining the impact of the variable and the intervention of the mediating variable in order to strengthen the independent and dependent variable.

Therefore, the researcher formed the following hypotheses for the role of mediations.

Hypothesis 5a (H5a) *Attitudes towards dietary supplements mediates the relationship between trustworthiness of eWOM and customers' purchase intentions*

Hypothesis 5b (H5b) *Attitude and purchase intentions towards dietary supplements mediate the relationship between perceived trustworthiness of eWOM and purchase behaviour*

3.4.2.6.2 Rationale for moderators
3.4.2.6.2.1 Moderating influence of perceived body image

There have been many conflicting researches concerning the role of attitude in predicting behaviour. Ajzen and Fishbein (2005) attempted to analyse the wide array of research on both sides of the spectrum on the issue of attitude-behaviour relationships, concluding that this is a complex phenomenon which is dependent on context and other moderating factors. While the moderator affects the direction or strength of the relationship between the two variables, the mediator explains the extent of relationship between the two variables.

According to Slimani et al. (2016), moderators within the conceptual framework act as a third variable in which the partitions focal independent variables are in the subgroups. In this research, the moderator aims to establish a domain of the maximal effectiveness with regard to the dependent variable, which is purchase behaviour. Windt, Zumbo, Sporer, MacDonald, and Gabbett (2017), highlighted the nature of moderators and investigated that in general terms it is a qualitative variable that includes information about class, age, sex or race, and it can also be a quantitative variable that depicts information about the level of rewarding, satisfaction and so on.

Fairchild and MacKinnon (2014) suggests that the moderator affects the relationship between the predictor or independent variable and determines the strength between the two variables. In this study, the correlation analysis framework will depict the moderator as the third variable of study which affects the zero-correlation between the other variables. For instance, the positive attitude and positive purchase intention towards dietary supplements will create a positive perceived trustworthiness of eWOM and positive purchasing behaviour. On the other hand, the negative attitude and negative purchase intention towards dietary supplements will create negative perceived trustworthiness of eWOM and negative purchasing behaviour. Therefore, as defined by Arslan (2018), moderator variables develop an interaction in the statistical models which strengthens the relationship between the independent and dependent variable.

Previous studies find that people see their bodies differently to others. For example, Thompson and Gray (2015) found that perceived body image is like a self-concept in which people experience actual and ideal body image discrepancies. Others see perceived body image as something developed through social comparison in a social media environment (Andrew & Tiggemann, 2016; Andrew, Tiggemann, & Clark, 2016; Neighbors et al., 2008; Rayner et al., 2013; Zach et al., 2016). A perceived negative or positive image may result in different behaviour, particularly when using the Internet (Ridgway & Layton, 2016). Pesa et al. (2000) studied the psychosocial differences associated with body weight between female adolescents. The purpose of their research was to determine whether overweight female adolescents differ to normal and underweight female adolescents with respect to a set of psychosocial factors, while controlling for body image. The

findings revealed significant differences between groups on the combined set of psychosocial factors. Self-esteem defined the difference in a positive direction while grades defined the difference inversely. However, when controlling for body image, multidimensional group differences were still evident although self-esteem was no longer a significant contributing variable. In their pilot study, Jansen et al. (2008) tested whether body exposure and describing one's body in a neutral way was an effective approach for increasing body satisfaction in obese adolescents. The results of their study indicate that adding body exposure and neutral descriptions of one's body to a weight reduction programme might be an effective way to increase body satisfaction in obese adolescents. Moreover, exposure was shown to be a powerful strategy to decrease anxiety and to increase body satisfaction. At post-treatment, body weight was also a significant predictor of positive feelings.

Douthitt (1994) investigated the psychological determinants of adolescent exercise, finding that Perceived Romantic Appeal was predictive of male exercise while Perceived Athletic Competency, Perceived Global Self-Worth, and Perceived Physical Appearance were predictive of female exercise. Perceived Romantic Appeal and Personality or Sport Congruence were predictive of exercise for non-competitive subjects. Musaiger et al. (2012) examined body weight perception among adolescents in Dubai, finding that obese adolescents were more likely to face stress and pressure from their parents and to be teased by friends compared to non-obese adolescents. Compared to their current body image, obese adolescents chose a lighter figure as their ideal compared to their actual body image.

The relationship between body image and adolescents' consumption behaviour is well established in the literature. For example, Yoo and Yurchisin (2017) conducted research which investigated the association between sociocultural attitude, gender, appearance and body mass index with adolescents' appearance-related behaviours and appearance-enhancing product usage. The results revealed that sociocultural attitude towards gender, appearance and body mass index positively influences adolescents' appearance-related behaviours and product usage. Adolescents who highly valued sociocultural attitude towards appearance were likely to participate in behaviours and product usage designed to enhance their attractiveness. As well as Yoo and Yurchisin's research, Dickman (2010) examined the relationship between body image and cosmetic consumer behaviour amongst female adolescents. The findings revealed that cosmetic consumer behaviour, such as compensation, were used when subjects felt negatively dissatisfied with their body image. Moreover, the results revealed that the time they used for fixing the appearance has a significant positive relationship with their body image disturbance.

Perloff (2014) addressed the fact that the exposure and interaction of female adolescents to social media caused body dissatisfaction. This study aims to explore the moderating influence of perceived body image on the relationship between eWOM trustworthiness and attitude, and proposes that Saudi adolescent girls with a negative body image are more likely to look for dietary supplements compared to those who have a perceived positive image. This concept was borrowed from the WOM literature, where it is believed that people who have a current unsatisfied need tend to actively look for WOM in order to satisfy their needs (Solomon, 2014). Women with perceived negative body image may feel dissatisfied about their own body, and so may more actively read

reviews about supplements. The findings of this study are in line with the existing body of knowledge in which it is argued that body image can also be developed by observing online reviews and using various dietary supplements which different social media contacts share with each other (Larson & Denton, 2014). However, there is little knowledge about the process or mechanism through which this perceived trustworthiness of eWOM enhances the perception of body image.

Adolescents are one of the largest age groups in the market who use social media or social networking sites for communication with their friends and families. This trend is increasing day by day, and adolescents are frequently engaged on digital screens either on smart phones, laptops or notebooks. Their interaction with friends and shared posts or reviews can go viral within minutes (Larson et al., 2014), which is why marketers consider social media represents a great opportunity for promotion and advertising their products. This is true, in particular, for dietary food supplements.

According to Khalaf (2015), there were an agreement between the actual, perceived, and ideal BI in 23% of Saudi female adolescents in the northern part of Saudi Arabia. This is thought to be associated with the desire to be thinner from the exposure to social media and thinner female photos and videos, and the surprising findings that the current study findings are not in line with previous studies. This is another contribution requiring future investigation.

Brunet and Sabiston (2011) found that peers had a significantly higher impact on the development of physique anxiety in adolescents compared to family members. Mueller et al. (2010) suggested

that female adolescents have a strong inclination to look slim due to comparison with their peers, and so indulge in risky behaviour like disordered eating. Comparing behaviour with personality traits and situational factors can predict various engagement related behaviour, where perceptions tend to be based either on personal factors or on situational factors. Social media can provide a good platform for situational factors (Rogers, Fuller-Tyszkiewicz, Lewis, Krug, & Richardson, 2017).

Ahadzadeh, Sharif, and On (2017) note that in multiple ways, supplements are the most common mechanism by which adolescents shape their bodies. Markova and Azocar (2017) prove a statistical relationship by showing that multiple views and experiences about body image attracts more users, which contributes towards positive or negative body image (Want & Saiphoo, 2017). Tsang (2017) argues that youngsters share their views about body image and the various ways to maintain their bodies.

Although few empirical studies exist, some previous studies examined whether social media or SNS appear to contribute to body dissatisfaction in adolescents (Burnette, 2017; Kwitowski & Mazzeo, 2017). This study used six focus groups to explore relations between social media use and body image in early adolescent girls (aged 12–14). A thematic analysis identified patterns in the data. In this sample, social media use was high. Girls endorsed some appearance concerns and social comparison, particularly with peers. However, they displayed high media literacy, an appreciation of differences, and confidence – strategies that appeared helpful in mitigating the potential negative association between social media exposure and body image.

Therefore, the current study hypothesised that:

Hypothesis 6a (H6a): The perceived body image (Negative or positive) moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that a negative body image will positively strengthen the relationship between perceived trustworthiness and attitude.

3.4.2.6.1 Moderating influence of time spent on social media or social networking sites

The time spent on social media has grown exponentially over the past decade. According to a report published by PEW in 2010, people spent 110 billion minutes per day on social networks and blogging sites. This time represents 22% percent of all time spent on the Internet. As of 2015, daily social media usage of global Internet users amounted to 106.2 minutes per day. According to Global Web Index (GWI, 2016) on average every person has five social networking accounts and spends around 100 minutes on social media, swallowing more than a quarter of time spent online. This study uses time spent on SNS as one of the moderators, and suggests that time spent on social media moderates the relationship between trustworthiness of eWOM and attitude.

Gaffney (2017) and Markova and Azocar (2017) investigate whether social media has a significant influence on adolescents' body image. The reason for this is that adolescents spend more time on social media and seek more information about brands. It seems that youngsters spend a considerable amount of time in social communities and brand communities where they can gather appropriate information according to their needs. Furthermore, Zhang, Trusov, Stephen, and Jamal

(2017), and Stump and Gong (2017) show that more time spent by the customer on social media influences eWOM more. A co-relationship between time spent on social media and eWOM has also been identified (Mishra, Maheswarappa, Maity, and Samu 2017; Narangajavana, Fiol, Tena, Artola, and García, 2017), in which a sig value of 0.000 is identified and there is a positive association between time spent on social media and its influence on eWOM. Thus, by exploring past studies, it can be seen that the time spent on social media influence on eWOM engages more people in information sharing.

Therefore, the current study hypothesised that;

Hypothesis 6b (H6b): The time spent on social media moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that longer time will positively strengthen the relationship between perceived trustworthiness and attitude.

3.5 Chapter Summary

This chapter focussed on the development of the conceptual framework which forms the basis of the current study. In total eight hypotheses were developed based on the literature review presented in chapter 2, and are justified in this current chapter. After investigating the conceptual framework and background for the present model, the discussion moved to the third section of this chapter, wherein the dimensions of perceived trustworthiness of eWOM are explained. In the fourth section, the relationship between eWOM and attitude was discussed, before the discussion moved to a study of the attitude–intention-behaviour relationship. The subsequent section discussed the

two moderators for the current study and the two mediators influence as well. Finally, a conclusion was drawn. The current chapter proposed testing the model of perceived trustworthiness of eWOM attitude towards dietary supplements, purchase intentions and purchase behaviour among Saudi female adolescents. The present chapter has emphasised the role of the two moderators and mediators discussed previously. The following chapter will act as a bridge between the conceptual framework and the methodology chapter.

Chapter Four: Methodology and Research Design

4.1 Introduction

This chapter focuses on the research methodology. It outlines the steps needed to implement the study and the quantitative research method and research philosophy used in the current study. The rationale for using quantitative methods to gather the research data is explored in the next section. The research process and design are also discussed. The research sample and population is discussed in the section which follows, which also includes the measurement of constructs. The subsequent section discusses the rationale for using pre-existing measures, and is followed by the questionnaire development.

The researcher assumes that Saudi female adolescents and non-Saudi female adolescents are exposed to similar SNS contexts. This means that the existing measurements for the current research were borrowed from existing measurement scales in different contexts, since Saudi is part of the collectivist culture. The questionnaire translation process is then presented. The next step was to explore the rationale for pre-test and purification for instruments. The section which follows covers the pilot study data collection and findings for the present research. Reflections of the pilot study on the main data collection and analysis are then given. The next section addresses the data collection for the main study before introducing the main data analysis strategy. The penultimate section presents the research ethics, before a closing summary chapter.

4.2 Research Methods

The research method is defined as the way in which data are collected and analysed, and how the findings are represented. There are three types of research method: qualitative, quantitative and mixed (Bryman and Bell, 2015). The most widely used methods are qualitative and quantitative. Both methods could be applied to secondary or primary studies. Bernard (2017) stated that the choice of the research method is dependent upon the approach and the topic of the study. Qualitative methods deal with the subjectivity and generalisability of the topic, and are based on non-statistical mechanisms of data analysis and collection. The tools which are generally used for qualitative analysis are interviews, observations, case studies and literature reviews (Smith, 2015). Quantitative methods, however, provide a rational approach towards the analysis. These methods are focused on the quantification of the responses for the purpose of providing a concrete analysis of the study (McNabb, 2015). Table 4.1 below discusses the strengths and weaknesses of both research methods.

	Quantitative Method	Qualitative Method
1. Characteristics	• Based on human opinion, subjective. • Non-mathematical.	• Based on mathematics. • Quantitative.
2. Strengths	• Could incorporate latest updates in the environment as well as "inside information".	• Consistent and objective. • Could consider more information and dates at one time.
3. Weaknesses	• Could bias forecast and decrease forecast accuracy.	• Often quantifiable data is not available. • As good as the data on which they are based on.

Table 4.1: Qualitative and quantitative research methods: strengths and weaknesses

(Source: Sanders and Reid, 2013)

Table 4.1 above identifies that qualitative data is more focussed on theoretical understanding, and provides in-depth knowledge of all the factors associated with the topic. However, the comprehensive nature of this method could deviate the analysis away from the topic and thus, human error and bias errors are common under this method (Creswell & Creswell, 2017). However, quantitative method is consistent and focussed on the study variables only, which can though lead to a lack of generalisability. Overall, both methods serve the purpose of data collection and analysis representation. In qualitative analysis, thematic analysis, literature analysis, and case-based analysis are followed. However, for quantitative analysis, statistical tools are generally used, which are presented in the form of various graphs and charts (Bryman, 2017).

This study utilises quantitative data collection based on the positivist epistemology. This study's justification of the positivist approach has been explained earlier. The study was broken down into two phases. The first phase involved a pilot study, which was undertaken in order to design the questionnaire and then to assess the reliability and validity of the measurement scales discussed in the current chapter in detail. Prior to launching the main study, the researcher wanted to make necessary changes to the scales, as needed, following this pilot study.

Several methodologies have been suggested for use in a similar research context about eWOM, for example the 'netnography' qualitative method found in several studies (Chung & Kim, 2015; Kulmala, Mesiranta, & Tuominen, 2013; Quintanilla, 2016; Xun & Reynolds). This methodology method is commonly used to explore and explain the behaviour of communities produced through computer-mediated communications (Kozinets, 1998). Although the notion of netnography as a

set of tools for exploring consumer behaviour online is not new, the potential of netnographic methods in market research and analysis is still largely undeveloped (Xun, & Reynolds, 2010). Moreover, this methodology is used to understand and explain online interactions between different individuals (Quinton and Wilson, 2016). The study on hand aims to test the relationships between various constructs, to create a well-developed field of consumer attitudes. A focus group study might have been more convenient and would have helped in forming the new scales that could be used for measurement. However, it was important to bear in mind the Saudi context, where making female adolescents talk about their private life in front of other students is culturally not feasible, especially for topics such as obesity and social media. For this reason, focus groups were not used in this study.

Instead, the research relied on using existing scales and purifying them, adapting them to the Saudi context with the help of pilot study. Since the researcher's inclination is towards positivism, interviews were not considered as this would lead to a collection of qualitative data in the form of words. Furthermore, females in Saudi Arabia find it difficult to convey their behaviour in front of others, even when those 'others' are female. This would not yield good qualitative data. Qualitative research necessitates the collection of rich data where interviewees are willing to provide information about their personal lives. Thus, both the positivist inclination and cultural issues in Saudi Arabia resulted in the non-adoption of any qualitative methods to study behaviour. The researcher, therefore, choose a purely quantitative research, meaning that a quantitative methodology is the most appropriate choice.

Quantitative research is used when constructs exist already. Qualitative research is based on attitudes, opinions, perceptions and values. A person's attitude can be described as their personal judgment of being for or against something (Lee and Green, 1991). According to Fishbein and Ajzen (1975), attitude is an important concept. In addition, attitude is a tool for measuring consumer behaviour. Furthermore, women in Saudi Arabia find it difficult to express their behaviour in front of others even though they are also female, which would not yield good qualitative data. Qualitative research necessitates the collection of rich data where the interviewee is willing to provide information about their personal lives. Thus, both the positivist inclination and cultural issues in Saudi Arabia resulted in the non-adoption of any qualitative methods to study behaviour. Another main reason for the current study applying the quantitative method is that key studies relevant to this present research did the same (see, e.g., Abubakar et al., 2017; Al-Faris et al., 2015; Al-Hazzaa et al., 2011; Al-Nakeeb et al., 2012; Andrew et.al, 2013; Chih et al., 2013; Erkan & Evans, 2016; Hajli et al., 2014; Hsu, et al., 2013; Lu & Chiou, 2011; Mahfouz et al., 2011; Mortazavi et al., 2014; Musaiger et al., 2013; Munar and Jacobsen, 2013; Simbolon, 2015; Sotiriadis and Van, 2013; Sparks, Perkins, and Buckley, 2013; Sweeney, Soutar, and Mazzarol, 2014; Tiggemann, & Slater, 2013; Yu & Natalia, 2013; Zainal et al., 2017). Furthermore, a study by Flanagin and Metzger (2013) suggested that for future studies to investigate volume, valence and perceived source expertise of eWOM on trustworthiness of eWOM, quantitative method should be used.

4.3 Research Philosophy

According to Flick (2011), research philosophy is the belief of a researcher regarding the phenomena that are being studied. The belief of the researcher further determines the justification

regarding the nature of the study, data collection methods and analysis tools. As Bryman (1988) argues, the selection of research methods, tools and technique as per the research philosophy helps maintain the quality of research. It justifies the alignment between each method and its advantages. Therefore, the outcome of the research and its effectiveness depends upon the selection of the right research philosophy and paradigm to answer the researched question (Carson et al., 2001; Neuman, 2003). Bryman (1988) states that the research paradigm is the cluster of beliefs which dictates that how the data will be gathered, who will be involved and how the results will be interpreted (Solomon et al., 2015).

There are two key consideration in a research paradigm, namely epistemology and ontology. Epistemology refers to the nature and scope of phenomena in a particular discipline, while ontology is referred to as the philosophy of reality which is known. Denzin and Lincoln (1994) note that epistemology aims to explore distinctive views that can be logical, methodological, semantic and scientific. As suggested by Sayer (1992) and Gray (2013), there is a distinctive relationship between epistemological and ontological research, and they determine the research philosophy, which can be positivist or interpretive. The epistemological view of the positivist philosophy shows the application of methods in order to explore social reality. From the objective perspective, reliability and measurement are emphasised, while in interpretive philosophy the focus is on exploring and understanding the ways in which the individual interprets the world by gathering subjective views (Blaikie, 2009).

Since this study is more inclined towards an objective view and measurement perspective, positivism has been selected for this scientific inquiry. The most significant aspect of the positivist philosophy is that it detaches researcher from the research, and does not place value on judgments as in interpretive philosophy (Guba & Lincoln, 1994). Guba and Lincoln (1994) further notes that in consumer behaviour the positivist paradigm is dominant, whereas interpretive philosophy is in the process of emerging. Since this study is based on exploring customer perceptions and buying behaviour based upon eWOM, positivism has been selected to explore the empirical and objective findings.

4.4 Research Process and Design

Scientific inquiry should reflect two distinct aspects: the process of developing a conceptual framework and the design of the study (Sekaran, 2003). The process includes identifying and defining the research problem/objectives, reviewing the literature, identifying variables, gathering the preliminary data, and formulating hypotheses (Malhotra, 2002). Design includes the planning of the actual study, selecting the sample, and collecting and analysing the data. The research process and design adopted by this study are outlined in the figure below.

Figure 4.1: Research Process

Source: Malhotra (2002), Basic Marketing Research: A Decision-Making Approach, Upper

Saddle River, NJ: Prentice Hall

4.5 Population and Sample

4.5.1 Sampling Design for the study

There are several sampling methods which could be used for this kind of study. It is not beyond

the scope to use any probability sampling technique. Education is a regulated industry in the

Kingdom of Saudi Arabia (KSA) meaning that all schools in the country, whether public or private, must be registered with the Ministry of Education. For the main study, schools will be selected randomly from the registration list of schools provided by the Saudi Ministry of Education, with a random selection being made using an online random number tool from the Random organization (https://www.random.org/). This will ensure that the random sampling treats private and public schools equally. The same process will also be used to randomly select classes from each school.

Since the targeted population of the study is adolescent girls studying in different classes in different schools in different cities of KSA, this study will use "multistage sampling", a technique which involves combining number sampling techniques. It is not uncommon in the marketing field to use this technique (Afolabi, 2007; McDaniel, 1985). The whole process of selecting the sample will be completed in three stages. In selecting the sample, the first stage is to select the cities where the study will be conducted. In the second stage, the schools will be selected. The third stage will see the selection of classes. The following section describes the sample frame, method and size.

	City	Population
1	Riyadh	5,328,228
2	Jeddah	3,456,259
3	Makkah	1,675,368
4	Medina	1,180,770
5	Hofuf	1,063,112

Table 4.2: Five major cities of the KSA

Source: Al-Ahsa, 2015

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According to the General Authority for Statistics, Al-Ahsa, five cities in the KSA have a population more than one million (2015), as outlined in table 4.2 above. The study will be conducted drawing samples from the two major cities of the KSA, i.e. Riyadh and Jeddah. These two cities have a population more than 8 million in total and represent approximately 30% of the whole country (General Authority for Statistics, Al-Ahsa, 2015). Riyadh is the capital city of the country and attracts people from the all regions of the KSA. After Dubai, Jeddah is the largest commercial hub in the Gulf region (Takamel, 2014). Therefore, due to their size, importance and high quantity of female adolescent schools, these two cities provide an opportunity to draw a representative sample. Table 4.3 provides school data, both public and private, in all regions of KSA. The two cities selected for the sample provide the greatest opportunity to draw a sample from the private and public schools because all other cities have a small number of private schools.

Region	Public	Private	Total
Riyadh Capital area	209	140	349
Jeddah (Mecca Area)	258	149	407
Eastern Area	151	50	201
Al-Baha Area	58	0	58
Aseer Area	266	28	294
Al-Madina Area	32	3	35
Northern Borders Area	237	64	301
Total	1211	434	1645

Table 4.3: Number of public and private female schools in KSA

Source: Central Department of Statistics and Information, 2015

This study randomly selected 20 schools from Jeddah and 20 from Riyadh, totalling 40. Only one school refused to cooperate in the study, due to exams. After selecting the schools, the next stage in sampling is to select the group of respondents, who are from grades 5-12. Since each class is divided into more than one section, the researcher selected two sections from each school. Each section consisted of approximately 30-40 students, and 1,340 questionnaires were distributed amongst them. Finally, 1,027 responses were collected, an 89% response rate. This response rate is consistent with the past studies in KSA (Hertzog, 2008; Treece and Treece, 1982).

4.5.2 Target Population and Sampling

For the main study, the sampling strategy would ensure that it is both representative and valid (Bryman and Bell, 2015). The sampling methods are divided into two major types: probability or 'representative sampling' and non-probability or 'judgmental sampling'. With probability samples, each case has the chance, or probability, of being selected from the population, and this is known and usually equal for all cases. In contrast to probability samples, non-probability samples do not offer an equal chance of all cases being selected, meaning that the probability of each case being selected from the population is not known (Saunders, et al., 2003).

Probability methods include random sampling, systematic sampling, stratified sampling, cluster sampling, area sampling, and doubles sampling. The advantages of the probability method are the high generalisability of findings, samples being less prone to bias, and the possibility of estimating the magnitude of the sampling error. Its disadvantages, however, are mainly related to the cost and the time required to collect the data. As such, it was excluded from the current study. It was decided that the non-probability method was used for better findings. Non-probability methods encompass

convenience sampling, judgement sampling and quota sampling. Although non-probability methods are suggested whenever quick, convenient and less expensive data are needed, the findings of these methods are not generalisable (Sekaran, 2003).

The sampling frame used in the study is a convenience non-probability sample, since a list of all students cannot be obtained from the Ministry of Education to undertake a random sample. A non-probability sample depends on the researcher's judgement (Malhotra & Birks, 2007) about what target schools would have students who are Internet savvy. Although a limited convenience sample is not based on the probabilistic approach of chance, it is still considered representative since it would include students from all regions of Saudi Arabia whose parents work and live in Jeddah and Riyadh. This said, there would be some element of bias in such a sampling method (Malhotra and Birks, 2007). A convenience sample is allowed since the main focus of the study is understanding the theoretical relationships of the constructs rather than a generalisation of the results to the population, which is allowed in the research (Best & Krueger, 2004; Bryman & Bell, 2015; Yun & Trumbo, 2000).

With regards to the sample size, there are no fixed rules when it comes to non-probabilistic samples (Saunders et al., 2011) since the attempt here is to contribute to theory rather than draw a generalisation for the whole population (Blaikie, 2009). Given that the data collection method was quantitative, a generalisation can be drawn from the current research to generalise the findings on Saudi Arabia. Following the principles of structural equation modelling (SEM), a sample size of between 500 participants is considered reasonable (Fritz & MacKinnon, 2007; Hair et al., 2006;

Iacobucci, 2010). Therefore, the current research sampling for both the pilot study data (182 respondents) and the main study (1,027) is also reasonable. The presence of latent variables might also affect the sample size required for the SEM analysis. In case of the maximum likelihood method of estimation, the sample size needs to be based on the N:q ratio where N refers to ratio of cases and q to the parameters (Tomarken & Waller, 2005). Ideally, the N:q ratio needs to be 20:1, but ratios of 10:1 and 5:1 are not uncommon, although this reduces the reliability of the SEM results (Weston & Gore, 2006). However, Hair et al. (2006) has suggested a sample size of 200 for obtaining reliable estimates of SEM; the target in this study is 1,072, which is well above the required level. In addition, the target population for the study are female adolescents, who are part of discussion groups on online social media. The target age for the current study is going to be in the range of 11 to 19 years based in Riyadh and Jeddah in 2016. In addition to the pilot study, there will be several personal visits by the researcher to the intermediate and secondary schools having obtained permission from the Ministry of Education.

4.5.2.1 The appropriate number of participants for the main study

Selecting a suitable number of participants for a survey can be difficult, time-consuming and tricky. The main technique should be based on the data analysis techniques, time and cost (Bryman and Bell, 2007; Hair et al., 2006). Bryman and Bell (2007) suggest that sampling should be based on the following five key points:

(i) size – which is one of the most basic considerations. Since a national probability sample size of 1,000 individuals would have a higher validity, researchers need to decide how much sampling error they are ready to neglect. As the sample size increases, the sample error decreases;

(ii) time and cost – which are likely to profoundly affect considerations of sampling size since striving for smaller and smaller increments of precision becomes an increasingly uneconomic proposition;

(iii) non-response – which most sample surveys experience, making it likely that this will affect some of the samples chosen for this study;

(iv) population heterogeneity – which affects the size of the sample; if the heterogeneity of the population is high, then it is preferred to use a larger sample; and

(v) type of research – whereby if the research topic is wide, the researcher should use a larger sample size than when the topic is narrow.

Bryman and Bell (2007) and Roscoe (1975) provide simple rules of thumb for selecting an appropriate sample size, based on an analysis of acceptable confidence levels in behavioural research studies (Foroudi, 2012, p.156). Roscoe (1975) noted four general points to be considered at the time of selection of sample size, namely:

 (i) that sample sizes between 30 and 500 are appropriate for most research studies;

(ii) that if the data is coming from more than one group (i.e. each segment of age or gender), then it is necessary to involve more than 30 respondents for each group;

(iii) if the researcher is using a multivariate analysis, then the size of sample should be 10 times higher than the number of variables; and

(iv) if the researcher is conducting a simple experiment, then the size of sample should be between 10 and 20 respondents.

Similarly, Comrey and Lee (1992) suggest that a sample size of 50 is very poor, 100 is poor, 200-299 is fair, 300-499 is good, more than 500 is very good, and close to or above 1,000 is excellent. Hair et al. (2006) and Malhotra (2007) also note five points that could affect the sample size in SEM to obtain reliable estimates. These five points are:

(i) in the case of non-normal data, the ratio of respondents to each parameter should be high;

(ii) if the maximum likelihood or SEM methods are used, the sample size should be150-400;

(iii) based on model complexity, if the structure equation model has five or fewer constructs, the sample size should be 100-150. If each construct has more than three items and the item communalities are higher (higher than 0.6), then the sample size should exceed 200. Finally, if there are more than six constructs in the model and each construct is measured by more than three items and has low communalities, then the sample size should exceed 500;

(iv) if it is expected that more than 10 per cent of the data will be missing, there should be an increase in the sample size; and

(v) larger sample sizes, when the communalities are smaller than 0.5.

Based on these discussions, it was found that previous researchers had not given any fixed sample size, but still there were assumptions which guided the researcher in this study to choose a sample size of more than 550. These assumptions were: that structural equation modelling was used; there were five constructs involved in the study; each construct had more than five items; the communalities items were modest (i.e. over 0.50); there were multigroup data (i.e. six moderators); and based on the results from the pilot study, it was expected that more than 10% of the data could

be missing. This all led the researcher to use a sample size of more than 550. Based on these suggestions, a sample size of 1,027 respondents was used in the current study.

The model includes four key constructs. Firstly, trustworthiness of eWOM, which was measured through 12 items, on five-point Likert scale. The response format ranged from 1 (Do not agree) to 5 (Totally agree). Secondly, the attitude towards dietary supplements, with the help of six items. Thirdly, purchase intentions, measured with the help of four items and the purchase behaviour, measured through three items. These measures were developed in the light of past studies and explained latter in this chapter. This would provide an assessment of the suitability of the questionnaire for adolescents in Saudi Arabia.

4.5.3 Rationale for using pre-existing measures

It is argued that one should not use a pre-existing measure unless it is valid and reliable. This study uses six major constructs, and in all cases the measure for the constructs have been developed in other studies. In the following section the usefulness of these measures is debated. Steinhart (2012), Sunyansanoa, Farquhar, and Czarnecka (2013) have referred to dietary supplements as credence products, which are 'those whose relevant attribute information is not available prior to and after the use of the product/service for a considerable period of time' (Girard & Dion, 2010). This category includes food supplements, car repairs, education and medical treatment. Therefore, when selecting the measure, it was ensured that the scale items were developed ideally for the dietary supplements, or at least for credence products.

The first part of deals with respondents' profiles, and includes five questions: age; name of school; class; social media platform you use; time spent on social media (hours per day). This last question measures time spent on social media variable as a moderator between the relationship of perceived trustworthiness of eWOM influence on attitude towards dietary supplements.

As for perceived source expertise of eWOM, Feick and Higie (1992) developed a scale measuring the perceived expertise of WOM, finding that the scale items were reliable and exhibited high internal consistency (alpha >.7). These scale items were tested for the various goods and services including interior decoration, car repair and plumbing. Therefore, this scale was used in the study to measure the perceived source expertise of eWOM. To measure the valence, the scale developed by Zhang, Wu and Mattila (2016), Park and Lee (2009), and Floh, Koller and Zauner (2013) is used. This scale measures the valence of eWOM and uses health foods as an example of the credence goods. The scale was found valid and reliable with alpha greater than 0.7 and goodness of fit higher than 0.9. To measure the volume of eWOM, the scale developed by Zhang et al., (2014) is used. The scale was developed to measure the response of male and female samples about positive WOM about products. The scale was found valid and reliable, with the internal consistency (alpha) greater than 0.7.

As for attitude about the product, to measure the attitude about dietary supplements, the scale developed by Spangenberg, Voss, and Crowley (1997) is adopted. This scale was developed for six different product categories including vacation resorts, personal computers and athletic shoes. The scale was found valid and reliable with alpha greater than 0.7. Confirmatory factor analysis

was also performed, and the scale provided strong evidence for construct validity. Regarding behavioural intention and actual purchase, a scale developed by Conner et al. (2001) was used. The scale was developed to measure the purchase intentions and actual purchase behaviour of dietary supplements. The data provides strong evidence that the scale items were highly reliable and valid with alpha more than 0.7. Finally, for perceived body image, the Nine Figure Silhouette Scale from Stunkard, Sorenson, and Schulsinger (1983) to measure respondents' perceived body image was used. The data provides strong evidence that the scale items were highly reliable and valid with an alpha more than 0.7.

4.5.4 Measurements of Constructs

The model includes four key constructs, Firstly, trustworthiness of eWOM, measured through twelve items in the pilot study. Three items for negative valence were deleted and the rationale was justified in the pilot study findings section, on a five-point Likert scale. The response format ranged from 1 (strongly disagree) to 5 (strongly agree). Secondly, the attitude towards dietary supplements with the help of six items on a five-point Likert scale. Thirdly, the purchase intentions were measured with the help of four items, and the purchase behaviour was measured through three items. These measures were developed in the light of past studies and are explained latter in this chapter, focusing on the suitability of the questionnaire for adolescents in Saudi Arabia. The rationale for using pre-existing constructs and scale items is also discussed in the next section. Table 4.3 below presents additional information about the scales employed to measure these variables.

Constructs	Code	Item statement	Reference
Perceived source expertise of eWOM	Exp1	The users have a good sense about the product	Feick and Higie (1992)
	Exp2	The users are knowledgeable about the product	
	Exp3	The users have experience with the product	
Valence of eWOM	V1	It actually worked. I lost 20 pounds! Still on my journey to lose more, 40 more pounds to go!	Zhang, Wu & Mattila (2016) Park and Lee (2009) Floh, Koller & Zauner (2013)
	V2	I am very pleased with the results. This is my third time purchasing this.	
	V3	I swear by these pills, it worked for me. I am ready to buy more in future.	
	V4	Used half of the bottle and didn't lose a pound. My friend finished the bottle and said nothing changed.	
	V5		
	V6	I used this for a month. Absolutely worthless, despite eating well not even a placebo effect. Don't waste the money. Stick to old fashion diet and exercise. All the hype you hear is hype. There is no miracle drug for weight loss.	
	V7		
Volume of eWOM	Vo1	Many people post online reviews about dietary supplements	(Zhang et al., 2014)
	Vo2	Dietary supplements have a large number of online reviews	
	Vo3	Dietary supplements are popular in online reviews forums	

		Overall, I think that taking dietary supplements would be.	Spangenberg, Voss and Crowley (1997).
Attitude about the product	AT1	Good or Bad,	
	AT2	Enjoyable or Unenjoyable	
	AT3	Positive or Negative,	
	AT4	Beneficial or Harmful,	
	AT5	Pleasant or Unpleasant,	
	AT6	Favourable or Unfavourable.	
Behavioural intension	BI1	I intend to take dietary supplements (definitely do / definitely do not)	(Conner et al. 2001)
	BI2	I plan to take dietary supplements (definitely do / definitely do not),	
	BI3	I want to take dietary supplements (definitely do / definitely do not)	
	BI4	How likely is it that you will take dietary supplements (likely / unlikely)	
Purchase/Behavioural Outcome	PB1	I buy dietary supplements regularly	(Conner et al. 2001)
	PB2	Buying dietary supplements is important to me	
	PB3	I will be using dietary supplements in the future too.	

Table 4.3: The constructs and items for the present study

4.5.5 Questionnaire Development and Design

The questionnaire contains three parts. Part one deals with the respondents' profiles and includes five questions about age, name of the school, class, social media platform you use and time spent on social media (number of hours per day). The last question measures time spent on social media variable as a moderator between the relationship of perceived trustworthiness of eWOM influence on attitude towards dietary supplements.

Part two contains six sections, in which section A contains perceived source expertise of eWOM and uses three scale items which are borrowed from Feick and Higie (1992). Section B consists of 6 scale items which measure valence, and is borrowed from the scale developed by Zhang et al. (2016), Park and Lee (2009), and Floh et al. (2013). Section C deals with the volume of eWOM and uses three scale items from the scale developed by Zhang et al., (2014). Section D presents attitude about dietary supplements measurements using six scale items borrowed from Spangenberg et al. (1997). Section E includes a purchase intention scale which contains four scale items borrowed from Conner et al. (2001). Finally, section F deals with purchase behaviour outcome measurement using three scale items borrowed from Conner et al. (2001).

Part three of the questionnaire contains the Nine Figure Silhouette Scale to measure respondents' perceived body image and an explanation how to answer the questions is explained below the figure contains two questions. It is borrowed from Thompson and Gray (1995).

4.6 Questionnaire Translation from English to Arabic

A questionnaire was developed based upon the constructs given above. The main language of the study is English. Therefore, the data collection instrument was designed in English. Since no study in the schools can be conducted without the permission of the Ministry of Education in KSA, the questionnaire was translated into Arabic. To get this permission, the concerned ministry required a copy of the questionnaire in the Arabic language. Therefore, it was necessary to translate the data collection instruments into Arabic. A qualified independent firm was hired to translate the

questionnaire from English to Arabic to ensure that the translation was professionally done. After this, the translated instrument was translated back into English to ensure that the main themes were not lost in translation (Harkness et al., 2004). The translation process should also ascertain the language expertise of the participants, and so the translation firm was briefed about the users of questionnaire. Once the translation process was completed, the process of getting permission from the Ministry of Education could be initiated.

4.7 Pre-test and Purification of the Instrument

The first step was to test the quantitative questionnaire designed for the study in order to measure the content validity. According to Kinnear and Taylor (1996) and Chisnall (1997), content validity is the subjective judgment by any professional expert. An expert shares their judgment regarding the design of the questionnaire and its appropriateness. Any suggested improvements are shared (Reynolds and Diamantopoulos, 1998). Hence, considering the significance of questionnaire validity and reliability, the questionnaire was devised and distributed to ten academic faculty members on university staff, and having received their suggestions, various items were revised and improved (Priporas, 2002). The academic members approached for feedback on validity were dealing with consumer behaviour and social media. These experts provided their feedback regarding items, questionnaire layout, format, length and survey items.

Before initialising the questionnaire, pre-testing was performed, and the questionnaire data was gathered from a random sample. The sample size was ten respondents. The pilot testing helped in identifying ambiguities in the questionnaire. It allowed the identification of terminological words,

inapplicable questions, sentence error and spelling mistakes, all of which could be corrected. In terms of the reliability of the construct, at the most fundamental level the relationship between the constructs and measures is the essence of construct validity. Face validity refers to the results from a specific survey that appear generally plausible in the lack of supporting evidence (Chisnall, 1997). In addition, it must be underlined that the reliability and validity of a questionnaire as a whole and in its parts that have been tested in populations with particular characteristics (social, economic, cultural) and habits cannot be considered as reliable and valid in cases where the same questionnaire will be tested in a population with different characteristics and habits. Thus, it is necessary for the questionnaire to be weighted with the characteristics of the new population (Priporas, 2002).

The content and face validity were tested. Last exploratory construct validity was performed to see whether the produced constructs agreed with the theoretical model that the researcher had in mind when developing the questionnaire. Factor analysis is a widely used tool testing validity. The use of factor analysis in marketing research depends on the researcher's expectations from a set of data. Factor analysis permits researchers to represent a set of observable variables using a smaller set of underlying factors with a minimum loss of information. Then factors can be used as new variables for further analysis (Priporas, 2002).

According to Humphries (2017), pre-testing is essential before gathering final data. The pre-testing helped in the following ways: in identifying whether the questionnaire is easy to answer; in checking whether there are any comprehension problems; in determining the efficiency of research

coding methods. According to Alavi et al. (2018), pre-testing is used in order to ensure that the research questionnaire is appropriate for the research survey in terms of language or structure. The pilot testing also enables the researcher to explore whether the information required from the targeted population is gathered correctly. It helps in analysing whether the targeted population is selected according to the nature of the study, and whether they can answer the research questions. While gathering pilot testing, special attention was paid to considering the questions posed by Venable, Pries-Heje, and Baskerville (2017), namely: Do the words and sentences are understood? Is every question able to measure what it intends to measure? Are all the questions interpreted similarly by each respondent? Are all the close-ended statements answered by every respondent? Do the questionnaires create a positive impression and motivate people to answer it? Are there any biases in the questionnaire? Is every question answered correctly or not?

4.8 Pilot study

The aim of the pilot study was to explore the phases that help in exploring and eliminating the problems before carrying out the full questionnaire survey. The initial pilot testing study was conducted on a sample of individuals before the actual survey (Humphries, 2017). The pilot testing sample was similar to the actual population of study. Pilot testing allows the researcher to focus on a particular area which was previously unclear. Pilot testing can also be used to test certain questions, allowing the researcher to develop a relationship with the participants by communicating with them. This develops rapports and also establishes communication patterns. The researcher can also uncover various ways to conduct the study using pilot testing (Porter, Hampshire. Abane, Munthali, Robson, and Mashiri, 2017). This helps the researcher understand

more ways of data collection, and the recording of documents helps in marinating the research quality. The pilot testing was conducted with 190 respondents, who were excluded from the final sample size.

According to Dickert et al., (2018), the researcher needs to consider the following aspects:

i.   The researcher needs to ensure that there will be no harm to the research participants;

ii.   The consent form shall be taken from respondents who agree to contribute to the study;

iii.   The researcher needs to ensure that there must be no invasion of participants' privacy;

iv.   There must be no deception.

This study complies with Middlesex University's ethical principles, which are in line with the ethical guidelines. Below are the guidelines from the British Educational Research Association:

Autonomy – The research participants must be communicated with regarding the research phenomena, and they must be free to share their responses (Crozier et al., 2017). There will be no penalty or coercion for not taking part in the study, and participants must be free to withdraw from the research at any time without any threat of adverse effects.

Beneficence – The research needs to be worthy and it must able to create a positive contribution. The followed methodology must be sound and able to produce quality results (Thomas, 2017).

Non-Maleficence – Any type of possible harm shall be avoided or mitigated by adopting precautions.

Integrity – The researcher needs to be open about the potential conflicts and actual conflicts of interest, and conduct the study in a manner that can meet the recognised standards of integrity.

By considering all these aspects, the research was completed and the self-assessment ethics form was approved. Following the ethical approval, the research was conducted. The consent form was developed to notify the research participants that:

1. The research participants contributed voluntarily to the study;

2. The respondents have the right to withdraw from the research;

3. The respondents can omit any question which they do not understand.

The teachers of the targeted classes and their students were informed about the time and the date of data collection. On the prearranged date, the participants were asked to provide their consent forms signed by the parents/custodians. Only those students with a signed form were allowed to participate in the study. Before the start of the study, the researcher gave a five-minute presentation to explain the broad purpose of the study, as well as to explain more about the confidentiality and anonymity of their responses. The researcher ensured that every respondent worked on her own questionnaire and that they gave their responses independently. The data collection was conducted in an exam setting to avoid any cheating or chatting. Since the data were collected in two different sessions in two different classes, in order to avoid any bias caused by sharing questionnaire information across the groups, both sessions were conducted back to back without any break. After

collecting the data from one group of respondents, the researcher thanked the participants, teachers and the school administration.

4.8.1 Data Collection for the Pilot Study

The pilot study data was collected from several schools, with the management of each school providing support in the data collection. The principal of each school assigned one contact person in each class and set up a meeting with them. The researcher explained the purpose of the study and explained the ethical issues involved in the process. The contact persons were given copies of the participant consent forms (see Appendix 3). The researcher set up a date one week after the meeting for data collection. The school management and contact person provided complete support at the school level.

On the scheduled dates, the researcher approached the contact persons and met the participants in each class. The researcher gave a briefing about the objectives of the study and the potential benefits to each class. The participants had the study explained to them, and how it could help them in understanding the role of perceived trustworthiness of eWOM in developing consumer attitude, particularly with reference to dietary supplements. The results from the study could help create health awareness in the Saudi adolescent females.

The participants were spoken to in their classrooms, and they were asked to provide consent forms signed by the participants and their parents. The researcher did not make any contact with the participants during the distribution or collection of the survey forms. The contact person in the

class (the teacher) collected the consent forms and distributed the questionnaires. Those who provided the consent forms were given paper questionnaires and those who did not provide consent forms were given a leisure task prepared by the teacher. The teacher also informed them that those who participated in the study would also have to do this task at home. The participants were asked to read the questions carefully and answer the questions honestly, without cheating and chatting with other participants.

A total of 190 participants provided consent forms and agreed to participate. After the consent forms and questionnaires were received, no missing values were found. In the pilot study 182 questionnaires were collected, meaning an overall response rate of 91%, which is consistent with the other studies (e.g. Hertzog, 2008) and the expectations of the researcher. The contact person remained present within the room during the whole process. The researchers thanked the participants and the teachers for their support in the process. The same process was repeated in each class of students under study. It took around 14-18 minutes for every participant to complete the questionnaire. After collecting the forms, the researchers asked the participants to express their thoughts or give any suggestions. This was a useful exercise, and suggestions are discussed at the end of this chapter.

The pilot data were collected on 17 different days because of number of classes involved. According to Hertzog (2008), as general guidelines, the pilot study should include at least 10% of the sample required for the main study. Therefore, 182 was an appropriate sample size; however, to perform multiple regression, a larger sample size would be required (Knofczynski & Mundform,

2007). Essentially, a pilot survey requires a small number of respondents (around 15-30) to pre-test questionnaires (Malhotra & Birks, 2003). However, as suggested by Hair, Black, Babin, and Anderson (2010), in order to perform factor analysis (EFA), the sample size must be more than the number of variables. Although the minimum absolute sample size should be at least 50 observations, the sample size should preferably be around 90-100 observations (Hair et al., 2010). According to Yu and Cooper (1983), the response rate for questionnaires distributed in person is generally around 81.7 per cent. Hence, the researcher intended to distribute 200 questionnaires to target respondents in person, receiving a total of 182 signed consent forms and questionnaires.

According to Malhotra and Birks (2003), the respondents for a pilot study and for the main survey should be drawn from the same population. They note that 'the respondents in the pilot-test should be similar to those who will be included in the actual survey in terms of background characteristics, familiarity with the topic, and attitudes and behaviours of interest' (Malhotra & Birks, 2003, p.345). Therefore, the pilot study and main study were collected from Saudi female adolescents in Saudi Arabia.

4.8.2 Discussion and Findings for the Pilot Study

After the pilot data collection of 182 questionnaires, the data were subjected to a further purification process, which involved reliability analysis and exploratory factor analysis (EFA). According to Churchill (1979), it is essential to perform a reliability analysis test and EFA to purify the scales in the early stages of a scale validation. Therefore, during the following stage, a reliability analysis and EFA were performed to simplify items and to examine the dimensionality

of the underlying constructs. Details for the questionnaires and respondents from the pilot study are provided Table 4.4 below.

Target population	Sampling unit Saudi females from intermediate and secondary schools, both private and public, aged 11-19 years old.
Sampling elements	Saudi female adolescents from private and government schools (intermediate and secondary schools).
Sampling technique	Non- probability random sampling. Saudi female adolescents from private and government schools from Jeddah and Riyadh's intermediate and secondary schools.
Sample size required	150-200
Distributed questionnaires	200
Possible response rate (expected questionnaires)	192
Response rate (returned questionnaires)	180
Usable questionnaires	192

Table 4.4: Details of questionnaires and respondents (Pilot study)

4.8.2.1 Reliability Analysis and Exploratory Factor Analysis (EFA)

According to Churchill (1979), it is crucial to perform a reliability analysis test and to purify the scales in the early stages of a scale validation, and to simplify items and examine the dimensionality of the underlying constructs. The researcher applies the same procedure on the pilot study.

4.8.2.1.1 Reliability Analysis for Pilot Study

Since the number of respondents was adequate for the pre-test sample size suggested in the literature (Malhotra & Birks, 2003), the next step was to analyse the reliability of the scales (Churchill, 1979). Reliability is defined as when the scale or question consistently measures a concept (Hair et al., 2007). It was measured using Cronbach's alpha. According to researchers, if a coefficient alpha is greater than 0.70, the results are highly suitable for research purposes (De Vaus, 2002; Hair et al., 2006). Since all the constructs had a Cronbach's alpha of more than 0.70, it could therefore be said that all the constructs were suitable for the research purposes, as shown in Table 4.5. It is also suggested that the total correlation value should be more than 0.50. However, it should be noted that a few of the total correlation values were found to be less than 0.50.

Based on these tests, the results showed that the Cronbach's alpha for all the constructs stood at more than 0.8. According to Melewar (2001, p.39), 'A low coefficient alpha indicates the sample of items performs poorly in capturing the construct'. Theoretically, the coefficient alpha is concerned with 'the degree of interrelatedness among a set of items designed to measure a single construct' (Netemeyer et al., 2003, p.49). Based on a standard of reliability, this suggests that values of item-to-total correlation greater than 0.35 and values of coefficient alpha equal to or above 0.70 indicate that the items are reliable (Melewar, 2001; Nunnally, 1978). Hair et al. (2010) assert that a coefficient alpha which is greater than 0.70 is highly satisfactory for most research purposes. However, Nunnally (1978) suggests that a coefficient alpha of 0.5 or 0.6 is satisfactory in the early stages of research. For the purpose of purifying the instrument, the researcher performed a reliability test to ensure that the measures were free from error and could produce

consistent results. The researcher in this study performed a reliability test before conducting the main survey (Hair et al., 2012). Table 4.5 presents the reliability test findings for the pilot study.

Construct	Items	Cronbach's alpha (α) if deleted	Corrected item-to-total correlation	
			Before deleted	After deleted
Volume	VOL1	0.715	0.653	0.736
	VOL2	0.669	0.736	0.791
	VOL3	0.741	0.669	0.721
Valence	VAL1	0.449	0.221	0.59
	VAL2	0.464	0.194	0.579
	VAL3	0.411	0.295	0.647
	VAL4	0.334	0.215	DROPPED
	VAL5	0.398	0.313	DROPPED
	VAL6	0.54	0.045	DROPPED
Expertise	EXP1	0.79	0.653	0.693
	EXP2	0.71	0.736	0.788
	EXP3	0.77	0.669	0.77
Cognitive	COG1	0.725	0.593	0.691
	COG2	0.708	0.612	0.645
	COG3	0.662	0.647	0.683
Affective	AFF1	0.759	0.675	0.722
	AFF2	0.714	0.719	0.769
	AFF3	0.792	0.642	0.683
Purchase Behaviour	BEH1	0.784	0.676	0.725
	BEH2	0.723	0.742	0.791
	BEH3	0.791	0.662	0.673
Purchase Intentions	INT1	0.885	0.862	0.89
	INT2	0.886	0.857	0.883
	INT3	0.898	0.823	0.931
	INT4	0.925	0.742	0.775

Table 4.5: Reliability test results based on the pilot study

From the pilot study findings in table 4.5, an examination of the coefficient alpha and item-to-total correlation supported the reliability for all constructs' scales. However, the scales for negative valence of eWOM were deleted. Another point of note came with reference to the items VAL4R, VAL5R and VAL6R. The researcher decided to remove the three negative scale items in addition to increasing the Cronbach's alpha (α), since this would bring the corrected item-to-total correlation values of the remaining 15 original items from to above the acceptable level of 0.35 (Bass & Avolio, 1994, cited in Northouse, 2004, p.196). Therefore, the research decided to remove VAL4R, VAL5R and VAL6R. Consequently, the corrected item-to-total correlation values of the remaining items increased to above the acceptable level. In addition, the Cronbach's alpha (α) of the construct increased from 0.949 to 0.965. The remaining items of the valence construct thereby became internally consistent. After the items were justified, the corrected item-to-total correlation and the Cronbach's alpha (α) of perceived trustworthiness of eWOM dimensions and the valence construct were above the acceptable level.

To sum up, the pilot study findings for the reliability of constructs, perceived trustworthiness of eWOM dimensions (valence, volume and expertise source of eWOM) scale items, attitude towards dietary supplements, purchase intention and purchase behaviour scale items were that the Cronbach's alpha (α) of perceived trustworthiness of eWOM dimensions, attitude towards dietary supplements, purchase intention and purchase behaviour was above an acceptable level (Nunnally, 1978). After the items were justified, the corrected item-to-total correlation and the Cronbach's alpha (α) of all constructs in the current research were above the acceptable level. Consequently, the reliability of the scale could then be supported. The measurement scales were also then subject to EFA.

4.8.2.2.2 Exploratory Factor Analysis (EFA)

EFA is a statistical procedure used to analyse interrelationships between large numbers of variables and to explain these variables in terms of their common underlying factors (Hair et al., 2006). It is defined as a multivariate method for fitting measurement models, which describes the covariance among a set of observed variables in terms of a set of latent variables (Easterby-Smith et al., 2002). It identifies the underlying dimensions or factors that explain the correlations among a set of variables (Malhotra, 2010). Every variable has a loading on every factor extracted, and these loadings are contained in a factor matrix (Malhotra, 2010). It explores the underlying structure of the data and helps to develop a theory that leads to a proposed measurement model that can be tested using confirmatory factor analysis (Malhotra, 2010; Malhotra et al., 2012). Numerous procedures are available for factor extraction and rotation in SPSS. One of these is principle component analysis KMO, which will be discussed after examining the EFA findings, which are presented in table 4.6 below.

Construct	Remained Items	Mean	SD	Reliability Test		EFA		Deleted item
				Corrected item- to-total correlation	Cronbach's alpha (α)	Leadings	MSA	
Volume	VO1	2.12	0.869	0.653	0.785	0.834	0.881	
	VO2	1.96	0.925	0.736		0.86		
	VO3	2	0.934	0.669		0.816		
Valence	VAL1	3.65	1.145	0.221	0.697	0.801	0.781	VAL4
	VAL2	3.45	1.29	0.194		0.807		VAL5
	VAL3	3.59	1.235	0.295		0.762		VAL6
Expertise	EXP1	2.98	1.011	0.653	0.827	0.843	0.822	
	EXP2	3.08	0.945	0.736		0.891		
	EXP3	3.08	1.008	0.669		0.854		
Attitude	ATT1	2.12	0.869	0.593	0.777	0.76	0.834	
	ATT2	1.96	0.925	0.612		0.756		
	ATT3	2	0.934	0.647		0.847		
Attitude	ATT4	2.12	0.869	0.675	0.823	0.845	0.791	
	ATT5	1.96	0.925	0.719		0.821		
	ATT6	2	0.934	0.642		0.791		
Purchase Behaviour	BEH1	3.89	1.252	0.676	0.830	0.857	0.841	
	BEH2	4.09	1.055	0.742		0.893		
	BEH3	3.77	1.17	0.662		0.849		
Purchase Intentions	INT1	3.85	1.125	0.862	0.922	0.927	0.922	
	INT2	3.81	1.181	0.857		0.924		
	INT3	3.76	1.164	0.823		0.903		
	INT4	3.6	1.131	0.742		0.834		

Table 4.6: EFA results from the item purification process

Following the item purification process, the use of reliability tested and EFA, three items (VaL4, VaL5, and VaL6) were deleted from the constructs (see Table 4.8). The reliability of the internal

consistency was tested by measuring coefficient alphas and item-to-total correlations. The test for dimensionality was analysed by EFA. A set of items was trimmed with only the three-negative valence.

Finally, according to the four combined criteria: 1) coefficient alphas were below 0.60; 2) there was a high possibility of cross loading, as suggested by EFA; 3) item to-total correlation was below 0.35; and 4) the opinions about the questions given by the respondents (Churchill, 1979; Kohli et al., 1993), was that the remaining items were satisfactory for measuring the constructs of interest. In addition, organisational tenure has been consistently seen in past research as a variable effect in organisations in terms of the support behaviour of employees (e.g. McEnrue, 1988; Ng & Feldman, 2010; Quinones, Ford, & Teachout, 1995; Wagner, Ferris, Fandt, and Wayne, 1987)

4.8.2.2.3 The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Barlett's and Communality tests

The 'Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Barlett's test of sphericity' are suggested as helping to achieve suitable factor analysis outcomes (Norusis, 1992). They examine the appropriateness of the factor analysis (Malhotra, 2010; Malhotra et al., 2012). According to Tabachnick and Fidell (2007), when the values are high (i.e. between 0.50 and 1.0), this suggests that the factor analysis was appropriate, but when the values are low (i.e. below 0.50), it implies that the factor analysis may not be appropriate. In this research, all the values were found to be higher than 0.70, suggesting that factor analysis was highly appropriate for the study. KMO and Bartlett's test and communality tables are provided below for perceived source expertise,

volume, valence of eWOM, attitude, purchase intention and purchase behaviours. Table 4.7 presents the KMO and Bartlett's test for perceived source expertise (EXP).

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	205.683
	Df	3
	Sig.	.000

Table 4.7: KMO and Bartlett's test for perceived source experience (EXP

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

eWOM volume consists of three items load on one factor only and they have communalities exceeding 0.5. The total variance extracted is over 50% (close to 60%). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is over 0.60. Table 4.8 presents KMO and Bartlett's test for Volume (VOL).

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.699
Bartlett's Test of Sphericity	Approx. Chi-Square	155.804
	Df	3
	Sig.	.000

Table 4.8: KMO and Bartlett's test for Volume (VOL

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour

eWOM valence consists of three items. Which are pruned in a four-step iterative procedure. First, VAL6R is pruned since it has a communality value less than 0.5. Second, VAL5R is pruned as it

has a communality value of less than 0.5. Third, VAL4R is pruned as it has a communality value less than 0.5 and a loading less than 0.5. The final scale for VAL consists of three items, each of which has loading on one factor only, and loadings well above 0.5. Tables 4.9 – 4.17 present KMO and Bartlett's test and communality for Valence (VAL)

Step 1: All indicators included for Valence of eWOM (Val)

VAL1-	.488	.414
VAL2-	.540	.501
VAL3-		.507
VAL4R-	.523	.613
VAL5R-	.612	.494
VAL6R-	.442	

Extraction Method: Principal Axis Factoring.

Table 4.9: KMO and Bartlett's test and communality's' test for Valence for eWOM (VAL)

	Initial	Extraction
VAL1-	.296	.410
VAL2-	.326	.543
VAL3-	.260	.387
VAL4R-	.417	.650
VAL5R-	.413	.619
VAL6R-	.178	.201

Extraction Method: Principal Axis Factoring.

Table 4.10: Communality for valence of eWOM

	Initial	Extraction
VAL1-	.296	.410
VAL2-	.326	.543
VAL3-	.260	.387
VAL4R-	.417	.650
VAL5R-	.413	.619
VAL6R-	.178	.201

Extraction Method: Principal Axis Factoring.

Table 4.11: Communality for valence of eWOM

	Initial	Extraction
VAL1-	.292	.478
VAL2-	.293	.485
VAL3-	.395	.549
VAL4R-	.404	.723
VAL5R-	.253	.381

Table 4.12: Communality for valence of eWOM

	Initial	Extraction
VAL1-	.291	.540
VAL2-	.291	.450
VAL3-	.252	.464
VAL4R-	.031	.181

Extraction Method: Principal Axis Factoring.

Table 4.13: Communality for valence of eWOM

	Initial	Extraction
VAL1	.384	.670
VAL2-	.391	.592
VAL3-	.331	.557

Extraction Method: Principal Axis Factoring.

Table 4.14: Communality for valence of eWOM

Step 2: Excluding valence of eWOM(Val6R)

VAL1-	.292	.478
VAL2-	.293	.485
VAL3-	.253	.381
VAL4R-	.404	.723
VAL5R-	.395	.549

Extraction Method: Principal Axis Factoring.

Table 4.15: Excluding Valence (Val6R)

Step 3: Excluding valence of eWOM (Val5R)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.649
Bartlett's Test of Sphericity	Approx. Chi-Square	99.802
	Df	6
	Sig.	.000

Table 4.16: Excluding valence of eWOM (Val5R)

Step 4: excluding Val4R

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.668
Bartlett's Test of Sphericity	Approx. Chi-Square	94.434
	Df	3
	Sig.	.000

Table 4.17: excluding Valence of eWOM (Val4R)

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

Attitude (ATT) consists of all six items' load on one factor only and they have communalities exceeding 0.5. Total variance extracted is over 50% (close to 60%). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is over 0.60 (Kaiser 1970, 1974), as shown below in table 4.18.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.846
Bartlett's Test of Sphericity	Approx. Chi-Square	574.636
	Df	15
	Sig.	.000

Table 4.18: KMO and Bartlett's test for Attitude (ATT)

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

Purchase Intention (INT) consists of four items load on one factor only, which have communalities exceeding 0.5. The total variance extracted is over 50% (close to 60%). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is over 0.60, as shown in table 4.19.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.845
Bartlett's Test of Sphericity	Approx. Chi-Square	564.924
	Df	6
	Sig.	.000

Table 4.19: KMO and Bartlett's test for purchase intention (INT)

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

Purchase Behaviour (BEH)

All four items load on one factor only, and they have communalities exceeding 0.5. The total variance extracted is over 50% (close to 60%). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is over 0.60 (see values in tables). Afterwards, the measurement scales were subject to EFA, which is discussed in the next section. (see table 4.20).

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.713
Bartlett's Test of Sphericity	Approx. Chi-Square	212.735
	Df	3
	Sig.	.000

Table 4-20: KMO and Bartlett's test and communality for purchase behaviour (BEH)

"EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

Researchers recommend the analysis of communalities (Tabachnick & Fidell, 2007). Communality is the amount of variance a variable share with all the other variables under consideration (Malhotra, 2010). Field (2009) stressed that a variable with a random variance would have a communality equal to one, while a variable that did not share anything with other variables, would have a communality equal to zero. It is suggested by various researchers that communality should be above 0.5, otherwise the study will require a large sample size of 300 cases or more (Hair et al., 2006; Malhotra, 2010; Malhotra et al., 2012; Pallant, 2007). Based on the results of this analysis, as set out in Table 4.21, the researcher deleted the three negative valence items on the basis of their low communality value.

Constructs	Initial	Extraction
EXP1	.438	.537
EXP 2	.542	.756
EXP 3	.466	.575
VOL1	.393	.535
VOL2	.438	.650
VOL3	.357	.476
VAL1	.488	.414
VAL2	.540	.501
VAL3	.252	.464
VAL4R	.523	.613
VAL5R	.612	.494
VAL2	.326	.543
VAL3	.260	.387
VAL4R	.417	.650

VAL5R	.413	.619
VAL6R	.178	.201
VAL1	.292	.478
VAL2	.293	.485
VAL3	.253	.381
VAL4R	.404	.723
VAL5R	395	.549
VAL1-	.296	.410
VAL2-	.326	.543
VAL3-	.260	.387
VAL4R-	.417	.650
VAL5R-	.413	.619
VAL6R-	.178	.201
VAL1	.384	.670
VAL2	.391	.592
VAL3	.331	.557
ATT1	.535	.586
ATT2	.549	.579
ATT3	.655	.675
ATT4	.620	.670
ATT5	.580	.610
ATT6	.555	.548
INT1	.770	.839
INT2	.759	.827
INT3	.683	.749
INT4	.551	.594

BEH1	.474	.583
BEH2	.550	.757
BEH3	.454	.554

Table 4-21: Communalities results for constructs

EXP= Expertise, VAL= Valence, VOL= Volume, ATT= Attitude, INT= Purchase Intention, BEH= Purchase Behaviour"

In line with Churchill (1979), during the next stage the remaining items 22 (out of 25) were then used for developing the main survey questions in order to obtain data for further assessment of the construct validity and reliability. Hence, with an attempt to assess construct validity and reliability, the researcher conducted the main survey in order to use the resulting data for performing confirmatory factor analysis (CFA) (Steenkamp & van Trijp, 1991) as well as for testing the research hypotheses. The data analysis and findings based on the data from the main survey are presented in the next chapter. In the following sections, the main survey process and the data analysis techniques are discussed, following reflections and suggestions for the collection in the main study.

4.9 Reflections and Suggestions from Pilot Study to Main Study

The data collection phase took place without too many difficulties, except for an insufficient sample size in the initial phase. The participants showed their interest in completing the questionnaires, and the majority of questions were answered. Although there were a few cases in which some participants did not answer some questions, the missing data issue was resolved using multiple imputation technique, as described by Royston (2004) and Sterne et al. (2009).

Participants were involved in a discussion to reflect upon the questionnaire, the items in the questionnaires and the data collection process. No one raised any concerns about contacting the respondents, filling in the ethical forms or the sequence of the questions. Therefore, for the main study, the researcher removed the three negative scale items from the negative valence, and kept the three scales items to measure the positive valence as discussed above. In general, there was a reasonable level of cooperation from the teachers, but at some points before the data collection, two teachers showed their concern about the wastage of students' lesson hours, being of the view that this exercise was of no use for either the participants or society. The researcher explained to them that the study would help their understanding about the role of perceived trustworthiness of eWOM in developing consumer attitudes, particularly with reference to dietary supplements. The researcher further explained that another outcome from the study could be the creation of increased health awareness in Saudi adolescent females and for health policy makers in Saudi Arabia. It would also help research in SA concerning adolescent behaviour on social media about the perceived trustworthiness of eWOM dimensions.

The participants showed their interest by completing the questionnaires, with the majority of questions being answered, although there were some cases in which participants did not answer one or two questions measuring constructs. There are several options for dealing with this issue. One could simply delete cases where data were missing. Alternatively, various imputation techniques can be used to deal with this issue. Multiple imputation technique, as described in Royston (2004) and Sterne et al. (2009), was used to deal with missing data. Participants were involved in a discussion to reflect upon the questionnaire, the items in the questionnaires and the

data collection process. No one raised any concerns about contacting the respondents, filling in the ethical forms and the sequence of the questions. However, there were some suggestions about some of the scale items.

The analysis helped in achieving first three research objectives discussed above. The beta coefficients exhibited that dimensions of perceived trustworthiness (i.e. perceived expertise of the opinion leader, volume of eWOM and valence of eWOM) significantly influence trustworthiness. Similarly, it was found that trustworthiness of eWOM significantly influences the attitude towards dietary supplements. The regression analysis also revealed that the purchase intentions significantly influence the actual purchase behaviour.

Data analysis was performed using the analysis of moment of structures (AMOS) to acquire further results to confirm the goodness of fit of the factor analysis model. This software is good for most analytical techniques (Wu et al., 2014). This study proposes testing the moderating effect of the perceived body image and time spent on social media, which cannot be performed using SPSS. AMOS is a good choice for testing the moderating effect. Therefore, based on the experience gained in the pilot, it is advisable to use AMOS to get robust results.

The present study deals with testing the influence of a number of latent variables including perceived trustworthiness of eWOM and attitude towards dietary supplements. To perform the regression analysis, the mean values of all items measuring each construct was computed as a separate variable. Using the mean of items as a variable can produce results, although the

robustness of the results may be questioned because of the inbuilt limitations of the mean, which has a tendency to provide misleading results because of outliers and skewness. Moreover, in a model where several relationships are involved, using regression is not an optimal choice. Therefore, based upon the results of the pilot, it is proposed that in the main study the SEM should be used for the model testing, confirmatory factor analysis and path analysis.

4.10 Main Study

The main survey was conducted in KSA (Jeddah and Riyadh) in order to purify the measurement scales (Churchill, 1976). Before conducting the main study, a pilot study was conducted to assess the instrument, data collection and preliminary data analysis. The pilot helped to identify the instrument and process weaknesses of the study, and to set the tone for a smoother transfer to the next phase of the main study. The data collected in the pilot helped identify whether the measures are reliable or not. Once the reliability and validity of the instrument is ensured, the main study was begun, with the three scale items of negative valence of eWOM being deleted from the main study in order to yield a significant result.

The researcher accessed the list of registered schools in both cities of Jeddah and Riyadh to draw a random sample of the schools previously in the pilot study and in the main study. The researcher went to Jeddah first to collect data, where the schools were welcoming, not only because of the message sent from the head of the school and the teachers, but also because the researcher was a TV presenter for eight years and so had credibility as a media person. The researcher was trying to go without make up and to act formally in order to avoid any bias, but all schools recognised

her. The researcher followed the ethical code designed by Middlesex University, and provided a copy to the KSA Ministry of Education.

The data collection was done in two phases. In the first phase, the researcher explained the reason for her visit by giving a copy of the consent forms to students to be signed by a parent for each school in the targeted cities. Then, the schools were revisited after a week to collect the signed consent forms. The researcher received a high number of responses from the participants, and most of the parents signed the consent forms. In the second phase, the researcher gave a brief explanation about the questionnaires and asked the participants to answer the questions given in the questionnaire. The questionnaire included a cover page, which set out the aims and objectives of the research and explained the voluntary participation of the individuals and the anonymity of the records. The whole process was completed in Jeddah over a six-week period. The same processes took place in Riyadh over another six-week period. Just one school in Jeddah did not allow the researcher to collect data; in Riyadh there was no such problem. In total, 1,027 responses were collected. The Ministry of Education approval letter was provided to collect data and also to gain access and support. A copy of the letter is attached in Appendix 3.

4.11 Data Collection for the Main Study

The teachers of targeted classes and their students were informed about the time and the date of the data collection. On a prearranged date, participants were asked to provide consent forms signed by the parents/custodians. Only those students were allowed to participate in the study. Before the start of the study, the researcher gave a five-minute presentation to explain the broad purpose of the study, as well as to explain the confidentiality and anonymity of their responses. The researcher

ensured that every respondent worked on her own questionnaire and that they gave independent responses, as far as possible. The data collection was conducted in an exam setting to avoid any cheating or chatting. Since the data were collected in two different sessions in two different classes, to avoid any bias caused by sharing questionnaire information across the groups, both sessions were conducted back to back without any break. After collecting the data from one group of respondents, the researcher thanked the participants, teachers and the school administration.

4.12 Main Data Analysis Strategy

As mentioned by Aaker et al. (2006), the quality of statistical analysis is affected by the way data are prepared and further converted for suitable analysis. The software package of social science research, SPSS, was used and 21 SPSS version was applied. As suggested by Tabachnick and Fidell (2007), the data were cleaned before they were processed for analysis. The following steps were followed: checking the attention of respondents; examining the data accuracy; examining the normal distribution of data; ensuring that the research data is free from the non-responses error.

Oppenheimer et al., (2009) suggested that a t-test should be applied in order to know the mean differences between those who did and did not respond. After performing the initial step, the model fitness was accessed through SEM. When considering SEM, two different methods were used, including the variance based partial least square and covariance-based method. Hair et al. (2010) argued that neither of these methods are better than the other. For Henseler et al. (2009), PLS-SEM is more suitable for exploratory purposes, whereas CB-SEM is more suitable for theory testing. The two conditions are met when the model contains construct and sample size with less than 200

observations. The present study contains sample size of 1,027, thus CB-SEM was applied. In the research analysis, the validity and reliability were ensured by using measurement model and after testing the hypotheses, the structural model was performed.

To test the research hypotheses, the structural model was developed and the directional relationship was proved by the help of factor loading. In addition to this, to test the moderation effect, the chi-square test was performed on the unconstrained and constrained model. This two-step approach is as follows: 1. The CFA was performed in order to ensure that the scale developed for the study were robust in term of research validity and reliability; 2. The structural equation modelling was employed in order to examine the conceptual framework and the relationship between the research variables.

4.12.1 Stages in Structural Equation Modelling

In relation to the previous section, the study aims to adopt a two-stage analysis and SEM data. SEM contains a measurement model and structural model. The first stage test was to test the measurement model by undertaking CFA, which took place in the pilot study prior to the main study. The measurement model aims to present the specific indicators for each construct, which enables the assessment of construct validity. In order to ensure the development of scale, the standardised factor loading was higher than 0.6 (Garver & Mentzer 1999; Gerbing & Anderson, 1988; Hair et al., 2014; Steenkamp & Van Trijp, 1991).

The CFA is applied in order to explore the extent to which the research shows theoretical patterns of factor loading on the pre-specific construct. The variables loading on specific constructs presents the actual data, and so it is recognised as the confirmatory test of measurement theory. The CFA helped to explore whether the subset of research items is internally consistent or not. According to Daimantopoulos and Siguaw (2000), and Hair et al. (2014), CFA is employed to explore them and investigate the construct validity to ensure that it is present. It helped in knowing whether or not the theoretical meaning is empirically encapsulated. The CFA provides a better estimate of reliability, and since it is one-dimensional it can be examined by the overall fit. The structural model fit was evaluated by performing the goodness-of-fit indices and path among the construct in order to examine the research hypothesis.

4.12.2 Assessing the Measurement Model's Fit

Henseler, Ringle, and Sarstedt, (2016) discussed the fitness of a model being based on the ability to reproduce data which is usually through the variance and covariance matrix. A good fit model is a position that is consistent with the data and does not require any re-specifications. The causal paths and the structural modelling are based on the fitness of the model where it is significant to assess during the data analysis since it ensures a correlation between the constructs and the model selected. Alongside this, various other measures such as the TLI and χ^2/df: chi-square and their fitness indices showed that the model was a best fit with the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Residual (SRMR) and the Tucker Lewis index (TLI). The χ^2/df: chi-square normed for the current measurement model p was < .001 above the Pvalue. Badness of fit indices were also measured to gather the measure of

error or deviation in the forms and lower values on the desired indices. For badness of fit indices, chi-square test ($\chi2$), Root Mean Square Error (RMSR), SRMR and RMSEA were used. These measures were categorised under the absolute fit, which presumes that the best fitting model has a fit of zero (Kenny, 2014; Loehlin & Beaujean, 2016).

4.12.3 Assessing the Fit of the Structural Model

4.12.4 Unidimensionality

Accessing reliability is assumed to be a unidimensional measure (Gerbing & Anderson, 1988; Hair et al., 2014; Hattie, 1985; McDonald, 1981; Steenkamp & Van Trijp, 1991). The unidimensional measure of a construct presents the steps which need to be attained prior to the future testing of a theory. Unidimensionality occurs when the research items are strongly associated with one another and they signify certain constructs. According to Hair et al. (2014), factor analysis plays an important role in making statistical assessments more reliable. Unidimensionality is the necessary condition for the efficient use of the coefficient alpha. As mentioned by Daimantopoulos and Siguaw (2000), there are fewer differences among the coefficient plans. The first difference is that it presents latent reliability. In addition to this, it is also used for the preliminary reliability test.

4.13 Research Ethics

The study collected data from female adolescent consumers in the KSA. Ethical approval was gained from Middlesex University. To conduct a study in the KSA as an external agency, it is mandatory that the agency should initiate the process by contacting the Saudi Cultural Bureau in

the respective country. This department then communicates with the concerned department in the country. Thus, the researcher contacted the Saudi Cultural Bureau in London to get permission from the Ministry of Education in Saudi Arabia. The Saudi Cultural Bureau forwarded the relevant paperwork to the Ministry in Saudi Arabia to get their approval. When approval was sent back to the Saudi Cultural Bureau, all schools in Jeddah and Riyadh came on board to participate in the study and the data collection. A copy of the permission letter to conduct the study from the Saudi Cultural Bureau is attached in Appendix 2.

To ensure that all ethical concerns were properly considered, multilevel permission/consent was sought. First, several permissions by the researcher were applied to official authorities, as outlined above, and the researcher had to ensure that the proper ethical regulations for conducting data collection were followed, as per the relevant websites and handbooks. In addition, several specific permissions had to be obtained from Saudi Arabia, specifically because the researcher was researching female adolescents. Signed consent forms by the students' parents had to be obtained so that they could participate in the current study data collection, for both the pilot and main study. A formal letter was written to the Ministry of Education via the KSA embassy in London. After getting permission, the school administration (head teachers / principals) were asked to give the researcher access to the classes.

The research consent form includes a statement regarding confidentiality and anonymity, on which basis the participants agreed to participate in the study. The participants were informed that the aim of the study was to gather data regarding the research purpose, and that any data shared by

them would only be used for academic purposes (Mertler, 2018). The respondents were told that their data would not be shared or disclosed to anyone. A copy of the consent form can be seen in Appendix 4. It is often difficult for academics to consider ethical issues which may arise during data collection.

4.14 Chapter Summary

This chapter discusses the methodology incorporated in the present study. Initially, the research paradigm and the research design were discussed, which explained the rationale behind choosing the methodology. Many alternative methodologies were discussed and the rationale for using a survey was explained. Furthermore, this chapter explained the population and the sampling procedure used in the study to collect the data from intermediate and secondary schools in Jeddah and Riyadh. The sample pilot size was 182, and the sample size of the main study was 1,027.

It was essential to test the methodology, the data collection instruments and the data analysis techniques before conducting the main study. As such, a detailed account of the pilot study was presented. The lessons learnt from the pilot were discussed to be incorporated in the main study. After this, the proposed data analysis strategy was discussed under consideration of the relevant research ethics. For the data analysis, it was proposed that CB-SEM would be used for the data analysis, and that to analyse data SPSS-AMOS would be used in the next chapter.

Chapter Five: Results and Analysis

5.1 Introduction

The sections covered in this chapter discuss the results of the data analysis run through SPSS and CFA, under the AMOS technique using SEM. The first section presents a descriptive analysis of the demographic data presented. The following section outlines a descriptive analysis of constructs. After this, CFA is discussed. The results are significant, and the assumptions and hypotheses are sufficient except for two hypotheses. Interestingly, the two hypotheses not supported have a strong justification. The section which follows explores common method variance, followed by structural models and results hypotheses for the present study. Mediation analysis is then explained, and the moderation effect of perceived body image and time spent on social media which moderates the relationship between the perceived trustworthiness of eWOM and attitude towards dietary supplements is addressed. The subsequent part covers measurement model invariance, followed by an analysis of configural and metric invariance using Structural Models for Multigroup Analysis. A summary of the hypotheses are presented in the penultimate section, before a chapter summary is presented.

5.2 Descriptive Analysis for Demographic variables

This section provides details of demographic variables. Their frequencies and percentages are given along with graphical representation. The ages of the respondents range from 11 to 19 years, with a maximum value of 243 (23.7%). 759 (74%) use WhatsApp on their mobiles, 657 (64%) use

Twitter, and 636 (62%) use Facebook. 883 (86%) use Instagram. Therefore, from the descriptive analysis demographic variables findings, Saudi female adolescents use Instagram more than the other social media apps. The following charts also reveal the frequencies of age, use of different mobile applications and time spent on SNS. The time spent on social media or SNS is given in table 5.4, and ranges from 0 to 14 hours on a daily basis. These findings reveal that most Saudi female adolescents spend 5 hours (N= 273, 26.6%) while 7 respondents do not spend a single hour on mobile media. The average time spent was 4.97.

5.3 Descriptive Analysis of Constructs

Descriptive analysis, sometimes referred as univariate analysis, is used to exhibit the basic features of the demographic data in research (Stevens, 2012). These statistics provide simple summaries about the sample. Sample distribution, central tendency and dispersion are used in univariate analysis. These data can be explained with the help of tables 5.1-5.4 since they form the basis of virtually every quantitative analysis of data. The data analysis started with descriptive statistics to ensure that the sample had a reasonable distribution and dispersion. Figures are given in sections 5.2.2-5.2.5 which tell us the level of agreement and disagreement in each item. This is a descriptive analysis of research variables that gives an idea about highest and lowest values. The age ranges are between 11 and 19, with the majority between 14 and 17 (see figure 5.1).
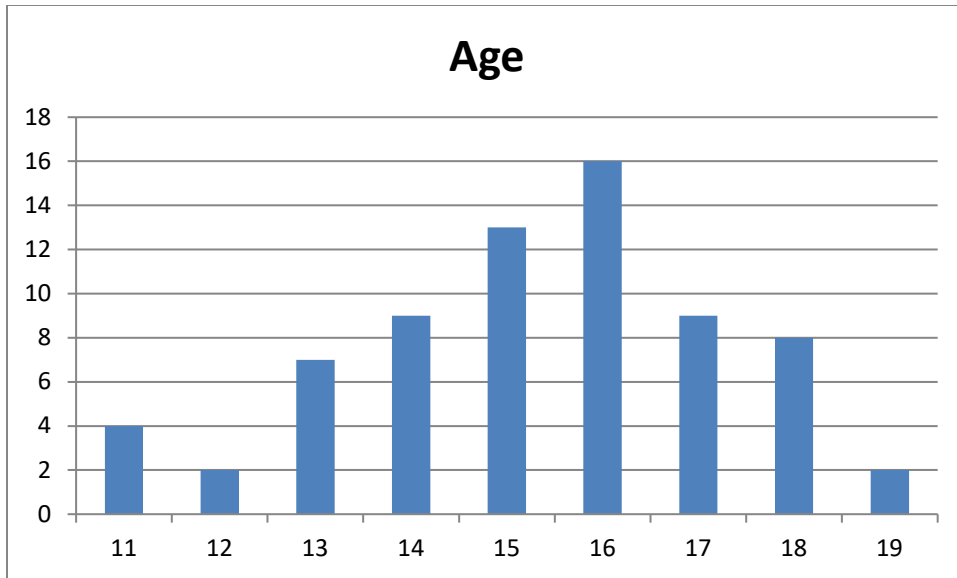
Figure 5.1: Age descriptive analysis

The data were collected from different classes. Most of the respondents were in Grade 11. The sample also gad representation from Grades 7, 8 and 9.

Participants Class
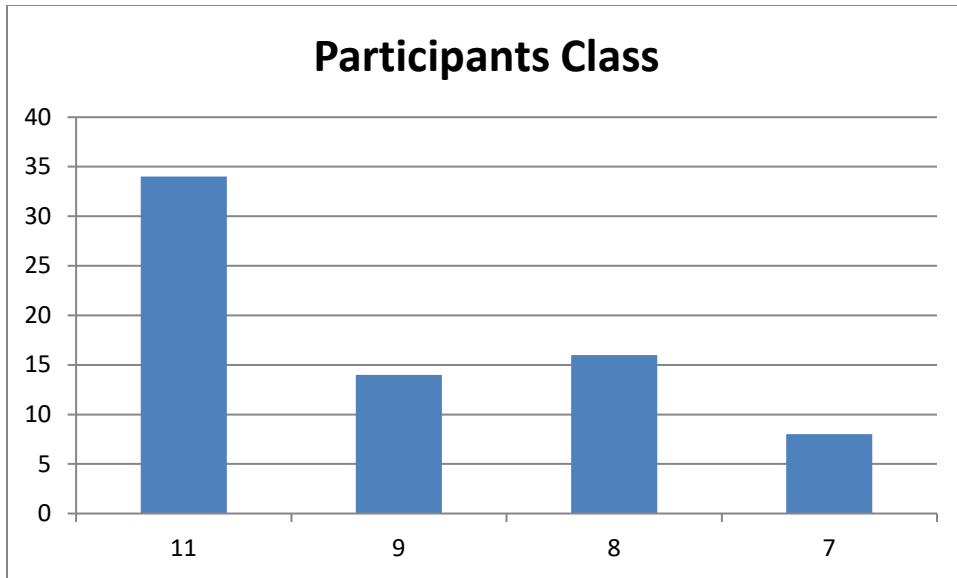
Figure 5.2: Participants descriptive analysis

The respondents were asked to provide information about which social media platform they use. The data revealed that most respondents used more than one social media platform. Snapchat, Instagram and YouTube are the most popular platforms. WhatsApp, Facebook and Kik are also used by several respondents. The graph below exhibits the various social media platforms used by respondents, with their corresponding numbers presented on the Y-axis. Figure 5.3 represents the participants descriptive analysis findings.
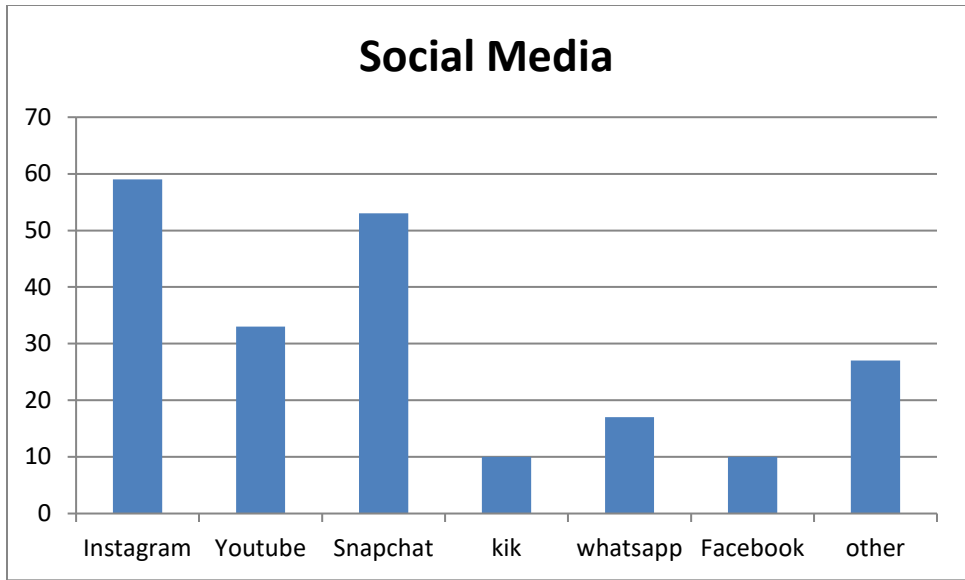
Figure 5.3: Participants descriptive analysis

The respondents were asked to provide information about how much time they spent on social media in a typical day. The time spent on social media ranged from 1 to 12 hours per day. It was found that, on average, respondents spent 4.71 hours per day. At least seven girls reported that they spent no hours per day. The distribution of time spent on social media is shown in figure 5.4 below.
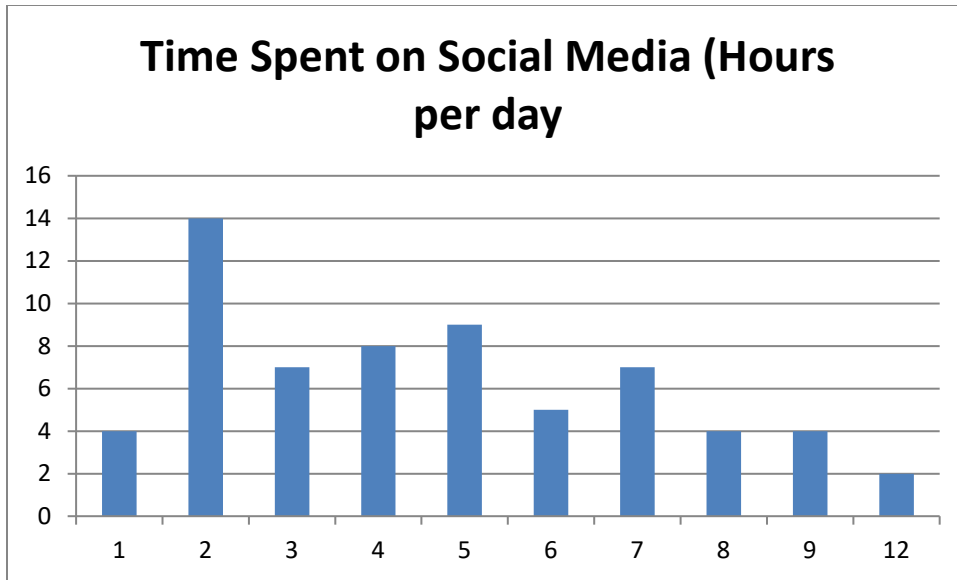
Figure 5.4:Time spent on social media descriptive analysis

5.3.1 Perceived Trustworthiness of eWOM

The perceived trustworthiness of eWOM's second order construct is comprised of three dimensions (perceived expertise, Valence and Volume of eWOM). A frequency and percentage analysis of each item shows that 269 respondents have sense regarding 'dietary supplements', and 335 respondents have knowledge. 33% of individuals have experience regarding dietary supplements. 516 individuals responded that dietary supplements helped them decrease their weight, with more than 400 saying they were happy with the results. Approximately 500 individuals responded that would make such purchases again in the future, with 313 responding that dietary supplements do not work. Only 81 individuals replied that weight could be lost through exercise and a controlled diet plan, with 311 responding that dietary supplements are well-known in online reviews. Only 6.6% respondents believed that dietary supplements have online reviews. Details of individuals' responses are provided in table 5.1 below.

Perceived trustworthiness of eWOM	SD	D	N	A	SA
Perceived source expertise Dimension					
1 "The online reviewers have a good sense about dietary supplements"	38 (3.7%)	365 (35.5%)	311 (30.2%)	269 (26.3%)	44 (4.3%)
2 "The online reviewers are knowledgeable about dietary supplements"	47 (4.6%)	275 (26.8%)	370 (36.0%)	283 (27.6%)	52 (5.1%)
3 "The online reviewers have experience about dietary supplements"	48 (4.7%)	288 (28.0%)	256 (34.7%)	275 (26.8%)	60 (5.8%)
Valence Dimension					
4 "It worked. I lost 20 pounds! Still on my journey to lose more, 40 more pounds to go!"	73 (7.1%)	164 (16.0%)	274 (26.7%)	222 (21.6%)	294 (28.6%)
5 "I am very pleased with the results. This is my three-time purchasing this"	100 (9.7%)	194 (18.9%)	257 (25.0%)	219 (21.0%)	257 (25.0%)
6 "I swear by these pills, it worked for me, I am ready to buy more in future"	73 (7.1%)	190 (18.5%)	268 (26.1%)	221 (21.5%)	275 (26.8%)
Volume Dimension					
7 "Many people post online reviews about dietary supplements"	242 (23.6%)	581 (56.6%)	137 (13.3%)	51 (5.0%)	16 (1.6%)
8 "Dietary supplements have a large number of online reviews"	341 (33.2%)	492 (47.9%)	133 (13.0%)	47 (4.6%)	14 (1.4%)
9 "Dietary supplements are popular is online reviews forums"	295 (28.7%)	447 (43.5%)	102 (19.7%)	55 (5.4%)	28 (2.7%)

Table 5.1: Perceived trustworthiness of eWOM's Frequency Analysis

SD—Strongly Disagree   D—Slightly Disagree   N—Neutral   A— Slightly Agree   SA—Strongly Agree.

5.3.2 Attitude

With regards to the construct of attitude, more than 50% responded that they believed using dietary supplements had a good and pleasant effect. 530 individuals responded that using dietary

supplements is beneficial for health and more than fifty percent believed that dietary supplements have a pleasant and favourable effect on health. Details of individuals' responses are provided in table 5.2.

	Attitude	SD	D	N	A	SA
13	Overall, I think that taking dietary supplements would be good.	38 (3.7%)	201 (19.6%)	249 (24.2%)	282 (27.5%)	257 (25.0%)
14	I think that taking dietary supplements would be enjoyable.	36 (3.4%)	170 (16.6%)	243 (23.7%)	339 (33.0%)	239 (23.3%)
15	I think that taking dietary supplements would be positive.	52 (5.1%)	234 (22.8%)	271 (26.4%)	243 (23.7%)	227 (21.1%)
16	I think that my taking dietary supplements would be beneficial	59 (5.4%)	209 (19.9%)	295 (29.7%)	241 (24.3%)	224 (20.7%)
17	I think that taking dietary supplements would be pleasant	36 (3.5%)	187 (18.2%)	285 (27.8%)	275 (26.8%)	244 (23.8%)
18	I think that taking dietary supplements would be favourable	54 (5.3%)	128 (12.5%)	321 (31.3%)	280 (27.3%)	244 (23.8%)

Table 5.2: Attitude's Frequency Analysis

5.3.3 Purchase Intention

According to individuals' responses regarding purchase intention of dietary supplements, more than 50% responded that they are interested in purchasing dietary supplements. The majority of individuals replied that they would like to get supplements, with 31% responding that they like to purchase these supplements. Details of individuals' responses are provided in table 5.3.

Purchase Intention	SD	D	N	A	SA
19 I do intend to take dietary supplements	47 (4.6%)	164 (16.0%)	227 (22.1%)	276 (26.9%)	313 (30.0%)
20 I do plan to take dietary supplements	49 (4.8%)	171 (16.7%)	235 (22.9%)	253 (24.6%)	319 (31.1%)
21 I do want to take dietary supplements	43 (4.2%)	160 (15.6%)	227 (22.1%)	270 (26.3%)	327 (31.8%)
22 How likely is it that you will take dietary supplements?	42 (4.1%)	134 (13.0%)	397 (38.7%)	180 (17.5%)	274 (26.7%)

Table 5.3: Purchase Intention's Frequency Analysis

5.3.4 Purchase Behaviour

According to an analysis of individuals' replies regarding purchase behaviour, the majority of respondents answered that they purchased dietary supplements on a regular basis. More than 50% responded that purchasing supplements is important, with 381 people replying that they would purchase supplements in the future. The frequencies of responses are given in table 5.4.

Purchase Behaviour	SD	D	N	A	SA
23 I buy dietary supplements regularly	64 (6.2%)	120 (11.7%)	190 (18.5%)	288 (28.0%)	365 (35.5%)
24 Buying dietary supplements is important to me	28 (2.7%)	92 (9.0%)	139 (13.5%)	387 (37.7%)	381 (37.1%)
25 I will be using dietary supplements in future too.	52 (5.1%)	114 (11.1%)	333 (33.4%)	185 (18.0%)	334 (33.4%)

Table 5.4: Purchase Behaviour's Frequency Analysis

5.4 Composite Reliability, Convergent and Discriminant Validity Assessment

Under CFA, the measurement was also subjected to validity and reliability tests. However, to evaluate the validity of the measurement, content and face validity were initially assessed (see above). Construct validity is concerned with the theoretical relationship of one variable to other variables (Cronbach & Meehl, 1955, cited in de Vellis, 1991, p.47). It addresses the degree to which the construct is captured by its indicators (Steenkamp & van Trijp, 1991). However, in order to claim that a construct is valid, convergent and discriminant validity as subtypes of construct validity, were first assessed by examining whether the factor loadings of items in their respective constructs are large and statistically significant (Anderson & Gerbing, 1988; Joreskog & Sorbom, 1996). To confirm that the constructs were valid, the researcher also assessed the unidimensionality of the construct and the nomological validity (e.g. Peter, 1981; Gerbing & Anderson, 1988; Steenkamp & van Trijp, 1991).

Convergent validity refers to 'the extent to which independent measures of the same construct converge or are highly correlated. In order to assess the convergent validity, the factor loadings and the average percentage of variance extracted (AVE) were evaluated' (Fornell & Larcker, 1981; Hair et al., 2010). The factor loading of each item was found to be fairly high (Hair et al., 2010). The desirable minimum levels of the average variance extracted (AVE) is 0.547 (Hair et al., 2010). In addition, all the t- values were above 1.96 (0.05 significance level). The composite reliability was calculated indices ($\rho\eta$) for all dimensions. The desirable minimum level of the composite reliability index is 0.7 (Hair et al., 2010). The composite reliability indices were satisfactory.

Moreover, the AVE of each factor was also satisfactory. Moreover, the model exhibited construct reliability and convergent validity with a significant level of values.

Composite reliability refers to the assessment of the reliability of the construct. This is defined as 'the total amount of true score variance in relation to the total score variance' (Malhotra, 2010, p.319). This corresponds to the conventional notion of reliability in test theory (Malhotra, 2010; Malhotra et al., 2012). Previous researchers have recommended the use of composite reliability of 0.7 or higher (Hair et al., 2006; Nunnally, 1978). However, estimates between 0.6 and 0.7 can also be considered acceptable, if the estimates of model validity are good. The results from this study suggested that the composite reliability for each construct was higher than 0.7. The results from this study showed that the composite reliability and AVE for each construct were higher than 0.5, as shown in Table 5.5.

	CR	AVE	MSV	ASV	BEH	ATT	INT	Perceived trustworthiness of eWOM
BEH	0.760	0.516	0.030	0.021	0.718			
ATT	0.786	0.552	0.403	0.176	0.086	0.743		
INT	0.840	0.637	0.147	0.098	0.173	0.341	0.798	
Perceived trustworthiness of eWOM	0.840	0.835	0.403	0.191	0.156	0.635	0.383	0.914

Table 5.5: Composite Reliability and AVE of Construct

5.5 Confirmatory Factor Analysis (CFA)

	CR	AVE	MSV	ASV	BEH	ATT	INT	Perceived trustworthiness
BEH	0.821	0.759	0.690	0.349	0.871			
ATT	0.900	0.722	0.666	0.145	0.509	0.850		
INT	0.934	0.789	0.651	0.402	0.488	0.493	0.888	
Perceived trustworthiness	0.764	0.716	0.626	0.266	0.491	0.446	0.332	0.846

Table 5.6: Composite reliability, AVE and Discriminant Validity table for the second order measurement model.

	CR	AVE	MSV	ASV	INT	VAL	EXP	VOL	ATT	BEH
INT	0.934	0.781	0.789	0.369	0.884					
VAL	0.786	0.552	0.403	0.235	0.547	0.743				
EXP	0.840	0.638	0.141	0.105	0.327	0.342	0.799			
VOL	0.759	0.516	0.030	0.020	0.143	0.086	0.172	0.718		
ATT	0.900	0.602	0.656	0.371	0.793	0.635	0.376	0.157	0.776	
BEH	0.821	0.605	0.789	0.389	0.788	0.591	0.363	0.131	0.610	0.778

Table 5.7: Composite reliability CR, Average variance extracted AVE, Maximum Shared Squared Variance MSV, Average Shared Square Variance ASV, Discriminant Validity table for the first order measurement model.

Tables 5.6 and 5.7 present factor loadings for different constructs along with their composite reliabilities and average variance extracted. Reliability denotes the element that a scale should steadily reflect the construct it is measuring (Collis & Hussey, 2013). The composite reliability coefficient or Joreskog Rho coefficient value should be equal or greater than 0.70 (Fornell & Larcker, 1981). The AVE is 0.835, which is higher than the 0.50 which is needed to establish evidence of composite reliability. Table 5.11 shows that the AVE for all constructs is above the threshold of 0.50.

The table above describes the composite reliability for the perceived trustworthiness of eWOM dimensions (valence of eWOM with volume of eWOM and perceived expertise source of eWOM), which is 0.914, since it is a second order construct and the results are provided below. The average variance extracted is 0.54, which is acceptable (Fornell & Larcker, 1981). The factor loadings for ATT1, ATT2, ATT3, ATT4, ATT5 and ATT6 and the AVE is 0.552, which is acceptable. Table 5.10 describes the composite reliability for BEH1, BEH2, BEH3 of purchase behaviour, which respectively have a composite reliability of 0.760. The AVE is 0.516, which is acceptable as a rule of thumb. The composite reliability for INT1, INT2, INT3 is 0.637 of purchase intentions with a composite reliability of 0.840. The AVE is acceptable according to Fornell & Larcker (1981). Moreover, the validity and reliability assessment for CFA is discussed next. According to the findings and the composite reliability, discriminant and convergent validity tests, the remaining scales exhibited a good model fit, significant loadings and satisfactory reliability and validity.

In this study, the measurement model test was assisted by the CFA (Diamantopoulos & Siguaw, 2000) and AMOS SEM. AMOS techniques were used for performing the CFA. When the measurement model is estimated using CFA, the fundamental dimensions which addressed the validity of a construct are assessed (Anderson & Gerbing, 1988). The dimensions of construct validation include: the unidimensionality of a construct; its composite reliability; discriminant validity; convergent validity and nomological validity (Anderson & Gerbing, 1988; Peter, 1981; Steenkamp & van Trijp, 1991).

In the next stage, the relationships between the constructs (SEM) are examined. The results of the hypotheses testing are then presented and discussed.

5.6 Measurement Model and Results

The measurement model was the initial component for evaluating the research model. The application of CFA helped in exploring the validity and reliability. According to Malhotra (2010), the CFA model aims to specify the variables which further reveal the constructs in the research. It aims to confirm that the factor and the loadings of the variables are matched with expectations based on the developed theory. It helps the researcher to measure and test the research hypothesis and to justify the relationship between the variables and their latent constructs. It further allows the identification of the items in order to remove those which do not have clusters with other items. The reliability analysis was the initial assessment of the measurement model. The data were measured with the help of reliability analysis. It was performed for the items individually and also at the construct level. According to Hair et al. (2006), the reliability at the items level is performed to check the internal consistency among items. It allows the measurement of the observed items so that it can represent the latent constructs and ignore the additional dimensions. Hence, the internal consistency is referred to as an approach which helps in accessing consistency amongst each item internally (Hair et al., 2006).

There are various indices in SEM, but Root Mean Square Error of Approximation (RMSEA) is one of the most commonly used statistics to measure fitness of model (Steiger & Lind, 1980). The AMOS user guide suggests that a RMSEA value of 0.08 or less would indicate a close fit of the

model (Hair et al. 2010). These are threshold values for which the values of CFI and TLI, closer to one, are a best fit. For RMSEA and SRMR, values closer to 0 are best. χ^2/df is presented in Table 4.11, presenting fit indices for measurement and structural models.

Table 5.9 presents a best fit model. The perceived trustworthiness of eWOM's construct has been measured through three dimensions (perceived expertise source of eWOM, Valence and Volume of eWOM). Expertise dimension was examined through three items, valence dimension through three items and volume dimension through three items for their model fitness. Purchase intention and purchase behaviour have been measured through four and three items respectively. The construct of attitude has been examined through six dimensions. Fitness indices exhibited that the model was a best fit with a Comparative Fit Index (CFI) =.960, an RMSEA =.053, an SRMR =.0384, and a TLI = .945. The χ^2/df: chi-square normed for the current measurement model is 3.866 for p < .001 above Pvalue, and is a significant finding. This model had all good fit indices, and this enhances the findings of the present study.

Fit Indices	Measurement Model	Structural Model	Criteria
χ^2/df	3.866 for p < .001	4.229 for p < .001	<5
CFI	.960	.939	>.90
TLI	.954	.924	>.90
RMSEA	.053	.059	<.07 (CFI>.90)
SRMR	.0384	.0428	<.08 (CFI>.92)

Table 5.8: Fit Indices for measurement and structural models

Note: χ^2/df: chi-square normed; CFI: Comparative fit index; TLI: Tucker Lewis index; RMSEA: Root mean square error of approximation; SRMR: Standardized root mean residual

5.7 Structural Model and Results - Hypotheses Testing

Moving towards the structural model from the measurement model, the study emphasises more about the relationship between observed variables and latent constructs. It defines the magnitude and nature of relationship between the research constructs. The research structural model was the second model estimated in the research. The model illustrated the theory which specified that the research constructs are correlated with one another, and that they often created dependence with one another (Anderson and Gerbing, 1982; Malhotra, 2010). In the next stage, the relationships between the constructs (SEM) are examined. The results of the hypotheses testing are then presented and discussed.

5.7.1 The Evaluation of SEM

The researcher tested the proposed model (based on the research hypotheses) on the basis of the structural model. In order to identify how well the model fitted, the researcher employed a combination of the following: chi-square statistic ($\chi 2$); normed chi-square ($\chi 2/df$) below 5 (Marsh & Hocevar, 1985); fit indices with values from 0.95 (Hairet al., 2010; Hu & Bentler, 1998; 1999); an SRMR with a value below 0.08 (Hu & Bentler, 1998; 1999) and a RMSEA with a value below 0.10 (Browne & Cudeck, 1993). Although the chi-square ($\chi 2$) was significant (p-value < 0.05), based on a combination of the goodness-of-fit indices (Browne & Cudeck, 1993; Hair et al., 2010; Hu & Bentler, 1998; 1999; Marsh & Hocevar, 1985), the results showed that all requirements were satisfied, indicating a satisfactory fit model (df $\chi 2$ =3.866 for p < .001; CFI =.968; SRMR =.050; RMSEA .0360). Table 5.9 shows the fit indices for alternative measurement models (2nd and 1st order conceptualisation).

Fit Indices	2nd order Measurement Model	1st order Measurement Model	Criteria
χ^2/df	3.866 for p < .001	3.929 for p < .001	<5
CFI	.968	.961	>.90
TLI	.956	.953	>.90
RMSEA	.050	.053	<.07 (CFI>.90)
SRMR	.0360	.0368	<.08 (CFI>.92)

Table 5.9: Fit indices for alternative measurement models (2nd and 1st order conceptualisation).

Note: χ^2/df: chi-square normed; CFI: Comparative fit index; TLI: Tucker Lewis index; RMSEA: Root mean square error of approximation; SRMR: Standardized root mean residual; SR: Stimuli-Response direct relationship.

The analysis suggested that the perceived trustworthiness of eWOM dimensions was a higher order construct. A higher order construct is one in which the covariances between the observed variables are explained by a two or more levels or layers of latent construct (Malhotra, 2010). The most common higher order construct model is a second-order construct in which there are two levels or layers (Malhotra, 2010). In this study, the perceived trustworthiness of eWOM dimensions was taken as a higher order construct with two second order constructs. Further analysis in CFA was done based on the higher order construct requirements (Awang, 2012).
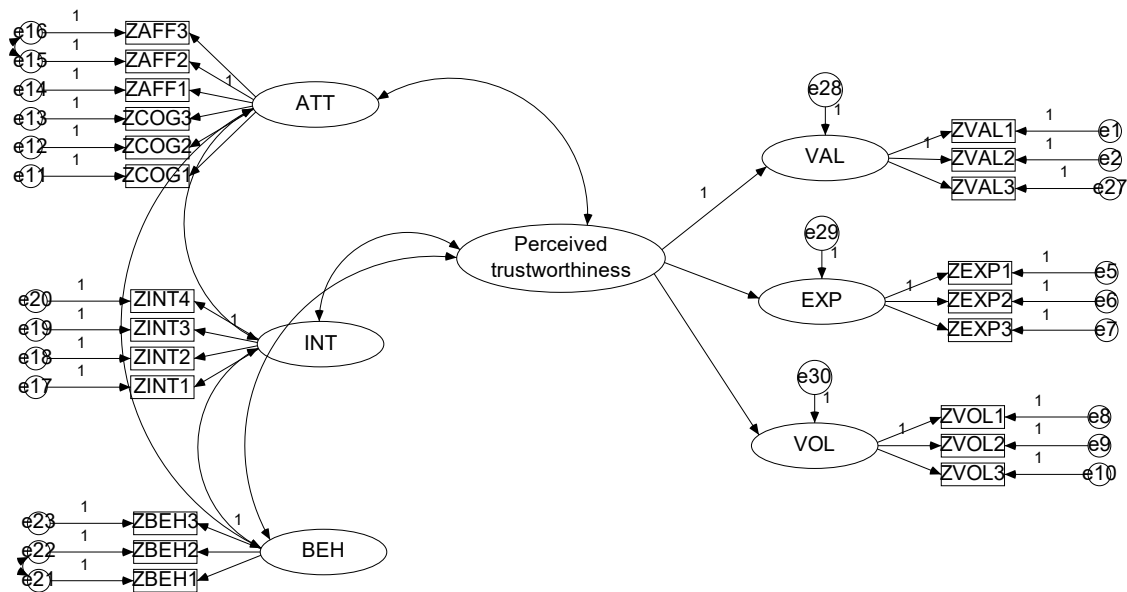
Figure 5.1: Confirmatory Factor Analysis

5.8 Assumption Testing

Skewness and Kurtosis' statistics tests were necessary to test the assumptions for the present research. There should be a sample size of at least 200 for SEM, and the main sample size was 1,027 questionnaires. In descriptive analysis, the next step was to investigate the normality of the data. According to Kline (2005), data should be normally distributed for applying the SEM. Skewness and Kurtosis statistics have been used for analysing the normality of the data, as indicated by Pallant (2011). The acceptable range of Skewness and Kurtosis values are -3 to +3. The Skewness and Kurtosis values of all items were within the acceptable range. Thus, the data of this study was normally distributed. This is a measure of the relative peakedness or flatness of the

curve defined by the frequency distribution (Malhotra, 2010, p.488-489; Tabachnick and Fidell, 2007). The kurtosis of a normal distribution is zero. If the kurtosis is positive, then the distribution is more peaked than a normal distribution, while if the kurtosis is negative, then the distribution is flatter than a normal distribution (Malhotra, 2010, p.488-489). This research showed that there were a number of constructs and variables within the satisfactory range. The statistics of both Skewness and Kurtosis have been provided in Table 5.10.

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
TS	1027	.422	.076	.575	.152
EXP1-	1027	.203	.076	.782	.152
EXP2-	1027	.002	.076	.580	.152
EXP3-	1027	.052	.076	.623	.152
VAL1-	1027	.320	.076	.954	.152
VAL2-	1027	.209	.076	1.076	.152
VAL3-	1027	.240	.076	1.028	.152
VAL4-	1027	.183	.076	1.020	.152
VAL5-	1027	.207	.076	1.091	.152
VAL6-	1027	1.092	.076	.003	.152
VOL1-	1027	1.051	.076	1.645	.152
VOL2-	1027	1.042	.076	1.261	.152
VOL3-	1027	.885	.076	.657	.152
ATT1-	1027	.259	.076	.986	.152
ATT2-I	1027	.382	.076	.755	.152
ATT3-I	1027	.099	.076	1.047	.152
ATT4-I	1027	.132	.076	.955	.152
ATT5-I	1027	.220	.076	.917	.152
ATT6-I	1027	.352	.076	.617	.152
INT1-I	1027	.447	.076	.858	.152
INT2-I	1027	.405	.076	.935	.152
INT3-I	1027	.465	.076	.852	.152
INT4-	1027	.131	.076	.810	.152
BEH1-I	1027	.705	.076	.534	.152
BEH2-	1027	.971	.076	.281	.152
BEH3-I	1027	.377	.076	.807	.152
BID	1027	.207	.076	.666	.152
Valid N (listwise)	1027				

Table 5.10: Skewness and Kurtosis for Normality

BID: Perceived Body image

5.9 Mediation Analysis and Bootstrapping

According to Hays (2013), intervening variables are called mediators. These explain the mechanism through which the independent variable affects the dependent variables. These variables start their effect and are considered dependent for independent while independent for dependent. The fourth objective of this study was to test the mediation effect of attitudes towards dietary supplements in the relationship between trustworthiness of eWOM and purchase intentions and purchase behaviour. To test the mediation in SEM, a mediation model was developed and tested with bootstrapping. Bootstrapping is a resampling strategy which creates sampling distribution to estimate standard errors and create confidence intervals (Cheung & Lau, 2008). The mediated model was generated through thousands of bootstrap samples to avoid Type I and Type II errors using the Biased Corrected Confidence Interval method, as suggested by Bollen and Stine (2013). The direct relationship is also evident from correlation coefficients which are positively and highly significant, thus confirming our objectives and hypotheses. It can be inferred that as the eWOM increases, the perceptions of attitudes and behaviours of respondents also increases.

To test the mediation effect of attitudes towards dietary supplements in the relationship between trustworthiness of eWOM and purchase intentions in SEM, a mediation model was developed and tested with bootstrapping. Bootstrapping is a resampling strategy which creates sampling distribution to estimate standard errors and create confidence intervals (Cheung & Lau, 2008). According to Baumgartner and Homburg (1996), any model estimate attempt should be subject to a testing of the role of the mediating relationships by comparing the constrained and unconstrained models. In the next stage, the proposed model is compared with the most plausible model in order to examine whether it is a better model than the nearest likely

model (Baumgartner & Homburg, 1996; Butts et al., 2009; Kelloway, 1998). The significance of the mediation effect is likely to be underestimated in the presence of measurement errors. It allows researchers to assess the stability of parameter estimates (Byrne, 2001; MacKinnon, 2008). The total, direct and indirect effects of the hypothesised model were obtained by bootstrapping for testing mediation in SEM using Bollen & Stine Bootstraps (*N*=3000) with 95% Bias Corrected Confidence Interval Method. The mediation model is given in below Figure 5.2. The overall model was a good fit, and the values are presented below. The mediations relationship is explored further in Table 5.12

1) ATT → INT → BEH
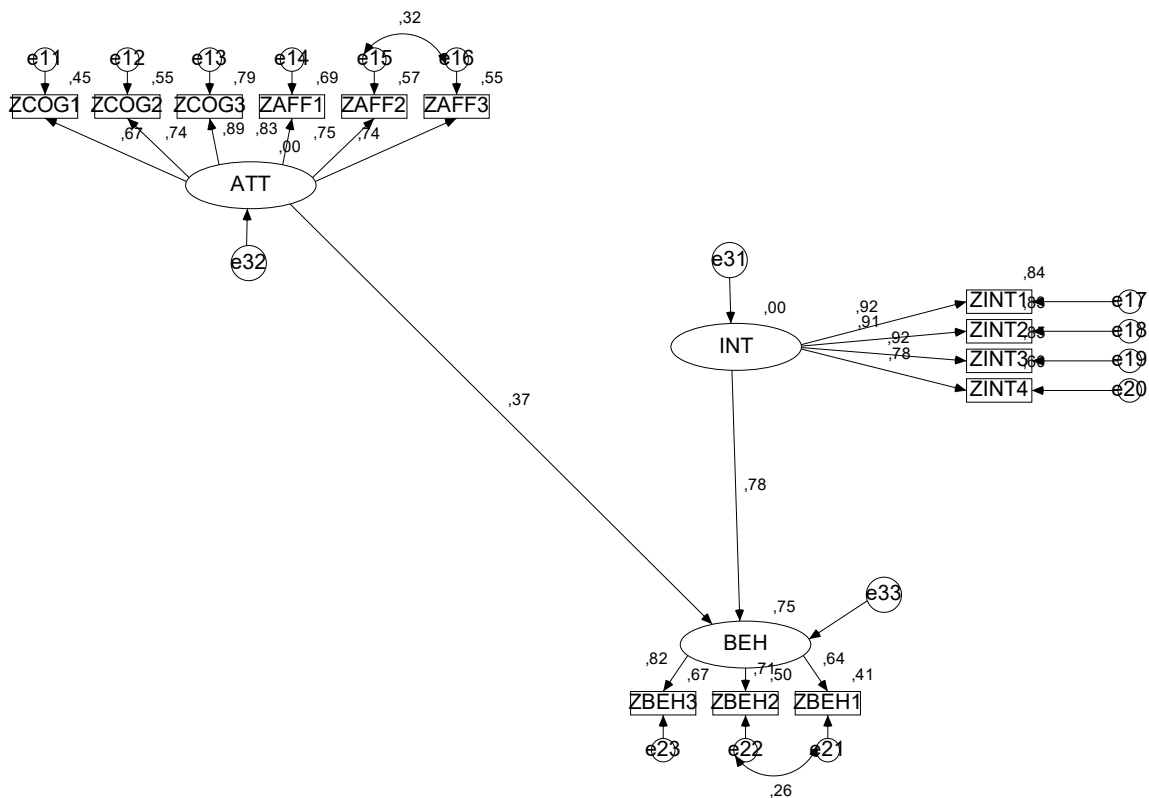
Figure 5.2: Independent model

Model	χ^2	df	RMSEA	CFI	TLI	PNFI
Independent	1110.309	61	.127	,903	,876	.703
Mediated	292.646	60	.060	.979	.972	.808

Table 5.12: Fit indices for the Independent and Mediated model.

Regressions paths			St.RW	S.E.	C.R.	P
Behaviour	←	Intention	.781	.023	26.936	<.001
Behaviour	←	Attitude	.368	.023	13.820	<.001

Table 5.13: Paths for the Independent model

Regression Paths			St.RW	S.E.	C.R.	P
Intention	←	Attitude	.793	.032	27.456	<.001
Behaviour	←	Intention	.663	.038	16.554	<.001
Behaviour	←	Attitude	.283	.040	7.175	<.001

Table 5.14: Paths for the Mediated model

Table 5.13 with fit indices clearly shows that the mediated model has clearly a very good model fit, whereas the independent one does not (very high χ2). In addition, Tables 5.13 and 5.14 show that the inclusion of the Attitude → Intention path strengthens the direct effects to Behaviour, compared to the independent model and all three effects are strongly positive and significant. Therefore, partial mediation is supported.

1) Perceived Trustworthiness of eWOM (PT) →Purchase intention (INT)→Purchase behaviour (BEH)
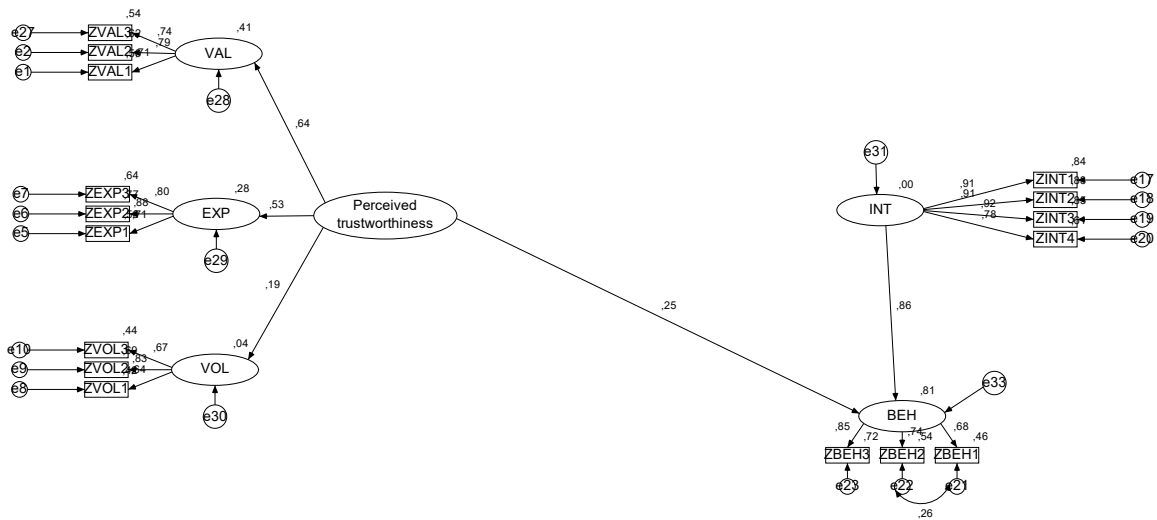
Figure 5.3: Independent model
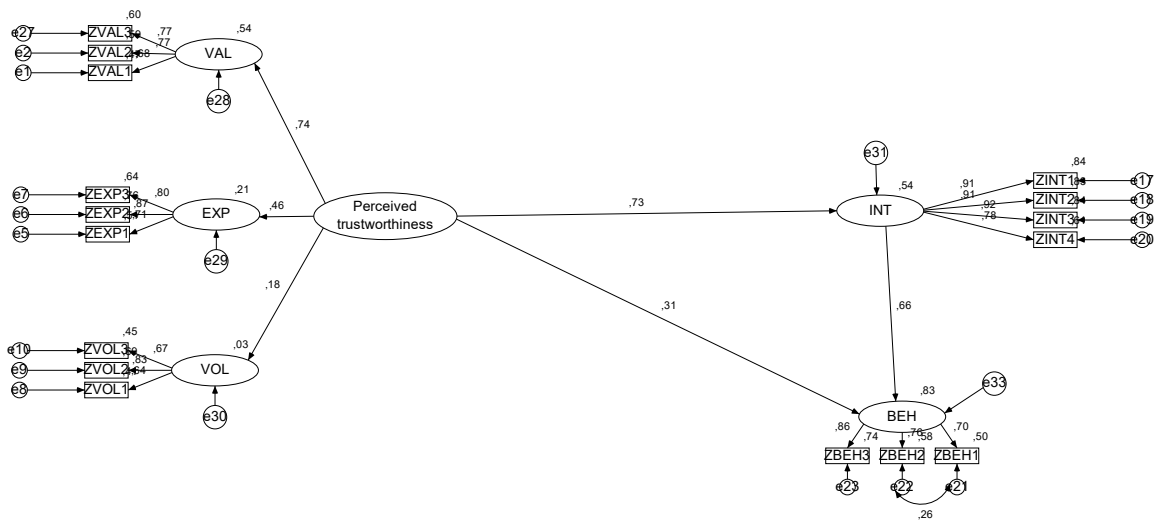
Figure 5.4: Mediated Model

Model	χ^2	df	RMSEA	CFI	TLI	PNFI
Independent	723.114	98	.078	,936	,922	.757
Mediated	418.113	97	.056	.967	.959	.834

Table 5.15: Fit indices for the Independent and Mediated model

Regressions paths			St.RW	S.E.	C.R.	P
Behaviour	←	Perceived Trustworthiness	.255	.075	5.423	<.001

Regressions paths			St.RW	S.E.	C.R.	P
Behaviour	←	Intention	.861	.024	31.159	<.001

Table 5.16: Paths for the Independent model

Regression Paths			St.RW	S.E.	C.R.	P
Intention	←	Perceived Trustworthiness	.734	.053	13.8489	<.001
Behaviour	←	Perceived Trustworthiness	.306	.048	6.375	<.001
Behaviour	←	Intention	.662	.056	11.044	<.001

Table 5.16: Paths for the Mediated model

Table 5.16 with fit indices clearly shows that the mediated model clearly has a very good model fit, whereas the independent one does not (very high χ2). In addition, Tables 5.15 and 5.16 show that the inclusion of the Perceived Trustworthiness→ Intention path strengthens the direct effects to Behaviour, compared to the independent model, and all three effects are strongly positive and significant. Therefore, partial mediation is supported.

2) Perceived trustworthiness of eWOM (PT)→attitude (ATT)→Purchase intention (INT).
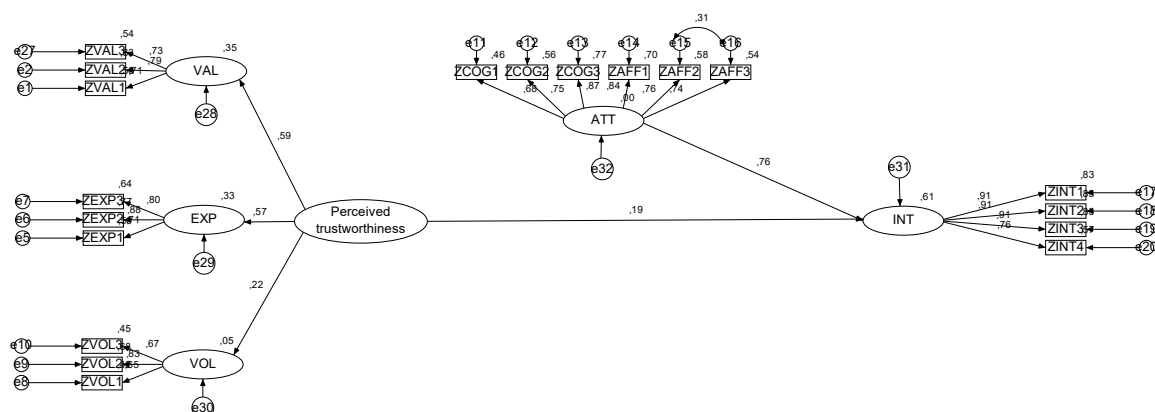
Figure 5.5: Independent model
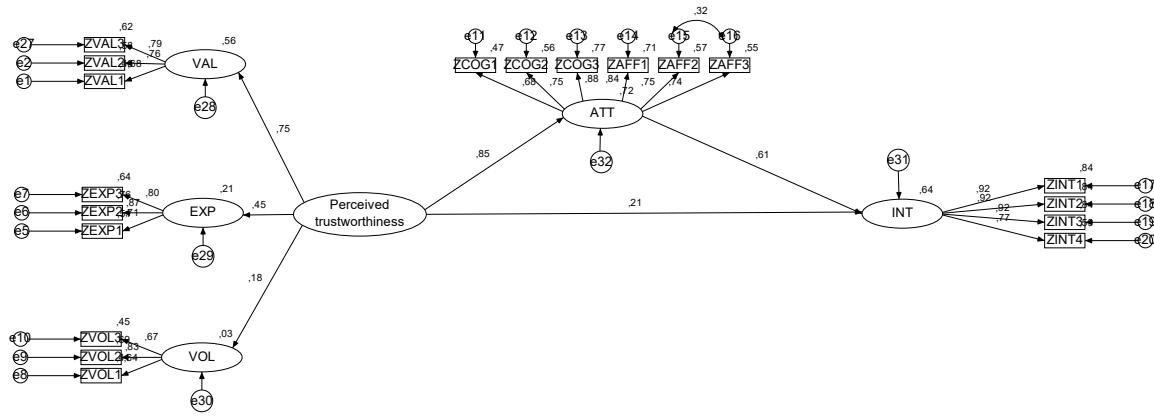
Figure 5.6: Mediated model

Model	χ^2	df	RMSEA	CFI	TLI	PNFI
Independent	974.645	146	.073	.932	.920	.786
Mediate	563.687	145	.052	.966	.959	.809

Table 5.17: Fit indices for the Independent and Mediated models

Regressions paths			St.RW	S.E.	C.R.	P
Intention	←	Perceived Trustworthiness	.186	.079	4.429	<.001

Table 5.18: Paths for the Independent model

Intention	←	Attitude	.760	.031	25.997	<.001

Table 5.19: Paths for the Independent model

Regression Paths			St.RW	S.E.	C.R.	P
Attitude	←	Perceived Trustworthiness	.846	.063	13.428	<.001
Intention	←	Perceived Trustworthiness	.215	.065	3.307	<.001

Regression Paths		St.RW	S.E.	C.R.	P
Intention ← Attitude		.611	.045	13.558	<.001

Table 5.20: Paths for the Mediated model

Table 5.18 with fit indices clearly shows that the mediated model has clearly a very good model fit, whereas the independent one does not (very high χ2). In addition, Tables 5.19 and 5.20 show that the inclusion of the Perceived Trustworthiness of eWOM→ Attitude path strengthens the direct effects to Intention, compared to the independent model, and all three effects are strongly positive and significant. Therefore, partial mediation is supported.

Table 5.21 exhibits the mediation analysis in the model. The model hypothesised that Attitude mediates the relationship between trustworthiness of eWOM and purchase intentions. The table provides the total effect (which includes direct and mediation effect), the direct effect (influence of trustworthiness of eWOM on PI and PB), and the indirect effect (influence of trustworthiness of eWOM on PI and PB through attitude). The table shows that attitude has a mediating influence of attitude towards dietary supplements on the relationship between perceived trustworthiness of eWOM and purchase intention. Also, attitude towards dietary supplements mediates the relationship between perceived trustworthiness of eWOM, purchase intention and purchase behaviour.

The standardised total effect of trustworthiness of eWOM on Purchase Intention was $B=.847$ ($p<.001$), with a standardised direct effect $B=.537$($p<.001$) and indirect effect $B=.309$ ($p<.001$). Since the direct effect was significant and indirect effect was significant, it is concluded that

partial mediation is here present. The standardised total effect of trustworthiness of eWOM on Purchase Behaviour was B=.911 (p<.001) with a standardised direct effect B=.820(p<.001) and indirect effect B=.092 (p<.046). Since the direct effect was significant and the indirect effect was significant, it is concluded that mediation relationships were significant and it is present here.

5.10 Moderation Effect of Time Spent on Social Media and Perceived Body Image

5.10.1 Measurement Model Invariance

During the measurement model or CFA, it is necessary to validate or confirm whether factor structure and regression weights or loadings are equivalent across different groups. Since there are two different groups based on time spent on social media and perceived body image, so invariance tests were performed to check configural invariance and metric invariance.

5.10.2 Structural Models for Multigroup Analysis

As stated by Hayes (2013, p.327), 'an analysis that ignores the potential contingencies and boundary conditions of an effect is going to result in a greater oversimplification of complex processes relative to an analysis that acknowledges that complexity by formally modelling it.' Moderation analysis is used to see whether any effect of independent on dependent is strengthened or weakened while a third contingent variable is introduced. A relationship is considered moderated when the direction or magnitude is dependent on the third variable or variables. After finding evidence for invariance in measurement models, structural models were built both for Body Image and Time Spent. When chi square difference tests were

performed for the constrained, measurement and structural weights models, no overall differences were found. However, at the item level there were significant differences observed in positive and negative body images in Valence, Volume and perceived source expertise of eWOM. In the case of perceived Body Image, groups are not different at the model level, although they are different at the path level. This was also confirmed through critical ratios and comparisons through a Chi square difference test. However, there is no significant difference in time spent at low or high level.

5.11 Common Method Variance (CMV)

The common method bias is referred as a measurement error which threatens the validity of the research (Podsakoff et al., 2003; 2012). It is most commonly applied when it is thought that method bias inflates the relationship between the self-reports and variables measured (Conway & Lance, 2010). When the researcher obtains self-reporting from a similar sample, concerns regarding general method variance are created (Conway & Lance, 2010). Studies which use attitudinal variables and dispositional variables invite common method bias (Organ & Ryan, 1995).

The identification of sources regarding common method bias helps in controlling the data. Statistical measures and procedural measures can be applied (Roni, 2014). The procedural measures involve (i) collecting the measure of criterion variables and predictors from multiple sources; (ii) using proximal, temporal, methodological or psychological separations; (iii) preventing respondents' information and maintaining anonymity to overcome apprehension; (iv) counter balancing the orders of questions; and (v) revising scale items (Roni, 2014, p.32).

Similarly, the statistical procedure also plays an essential role in preventing the influence of common bias. The statistical procedure begins by (i) applying a Common Latent Factor (CLF) test; (ii) using a partial correlation; (iii) controlling the influence of the direct effect measured; (iv) controlling the influence of unmeasured latent factors; and (v) using multiple factors (Roni, 2014). Some researchers apply Harman's test rather than the CLF, but for Tehseen et al. (2017), Harman's test is easy to conduct but also has some drawbacks. For instance, Podsakoff et al. (2003) explained that Harman's test is insensitive, meaning that the claim regarding CMV through this test is incomplete. It is improbable that a general-factor model will fit the data, and no useful guidelines are available regarding the acceptable percentage of explained variance by a single factor (Chang et al., 2010). Moreover, it has also been noted that this test only provides information regarding the absence or presence of CMV, but it cannot control or correct the common method bias that might present in the study.

The results suggested that there would not be any problem with the common method bias. Finally, a common latent factor test was performed. Usually researchers suggest using a marker variable (Simmering et al., 2015; Williams et al., 2010). Since no marker variable had been used, a CLF test was performed (Hultman et al., 2009). A chi-square difference test between the original model (or unconstrained model) and the CMB-adjusted model (or fully constrained model) was performed. The results, as set out in Table 6.21, showed that the two models were significantly different and shared a variance. As a result, the unconstrained model was retained and further imputed. The new data had accounted for the shared variance explained by the CLF. This data set was used for further analyses in the research, with the results from the study revealing that there is no issue with the common method of bias. The CLF analysis was used, wherein researchers usually recommend using the marker variable (Simmering et al., 2015;

Williams et al., 2010). In this study there was no marker variable used, and a CLF was conducted. The Chi-square test was done between the CB adjusted model and the original model (Hultman et al., 2009). The unconstrained model in the study was retained and was further imputed. In addition, the new data accounted for the shared variances which were explained by the latent factor. In this way, the data set was further used for the analysis in the study. Both models are presented below, and the 2nd order construct presented better results. See Figures 5.7 and 5.8.
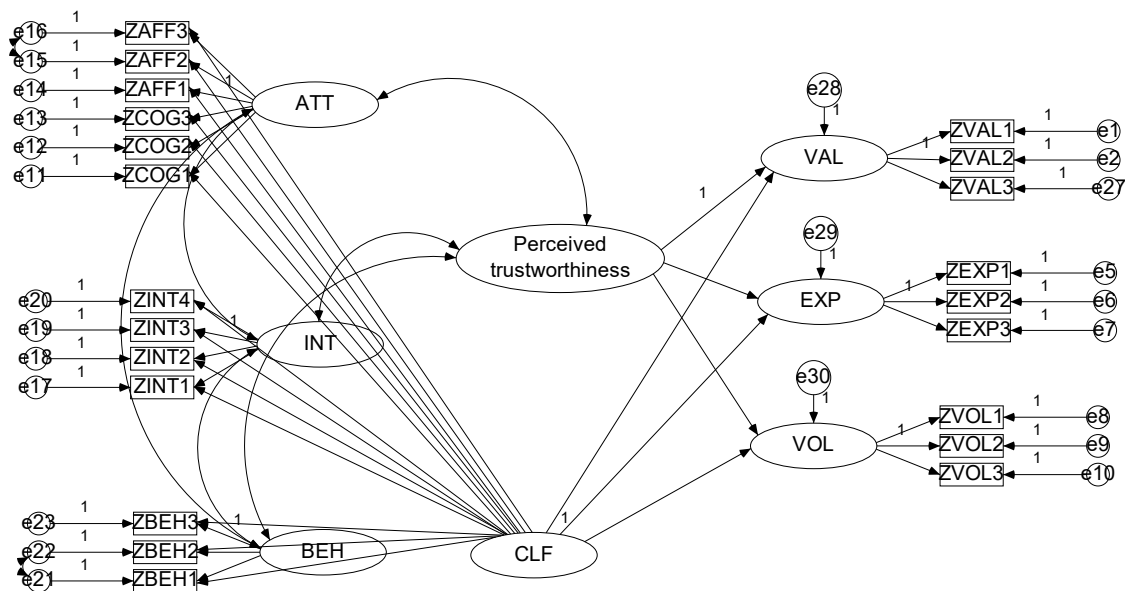
Figure 5.7: Common Method Variance (Common Latent Factor - CLF – technique) Unconstrained measurement model with CLF (χ2 = 694.717, df=182)
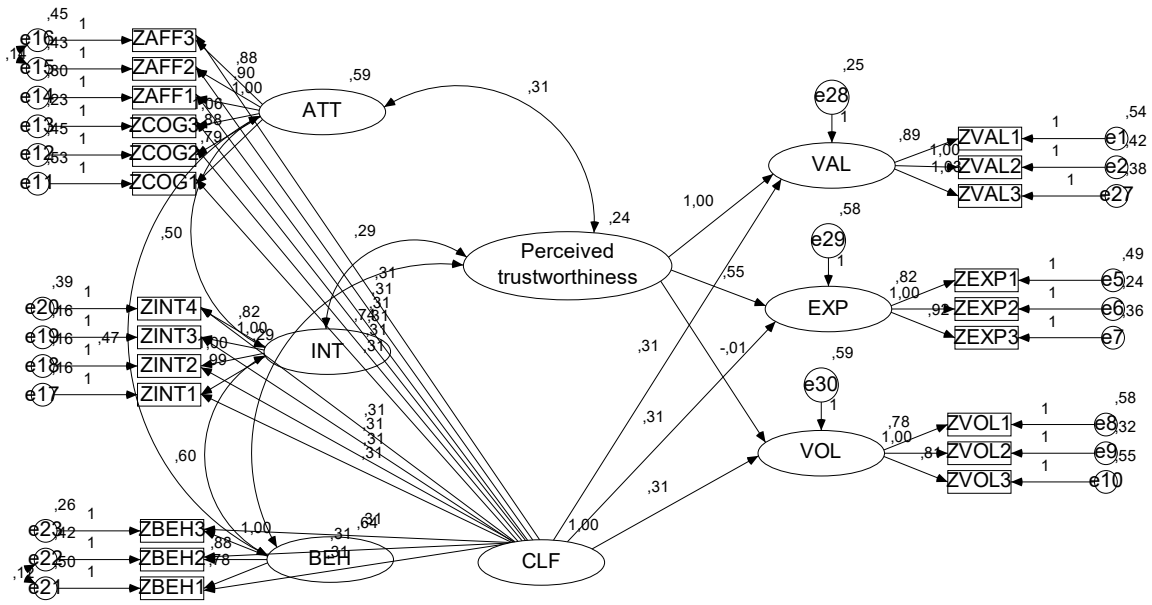
Figure 5.8: Fully constrained measurement model with CLF (χ2 = 716.236, df=197)

The chi-squared difference tests conducted revealed that the difference between the fully constrained and unconstrained models is not significant ($\Delta\chi^2$ = 21.519, *df*= 15, and p = 0.121>0.05). Therefore, according to MacKenzie and Podsakoff (2012), common method bias effects are not expected to distort the results of this research. The analysis suggested that perceived trustworthiness of eWOM was a higher order construct. A higher order construct is one in which the covariances between the observed variables are explained by a two or more levels or layers of latent construct (Malhotra, 2010, p.738). The most common higher order construct model is a second-order construct in which there are two levels or layers (Malhotra, 2010, p.738). In this study, perceived trustworthiness of eWOM was taken as a higher order construct with three second order constructs, (i.e. perceived expertise, volume and valence of eWOM) dimensions. Further, analysis in CFA was done based on the requirements of higher order constructs (Awang, 2012). The findings of the first order construct and second order construct model confirm that perceived trustworthiness of eWOM is a second order construct.

5.12. Step Two: Structural Model and Results - Hypotheses Testing

In moving from the measurement model to the structural model, the emphasis shifts from the relationships between the latent constructs and observed variables to the nature and magnitude of the relationships between the constructs (Malhotra, 2010, p.726; Malhotra et al., 2012). The structural model is the second model estimated in the study. It represents the model that specifies how the constructs are related to each other, often with multiple dependence relationships (Anderson and Gerbing, 1982; Malhotra, 2010).

In this study, a conceptual model or path diagram based on the importance of perceived trustworthiness of eWOM was developed, where the effects of celebrity trust on advertising credibility, brand credibility, corporate credibility and corporate image were examined. The X^2 value was then computed, before there was a final computation of the hypothesised relationships between the constructs, i.e. standardised coefficients (β), standard error, p-value, and critical ratio (t-value), along with the variance in each of the construct. See the findings in Table 5.21 for the first and second order structural models.

Endogenous Latent Variables	R^2(2nd order structural model)	R^2(1st order structural model)
Attitude	.763	.407
Purchase Intention	.642	.625
Purchase Behaviour	.845	.809

Table 5.21: Squared multiple correlation values (R2) of endogenous latent variables (2nd and 1st order structural models)

Hypothesis *H1* is accepted because:

1) A comparison of absolute, incremental and parsimony fit indices clearly shows that the second order measurement model fit the data better than first order ones.

2) A comparison on discriminant validity grounds shows that the first-order model does have several validity violations with MSV and the diagonal values.

3) A comparison of the squared multiple correlation values of the constructs participating in the second-order and the alternate first-order structural model clearly shows that the second order conceptualisation has a higher explanatory power than the first-order one for all endogenous variables (i.e. attitude, intention and behaviour).

This is a comparison between two alternative measurement models to respond to Hypothesis 1 (H1). The first model is a second order for Perceived Trustworthiness and the second one is a first order model for Perceived Trustworthiness of eWOM, since the covariances are between Perceived Trustworthiness of eWOM's dimensions directly to the rest of constructs.

The fit indices of the second order model is better. Figures 5.10 and 5.11 show that the first order measurement model has six validity violations whereas the second order model has no validity problems whatsoever. Finally, a comparison of R2 shows that second order conceptualisation of the Perceived Trustworthiness of eWOM is preferable as it has a higher explanatory power. Therefore, H1 was supported. Similarly, H2 was also supported. H3, that attitude towards dietary supplements has a positive influence on customers' purchase intentions, and H4, that customers' purchase intentions are a significant predictor of their purchase behaviour, were also supported. H5a, that attitude towards dietary supplements

mediates the relationship between trustworthiness of eWOM and customers' purchase intentions, and H5b, that attitude and purchase intentions towards dietary supplements mediate the relationship between perceived trustworthiness of eWOM and purchase behaviour, were also supported. However, H6a, that perceived body image (negative or positive) moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that a negative body image will positively strengthen the relationship between perceived trustworthiness and attitude, was not supported. This means that H6b, that the time spent on social media moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that longer time will positively strengthen the relationship between perceived trustworthiness and attitude, was also not supported. A summary of the research hypotheses is presented below.

5.13 Summary of Hypotheses

No	Description	Status
H1	Perceived Trustworthiness of eWOM is a second-order construct represented by three dimensions (Volume, Valence and perceived source expertise of eWOM).	*Supported* *p<.001*
H2	Perceived Trustworthiness of eWOM positively affects attitude towards dietary supplements	*Supported* *p<.001*
H3	An attitude towards dietary supplements has a positive influence on customers' purchase intentions.	*Supported* *p<.001*
H4	Customers' Purchase intentions is a significant predictor of their purchase behaviour	*Supported* *p<.001*

H5a	Attitude towards dietary supplements mediates the relationship between trustworthiness of eWOM and customers' purchase intentions	*Supported* *p<.001*
H5b	Attitude and purchase intentions towards dietary supplements mediate the relationship between perceived trustworthiness of eWOM and purchase behaviour	*Supported* *p<.001*
H6a	Perceived body image (negative or positive) moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that a negative body image will positively strengthen the relationship between perceived trustworthiness and attitude.	*Not Supported*
H6b	The time spent on social media moderates the relationship between perceived trustworthiness of eWOM and attitudes towards dietary supplements, such that longer time will positively strengthen the relationship between perceived trustworthiness and attitude.	*Not supported*

Table 5.22: Summary of the current study's hypotheses

In the main study, 1,027 respondents in total were analysed. The results from the data were used for hypotheses testing. It was found that the majority of hypotheses were supported (H1, H2, H3, H4, H5a, H5b). H6a and H6b were not supported, for reasons that will be analysed in the discussion chapter. The findings have shown that the perceived trustworthiness of eWOM in an important factor in determining the purchase behaviour of dietary supplements in Saudi female adolescents. However, the results have shown that the perceived trustworthiness of eWOM uses a mechanism through which it influences purchase intentions and purchase behaviour. Furthermore, the attitude towards dietary supplements provides that mechanism. Therefore, it can be inferred that attitude towards dietary supplements mediated the relationship

between the perceived trustworthiness of eWOM and the purchase intention in Saudi female adolescents. This attitude towards dietary supplements mediated the relationship between the perceived trustworthiness of the eWOM and purchase behaviour in Saudi female adolescents.

It is hypothesised that perceived body image and the time spend on social media moderated the relationship between the trustworthiness of eWOM and attitudes towards dietary supplements. The data revealed that perceived body image does not mediate the relationship between the perceived trustworthiness of eWOM and attitude towards dietary supplements. Surprisingly, the data showed that the time spent on social media does not moderate the relationship between perceived the trustworthiness of eWOM and attitudes towards dietary supplements.

5.14 Chapter Summary

It can be concluded that the research findings present information based upon hypotheses and structural testing. The initial data analysis was conducted to explore and perform CFA. The structural model and the measurement model were evaluated. The data assumption for conducting multivariance factor analysis was also studied. The model fit was investigated and examined, and from this analysis it was evaluated that the model fitted into the data well. In addition, after conducting a complete analysis, the measurement scale was also founded to develop satisfactory measurement properties. Hence, for the hypothesis testing and structural model the research findings showed statistical significance, and proposed the strong relationship between the variables except for the two moderators in the study, which were not supported. These two moderators were insignificant for reasons which will be addressed in the next chapter. Here there will also be findings which discuss the research in a more comprehensive manner.

Chapter Six: Discussion

6.1 Introduction

This chapter discusses research findings in the light of previous literature which was given in contained an overview of the thesis's findings. This chapter discusses general comments on the descriptive analysis outcomes for the demographics of respondents and also for constructs. The following sections present the influence of research constructs with a descriptive analysis for constructs. Furthermore, the following sections cover mediating and moderating roles for the current study. Finally, the chapter discusses a summary of its key points.

6.2 Study Overview

The research questions in this research seek to answer three questions:

1) What is the role of perceived trustworthiness of eWOM on attitude towards dietary supplements amongst female adolescents in Saudi Arabia?

2) What is the role of perceived trustworthiness of eWOM on the purchase intentions of dietary supplements amongst female adolescents in Saudi Arabia?

3) What is the role of perceived trustworthiness of eWOM on purchase behaviour of dietary supplements amongst female adolescents in Saudi Arabia?

As presented in the first chapter, the research objectives can be divided into six sections. First, the study aims to examine the phenomenon of perceived trustworthiness of eWOM. It is explained earlier that the perceived trustworthiness of eWOM is a second order construct variable which is measured with the help of three dimensions (perceived source expertise of the eWOM, volume of eWOM and the Valence of eWOM). The study explored, with the help of data, the extent to which these observable variables determine the trustworthiness of eWOM.

Second, the present study investigates the influence of perceived trustworthiness of eWOM on the attitude towards dietary supplements and their purchase intentions in the context of Saudi female adolescents. Third, this study attempts to examine the influence of purchase intention to actual purchase of dietary supplements in the context of Saudi female adolescents. Fourth, this study investigates the mediation effect of attitude towards dietary supplements between the perceived trustworthiness of eWOM and purchase intentions of Saudi female adolescents. Fifth, there was an investigation of the mediation effect of attitude towards dietary supplement between perceived trustworthiness of eWOM and purchase behaviour. Lastly, the study aims to explore the moderating effect of perceived body image and time spent on social media on the relationship between perceived trustworthiness of eWOM and attitude towards dietary supplements. This study was significant as it had filled several gaps in the literature, as discussed in the introduction chapter (see 1.4.2), and met all the objectives of the research with the exception of two moderators hypothesised by the researcher.

In order to answer the research questions, the study uses a quantitative approach. Data were collected from Saudi female adolescents in KSA, from Jeddah and Riyadh, using a random sample technique. To collect data, a closed ended questionnaire was developed by extracting measurement scales from the existing literature. A pilot study was conducted to test and purify the scale items using EFA on a sample size of 182. To ensure the validity of the scale items, reliability and validity was determined. In the pilot study, after applying EFA, only three negative valence scale items were found to not be reliable, and so it was a correct approach to achieve better results.

A CFA was performed to test the measurement model and hypotheses using SEM in the main study. The data collected from 1,027 respondents were used for hypotheses testing. It was found that the most of the hypotheses were supported (H1, H2, H3, H2, H4, H5a, H5b). H6a and H6b were not supported; the reasons for are discussed in section 6.8 below. The findings have shown that perceived trustworthiness in a predominant factor in determining attitude towards dietary supplements for SA female adolescents in terms of purchase intention and purchase behaviour. However, the results have shown that trustworthiness uses a mechanism through which it influences purchase intentions and purchase behaviour. The attitude towards dietary supplements provides that mechanism. Therefore, it can be inferred that attitude towards dietary supplements mediated the relationship between perceived trustworthiness of the eWOM, and the purchase intention and purchase behaviour for dietary supplements in Saudi female adolescents.

It is hypothesised that perceived body image and the time spend on social media moderated the relationship between trustworthiness of eWOM and attitudes towards dietary supplements. The data revealed that perceived body image does not mediate the relationship between perceived trustworthiness of eWOM and attitude towards dietary supplements. Furthermore, the data exhibited that the time spent on social media does not moderate the relationship between trustworthiness of eWOM and attitudes towards dietary supplements.

6.3 General Comments on the Descriptive Analysis

The first part of this study provides detailed information about the major characteristics of the population in the form of demographic variables, their frequencies and percentages, which are also given through graphical representation. It should be noted that adolescents are more

conscious about their body image. Cyber space has provided adolescents with knowledge about their health and body concerns. As a result, they are using SNS to find products that are reliable. The reliability of dietary supplements is measured using different methods. Online reviews about the product is one method to measure reliability. For example, if a product such as a movie has a high number of reviews and ratings, it may be considered to be more reliable.

The data have revealed that Saudi female adolescents spend approximately five hours a day on SNS. The data were collected in 2017, and the results have shown that this number is much higher than the global average according to the GWI (2016), and that it is also in line with past studies (O'Keeffe & Clarke-Pearson, 2011; Vossen and Valkenburg, 2016).

There are many types of SNS which are popular, but for this group Instagram is first and WhatsApp is second, with around three-quarters of the cohort using these applications on their mobiles. This is due to their multiple features and ease of use to share comments documents, pictures and videos. For the purpose of calling and video chats, most respondents use Instagram. The average time spent on SNS is about five hours during the day, or nearly a quarter of the entire day. They also have to spend time in sleeping, jogging, classes, homework and other gatherings. The amount of time is less than the amount Western girls spend on SNS.

When the description of the respondents was observed regarding their agreement or disagreement, it was found that many respondents have sense regarding 'dietary supplements' and have good knowledge regarding such type of supplements. However, many do not have experience regarding dietary supplements because they want to check their existing diets rather

than using the dietary supplements. This said, adolescents who used dietary supplements said they helped them lose weight, and that they were happy with the results. As a result, most of these individuals responded that they would purchase them again in the future, with just a few saying that dietary supplements do not work. Some individuals replied that weight could be lost through exercise and a controlled diet plan, and it was also reported that dietary supplements are well-known for their online reviews. These were the overall perceptions of respondents regarding the three dimensions of eWOM (valence, perceived source experience of eWOM, and volume of eWOM), which formed the basis of their self-reported response.

6.4. Perceived Trustworthiness of the Influence of eWOM's Three Dimensions

In this section, the research findings of the initial stage of the proposed model are discussed. This section examines the influence of the three observable variables on the second order construct perceived trustworthiness of eWOM. The perceived trustworthiness of eWOM has three dimensions, namely perceived source expertise, valence and volume of eWOM. The sample data described that online reviewers had, generally speaking, average good sense, enough knowledge and sufficient experience about dietary supplements. Valence was found in most, provided they were positive, and there were also high numbers in the volume dimension (Lin, 2008, Lin, Xu, & Xu, 2017). Another study discusses the role of perceived trustworthiness of eWOM influence on purchase intention and behaviour, meaning that these findings are in line with Kim, Kandampully, and Bilgihan (2018). The increase in trustworthiness increases the customer purchase intention due to having a positive attitude. Consumers act differently according to the different level of trust, meaning that the findings for this study are in line with Kudeshia and Kumar (2017).

Previous studies regarding volume of eWOM influence on perceived trustworthiness of eWOM are in line with the findings of the current study (Bansaal & Voyer, 2000; Kerstetter & Cho, 2004; Mayer & Davis, 1999; Priester & Petty, 1995; Subrahmanyam & Lin, 2007; Vaterlaus, Patten, Roche, & Young, 2015). The current study findings support the notion that volume is influential in popularising the message, resulting in a social contagion of eWOM that would influence purchase intentions (Chua & Banerjee, 2015; Mitchell & Khazanchi, 2010). The volume of eWOM was analysed in depth by Liu (2006) while researching the quantity and valence of eWOM. Chua and Banerjee (2015) and Mitchell and Khazanchi (2010) found that the quantity of eWOM plays a significant role in purchase decision irrespective of valence (positive or negative), and so this study supports the findings of these previous studies.

Flanagin and Metzger (2013) investigated the valence of eWOM ratings and the volume of eWOM in order to test their influence on perceived trustworthiness of eWOM, as outlined specifically in the conceptual framework and hypothesis development. Results from the current study indicated that volume is positively associated with perceived trustworthiness of eWOM user-generated content, the ratings source of eWOM and the perceived expertise of eWOM influence on people's opinions and behavioural intentions, and that they converge with the eWOM to which they are exposed. In addition, these effects apply more strongly to people more conversant with user-generated content.

6.4.1 Perceived Source Expertise of eWOM as a Dimension of Perceived Trustworthiness of eWOM

With regard to hypothesis H1a, it was proposed that the one of the dimensions of perceived trustworthiness of eWOM is perceived source expertise of eWOM. H1 postulates that

perceived trustworthiness of eWOM dimensions is as a second order construct. The perceived source expertise of eWOM positively influences the perceived trustworthiness of eWOM. The analysis suggested that perceived trustworthiness of eWOM was a higher order construct. This study has shown that perceived source expertise of eWOM significantly predicts the perceived trustworthiness of eWOM. The standardised beta coefficient for the influence of perceived expertise on trustworthiness is 0.283, with a level of significance of 0.00. Therefore, it can be inferred that there is sufficient evidence for the influence of perceived expertise of eWOM on the perceived trustworthiness of eWOM. The data in this study verify the findings from past studies, for example Bhattacharyya and Bose (2017, Ismagilova et al. (2017), and Shoham and Ruvio (2008). The results are consistent with the findings of perceived source expertise of eWOM being an important factor in developing perceived trustworthiness of eWOM.

According to Yan (2016), further research was needed to investigate the robustness and generalisability of the results across multiple product categories on consumer trustworthiness of eWOM. Yan (2016) addressed the influence of product type on perceived trustworthiness of eWOM towards purchase behaviour for a product. The current study focused on a specific type of product influence on perceived trustworthiness of eWOM on perceived source expertise of eWOM. The study findings are thus in line with Yan (2016). In addition, according to Girard and Dion (2010), a new product classification framework was developed, generally referred to as search, experience and credence products (SEC). This SEC classification of products differentiates them on the basis of availability of information about the product, uncertainty about the benefits, and the cost or difficulty level consumers encounter in acquiring and evaluating them (Girard & Dion, 2010). For instance, a product is considered to be a 'search' product according to its product attribute information (e.g., price, size quality, colour,

performance, style). According to Nelson (1974), 'experience products' are those whose relevant attribute information cannot be known until a consumer uses the product. For 'credence' products, however, the relevant attribute information is neither available before nor after the trial/use of the product for a considerable length of time (Darby & Karni, 1973).

In terms of evaluation, products can be either easy or difficult to evaluate, and as per Nelson information asymmetry, this leads to products being classified as search, experience and credence goods (Ford et al., 1988). The product types influence the perceived trustworthiness of eWOM on attitude towards dietary supplements, purchase intention and behaviour for SA female adolescents, meaning that these findings are in line with previous studies.

6.4.2 Volume of eWOM as a Dimension of Perceived Trustworthiness of eWOM

H1b hypothesises that perceived trustworthiness of eWOM has dimensions, namely volume, valence and perceived source expertise of eWOM. The perceived source expertise of eWOM addresses the volume of eWOM, and significantly influences the determination of trustworthiness of eWOM, in such a way that the greater the volume of eWOM, the higher the trust. The results of this study showed that the volume of eWOM significantly influences the perceived trustworthiness of eWOM. The standardised beta coefficient for the influence of the volume of eWOM on trustworthiness is 0.185, and the p-value is less than 0.00. These results are in line with previous research findings for volume of eWOM (Amblee & Bui, 2011; Cho & Chan, 2017; Chatterjee, 2001; Melián-González et al., 2013; Litvin, Goldsmith, & Pan, 2008; Liu, 2006; Harris & Prideaux, 2017).

6.4.3 Valence of eWOM as a Dimension of Perceived Trustworthiness of eWOM

It was hypothesised in H1c that one of the perceived trustworthiness of eWOM dimensions is valence of eWOM. Hence, valence determines the level of trustworthiness of eWOM. Previous studies are in line with the findings of this research regarding the positive influence of valence on perceived trustworthiness of eWOM, exploring the role of positive valence on eWOM and on the perceived trustworthiness of eWOM on attitude or purchase behaviour or purchase intentions (Chen, Hong, & Li, 2017; De Keyzer, Dens, & De Pelsmacker, 2017; Moran & Muzellec, 2017; Ruiz-Mafe & Veloutsou, 2017; Ladhari & Michaud, 2015; Lee et al., 2009; Sparks et al., 2013; Vermeulen & Seegers, 2009; Yoon, Li, North, Ji, Hong, & Liu 2017).

However, one of the major 'building blocks' contribution of this study is on negative valence, since the findings of the present study are not in line with previous studies regarding the influence of negative valence of eWOM in terms of addressing the role of negative valence on the perceived trustworthiness of eWOM on female adolescents (Augusto and Torres, 2018; Lin & Xu, 2017; Siegrist & Cvetkovich, 2000; Skowronski & Carlston, 1989; Wilson, Giebelhausen, & Brady, 2017). Previous studies identified that negative information seems to be more trustworthy and more genuine than positive valence of eWOM. However, previous studies found that positive and negative valence enhance the influence of eWOM (Harris & Prideaux, 2017; Highhouse & Paese, 1996; Park & Lee, 2009; Rozin & Royzman, 2001; Verhagen et al., 2013). The researcher hypothesised that positive and negative valence have a significant influence on Saudi female adolescents towards attitude towards dietary supplements, purchase intentions and behaviour. In the current research, the sample size was significant in both the pilot study and main study, and in the pilot study reliability the researcher

deleted negative valence scales so that the results were significant in the main study. However, future investigation for future research implications is required.

The researcher analysed only positive valence items, with negative valence scale items deleted in the analysis of the pilot study, which was an appropriate decision since the hypothesis proposed in the current research was supported. The data analysis revealed concerning the standardised beta coefficient for the influence of the valence of eWOM on the perceived trustworthiness of eWOM, the p-value is less than 0.00. Out of the other two dimensions, the positive valence had the strongest influence on determining the trustworthiness of eWOM.

This current research is in line with one of the findings of Pan and Chiou (2011), a study focusing on the influence of credence or experience goods on attitude towards a product and intentions. The current research chose dietary supplements as a credence product, and it emphasised those findings. However, this previous study is not in line with the findings that negative valence of eWOM on credence products is higher. One of the limitations of Pan and Chiou (2011) is that they only looked at one type of credence product and one type of experience product; indeed, they recommended further studies to explore the influence of different types of products on perceived trustworthiness of eWOM on attitude towards the product and on intention. The reason why the researcher selected dietary supplements is that female adolescents in general, and Saudi female adolescents in particular, use dietary supplements. However, this influence might also be negative since it does impact the perceived body image of female adolescent transitional phase of growth and development between childhood and adulthood.

6.5 Perceived Trustworthiness Dimensions' of eWOM (Perceived Source Expertise of eWOM, Volume and Valence of eWOM) and the Attitude towards Dietary Supplements

This section explains the relationship between the perceived trustworthiness of eWOM and the attitude towards dietary supplements in Saudi adolescent consumers. A structural model was run to estimate the coefficients. The study hypothesised in H2 that perceived trustworthiness of eWOM significantly influences the direct relationship to attitude towards dietary supplements. The statistics showed that the standardised beta coefficient for perceived trustworthiness is 0.954, and the p-value is less than 0.00. The data revealed that the perceived trustworthiness of eWOM has a significant influence on the attitude towards dietary supplements. These simultaneous equations were similar to multiple regressions, and by observing the Beta values or loadings of the equations, it was found that volume, valence and perceived source expertise have a significant high value of beta, thus confirming our hypotheses. These results are significant, and when the overall effect of these dimensions was calculated, it was significantly high (about 85%), thus supporting our first objective. These results are also strengthened when looking at correlation, which also reports the overall significant relationship. These findings are consistent with previous findings, as was reported in literature review chapter.

The findings in this study are in line with previous studies (Kim Kandampully, and Bilgihan 2018), particularly on eWOM influence on body shaping, imaging, physical health and also for marketing dietary supplements (Cova & Cova, 2002; Croft, 2013). Similarly, the findings were also consistent regarding the volume of eWOM or valence of eWOM or perceived source expertise of eWOM influence on attitude (Baur & Nyström, 2017; Chevalier & Mayzlin,

2006b; Chin-Lung et al., 2013; Gains, 2017; Jalilvand, Ebrahimi, & Samiei 2013; Jin & Phua, 2014; Koo, 2015; Ladhari & Michaud, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan, et al. 2015; Silverman 2011). Flanagin and Metzger (2013) investigated the influence of volume and perceived source expertise of eWOM on eWOM and suggested that the valence influence on eWOM be explored further.

The current study findings are in line with studies about dietary supplements for muscle building and weight loss creating adverse effects on health as well as the marketing of dietary supplements in social media and the illegal marketing for some dietary supplements (weight loss supplements) which are not approved by the FDA (Cohen, 2014; Ferrell & Ferrell, 2012; Geller et al., 2015; Glenn, 2011; Pillitteri et al., 2008; Raghupathi & Fogel, 2013). Therefore, there is a demand for policy makers to understand that dietary supplements are powerful. Illegal dietary supplements will be discussed in the conclusion.

The current research findings interpreted a significant relationship between the role of the influence of volume, valence and perceived source expertise of eWOM on attitude, purchase intentions and purchase behaviour for Saudi female adolescents. Therefore, the primary objective of the researcher was to examine the dimensions of perceived trustworthiness of eWOM, i.e. perceived source expertise of eWOM, volume of eWOM, valence of eWOM influence on attitude towards dietary supplements. The second objective was to analyse the role of perceived trustworthiness of eWOM and how it affects attitude towards purchase intention. Both of the objectives have been reached in the current study.

The rationale behind the need for further conceptualizing on this research was to investigate the purchase behaviour of perceived trustworthiness of eWOM. SNS users do not trust eWOM all the times since they are aware of marketers interfere with the generated eWOM by user-generated contents.

Therefore, findings reveal that perceived source expertise or opinion leaders influence on attitude is higher than positive valence and finally volume since it might be affected by marketers.

The main motivation for the current study was the need for greater clarity in the conceptualisation of the perceived trustworthiness of eWOM dimensions: volume, valence and perceived source expertise of eWOM. Despite the importance of the perceived trustworthiness of eWOM, it is not well defined in the marketing literature. So far, inadequate empirical research has been accomplished on the perceived trustworthiness of eWOM dimensions and its influence on the attitude, purchase intentions and actual purchase behaviour. Thus, the present study endeavoured to gain a significant degree of understanding of the perceived trustworthiness of eWOM dimensions.

The perceived trustworthiness of eWOM was conceptualised as a multi-dimensional construct. The results of the quantitative study (survey) were treated as a preliminary insight into the study problem, and used the appropriate scale to measure the the main construct dimensions.

The findings supported the conceptualisation and contrast the relative contribution of the three dimensions of perceived trustworthiness of eWOM i.e. perceived source expertise, volume and valance of eWOM. A large proportion of the sample has shown strong agreement about the statements. In case of valance, there are relatively fewer observations on disagreement, while a large number of observations are towards agreement and strong agreement volume shows the lower strongly agreement and agreement which reflect that Saudi female adolescents are more

influenced by perceived source expertise of eWOM, valence of eWOM and the lower was volume of eWOM.

Therefore, Saudi female adolescents are not influenced with the high amount of likes or retweets but are concerned more with the experience of the source expertise or opinion leaders more than the quantity of eWOM and then positive valence or positive statements of eWOM about dietary supplements is the second major influence.

6.6 The Influence of Attitude towards Dietary Supplements on Purchase Intentions and Purchase Behaviour

6.6.1 Attitude towards Dietary Supplements' Influence on Purchase Intentions

The third objective of this study was to investigate the influence of attitude towards dietary supplements on the purchase intentions and the purchase behaviour of Saudi adolescent females. A regression test was run to identify the influence of purchase intentions on purchase behaviour. A structural model was run to estimate the beta coefficients of the proposed relationships in the model. Hypotheses H3 and H4 were framed.

H3 stated that attitude towards dietary supplements significantly influences the purchase intentions of Saudi female adolescents. The structural model showed that the standardised beta coefficient for the influence of attitude on purchase intention is 0.342, and the p-value is less than 0.00. Therefore, it can be inferred that the attitude towards dietary supplements significantly influences that purchase intentions of dietary supplements in Saudi female adolescents. Previous research about the attitude towards product and purchase behaviour intentions suggests that purchase intentions are influenced by attitude (see e.g. Ajzen, 2000; Ferrell & Ferrell, 2012; Glenn, 2011; Lee & Yun, 2015; Park & Kim, 2008, Wirth et al., 2012;

Zhang, 2017). The findings of the present study are in line with previous studies, as discussed in the conceptual framework chapter. In addition, Pan (2014) also addressed the significant influence of attitude towards behaviour intentions on dietary supplement, and these findings are in line with those. H3 examined the conversion of purchase intention to actual purchase behaviour, and it was achieved in the present study.

6.6.1.2 *Attitude towards Dietary Supplements' Influence on Purchase Intentions on Actual Purchase Behaviour*

H4 postulates that attitude towards dietary supplements customers' purchase intentions influences actual purchase behaviour of dietary supplements. The data revealed that the standardised beta coefficient for the influence of attitude on actual purchase behaviour is 0.096, and the p-value is less than 0.05. Based on this, it can be inferred that the attitude towards dietary supplements significantly influences actual behaviour towards dietary supplements in Saudi female adolescents.

The results from this research are in line with past studies (Balderjahn, 1988; Kassarjian, 1971; Mostafa, 2007). It was discovered that the influence of perceived service quality and self-concept on consumer attitude, purchase intention and behaviour, satisfaction, and loyalty varied with channel type. These research findings are in line with previous studies regarding the influence of attitude towards any product type on the actual purchase in general, and it also confirms the influence of attitude towards dietary supplements purchase intention for SA female adolescents more specifically (Etzel, Walker, & Stanton 1997; Felix & Braunsberger, 2016; Kim, 2017; Lee, Qu, & Kim, 2007; Punyatoya, 2015).

The Theory of Planned Behaviour (TPB) reveals that perceived control creates direct effects on individual effective behaviour (Augusto and Torres, 2018; Kim et al., 2018; Song, Kim, & Lee, 2016; Wang, Cunningham, & Eastin, 2015; Williams, Michie, Dale, Stallard, and French, 2015). Hence, the variable of behaviour indicates the effective capacity of an individual towards a certain action, and the individual beliefs depict the real limitation that has to be faced by an individual in the overall decision-making process.

TPB has been used online to analyse multiple behaviours. For instance, Klobas and Clyde, (2000) analysed TPB in order to explore the acceptance of users towards the World Wide Web. Lu, Liu, Yu, and Yao (2001), Luarn and Lin (2005), and Pedersen and Nysveen (2002) used TPB in order to explore the adoption of mobile-based technology and the use of online purchasing services. Other studies have explored online shopping behavior by implementing TPB (Agarwal, Ahuja, Carter, & Gans, 1998; Bosnjak et al., 2006; Hsu & Chiu, 2004; Lau, Yen & Chau, 2001; Lee, Kang, & Kim, 2007; Liao, Chen, & Yen, 2007). Limayem, Khalifa, and Frini (2000) investigated the adoption of e-commerce practices and purchase intention and their direct influence on effective behaviour. In addition, this study also reveals that attitude, perceived control and subjective norms are the direct determinants of online shopping. Gentry and Calantone (2002) and Khalifa and Cheng (2002) further illustrate that automated shopping and shopping robots do influence customer attitude and purchase behaviour. These studies proved the acceptance of T-Mobile shopping services amongst customers. In addition, Keen, Wetzels, De Ruyter, and Feinberg (2004) investigated digital buying methods and online or e-commerce services preferred by the customer, as opposed to traditional marketing. The study proved that e-commerce services are more effective, and that they have a direct influence on customer purchase intention (Paul, Modi, & Patel, 2016).

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Fitzgerald and Kiel (2001) and Shim and Drake (1990) also used the Theory of Reasoned Action in order to develop their conceptual framework. Shim and Drake (1990) analysed the acceptance of an online system which creates positive effects on individual attitudes due to normative influence. Fitzgerald and Kiel (2001) supported the relationship between attitude and online shopping by proving the direct impact of attitude on customer online shopping intention. However, this study failed to confirm the influence of subjective norms (Brooks, Iwanaga, Chiu, Cotton, Deiches, Morrison, Moser, & Chan, 2017). The perceived trustworthiness of eWOM is most influential in terms of information transmission (Augusto, and Torres, 2018; De Leeuw, Valois, Ajzen, & Schmidt, 2015; Kim et al., 2018; Song et al., 2016; Wang et al., 2015). The perceived trustworthiness of eWOM develops positive attitudes among customers, and they prefer to purchase dietary products.

Therefore, H5a and H5b present the mediating effects of perceived trustworthiness of eWOM, which intervenes in the relationship between the independent variable and the dependent variable. The fifth objective and the H5a hypothesis is to test attitudes towards dietary supplements, which mediates the relationship between trustworthiness of eWOM and customers' purchase intentions. The second mediating effect, H5b, and the sixth objective, was to test attitude and purchase intentions towards dietary supplements that mediate the relationship between the perceived trustworthiness of eWOM and purchase behaviour. This objective was achieved.

Several studies argue that customers need to see products and the value of products, after which time a certain attitude is developed (Augusto and Torres, 2018; Kim et al, 2018; Song et al., 2016; Wang et al., 2015). Based on this, the customer shows willingness or unwillingness

towards the purchase of dietary supplements, which is discussed in further detail in the next section.

6.6.1.3 Influence of Purchase Intentions on the Actual Purchase Behaviour of Dietary Supplements

H5 hypothesised that attitude towards dietary supplements has a significant influence on purchase intentions on the actual purchase behaviour of dietary supplements among Saudi female adolescents. The structural model showed that the standardised beta coefficient for the influence of purchase intention on actual purchase behaviour is 0.889, and the p-value is less than 0.00. Therefore, it can be inferred that purchase intentions significantly influence the purchase behaviour of dietary supplements in Saudi female adolescents.

The results of this present study examine the direct relationship of attitude towards dietary supplements with purchase intentions to the actual purchase behaviour, showing that it was significant. The next objective was to examine whether purchase intentions are converted to purchase behaviour as depicted by their self-reported views. The data revealed that the correlation between purchase intentions and purchase behaviour was significant. Moreover, the beta coefficient for the proposed relationship was also found significant, showing the significant influence of purchase intentions on actual purchase behaviour.

While investigating the influence of purchase intentions and actual purchase behaviour, it was found that purchase intentions significantly influence the purchase behaviour of the Saudi adolescent female consumers. This relationship was found significant in this research, in line with previous studies (Gunawan and Huarng, 2015; Hajli, Sims, Zadeh, & Richard, 2017; Kumar, Manrai, & Manrai, 2017; Morwitz, 2012).

According to TRA, attitudes turn into actual behaviour through the persuasion process (Fishbein & Ajzen, 2010). Related to this theory, our attitudes, which are judgments or evaluations, might turn into actual behaviour on the basis of two primary factors which are action oriented. The first is the outcome or consequence of behaviour and the second is our evaluation of this potential outcome, whether good or bad. Our study perceived that the trustworthiness of eWOM influences our attitudes. This resulted in Saudi female adolescents turning towards purchase intentions and then actual purchases of dietary supplements.

The results of this study are consistent with the Theory of Planned Behaviour (Ajzen, 1985; 1991), which is an extension of the Theory of Reasoned Action, which is also applied in Han, Meng and Kim (2017). According to these authors, the necessity for this new model results from the limitations on behaviours, where people had not been practising the actual behaviour. Attitudes do not always convert into behaviour, and there are some conditions which are necessary. Adolescents in KSA reveal their purchase behaviour about their body image accordingly. Ajzen therefore added a third element to his model, which he posits has an influence on a person's intention to perform a behaviour which might happen. This attitude may be based on various factors experienced by the consumers in the past, for example a reference from their eWOM source which they perceive as being reliable and trustworthy.

In this study, one question which arises concerns attitude in terms of whether it is positive, negative or neutral. Most respondents believe strongly that the use of dietary supplements will lead to desirable outcomes, making their body image slim and more attractive. Therefore, the attitude of Saudi female adolescents towards such dietary supplements is positive, and so will

become actual purchase behaviour. Similarly, some of the adolescents strongly believe that behaviour will lead to an undesirable outcome, which means they are likely to have a negative attitude about it. However, subjective norms were excluded from the current study. The findings for the present study, that consumer attitude shows a behavioural dimension of the consumer buying decision, are in line with past studies (Bhandari & Rodgers 2017; Kudeshia & Kumar, 2017). Similarly, in Jalilvand et al. (2013) and Lidhari and Michaud (2015), the influence of the significant direct relationship of purchase intentions for purchase behaviour towards dietary supplements is noted.

Given that perceived trustworthiness of eWOM is based on their own perceptions, feelings and experiences, this leads Saudi female adolescents towards making judgments and evaluations that result in the form of actions. The negative side of this is that by disregarding these aspects, the consumers may unconsciously see an intrusion, since it oversees the effect and intent of attitudes, and stimulates actions. Therefore, the theoretical underpinnings of this study are valid and conclusive.

6.7 The Influence of Attitude Mediating the Relationship of Perceived Trustworthiness of eWOM on Purchase Intentions and Behaviour

The conceptual model explained that the attitude towards dietary supplements provides a mechanism through which the perceived trustworthiness of eWOM influences the purchase intentions and the actual purchase behaviour of Saudi adolescent female consumers. With regards to hypothesis H5a, it was proposed that the attitude towards dietary supplements mediated the relationship between perceived trustworthiness of eWOM and purchase intention.

The results have shown that attitude provides the mechanism through which the perceived trustworthiness of eWOM predicts purchase intentions. The standardised beta coefficient for the direct effect of trustworthiness on purchase intentions is 0.537, and the p-value is 0.01. The indirect effect of trustworthiness on purchase intentions is 0.309, and the p-value is 0.01.

H5b proposed that the attitude towards dietary supplements mediates the relationship between perceived trustworthiness of eWOM purchase intention towards purchase behaviour. Therefore, it can be inferred that we have sufficient evidence for the mediating effect of attitude towards dietary supplement on the relationship between perceived trustworthiness of eWOM and the purchase intentions to purchase behaviour in Saudi female adolescents. The significance of the mediation effect is likely to be underestimated in the presence of measurement errors. It allows researchers to assess the stability of parameter estimates (Byrne, 2001; MacKinnon, 2008). The total, direct and indirect effects of the hypothesised model were obtained by bootstrapping for testing mediation in SEM using Bollen & Stine Bootstraps with Bias Corrected Confidence Interval Method. The overall model was a good fit and the standardised total effect of eWOM on purchase intention was very high. This connotes that one-unit change eWOM brings 84.7% change in purchase intentions. However, in this total effect, the standardised direct effect was only 53.7% and the indirect effect was only 30.9%. However, the direct effect was significant, and the indirect effect was also significant. Therefore, it was concluded that there is a significant mediation relationship. Therefore, the current study findings are in line with past studies

Hypothesis H5b states that the attitude towards dietary supplements mediated the relationship between perceived trustworthiness of the eWOM and the actual purchase behaviour. The

findings for the above-mentioned relationship were based upon a similar mediation model to the one described in H6b. The results have shown that attitude provides mediation in the relationship between the perceived trustworthiness of eWOM and purchase intention towards the actual purchase behaviour.

The standardised beta coefficient for the direct effect of perceived trustworthiness of eWOM on the actual purchase behaviour is 0.820, and the p-value is 0.01. The indirect effect of trustworthiness on the actual purchase behaviour is 0.092, and the p-value is 0.046. Therefore, it can be inferred that we have sufficient evidence for the mediating effect of attitude towards dietary supplement on the relationship between perceived trustworthiness of eWOM and the actual purchase behaviour of dietary supplements in Saudi female adolescents.

The overall model was a good fit, and the standardised total effect of eWOM on actual purchase behaviour was very high, which connotes that one-unit change eWOM brings 91.1% change in purchase intentions. However, in this total effect the standardised direct effect was 82% and the indirect effect was 9.20%. As can be seen, both the direct and indirect effects are significant; therefore, it can be inferred that there is partial mediation for the relationship between trustworthiness and purchase intentions towards actual purchase behaviour. Therefore, based upon the data, this study suggests that the perceived trustworthiness of eWOM affects actual purchase behaviour indirectly through attitudes.

6.8 Moderating Influence of Perceived Body image on Perceived Trustworthiness of eWOM

The conceptual model explains that perceived body image of consumers serves as a contingency for the relationship between trustworthiness of eWOM and attitude towards dietary supplements. Along similar lines, another variable, time spent on SNS, was also used a moderating variable between the perceived trustworthiness of eWOM and attitude towards dietary supplements. This relationship is explained with the help of hypothesis H6a and H6b. The final objective of this research is to examine the moderating effect of perceived body image and the time spent on social media on the relationship between perceived trustworthiness of eWOM and attitude towards dietary supplements.

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6.8.1 Moderating Influence of Perceived Body Image

Hypothesis H6a states that perceived body image moderates the relationship between the perceived trustworthiness of the eWOM and the attitude towards dietary supplements. This contingency works in such a way that if a Saudi female adolescent has a perceived negative body image about herself, the perceived trustworthiness of the eWOM will have a stronger influence on the attitude towards dietary supplements. In contrast, if a Saudi female adolescent has a perceived positive body image about herself, there will be a weaker influence of perceived trustworthiness of the eWOM on the attitude towards dietary supplements.

Having found evidence for invariance in the measurement models, structural models were built for perceived body image. Chi square difference tests were performed for constrained and unconstrained models. Since the chi-square difference for both models were significantly different from each other, it can be inferred that perceived body image significantly moderated

the influence of perceived trustworthiness of the eWOM on the attitude towards dietary supplements. One of the main contributions of the current study is that perceived body image was supported by previous studies, with both Perloff (2014) and Tiggemann and Slater (2013) addressing the negative power of perceived body image on female adolescents from exposure to SNS. Previous studies by Burnette et al. (2017) and Kwitowski and Mazzeo (2017) were not in line with the current study findings, which proved the negative influence of exposure to social media or SNS towards perceived body image.

The other major contribution of the current study is that it is in line with Xiaojing (2017), who identified the limited studies to examine the effect of social media on perceived body image by female adolescents. Xiaojing (2017) aimed to explore how appearance presentation and appearance interaction from exposure to SNS influences body image dissatisfaction amongst young female adolescents in Chinese patriarchal society. In addition, it might be correlated with culture depending on whether it is collectivist or individualist. This study showed that perceived body image and time spent on SNS are correlated, which explains why the two moderators suggested by the current researcher were not supported. This is the key justification for both the moderator's hypotheses not being supported. Thus, this study confirms that it is in line with Xiaojing (2017). As such, it is suggested that there be future research regarding eWOM which uses culture as a moderator in the light of Hofstede's cultural dimensions.

6.8.2 Moderating Influence of Time Spent on Social Media or Social Networking Sites

One of the main objectives of the current study was to investigate the moderating effect of time spent on social media with the relationship between perceived trustworthiness of eWOM and

attitude towards dietary supplements. It was hypothesised in H6b that the time spent on social media or SNS moderates the relationship between the perceived trustworthiness of eWOM and the attitude towards dietary supplements. The moderating effect of the time spent on social media works such that if a Saudi female adolescent spends more time on social media, the perceived trustworthiness of eWOM will have a stronger influence on the attitude towards dietary supplements. On the contrary, if a Saudi female adolescent spends less time on social media, there will be a weaker influence of perceived trustworthiness of eWOM on the attitude towards dietary supplements.

After finding evidence for invariance in the measurement models, structural models were built for time Spent on social media. Chi square difference tests were performed for constrained and unconstrained models. The measurement and structural weights model found no overall differences. Therefore, it can be inferred that the moderation effect of time spent on social media for the proposed relationship is insignificant.

The present study was conducted on Saudi adolescent female consumers, who have a greater tendency to use social media than any other demographic group in KSA. Due to limited variability in the data, the results showed an insignificant moderation effect. Although previous studies addressed the role of time spent in social networking sites or social media (Ahadzadeh, Sharif, and On, 2017; Gaffney, 2017; Markova and Azocar, 2017; Mishra, Maheswarappa, Maity, and Samu, 2017; Narangajavana, Fiol, Tena, Artola, and García, 2017; Stump and Gong, 2017; Tsang, 2017; Zhang, Trusov, Stephen, and Jamal, 2017), the findings of the current study are not in line with those previous studies.

Tu and Yang (2016) showed that when the mediator variable measures with less perfect consistency, it causes effects which are likely to be biased. Hayes (2017) mentioned that the mediator variable creates an effect which is underestimated, and that the impact of the independent variable on the dependent variable is more likely to be overestimated. Hence, the biases in the variations are due to an error in measurements, and the instrumental variable is used to solve the problem and the bias issues in the variability of the mediator construct (Preacher, Rucker, and Hayes, 2007). Therefore, one of the main contributions of this study is that time spent on social media does not moderate the relationships between perceived trustworthiness of eWOM and attitude. Therefore, boundary conditions for the relationship between perceived trustworthiness of eWOM dimensions on attitude towards dietary supplements on purchase intention and behaviour among female adolescents in KSA can be inserted. In the next chapter, the implications and limitations of this research, as well as the future research directions, are discussed.

6.9 Chapter Summary

This chapter has commented on the hypotheses testing, based upon the data analysis conducted in chapter five. The findings are discussed in the light of previous literature. In addition to the findings, the reasons for the relationships revealed are also presented in this chapter. The study found that the perceived trustworthiness of eWOM is determined with the help of three dimensions, perceived source expertise of the eWOM, volume of eWOM and positive Valence of eWOM. The study found that all these three dimensions have a significant influence in determining the perceived trustworthiness of eWOM dimensions. The study further found that perceived trustworthiness of eWOM has a significant influence in determining the attitude towards dietary supplements in Saudi female adolescents. It was also found that attitude

towards dietary supplements helps to predict purchase intentions and actual purchase behaviour.

The data show that perceived trustworthiness of eWOM can influence purchase intensions to purchase behaviour in terms of dietary supplements, while the attitude towards dietary supplements provides the mechanism which mediates perceived trustworthiness of eWOM and influences purchase intentions and actual purchase behaviour. The moderation analysis suggested that the relationship between perceived trustworthiness of eWOM and attitude towards dietary supplements does not moderate the perceived body image of Saudi female adolescents. Perceived body image provides a contingency through which the perceived trustworthiness of eWOM influences the attitude towards dietary supplements. This study failed to support the claim that time spent on social media may moderate the relationship between perceived trustworthiness of eWOM and the attitude towards dietary supplements. The final chapter now discusses the theoretical, managerial and policy maker contributions, limitations and future guidelines.

Chapter Seven: Conclusion, Limitations and Future Research

7.1 Introduction

At first, the theoretical contribution for practitioners and policy makers is discussed. The sections that follow pinpoint the present research limitation sampling/analysis limitation. The limitations of the conceptual framework are then presented. After this is the future implications. The final section presents a summary of the chapter.

The main aim of this study was to investigate the perceived trustworthiness of electronic Word of Mouth (eWOM) in influencing attitude, purchase intention and purchase behaviour amongst Saudi female adolescents towards dietary supplements. This aim was achieved by conducting quantitative data collection and developing a questionnaire survey. The sample size was 1,027 participants, and the findings from the research conclusively sum up that the perceived trustworthiness in eWOM has a predominant role on shaping the attitude of female adolescents. This means that Saudi female adolescents investigate products on social media, which in turn reveals their purchase intention and turns into actual purchase behaviour. This study found that Saudi female adolescents purchase dietary supplements.

The research aim was to investigate the perceived trustworthiness of electronic word-of-mouth (eWOM) dimensions: volume, valence and perceived source expertise of eWOM in influencing the attitude, purchase intention and behaviour amongst Saudi female adolescents towards dietary supplements and each part of the aim were achieved.

The resrach objectives are:

The study's first objective was to examine the dimensions of perceived trustworthiness of eWOM: perceived source expertise of eWOM, volume of eWOM, valence of eWOM influence on attitude towards dietary supplements. It showed that these three dimensions have a significant influence on attitude, purchase intentions and purchase behaviour.

The second objective was to analyse the role of perceived trustworthiness of eWOM and how this affects attitudes towards purchase intention and it did show significant influence on attitude towards purchase intentions.

The third objective is to examine the conversion of purchase intention to actual purchase behaviour. It is concluded that changes on the purchase intention do influence significantly actual purchase behaviour.

The fourth objective of the current study was to test the attitude towards dietary supplements that mediates the relationship between perceived trustworthiness of eWOM dimensions and customers' purchase intentions. This objective was achieved as well.

The fifth objective was to test attitude and purchase intentions towards dietary supplements that mediate the relationship between perceived trustworthiness of eWOM and Purchase Behaviour. This objective was achieved as it showed a strong relationship between attitude and purchase intentions towards dietary supplements, which mediate the relationship between perceived trustworthiness of eWOM and purchase behaviour.

The sixth objective was to examine the moderating effect of perceived body image and time spent on social media on the relationship between perceived trustworthiness of eWOM and attitude towards dietary supplements. This objective was based mainly based on an examination of the moderating effect of perceived body image and time spent on social media on the relationship between perceived trustworthiness of eWOM. This objective was not achieved for cultural reasons.

Research questions:

The research questions were all answered in this research context and they were:

1. What is the role of the perceived trustworthiness of eWOM on the attitude towards dietary supplements amongst female adolescents in Saudi Arabia?

2. What is the role of the perceived trustworthiness of eWOM on purchase intention towards dietary supplements amongst female adolescents in Saudi Arabia?

3. What is the role of the perceived trustworthiness of eWOM on purchase behaviour towards dietary supplements amongst female adolescents in Saudi Arabia?

The achievements of answering the research questions and the objectives suggest that the perceived trustworthiness of eWOM dimensions volume, valence and perceived source expertise of eWOM are recognised as essential dimension for Saudi female adolescents to trust eWOM.

7.2 Research Contribution

The contributions of this study can be divided into three sub-parts: theoretical contributions, managerial contributions, and policy maker contributions.

7.2.1 Theoretical contributions of this study

This study made several significant contributions from a theoretical perspective by using a new model (PBSM), which borrows some constructs from the TRA model and adds perceived trustworthiness of eWOM dimensions. The current model also has an additional contribution that explores the role of perceived trustworthiness of eWOM dimensions influence on attitude towards dietary supplements, purchase intentions and purchase behaviour for Saudi female adolescents. Moreover, the present study contributes to filling several gaps in the literature by adding minor contributions to the perceived trustworthiness of eWOM, including two of the dimensions for volume, positive valence and perceived source expertise of eWOM dimensions. It also contributes to negative valence with the help of some constructs borrowed from the TRA model. The theoretical original contribution for the current study is relevant to consumer behaviour marketing with the support of perceived trustworthiness of eWOM dimensions, and some of the TRA constructs in an SNS environment.

The research questions and objectives have extended the previous literature findings in several areas. First, in the concept of perceived trustworthiness of eWOM with the three dimensions (perceived source expertise of eWOM, volume, valence of eWOM) influence on attitude towards dietary supplement, purchase intentions and behaviour amongst Saudi female adolescents. Previous researchers had focused on volume of eWOM (Barhorst & Wilson, 2017; Baek et al., 2017; Chen et al., 2017; De Keyzer et al., 2017; Harris & Prideaux, 2017; Ladhari

& Michaud, 2015; Lee et al., 2009; Moran & Muzellec, 2017; Ruiz-Mafe & Veloutsou 2017; Sparks et al., 2013; Vermeulen and Seegers, 2009; Yoon et al., 2017).

Secondly, this study fills gaps in the existing literature by studying perceived source expertise of eWOM, which is a minor contribution to the perceived source expertise of eWOM literature. Previously, studies by Banerjee et al. (2017), Ismagilova et al. (2017), and Shoham and Ruvio (2008) investigated the role of perceived source expertise of eWOM only.

Third, the current research contributes to the positive valence of eWOM, as a minor contribution to the existing literature. In addition, this research contributes to negative valence eWOM as a major contribution, also providing building blocks for future research. As well as this, it explores those three dimensions of perceived trustworthiness of eWOM influence on attitude towards dietary supplements, purchase intention and behaviour among Saudi female adolescents.

Fourth, this research contributed to the existing literature by adding to the perceived trustworthiness of eWOM dimensions' (perceived source expertise of eWOM, volume, positive valence and negative valence of eWOM) influence on attitude towards dietary supplements purchase intention and the actual purchase behaviour amongst Saudi female adolescents. Furthermore, purchase intention does not always lead to purchase behaviour of dietary supplements (Ajzen & Fishbein, 2000; 2005).

Fifth, this research fills a gap in that it explores the role of perceived trustworthiness dimensions of eWOM influence on attitude towards dietary supplements purchase intention

and behaviour among Saudi female adolescents, which can be considered a credence product according to previous studies (Girard & Dion 2010; Yan 2016). For example, anti-wrinkle cream, hair growth cream, stock market investments and herbal supplements can be enriched by the findings of the current study in terms of the role of product types on the demand for eWOM, and how trust in the products' reviews contributes to purchase behaviour. The results of this study are in line with those previous findings. The findings were also consistent with previous studies (e.g. Baur & Nyström, 2017; Chevalier & Mayzlin, 2006b; Chin-Lung et al., 2013; Gains, 2017; Jalilvand, Ebrahimi, & Samiei 2013; Jin & Phua, 2014; Koo, 2015; Ladhari & Michaud, 2015; Lin & Xu, 2017; Pan & Chiou, 2011; Purnawirawan, et al. 2015; Silverman 2011), but no-study has, to the best of this researcher's knowledge, combined those three dimensions. In addition, Flanagin and Metzger (2013), who investigated the influence of volume and perceived source expertise of eWOM on the trust of eWOM and other researches, emphasise the role of volume, valence and perceived experts of eWOM in the relationship of those dimensions. The influence on attitude towards dietary supplements on the demands for eWOM for credence products is noted, and it is recommended that different product types be combined to compare the findings with the current research outcomes.

Sixth, this research fills a gap in the existing literature by adding to the relationship between attitude towards dietary supplements purchase intentions and purchase behaviour among Saudi female adolescents (see e.g. Ajzen, 2000; Ferrell & Ferrell, 2012; Glenn, 2011; Lee & Yun, 2015; Park & Kim, 2008; Wirth et al., 2012; Zhang, 2017). It is another minor contribution and a building block for the TRA model.

Seventh, this research contributed to the existing literature by adding to the relationship influence of attitude towards dietary supplements on the actual purchase behaviour of previous studies (Etzel, Walker, & Stanton, 1997; Felix & Braunsberger, 2016; Kim, 2017; Lee, Qu, & Kim, 2007; Punyatoya, 2015).

Eighth, this research contributed to the existing literature as a minor contribution by enhancing the existing literature in terms of purchase intentions converting to actual purchase behaviour for dietary supplements amongst Saudi female adolescents on SNS (Ajzen, 1985; 1991; Han, Meng, & Kim, 2017).

Ninth, this research contributed to the existing knowledge by making a major contribution in terms of examining the attitude towards dietary supplements as a mediator that mediates the relationship between perceived trustworthiness of eWOM and purchase intentions. In addition, this study fills a gap regarding the fact that attitude towards dietary supplements and purchase intention mediates the relationship between perceived trustworthiness of eWOM and purchase behaviour. This study made a major contribution in filling this gap.

Tenth, this study made a major contribution for the two moderators hypotheses in this research by examining the moderator effect of perceived body image on attitude by adding to some of the previous studies which addressed the role of time spent on SNS or social media influence on perceived trustworthiness of eWOM, and also by testing the moderator effect of time spent on social media or SNS on attitude towards dietary supplements by adding to the previous studies (e.g. Ahadzadeh, Sharif, and On, 2017; Gaffney, 2017; Markova and Azocar, 2017;

Mishra et al., 2017; Narangajavana et al., 2017; Perloff, 2014; Stump & Gong, 2017; Tiggemann & Slater, 2013; Tsang, 2017; Xiaojing, 2017; Zhang et al., 2017 Stump and Gong 2017).

Eleventh, this research has made a minor contribution to the existing literature of Generation Z in marketing research (e.g. Priporas et al., 2017; Qi & Leung 2018; Schlossberg, 2016; Southgate 2017; Stavrianea & Kamenidou 2017) and has also added to the previous literature of dietary supplements (Cohen 2014; Geller et al., 2013; Raghupathi and Fogel, 2013). This research adds to the current literature regarding Saudi female adolescents and understanding their attitude towards dietary supplements, purchase intention and purchase behaviour on SNS.

Finally, the current study made a major contribution to previous studies (Ferrell & Ferrell, 2012; Glenn, 2011; Pillitteri et al., 2008) regarding the marketing of dietary supplements on social media. There is illegal marketing by some of the companies who use social media platforms for marketing purposes and who sell it online and in without prescription pharmacies in KSA. Those dietary supplements need more attention, especially with regards to selling without prescription. More research is required regarding dietary supplements usage and its implication on SNS. The current study has made theoretical implications for future research to investigate the role of dietary supplements' types, brands and purposes of using a particular dietary supplement rather than other types of dietary supplements. This may look at spreading awareness about the advantages and disadvantages of dietary supplements and how social marketing can participate with social marketing campaigns that can be presented approvingly by social influencers to gain support from policy makers (e.g. health and education ministries). The next section explores the managerial contribution.

7.2.2 Managerial Contribution

The findings of this study provide some useful insights for marketers and decision makers on the basis of a large population of adolescents can bring many brand equities by building long-term relationships with a population. The managerial contributions can be divided into the three areas in creating more awareness for the role of perceived trustworthiness of eWOM generated regarding dietary supplements in by Saudi female adolescents.

The outcomes of this study suggest that if the volume of eWOM about product and marketing offerings is large, consumers have a greater level of perceived trustworthiness in eWOM, which ultimately leads to positive purchase intentions and behaviour. Therefore, marketers can help their users to write reviews and to provide positive and negative reviews to improve and maintain customer loyalty. Studying the effect of eWOM can be beneficial for companies, which will be perceived as useful and credible eWOM that influences attitude towards dietary supplements' purchase intention and behaviour amongst Saudi female adolescents.

The study also found that positive valence of eWOM can also contribute to creating a positive perceived trustworthiness of eWOM about the dietary supplements of female adolescents in KSA. The negative valence of eWOM may put positive reviews about the dietary supplements they use. Prospective consumers' perceptions about the marketing offerings heavily depends upon positive online eWOM to evaluate a product in their purchase decision. The marketing decision makers can encourage users who have experienced the product or service to recommend sharing information and honest opinions to other consumers on their SNS pages. These recommendations may be made on the website of the seller, or on third-party websites

(e.g. yelp.com). To encourage satisfied users to post their reviews, it is pertinent to note that businesses should encourage customers to write positive reviews without using deceptive practices or engaging in unethical activities, for example eWOM manipulation. According to Floyd et al. (2014) any unethical behaviour of the marketers in creating eWOM results in a reduction in consumers' perceived trustworthiness of eWOM towards the company, which in turn can prompt a negative reaction amongst customers, who may not trust eWOM in the future. Trust is crucial in this business. of dietary supplements.

The study suggested that, the negative valence of eWOM was not found reliable, therefore it was excluded from any further processing after the pilot study. The data suggested that the items measuring the negative valence were not found reliable, although the literature suggests that negative reviews or valence about dietary supplements will be perceived as more trustworthy by Saudi female adolescents. Furthermore, marketers should try to recognise "social influencers" or "market mavens" on SNS or social media and encourage them to spread healthy lifestyle practices by eating healthy, exercising and providing proper information about weight loss or controlling weight by dietary supplements to increase awareness regarding the advantages and disadvantages of dietary supplements. Marketers must take societal affiliation factors into account, as well as advance personalised communications strategies, to fulfil SNS users' needs.

 In addition, social media marketers may want to consider the social influencers of SNS to nudge them to practice healthy lifestyle and share successful stories for adolescents who were able to change their lifestyle and maintain a healthy lifestyle.

Moreover, changes in food marketing and labelling can assist to make better food and drink choices, and may also nudge food producers and marketers to create healthier offerings. In addition, re-branding healthy foods on non-health related positive benefits to change the stigma

that healthy food is not delicious and nudge the consumption of healthy food by using social networking sites by those companies with adolescents. Dietary supplements marketers can explain more related information about dietary supplements and the use of it and the different outcomes of those dietary supplements but under medical advice.

Since customers do not have the time for cataloguing confusing and contradictory information, WOM and eWOM have become a necessary time saver, wherein all information can be shared anytime and for any targeted group. However, eWOM is preferred over WOM since WOM is bidirectional and operated by opinion leaders and opinion seekers, while eWOM uses social media where many interpersonal communication providers and seekers are involved (Gilly et al., 1998; Watts & Dodds, 2007). eWOM can be spread to millions of people through a single click and achieve virality. Social influencers can also ask their followers to follow the SNS of targeted companies. In addition, companies can increase awareness about the advantages of their products and that they have FDA approval. There can be a managerial contribution to marketing dietary supplements which encourage a healthy life style by eating healthily and exercising. This can be achieved by spreading healthy tips and practices on SNS and by supporting the role of policy makers in marketing health campaigns as part of their social marketing awareness. This will be more influential in encouraging adolescents to take serious steps as it will be from a proper source of knowledge.

7.2.3 Policy Maker Contribution

This research can encourage policy maker stakeholders, such as health and education ministries, target social mavens and social media influencers to spread healthy lifestyles and use the help of those influencers to spread awareness messages as part of social marketing campaigns online and at schools. Social marketing campaigns are required to support a healthy

and active lifestyle since it is an essential strategy which leads to improve the awareness and it requires the involvement of parents to be an integral part to enhance the results. This way the parents, Saudi female adolescents and Ministry of Health and Ministry of Education will have a powerful influence to reach their goals.

Risk assessments forms an urgent process and this can be done by adding Nutrition and Physical Education to the curriculum of modules. Moreover, fast food consumption should be prohibited in schools to support the whole process. Dietary supplements are sold over the counter in pharmacies in Saudi Arabia and this availability option requires to be restricted and access should only be via medical support and by prescription only.

Social media influencers play a significant role in influencing the perception of users. Social pages on SNS can provide awareness to users regarding healthy eating habits, about how they can overcome obesity and maintain body mass and dietary supplements. For instance, on Twitter "Healthcare Hash tags" can be posted which communicates messages that promote awareness regarding obesity and how to fight it. Policy makers can collaborate with social influencers to enhanceanalysis chapter

 eWOM about healthy lifestyle practices, for example that if there is a need or health complications for weight loss it should be under medical advice, so that harmful measures and consequences can be avoided.

Doing this can encourage feedback and suggestions by encouraging interaction between social media influencers, policy makers and the targeted group (Saudi female adolescents) because of the chance to interact and learn more about adolescents to enhance researches, policies and practices. In addition, policy makers could arrange, with social influencers, some walking activities or marathons with different levels for beginners, intermediate and advanced to encourage adolescents to practice exercise now and for the rest of their lives.

Furthermore, the results from this study will contribute practically towards a scientific justification for policy makers as well as marketing managers since they can identify the strongest variables that influence consumer buying behaviour. Marketing to Generation Z requires extra attention since they use social media more than other age groups, in that they often practise sedentary behaviour. Moreover, it is a good opportunity for health, or other, ministries to invite marketing mavens to share awareness and encourage adolescents to practise healthy lifestyles online and in schools in special events. In addition, policy makers need to learn more about the companies that sell those supplements worldwide, and spread awareness regarding dietary supplements' benefits and risks, in schools, on SNS and in different settings. It is not possible to stop these illegal products from being sold without enhancing awareness and applying new regulations. Therefore, it is crucial to spread awareness through social influencers since they have followers who trust them. This study can advance the conceptualisation of perceived trustworthiness of eWOM attitude, purchase intention and behaviour.

7.3. Research Limitations

This study represented a preliminary foray into the conceptualisation of perceived trustworthiness of eWOM's three dimensions. Like other studies, this research also had some limitations, which were based on the methods of sampling/analysis.

7.3.1 The Method of Sampling/Analysis Limitation

This study had various limitations based on its method of sampling/analysis. First, this study was conducted in a single setting, i.e. only in KSA. The second limitation is the research method, quantitative method, used random non-probability sampling techniques. It could have used other sampling techniques together, using other relevant methods. The third limitation of

this study was on the views of consumers (Saudi female adolescents) rather the views of other parties (e.g. advertising and marketing managers). The sample size was collected from Jeddah and Riyadh only, which created a further limitation in this study. However, this present study can generalise the findings and outcomes for KSA female adolescents since the quantitative method was used and the sample size is representative. Further studies are required to fill the other gaps.

7.3.2 The Conceptual Model Limitation

Alongside the limitations in the sampling, there were also limitations in the conceptual model. Firstly, this study focused only KSA female adolescents. Another limitation was that this study focused on dietary supplements only. Lastly, this study examined the effects of two moderators only: perceived body image and time spent on social media or SNS. Other researchers could study more moderator's factors, for example culture, by applying Hofstede's cultural dimensions to explore the outcomes.

7.4 Recommendations for Future Studies

Based on the limitations noted in the previous section, several suggestions could be made to further extend the current body of knowledge on perceived trustworthiness of eWOM. In terms of the generalisability and validity of the measurement, studies in other regions or other cultural contexts could be considered, e.g. studies in other countries or doing a comparison study between two different s such as collectivist and individualist. These findings will enhance research in this particular field. Future studies could use qualitative method or mixed method if it requires building new scale measures, constructs or theories. Furthermore, a future study could also examine the model based on data from marketing and advertising managers. Examining this topic from advertisers' and marketers' perspectives would provide more insight into the selection of perceived trustworthiness of eWOM dimensions.

A future study could also examine the effects of perceived trustworthiness of eWOM dimension (with building other constructs). This could help practitioners in understanding the influence of perceived trustworthiness of eWOM in different scenarios. It could be suggested that findings in other cultural contexts or different countries could have different results. However, from the understanding of the researcher regarding the right assumption to use pre-constructs in this study, it seems that all constructs and scale measurements were significant and correlated except the two moderators. Therefore, it is suggested that SNS can influence adolescents from different cultures similarly. It is suggested that this should be taken into consideration, to prove whether this suggestion can be significant by comparing two different cultures in future studies.

In the future, this study could be expanded through the application of quantitative as well as qualitative methods, which would help to examine the subjective and objective perspective of data. It is suggested to have the participants along with interviews of the parents too. Parents' views can be gathered in order to explore the behaviour of their children towards eating habits. Future studies could also present a comparative analysis of Western and non-Western female adolescents' eating habits and their behaviour towards spending time on social media. Looking closely at Hofstede's cultural dimensions can help understanding of the factors which create influence on the buying behaviour. Moreover, some SNS platforms can be studied separately or in comparison/contrast to each other

Lastly, the findings of this study emphasise that Generation Z can be exposed to similar content on SNS in marketing, which might have a similar influence. Generation Z marketing research is scant and future actions is recommended.

7.6 Chapter Summary

This chapter examined the contributions of the study drawn from the survey-based data and data analysis. An overall conclusion of the present study was presented in the current chapter, and it covers the theoretical contributions, managerial and policy makers implications. Theoretically, this study extends she social media and consumers' behaviour landscape literature by offering the use of perceived body image and time spent on social media as moderators. For marketing practices, adolescents or Generation Z are a more appropriate segment to address healthy lifestyle practices such as healthy food, exercise and the consumption of dietary food supplements, in order to influence perceived body image of female adolescents. The present study also contributes to the field of social marketing by offering a wider assortment to attract demographically distributed consumers to enhance and increase their awareness, which will protect them for harmful measures. At the end of the chapter, recommendations were presented for future studies. It is suggested that these conduct longitudinal research designs in several cultural contexts, which could be studied using a qualitative method or mixed methods approach. Moreover, introducing various contextual and dispositional moderators may make this study more valuable.

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Appendix I (Questionnaire in English version)

Questionnaire of online reviews, usage of dietary supplements, attitude towards dietary supplements (weight loss supplements) among Saudi female adolescents, purchasing intention and behaviour, perceived trustworthiness of eWOM influence in social networking sites.

Part 1: Demographic Data

Age:

Name of the school:

Class:

Social media platform you use:

Time Spent on Social Media: number of hours per day

Part 2, Instruction:

Please tick (✓) the best answer for you:

s/n	Items	Rating				
A	Following questions will help us understand impact of perceived source expertise of eWOM	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	The online reviewers have a good sense about dietary supplements					

		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
2	The online reviewers are knowledgeable about dietary supplements					
3	The online reviewers have experience about dietary supplements					
B	You are thinking to buy dietary supplements in near future, you read different reviews, please read the reviews below and rate which review is more reliable. Chose strongly agree if you think it most reliable or strongly disagree if you think it's least reliable.	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
4	Dietary supplementsworked. I lost 20 pounds! Still on my journey to lose more, 40 more pounds to go!					
5	I am very pleased with the results. This is my three-time purchasing this product.					
6	I swear by these pills, It worked for me, I am ready to buy more in future.					

7	Used half of the bottle and didn't lose a pound. My friend finishes the bottle and said nothing changed.					
8	I used this for a month. Absolutely worthless, despite eating well not even a placebo effect.					
9	Don't waste the money. Stick to old fashion diet and exercise. All the hype you hear is hype. There is no miracle drug for weight loss.					
C	Following questions help us understand the volume effect of eWOM	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
10	Many people post online reviews about dietary supplements					
11	Dietary supplements have many online reviews					
12	Dietary supplements are popular is online reviews forums					
D	Following questions will help us understand attitude about dietary supplements	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

13	Overall, I think that taking dietary supplements would be good.					
14	I think that taking dietary supplements would be enjoyable.					
15	I think that taking dietary supplements would be positive.					
16	I think that my taking dietary supplements would be beneficial					
17	I think that taking dietary supplements would be pleasant					
18	I think that taking dietary supplements would be favorable					
E	Following questions will help us understand behavioural intension towards dietary supplements	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
16	I do intend to take dietary supplements					
17	I do plan to take dietary supplements					
18	I do want to take dietary supplements					
19	How likely is it that you will take dietary supplements?					

F	Following questions will help us understand purchase behaviour outcome	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
20	I buy dietary supplements regularly					
21	Buying dietary supplements is important to me					
	I will be using dietary supplements in future too.					

NINE FIGURE SILHOUETTE SCALE

(Stunkard, Sorenson, & Schulsinger, 1983)

DIRECTIONS: On the silhouette continuum provided below, please indicate the figure that you think represents your **CURRENT** figure and label it (**A**). Next, indicate the figure that you think represents the *IDEAL* figure for success in your sport and label it (**B**). If you feel you are represented by a figure in-between two given on the continuum, then please estimate to the nearest tenth of a decimal and label that number with the appropriate letter. (For example- 4.7 would be an appropriate estimation if you feel your current figure is close to, but not exactly, a 5.)
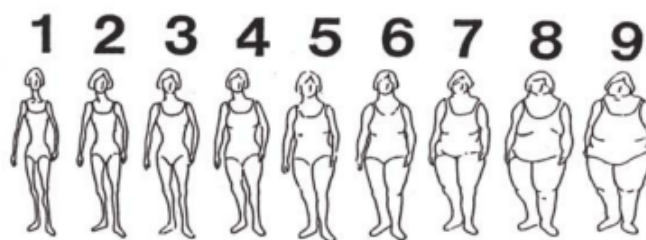
Thank you very much for your kind participation support to improve knowledge in our country and in general. The quesionnaire consists of 4 pages only

Appendix 2: Arabic version Questionnaire for the pilot study

استطلاع بخصوص قراءتك لأراء المشاركين في مواقع التواصل الاجتماعي ، و بحثك عن المكملات الغذائية

و معتقداتك ونواياك وسلوكياتك الشرائية لهذه المنتجات

الجزء الأول: معلومات عامة

السن: _____

الصف: _____

هل استخدمتي المكملات الغذائية منذ قبل؟   نعم   أو   لا

ماهي   صفحات   التواصل   الاجتماعي   التي   تستخدمينها؟

_____

عدد الساعات التي تقضينها على وسائل التواصل الاجتماعي في اليوم: _____

الجزء الثاني: تعليمات:

يُرجى وضع إشارة (✓)واحدة لكل سؤال لأكثر إجابة تناسبك:

الرقم التسلسلي	العناصر	التقييم				
		أوافق بشدة	أوافق	لا أعلم	أرفض	أرفض بشدة
أ	ستساعدنا الأسئلة التالية في فهم تأثير خبراء مستخدمي وسائل التواصل الاجتماعي					
1	لدى خبراء مواقع التواصل الاجتماعي حكم جيد على المكملات الغذائية					

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أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة		
					لدى خبراء مواقع التواصل الاجتماعي معرفة جيدة عن المكملات الغذائية	2
					لدى خبراء مواقع التواصل الاجتماعي خبرة جيدة بخصوص المكملات الغذائية	3
أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة	على سبيل المثال أنت تفكرين بشراء مكملات غذائية في المستقبل القريب، وتقراي آراءً مختلفة عنها، يُرجى قراءة الآراء أدناه وتقييم أي الآراء أكثر مصداقية. اختاري "أوافق بشدة" إذا كنت تعتقدين أنها الأكثر مصداقية أو "أرفض بشدة" إذا كنت ترين أنها الأقل مصداقية.	ب
					لقد نجحت المكملات الغذائية بالفعل. فقدت خسرت عشرين رطلًا من وزني! وما زلت مستمرة لأفقد المزيد، بقي أمامي ان افقد من وزني أربعين رطلاً!	4
					أنا سعيدة جدًا بنتائجخسارتي للوزن. هذه هي المرة الثالثة التي أشتري فيها المكملات الغذائية	5
					انا موقنة جدا بنتائج المكملات الغذائية ، إنها مفيدة لي، سأشتري المزيد منها مستقبلًا.	6
					استخدمت نصف علبة المكملات الغذائية ولم أفقد رطلاً واحداً. لي صديقة أنهت العلبة وقالت أن شيئًا لم يتغير.	7
					لقد استخدمت هذه الحبوب مدة شهر. وبالفعل ليست مفيدة، على الرغم من تناول الطعام بسكل صحي، وليس لها أي تأثير حتى لو كان أثرًا وهميًا.	8

أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة		
					لا تضيعي أموالك والتزمي بالطريقة القديمة في التخسيس بالطعام الصحي و الرياضة. كل ما تسمعينه من مبالغات هي مجرد مبالغة. لا يوجد دواء سحري لخسارة الوزن.	9
أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة	ستساعدنا الأسئلة التالية في فهم تأثير كثافة مشاركة متابعين وسائل التواصل بأرائهم حول المكملات الغذائية	ج
					ينشر العديد من الأشخاص عبر الإنترنت آراءً حول المكملات الغذائية	10
					يوجد عدد كبير من الآراء حول المكملات الغذائية عبر الإنترنت	11
					المكملات الغذائية مشهورة و معروفة في المنتديات و مواقع التواصل الاجتماعي	12
أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة	ستساعدنا الأسئلة التالية في فهم معتقداتنا حول المكملات الغذائية	د
					بصفة عامة، أعتقد أن تناول المكملات الغذائية أمر جيد.	13
					أعتقد أن تناول المكملات الغذائية سيكون أمراً ممتعاً.	14
					أعتقد أن تناول المكملات الغذائية سيكون أمراً إيجابياً.	15
					أعتقد أن تناول المكملات الغذائية سيكون أمراً مفيداً.	16
					أعتقد أن تناول المكملات الغذائية سيكون أمراً يعطيني احساس بالسعادة.	17
					أعتقد أن تناول المكملات الغذائية سيكون أمراً مفضلاً.	18
أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة	ستساعدنا الأسئلة التالية في فهم لو كان لديك نية لشراء المكملات الغذائية في المستقبل	ه
					بالتأكيد أرغب في تناول المكملات الغذائية	19
					بالتأكيد أخطط لتناول المكملات الغذائية	20

أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة		
					بالتأكيد أرغب في تناول المكملات الغذائية	21
					ما مدى احتمالية تناولك للمكملات الغذائية؟	22

| أرفض بشدة	أرفض	لا أعلم	أوافق	أوافق بشدة	ستساعدنا الأسئلة التالية في فهم السلوك الشرائي الحقيقي لديك	و
					أشتري المكملات الغذائية بانتظام	23
					يعد شراء المكملات الغذائية أمراً هاماً بالنسبة لي.	24
					سأستخدم المكملات الغذائية مستقبلاً أيضاً.	25

الجزء الثالث: اختاري

ميزان الظلال بتسعة أشكال

(ستونكارد وسورينسون وشولنجر، 1983)

تعليمات: في تسلسل الظلال المقدم أدناه، يُرج الإشارة إلى الشكل الذي تعتقدين أنه يمثل شكلك **الحالي** وتسميته بالشكل (أ). بعد ذلك، قومي بالإشارة إلى الشكل الذي تعتقدين أنه يمثل الشكل المثالي لك بعد الانتظام على ممارسة الرياضة وتسميته بالشكل (ب).

إذا كنت تشعرين أن شكلًا بين شكلين في التسلسل هو الذي يمثلك، فيُرجى تقدير أقرب رقم عشري ووضع علامة بالحرف الملائم. (على سبيل المثال، سيكون الرقم 4.7 تقديرًا مناسبًا إذا شعرت أن شكلك الحالي قريب بين 4 و 5، لكن ليس أ 5 تمامًا.)
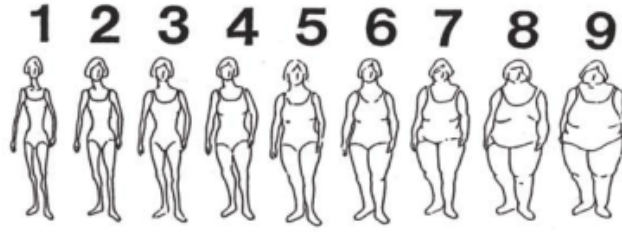
عدد صفحات الاستبيان 4 صفحات

شاكرة لكم مشاركتكم في الاستبيان

Appendix 3: The ethical approval letter from the ministry of education before the researcher start collecting the data from Saudi

المملكة العربية السعودية
وزارة التعليم
الإدارة العامة للتعليم بمنطقة الرياض
إدارة التخطيط والتطوير

الرقــم : ....
التاريـخ : ٢٠١٦/٨/١٠
المرفقات : ١٤٣٧/١١/٧هـ

وزارة التعليم
Ministry of Education

إفادة

رقم الهوية الوطنية	اسم الدارسة
١٠١٧٧٤٣٩١٣	هبة كمال إبراهيم جمال

تلبية لطلب الدارسة الموضحة بياناتها أعلاه ؛ فإن إدارة التخطيط والتطوير بالإدارة العامة للتعليم بمنطقة الرياض تفيد بإمكانية تطبيق دراستها في مدينة الرياض بعنوان : (دور الثقة بمواقع التواصل الاجتماعي في تغيير عادات و سلوكيات المراهقات السعوديات الشرائية).

Evaluation of trustworthiness of electronic word of mouth in shaping the attitudes of Saudi female adolescents towards dietary supplements

على أن يتم لاحقاً تزويدنا بأدوات البحث لاعتماد تسهيل مهمتها .

والله ولي التوفيق

إدارة التخطيط والتطوير

Appendix 4: The letter from the the ministry of education confirmation the researcher collected the data from Riyadh

Appendix 5: The letter from the ministry of education confirmation that the researcher collected the data from Jeddah