EXPLORING THE FACTORS AFFECTING CONSUMER BEHAVIOR TOWARDS THE PURCHASE OF NUTRACEUTICALS IN PAKISTAN

Faryal Salman1*, Hina Mubeen2, and Saira Siddiqui3.

ABSTRACT
The aim of this study was to examine the association between factors affecting the purchase of Nutraceuticals and the health-conscious behavior of consumers in a Pakistani university population that consisted of millennials. Additionally, the sociodemographic profile of the respondents was also explored to understand the consumption pattern of these complementary medicines. The research model was tested using a questionnaire survey instrument, and the measurement scales were developed. Data was collected through the convenience sampling method. The survey was floated to around 300 undergraduate students at a local health care university. The association between variables influencing customers’ decisions to purchase nutraceuticals and their health-conscious behavior was described using multiple regression analysis. The first deciding aspect was how the products were perceived. Results confirm the hypothesis and assert that health-conscious consumers are influenced by their perceptions of nutraceuticals. Moreover, it was validated that the accessibility of nutraceuticals was not a significant issue, whereas the source of information was found to be statistically significant, confirming that the source of information influences the decision to purchase nutraceuticals. The purpose of this study was to look at the factors affecting Pakistani customers’ choices when making health-conscious purchases. With the growing popularity and rising awareness about the consumption of nutraceuticals among young consumers, it was important to understand how significant these factors were for health-conscious consumers. Perceptions of the nutraceuticals formed by the health benefits, safety features, and other product features such as taste packaging were found to be significant influencing factors along with the source of information. Interestingly, accessibility measured through cost, ease of purchase and ease of use had no significant influence on the purchase behavior.

Keywords: Nutraceuticals; Perceptions; Accessibility; Sources of Information; Health-Conscious Consumer.

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INTRODUCTION
A new diet health paradigm that emphasizes the advantages of diet has emerged in recent years. With economic growth, there has been an improvement in the standard of living in terms of income, consumption, and lifestyle. But it has also created a significant issue in the shape of “lifestyle diseases.” The effects of this way of living were initially felt in dietary practices. Junk food consumption causes several issues connected to nutritional deficits. In a poll conducted in the United Kingdom, Germany, and France, consumers regarded food as more important for maintaining good health than exercise or inherited factors, which gave rise to the term “nutraceutical.” The trend of too many customers switching to nutraceuticals (Pandey et al., 2010; Das et al., 2011) was expected.

Stephen De Felice, the founder, and chairman of the Foundation for Innovation in Medicine (FIM), invented the phrase “nutraceutical,” which is described as “a food or component of a food that delivers medical or health advantages, including the prevention and/or treatment of sickness.” (Santini & Novellino, 2017), administered as tablets, capsules, liquid, or pills (Cruz & Tanchoco, 2000). Nutraceuticals are dietary supplements that offer additional health advantages to their real nutritional benefits (Teoh et al., 2019). A nutraceutical is different from a dietary supplement in that it should aid in the prevention and/or treatment of a problem or disease in addition to serving as a dietary supplement. Dietary supplements and natural/herbal goods saw the industry’s fastest growth rates combined, at 19.5% per year (11.6 percent per year). A USD 117 billion market for nutraceuticals is anticipated worldwide. To assure their safety, the FDA regulated dietary supplements like foods (Chauhan et al., 2013).

From the perspective of the consumer, nutraceutical products are acknowledged as a source of health benefits, ranging from cardiovascular pathologies to prevent or treat hypertension, protection of the cardiovascular system, cholesterol control, diabetes, healthy immune system support, excess weight, arthritis, insomnia, not to mention headaches, varicose veins, depression, and decreased osteoporosis. Instead of focusing on any specific (sick) health condition, another substantial group of products is anticipated to focus on overall health (e.g., probiotics) or physical and mental performance (energy and sport-bars and beverages) (Prabu et al., 2012; Daliu et al., 2018; Jain & Ramawat, 2013; Siedlok et al., 2010). There are already more than 470 nutraceutical products with common health advantages accessible (Shah et al., 2021).

Instead of treating and managing diseases, preventive healthcare practices are more in line with current market trends in healthcare. Demand for tailored nutrition and nutraceuticals is rising
due to the increasing incidence of chronic diseases and the high expense of healthcare interventions. The inclination of consumers is also shifting away from synthetic pharmaceutical preparations and toward natural and organic nutraceutical substances. The United States is the first country in the world to produce and develop nutraceuticals, followed by Europe (in particular Germany), the United Kingdom, Asia Pacific Countries (e.g., China, Japan, India), Central, and South America Countries (Brazil), the Middle East, and Africa (Aina & Ojedokun, 2014; Chopra et al., 2022; Lordan et al., 2021). This is according to the most recent report by Grand View Research Inc.

The preliminary 2017 census results showed that 207.8 million individuals, or 63% of Pakistan’s population, were counted (Wazir & Goujon, 2019; Amaliah et al., 2019; Chong et al., 2020). Due to the nation’s disproportionately young population, the need for nutraceuticals has grown over time. Research from the past shows that the educated population in Pakistan consumes nutraceuticals most frequently (Abbas et al., 2015; Naqvi et al., 2019). A study was conducted on medical students to ascertain their opinions and sentiments on supplements. The majority of the students believed that nutraceuticals are essential for people of all ages and that they are excellent for health (Naqvi et al., 2019). Another Pakistani study looked at the high rate of self-medication among medical students. The primary causes of self-medication are stress from academic work, which leads to students using psychoactive stimulants to complete their assignments. Additionally, students might utilize nutraceuticals to prevent any depression symptoms they may suffer from juggling their courses. The use of complementary medicines happens for a variety of reasons, including accessibility, usability, and in some situations, peer pressure (Abbas et al., 2015).

The demand for nutraceuticals and millennials’ awareness of their health are rising. Once more, customer perceptions of value and awareness of nutritional supplements are crucial in influencing whether or not they will be purchased. Additionally, promoting the use of nutraceuticals requires a link between consumer health consciousness and understanding (Hoque et al., 2018). The concept of self-care is increasingly widely accepted as health consciousness among young consumers grows more popular due to education and simple access to information. Consumers become more aware of health issues as economies prosper, leading them to actively manage their health and take it more seriously. Existing research demonstrates that young consumers think they can improve some aspects of their health by consuming particular foods or beverages. Consumer trust to purchase products with specific health claims that have undergone clinical trials to be validated can increase. 207.8 million
people, or 63 percent of Pakistan’s population, were revealed by the preliminary 2017 census findings (Wazir & Goujon, 2019; Amaliah et al., 2019; Chong et al., 2020).

Consumers frequently exhibit traits like drive, optimism, and intense curiosity. The millennial generation has a very high level of awareness of healthy living. Probiotics and other nutraceuticals are in great demand among consumers, especially younger consumers. Nutraceutical solutions containing probiotics are well known for enhancing gastrointestinal functionality and providing additional advantages, including increased immunity and improved health (Amaliah et al., 2019; Chong et al., 2020).

Understanding the amount of health consciousness among young people, their level of health awareness concerning their demographic profile, and the essential elements that influence their decision to use nutraceuticals are all benefits of this study. The study’s conclusions will aid pharmaceutical firms in developing effective marketing plans for their line of goods. Additionally, our findings will assist medical practitioners in developing campaigns to raise awareness of the value of nutraceuticals as a kind of supplementary therapy.

Young customers are becoming more concerned about their general fitness and health. They have a good outlook on the available nutraceuticals and are more concerned about their health. Numerous studies look into why millennials utilize nutraceuticals, yet they are all dispersed in their findings (Bailey et al., 2013; Iversen, 2006; Hoque et al., 2018). There is less compelling evidence to support the idea that being health conscious influences the choice making towards nutraceuticals, even though existing studies reflect on the general health consciousness of millennials. Additionally, few empirical research examine how perceived health risks affect people’s decisions to use nutraceuticals (Hailu et al., 2009).

Additionally, there is a need to investigate the critical variables that consumers who care about their health will consider while making decisions (Teoh et al., 2019). The first factor is how these nutraceuticals are viewed in terms of their potential health benefits, safety, and other product attributes. The second factor is accessibility, which is determined by the price, simplicity of use, and simplicity of purchase of nutraceuticals. Last but not least, consider the value of information sources when selecting which nutraceuticals to utilize. Individual knowledge, expert medical advice, and influence from friends and family are used to measure this. Investigating how health-conscious consumers are inclined to look for information about nutraceuticals in various sources is also necessary. Additionally, this study makes an effort to explore the relationship between consumer health consciousness and perceived health hazards.
with regard to the critical criteria for choosing nutraceuticals using empirically evaluated data. The main topic of this study is, ultimately, what influences a health-conscious consumer’s choice of nutraceuticals and what impact the consumer’s perception of potential health risks play in their decision to use or abstain from these complementary goods.

**Background & Scope**

There are certain theories that have developed to explain why consumers still use nutraceuticals in spite of the paucity of clinical proof. The absence of updated clinical evidence among healthcare professionals, inadequate regulation of the marketing of nutraceuticals, and consumers’ lack of knowledge of current clinical data are some of these. To meet their demands, it is essential to comprehend consumer attitudes and motivations; nevertheless, there is no specialized research disclosing consumer viewpoints on these issues. Previous studies have demonstrated that the three most frequently cited significant factors that have been investigated have an impact on consumers’ decisions to use nutraceuticals: perception of nutraceuticals, accessibility of nutraceuticals, and source of information (Teoh et al., 2021; Teoh et al., 2019; Blendon et al., 2013; Tangkiatkumjai et al., 2013; Bailey et al., 2013).

Regarding the connections between customers’ orientation toward health consciousness, the perceived health hazard, and the motivations pushing them to acquire the nutraceuticals, this research offers a novel perspective. For a consumer who may be particularly health conscious or vice versa, the study tries to scientifically examine the significance of numerous criteria. The following justifies the originality of this study:

- To the best of our knowledge, very little literature has examined these interactions in the context of complementary medicine.
- No studies have provided empirical evidence from Pakistan on a holistic theoretical framework presented here.
- The existing literature on consumers’ health-conscious behaviour and what motivates them to purchase nutraceuticals is largely influenced by perspectives from developed countries, whereas existing works from developing countries generally do not discuss the topic in the Pakistani context. The present study closes a gap in the body of knowledge on consumer health-conscious behaviour in Pakistan.

The remainder of this research is organized as follows: In relation to the connections between consumer health consciousness, the driving factors for buying nutraceuticals, and perceived health hazards, the next section provides a review of the literature and theoretical
underpinnings and formulates the hypotheses to be evaluated. The research methodology is described in section 4, the results are presented in section 5, and the analyses and discussion of the results, implications, constraints and future research paths are described in section 6.

LITERATURE REVIEW

Concerns regarding the handling, administration and cost of their healthcare are top priorities for health-conscious customers (Prabu et al., 2012). They are unhappy with the exorbitant price of modern medicine and the high-tech approach to sickness treatment. Nutraceuticals are now used since the health-conscious consumer is searching for alternative alternatives. In an effort to offer physiological advantages or illness prevention, they are using nutraceuticals more frequently.

Nutraceuticals among Young Consumers and the reason for use

The young people of this generation are referred to as millennials. According to several surveys, the significant population in the near future may make the millennial generation, which includes people born between the early 1980s and 2000, one of the considerable target consumers. Young customers frequently exhibit traits like drive, optimism, and intense curiosity. The millennial generation has a very high level of awareness of healthy living. Probiotics and other nutraceuticals are in great demand among consumers, especially younger consumers. Nutraceutical solutions containing probiotics are well known for enhancing gastrointestinal functionality and providing additional advantages, including increased immunity and improved health (Amaliah et al., 2019; Chong et al., 2020).

Perception of Nutraceuticals among Young Consumers

There are certain theories that have developed to explain why customers kept using nutraceuticals despite the lack of clinical proof. The absence of updated clinical evidence among healthcare professionals, inadequate regulation of the marketing of nutraceuticals, and consumers’ lack of knowledge of current clinical data are some of these. To meet their demands, it is essential to comprehend consumer views; nevertheless, there is no specific research disclosing customer perspectives on these issues. Previous studies have demonstrated that a variety of factors included in the following text have an impact on consumers’ decisions to use nutraceuticals (Teoh et al., 2019; Teoh et al., 2021).

i. Health Benefits of Nutraceuticals

According to prior research on the perceived health advantages of nutraceuticals, young people use them for a variety of reasons, with the most prevalent ones being to strengthen their immune
system, feel better overall, and increase energy levels (Blendon et al., 2013; Tangkiatkumjai et al., 2013; Bailey et al., 2013).

Consumers of nutraceuticals were more likely than nonusers to report having very good health. According to earlier studies, those who use nutraceuticals consume more vitamins and minerals from their meals alone than people who do not (Bailey et al., 2013; Klafke et al., 2013). The assessment of the perceived health advantages of taking nutraceuticals is also influenced by the perception of whether or not nutrient intake from diet alone was sufficient. Specifically, individuals who felt their vitamin intake from diet alone was insufficient opted to take nutraceuticals (Bailey et al., 2013; Mercer et al., 2012). Similarly, customers who were happy with their medication regimen would refrain from using nutraceuticals (Mercer et al., 2012; Teoh et al., 2021).

**ii. Consumer perception regarding Nutraceutical is safe**

Previous studies revealed that consumers trusted nutraceuticals and believed they were safe to ingest, which was what influenced their decision to do so (Ibrahim et al., 2016; Klafke et al., 2013; Mercer et al., 2012; Lowry et al., 2015; Teoh et al., 2021). Some consumers prioritize safety over health advantages, believing that "if it doesn't help, it won't hurt" (David et al., 2012; Klafke et al., 2013; Lowry et al., 2015). Additionally, consumers mentioned that while choosing nutraceuticals, they take into account the efficacy and adverse effects of prescription medications they are currently using. They avoid utilizing nutraceuticals if their medications manage their disease effectively and have minimal to no side effects (Mercer et al., 2012; Tangkiatkumjai et al., 2013; Sandmann et al., 2015; Downie et al., 2015) and choose a regular, whole-foods diet (Downie et al., 2015; Sandmann et al., 2015). Consumer impression of nutraceuticals as safe and effective is also observed in other studies (Pike et al., 2013; Sandmann et al., 2015). Sandmann et al. (2015) and Downie et al. (2015) favored a regular diet with actual food. Consumer impression of nutraceuticals as safe and effective is also observed in other studies (Pike et al., 2013; Sandmann et al., 2015).

**iii. Consumer perception regarding other Product Features of Nutraceuticals**

Because different consumer segments may be motivated toward different benefits, such as improved physical health/performance compared with improved mental or emotional health, the nature of the health benefit of the nutraceutical is also likely to influence consumer purchase and use in addition to taste. The frequency of consumption necessary to obtain the benefit, the
product label, the source of the benefit claim, the nature of the product and/or its ingredients, and the mode of consumption (tablet or capsule form) are additional variables that may have a significant impact on consumers’ use of nutraceuticals (Cardello & Schutz, 2003; Sandmann et al., 2015).

**Accessibility of Nutraceuticals for Young Consumers**

1. **Ease of using of Nutraceuticals**

   Existing research found that some young consumers thought nutraceuticals didn’t work or didn’t know what to take, while others claimed they already had a healthy diet (Holt et al., 2010). This view may be well-founded because studies have indicated that young adults’ and students’ diets fall short and don’t include enough micronutrients; therefore, they turn to nutraceuticals to meet their daily needs (Steele & Senekal, 2005).

2. **Relationship with Cost in terms of Affordability**

   According to earlier studies (Holt et al., 2010; Sandmann et al., 2015; Downie et al., 2015), customers avoided nutraceuticals when the price was viewed as high. Those who believed the cost of nutraceuticals was less than that of traditional treatments were encouraged to utilize them (Ibrahim et al., 2015).

3. **Ease of Purchasing**

   When determining whether to take nutraceuticals, customers also took into account how simple it was to buy the items in terms of availability (Page et al., 2015; Teoh et al., 2019).

**Source of information for nutraceutical consumption**

1. **Individual Knowledge**

   According to empirical studies, consumers are driven to utilize nutraceuticals because they are aware of them, even though ignorance is the main barrier to using them (Vella et al., 2014; Bilici et al., 2012). According to a different survey, customers do not take supplements because they think they are ineffective, while others think they lack expertise and are unsure of what to eat. Some customers claimed to have used nutraceuticals since they were aware of the health benefits (Holt et al., 2010; Vella et al., 2014).

2. **Significant relationship with Professional Consultation**

   Previous studies indicate that consumers said they would believe their doctor’s advice on using nutraceuticals. Consumers reported that doctors had suggested nutraceuticals over the previous two years (Blendon et al., 2013; Holt et al., 2010; Pike et al., 2013); yet, some consumers
reported that doctors had advised them to stop using nutraceuticals over the previous two years (Blendon et al., 2013).

iii. **Influence other than Health Care Professional**

This may help to clarify why they should have turned to their family and friends for guidance and information rather than their medical professionals. Consumers worry about adverse responses from their doctors (e.g., they might not support nutraceuticals use or might try to persuade them against it). Customers believe their doctors are unaware of nutraceuticals and unable to provide helpful advice. However, consumers stated that they learned about nutraceuticals from family and friends; this was the most widely cited information source (Pike et al., 2013; Tangkiatkumjai et al., 2013). In contrast, the American Dietetic Association (ADA) indicated that publications and the mass media appear to be the main sources of information for consumers in the USA. (Steele & Senekal, 2005)

**RESEARCH OBJECTIVES**

**RO1:** To investigate the connection between the factors influencing consumers’ use of nutraceuticals and their health awareness.

**RO1:** To examine how the perception of nutraceuticals influences the purchase decision of a health-conscious consumer.

**RO2:** To explore the influence of ease of accessibility of nutraceuticals on the purchase decision of a health-conscious consumer.

**RO3:** To empirically test how the source of information about nutraceuticals motivates the purchase decision of a health-conscious consumer.
CONCEPTUAL FRAMEWORK

RESEARCH HYPOTHESES

Perception of the nutraceuticals among health-conscious consumers

Adults most frequently cited “improving overall health” and “maintaining health” as their primary motivations for utilizing nutraceuticals. Adults mentioned using nutritional supplements “to obtain more energy” and “for mental health.” According to prior research, adults primarily used nutraceuticals to maintain or improve their general health or to strengthen their immune systems (Bailey et al., 2013; Menon et al., 2021; Cassileth et al., 2009). The decision to take nutraceuticals was typically driven by customer faith in the industry and the conviction that such goods were safe to use (Ibrahim et al., 2016; Klafke et al., 2013; Mercer et al., 2012; Lowry et al., 2015). Since different consumer segments may be motivated toward different benefits, such as improved physical health/performance compared with improved mental or emotional health, the nature of the health benefit of the nutraceutical is also an important factor influencing consumer purchasing decision and use (Cardello & Schutz, 2003). Therefore, we propose that:

**H1**: Perception of nutraceuticals is a significant predictor for health-conscious consumers.
Accessibility feature of the nutraceuticals for the health-conscious consumers

The primary justifications given by consumers for favoring nutraceuticals are that they desire balanced nutrition and that it is an easy method to eat healthily (Steele & Senekal, 2005; Sandmann et al., 2015). The two main arguments against nutritional supplements were that they are “too expensive” and “fear of artificial chemicals” (Holt et al., 2010; Sandmann et al., 2015; Downie et al., 2015). Consumers have previously stated that while being well-liked and widely available, nutraceuticals are subject to different regulations than therapeutic items (Downie et al., 2015; Sandmann et al., 2015). Consequently, it is proposed that:

**H2: Accessibility of nutraceuticals is a significant predictor for health-conscious consumers.**

Sources of information as motivating factor for the health-conscious consumers

Prior research indicates that while some consumers take guidance from television, social media, and friends and family, the majority of consumers responded that they would trust their doctors and pharmacists for advice about dietary supplements (Holt et al., 2010; Vella et al., 2014). Consumer research has identified doctors and dietitians as sources of information on nutrition and health that people perceive to be reputable. Consumers have also mentioned friends and family as reliable sources of information (Vella et al., 2014). In a different research, sources of information most frequently cited sources included friends, family, the media, and medical advice (Tangkiatkumjai et al., 2013). As a result, it is assumed that:

**H3: Source of Information is a significant predictor for health-conscious consumers.**

RESEARCH METHODS

Sample and Procedure

The exploratory nature of the study intends to determine the importance of the relationship between perceived health hazards and consumers’ health-conscious behaviour as well as the factors influencing the purchase of nutraceuticals and consumers’ health consciousness. The measuring scales were created, and the study model was tested using survey instruments in the form of a questionnaire. Pretesting of the scale was carried out with the assistance of a senior faculty member who was both a doctor of medicine and a graduate of business studies. This guaranteed the legitimacy of the content. A few adjustments were made based on the recommendations. The proposed hypothesis was then tested using the last instrument. Data were gathered using a convenient sampling technique. Around 300 undergraduate students studying at a nearby health care university who represented the fields of medicine, pharmacy,
business, and nursing were given the survey using Survey Monkey. It took around two months to complete the data collection process. Out of 300 students who were contacted, 244 responded to the survey, representing an 81 percent response rate.

**Measurements**

After reviewing recent and ground-breaking literature on the subject, an online survey was generated. Nine variables that covered overall attentiveness, self-consciousness, engagement, and self-monitoring were used to gauge consumers’ health-conscious behaviour. The scale was taken from the works of Gould (1988). From the fundamental works of Teoh et al. (2019), variables to gauge consumer motivation for purchasing nutraceuticals were advocated. Three important elements that influence consumers’ decisions to use nutraceuticals have been found in a systematic review: a) perceptions of nutraceuticals, b) accessibility of nutritional supplements, and c) information sources. Six questions were used to gauge perceptions, three items to measure the accessibility of nutraceuticals, and six items to assess the reliability of the information source. Likert scale responses ranged from (1) strongly disagree to (5) strongly agree on a five-point scale for each topic. Inquiries on the participants’ age, gender, socio-economic status, and place of residence were used to gather demographic data.

**DATA ANALYSIS**

The frequency of distribution of each sociodemographic feature variable made up the univariate analysis. Table 5.1 contains a report of the findings. The significance of perceived health threats and the relationship between the motivating factors influencing customer purchasing behaviour and health consciousness were empirically examined by multiple regression using SPSS version 24. Cronbach Alpha was used to test the data’s reliability, and table 5.2 reports the results.

<table>
<thead>
<tr>
<th>Table 1. Demographic Profile of the Respondents</th>
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<tr>
<td><strong>Demographic Characteristics</strong></td>
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<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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<tr>
<td><strong>Age</strong></td>
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<tr>
<td>18-22</td>
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<td>23-27</td>
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<td>28-32</td>
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<td>33-37</td>
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<td>37 above</td>
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</table>
Hypotheses are examined to determine the degree of correlation between the elements influencing customers’ decisions to use nutraceuticals and their health consciousness. The R² value of the prediction model, which measures the explanatory power of the predictors, is 21.5 percent, making it statistically significant for F = 51.61, p < 0.001. The first deciding aspect was how the products were perceived. The sig value is 0.000, and the (beta value) is 0.341 (p < 0.001). Therefore, we confirm our hypothesis and assert that consumers who are health-conscious are influenced by their perceptions of nutraceuticals when making decisions about the purchase of complementary goods. The results of a systematic analysis of studies examining the variables influencing consumers’ decisions to use nutraceuticals revealed that the perception of these products and the source of information were the primary drivers of consumer behaviour. (Vella et al., 2014; Teoh et al., 2020). With a (beta value) of 0.01 (p < 0.001) and a sig value of 0.812, it was determined that the accessibility of nutraceuticals was not a significant issue. It was discovered to be a significant obstacle to taking nutraceuticals (Teoh et al., 2020). The source of information is statistically significant; the sig value is 0.001, and the beta value is 0.199 (p < 0.001). As a result, we accept our hypothesis and claim that the source of information

Table 2. Reliability Analysis

<table>
<thead>
<tr>
<th>Constructs</th>
<th>No of items</th>
<th>α</th>
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<tbody>
<tr>
<td>Health Consciousness</td>
<td>9</td>
<td>0.860</td>
</tr>
<tr>
<td>Perceptions of Nutraceuticals</td>
<td>6</td>
<td>0.742</td>
</tr>
<tr>
<td>Availability of Nutraceuticals</td>
<td>3</td>
<td>0.607</td>
</tr>
<tr>
<td>Source of Information about Nutraceuticals</td>
<td>4</td>
<td>0.684</td>
</tr>
</tbody>
</table>

Source: This Study
influences the choice to buy a supplement. As the principal source of knowledge on nutraceuticals or alternative therapies, consumers had previously identified pharmacists in research (Kwan et al., 2006; Barnes et al., 2016). The most reliable source of information is a doctor (Sandmann et al., 2015).

There is a large market for nutraceutical products, particularly among younger consumers. One of the products recognized for enhancing gastrointestinal functionality and other advantages like increasing immunity, etc., is the nutraceutical (Shi et al., 2016). The main factor influencing consumers’ propensity to consume nutraceuticals was their perception of the benefits, which improved performance, mood, health, and illness prevention (Babicz-Zielinska & Jezewska-Zychowicz, 2017). “Unclear” denotes a lack of information or insufficient information in the context of accessibility or pricing for nutraceuticals. However, if consumers were not informed of the costs, the availability of nutraceuticals was cited as a rationale for not using them (Tyler et al., 2009). Results are tabulated below:

**Table 3. Regression Analysis**

<table>
<thead>
<tr>
<th>Model Summary</th>
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<tr>
<td></td>
<td>R</td>
<td>R Square</td>
<td>Adjusted R</td>
<td>Std. Error of the Estimate</td>
</tr>
<tr>
<td>1</td>
<td>.463⁠a</td>
<td>.215</td>
<td>.205</td>
<td>.456</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), source of information about nutraceuticals, perceptions towards nutraceuticals, availability of nutraceuticals*

*Source: Study Analysis*

**Table 4. ANOVA**

<table>
<thead>
<tr>
<th>ANOVA*</th>
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</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of Squares</td>
<td>df</td>
<td>Mean Square</td>
<td>F</td>
</tr>
<tr>
<td>1</td>
<td>13.654</td>
<td>3</td>
<td>4.551</td>
<td>21.876</td>
</tr>
<tr>
<td>Regression</td>
<td>13.654</td>
<td>3</td>
<td>4.551</td>
<td>21.876</td>
</tr>
<tr>
<td>Residual</td>
<td>49.931</td>
<td>240</td>
<td>.208</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63.585</td>
<td>243</td>
<td></td>
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</tr>
</tbody>
</table>

*a. Dependent Variable: Health Consciousness*

*b. Predictors: (Constant), : (Constant), source of information about nutraceuticals, perceptions towards nutraceuticals, availability of nutraceuticals*

*Source: Study Analysis*

**Table 5. Coefficients**

<table>
<thead>
<tr>
<th>Coefficients*</th>
<th></th>
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<tbody>
<tr>
<td>Model</td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.804</td>
<td>.253</td>
<td>.365</td>
<td>7.135</td>
</tr>
<tr>
<td>Perceptions towards nutraceuticals</td>
<td>.341</td>
<td>.056</td>
<td>6.054</td>
<td>.000</td>
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</tbody>
</table>
CONCLUSION

The goal of this study was to investigate the elements influencing Pakistani consumers’ health-conscious purchasing decisions. The most significant elements influencing customer purchasing decisions have been recognized in the literature. It was crucial to comprehend how important these aspects were for consumers who were especially health conscious, given the expanding popularity and increased knowledge of the intake of these nutraceuticals among young consumers. Health benefits, safety features, and other product elements such as taste and packaging were found to be key influencing factors along with information source when it came to consumer perceptions of nutraceuticals. In a collectivistic society like Pakistan, customers frequently turn to friends and family for advice instead than medical professionals when buying health care items.

Interestingly, accessibility, as determined by price, the convenience of purchase, and ease of usage, had no discernible impact on consumers’ purchasing decisions. The study provides an important theoretical contribution because the body of research on nutraceuticals is currently quite fragmented, and there aren’t many studies that have been done from a marketing perspective. Finally, the study offers helpful information for health professionals and marketers of these complementary goods. These important characteristics must be taken into account when developing a communication strategy to advertise these items and inform the public about their use and consumption. There are certain limitations of this study. Data has been collected only from only one segment of the population, that is, the millennials, as it is the biggest cohort of the population in Pakistan. We may get varying results if data is collected from the older population.
REFERENCES


