

RESEARCH PAPER

# The Effect of Sustainability On Customers' Intention to Buy from An Online Group-Buying Website

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## ABSTRACT

*Online group buying emerged as one of the most successful online business models. Online group buying refers to the online buying community's purchase of products and services significantly reduced from the regular retail price. According to previous studies, many factors can affect purchase intention on such a platform. This study developed a model that explains the factors influencing purchase intention in an online group buying website, it also proposed a model to study online group buying sustainability from the customer perspective. It considers the impact of sustainability dimensions, customer satisfaction, and website quality on customers' intention to buy. This study examines three dimensions of social, economic, and environmental factors on customers' intention to buy from online group buying websites for the first time. This study also addressed the related relationship between the sustainability dimensions in such a platform. The results show that each social, economic, and environmental dimension positively affects customer satisfaction. Moreover, the sustainability dimensions positively influence the purchase intention, while the environmental dimension has less impact, and the studied online group buying customers pay less attention to it, also, the satisfaction and quality of the website affect the purchase intention.*

**KEYWORDS:** *Online group-buying; Purchase intention; Sustainability; Satisfaction, ;Website quality.*

## 1. Introduction

Online Buying (OB) is a type of shopping performed through online stores. OB has become the driving force in the retail industry, and online retailers deliver their products directly to the customer's requested location. This saves time and money on travel [1]; [2]; [3]. However, Online Group-Buying (OGB) is a system that offers discounts, a new form of in-place advertising, and pricing [4]. The central concept of OGB is to offer lower prices by collecting large orders [5]. This system was successful when it started operating in the United States in 2008, and in a short period, many OGB websites

have spread worldwide. It provides suitable conditions for system shareholders, companies, and customers [6].

In an OGB, consumers share information, resources, or knowledge on the web or social media to promote the same benefits and encourage them to participate and enjoy attractive incentives and discounts. In traditional buying, consumers can get a high discount by reducing the price even more than 50% by buying products in bulk. Moreover, OGB offers cheaper products to customers, and they get more discounts by buying products in large quantities. Unlike OB, which sells services or products to customers, OGB sites sell coupons [6]; [7]; [8].

To the best of our knowledge, most of the research related to the factors influencing the popularity of buying from OGB sites has focused on social metrics such as trust, quality, satisfaction, and loyalty [9]; [10]; [11]. Numerous studies have also pointed to economic factors and

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their relationship to buying. On the other hand, many customers today became interested in the environmental aspects of their buying behavior, which has affected OB [12]; [13]. Recently, businesses and consumers have paid attention to the relationship between three dimensions of sustainability that is economic, social, and environmental [14].

Academics have extensively investigated this notion from many disciplines [15]. Sustainability has attracted the increasing attention of organizations due to climate change and the growing pressures on environmental and social responsibilities [16]; [17]. Moreover, a company must be able to develop new products and services continuously and at the same time have financial stability for its survival. Previous research in various disciplines has studied the relationship between these different dimensions.

As we know, in OGB, several variables and factors motivate customers to buy, and many studies have examined the factors affecting the tendency of OGB; each study focused on a small number of elements from a particular perspective. In this study, an attempt has been made to provide a framework including cost, income, and savings variables (economic factors), as well as variables of trust, sharing value, and social interaction (social factors) and variables of awareness of environmental change and personal responsibility (environmental factors). Because businesses and recent academic research have emphasized a sustainability approach, this study considers the three dimensions of sustainability (social, economic, and environmental) along with the variables of satisfaction and website quality, the intention of OGB's customers to check the Takhfifan website.

In the last decade, the attention of companies and customers has shifted to OB. Also, in the previous two years, when Covid-19 has blocked traffic and caused some face-to-face issues, attention to OB has increased significantly; preventing the spread of disease, and damage to the environment is of particular value; Because the improper use of cars and motorcycles, causes adverse effects on the environment and global warming, resulting in forest fires and the destruction of the environment [18]. Therefore,

online websites are also thinking about improving and expanding their organization because facilitating the process of searching and OB can play a crucial role in preserving the environment. While providing a clear and comprehensive picture of the existing space, this framework can guide business owners for better investment and decision-making. It can also be a good guide for companies active in the field of e-commerce to enter the OGB market. The variables affecting the willingness to buy, if correctly identified and used, and the necessary infrastructure to establish them play a significant role in the success of this business model.

The issue of considering the relationship between the dimensions of sustainability along with the variables of customer satisfaction and website quality on OGB intention has been raised for the first time. So far, no research has been done on the effect of sustainability on OGB and even on any type of OB. Considering the efficiency of this issue and helping the sales department managers of websites and their performance is another research innovation. Also, considering the main social, economic and environmental dimensions together and paying attention to their two-way relationship has been discussed for the first time in the review of OGB websites.

The structure of the study is as follows. OGB literature is provided in Section 2. Next, the research model is introduced. Then, the research methodology and data analysis are given in Sections 3 and 4. The section describes the theoretical and practical contributions, the study's limitations, and future research directions.

## **2. Literature Review**

### **2.1. Online group buying**

OGB is a system that offers daily discounts on various services and products. The OGB literature is pervasive and dates back to 2008, and in just a short time, it has spread worldwide. Studies on OGB behavior are considered necessary because they relate to the development of e-commerce that builds customer relationships and marketing strategy, the history of which will be discussed in this section.

The basic idea of OGB to attract people to lower transaction prices were considered by Kaufman et al. According to their study, the higher the number of orders, the more willing consumers are to participate in the purchase. By engaging with

more people, many potential buyers are waiting for the auction price to drop to an acceptable level. They conducted a series of experiments on bakery cookie sales using an OGB test auction to gain insight into how these incentives work. The results showed that price satisfaction can positively affect purchase intention. Erdoğan and Çiçek (2011) reviewed the system in Turkey. They used the in-depth interview method to examine their motivations, behavior, and understanding of the OGB system. The results showed that most customers made a decision based on the advantage of price and discount. In addition, this was an indication of the importance of the price factor [6].

Shiau et al. (2012) examined the factors influencing the customer's persistence in consuming OGB and the degree of reciprocity and reputation of social exchanges, seller trust, and creativity on consumer satisfaction and intention to buy. Data from 215 samples were collected using an online questionnaire. The results showed that consumer satisfaction, trust, and seller creativity predicted the intention to buy. Consumer satisfaction with OGB is primarily related to trust [19]. Cheng and Huang (2013) examined the relationship between intention to participate in the OGB and consumer behavior. An online questionnaire was collected from 373 members of the ihergo website. The results showed potential consumers' innovative relationships and service quality attitudes affect OGB intention. Also, system quality positively affects buying intention, and buying intent positively affects OGB behavior [20].

Hsu, Chang, et al. (2014) studied the intention to repurchase on an OGB website in Taiwan. They tested their theoretical model using data collected from 253 customers. They examined the factors of satisfaction, quality, and trust separately on the website and the seller. The results showed that website satisfaction, seller satisfaction, and perceived website quality positively affect repurchase intention; in contrast, perceived website quality and seller quality significantly affect website satisfaction and seller satisfaction, respectively [21]. Yi Cheng Chen et al. (2015) created an explanatory model through an online survey to explain how social capital, software platforms, and active participation affect consumer interests in OGB. The results showed that social capital increases consumer benefits by increasing the active participation of consumers [9]. According to a theoretical model, Hsiang Hsu et al. (2015) examined the factors influencing the repeat purchase intention from a

group of 246 respondents. The results showed that trust and satisfaction significantly impact repeat purchase intention. They also showed that satisfaction significantly affects trust, while perceived value and website quality affect satisfaction [10]. Che et al. (2015) examined consumer revisits to OGB websites. In fact, from the perspective of transaction cost economics (TCE), they identified three specific factors, namely, unpredictability, trust, and personalization traits, which can influence consumers' intention to revisit. The results showed that unpredictability has more severe adverse effects on the intention of indirect visitors again. In contrast, the positive effects of personalization and trust are more potent for direct visitors [22].

Norazah and Norbayah Mohd Suki (2017) examined the determinants of consumer attitudes toward OGB. In addition, shoppers compared men and women based on their buying behavior on OGB. The results show that online retailers need to improve their transaction security mechanisms and internet technology to reduce consumers' perceived financial, product, and time risks and strengthen their trust [23]. Yifan Wu et al. (2017) examined a model in which the seller offers discounts on OGB websites to attract customers. In addition to discussing the best decisions about service quality and online pricing, they analyzed the conditions under which a salesperson can benefit from an OGB strategy; They found that only when the website was large enough was the salesperson to benefit from the group purchasing strategy [24].

Weng Marc Lim (2020) examined the background and consequences of OGB behavior based on a purchase value model. This study's structural equation model used the response of 458 customers with the purchasing experience. The results showed that OGB marketers and site operators need to improve perceived benefits (value for money, product and service selection, convenience), perceived quality (ease of use, aesthetics, fast processing speed), and perceived risk (security, privacy, redemption) [25]. Sharma and Klein (2020) considered consumer involvement as a vital issue for OGB, consumer perceived value, self-confidence, and sensitivity to interpersonal influences to more closely examine consumer intent in OGB. The results showed that customer perceived value, perceived trust, and sensitivity to interpersonal effects have a significant relationship with consumer involvement. Consumer perceived value also has a strong relationship with trust, which is essential

to participating in OGB [26].

Hossein et al. (2021) examined the reason for choosing customers from one OGB vendor over others. Explaining transaction cost economics (TCE) theory, they explained the buying behavior of OGB customers. Data analyzed by structural equation modeling based on partial least squares (PLS-SEM). The results showed that unpredictability, trust, and customization affect purchase intention. In addition, customization reduces unpredictability [2]. Cheng et al. (2021) studied the effect of individual perception and social atmosphere on consumer OGB decisions. In this study, a model was used to explain how a new mechanism for buying through personal interactions could work. The results showed that the effect of the social atmosphere and trust could effectively promote positive attitudes and intentions towards OGB [27]. Recent studies have shown the relationship between consumer decision-making models and consumer participation in understanding OGB, but none have analyzed their collective impact. Klein and Sharma (2022) examined consumer participation as a mediator between the consumer's intention to participate in the OGB and their decision-making styles. The results showed that the price is a conscious habit, loyal to the brand, and the confusion is due to the over-selection of consumer decision-making styles and their intention to participate [4].

## **2.2. Dimensions of sustainability in purchasing**

A new trend that has encouraged customers to OB is environmental issues. Customer concerns about environmental degradation led to new buying models, and online buying schemes became more popular. On August 11, 1994, the first Internet-based transaction took place, and since then, the Internet has constantly changed how it bought. Various areas and business sectors have witnessed changes with the advent of the Internet. At the time, e-commerce was an utterly unknown term that gradually became an essential part of our daily lives. Previous studies have shown that reducing transportation and optimizing e-commerce lessen the adverse effects of shopping on the environment.

According to previous studies, sustainability is the relationship between these three social, economic, and environmental dimensions. Sustainability is an issue that has received much attention today. It has been widely expressed in many fields [15]. Sustainability due to climate change and the environment held people

accountable. Many companies consider sustainability vital to their strategic goals [28]. Economic sustainability is critical to the financial success of companies and organizations. To survive, an organization must produce goods and services while being profitable continuously. Environmental sustainability considers the impact of companies on the environment. Protecting natural resources and the environment is essential for today's sustainable economies and societies and the survival of generations. Previous research examined the components of sustainability in traditional and OB. However, it has not been studied in OGB as a form of online buying. Therefore, this issue is examined in this study. Of course, different stakeholders are involved in OGB. This research focuses on customers' perceptions of sustainability and its impact on the intention to buy from an OGB site.

Sustainability is increasingly attracting the attention of researchers, policymakers, and companies. Marketing also plays a vital role in implementing and promoting such initiatives, which logos can significantly support. Based on their research, Kumar et al. (2014) found that companies can use logos to promote sustainable value for experimental customers of industries, consumers, and other stakeholders. It can be done through business activities emphasizing the firm's sustainability measures and their impact on stakeholders. Expressing sustainability measures as measurable and related outcomes and their relationship to logos can further facilitate this integration of sustainability and branding [15]. Claire Brindley et al. (2014) examined the challenges facing organizations in meeting the requirements of sustainable procurement and marketing needs and changes in supply chain management practices. While externalities are easy to understand, less is understood about the supplier's implications for meeting sustainable procurement requirements and the organizational challenges of aligning the market with sustainable supply chain management. The study was conducted in the Hospitality Department of the University of the United Kingdom to examine strategies, processes, and relationships related to sustainable supply chain and green marketing needs [29].

The garment industry also has great potential for improving various aspects of sustainability. Although consumer attitudes towards sustainable products and services, in general, and in the field of clothing in general, have become more and more desirable in recent years, the market share of clothing produced in environmentally friendly

and socially responsible ways is still lagging. Kathleen Jacobs (2018) empirically examined this phenomenon as a behavioral gap in sustainable clothing. Based on a large sample of German female consumers, a structural equation model is estimated that assesses the extent of the behavioral gap and the impact of possible factors and barriers to sustainable clothing buying behavior. The results showed that a positive attitude towards social-environmental clothing standards increases biosphere and altruistic values and the desire to shop online and buy sustainable clothing. Curiosity and hedonistic values and the preference for durable clothing prevent consistent buying behavior; Thus, the results show the importance of changing attitudes and values towards sustainability and focusing on the durability of sustainable clothing and its availability through retail stores [30].

Various areas and business sectors have witnessed changes with the advent of the Internet. Over the past decade, the retail industry, in particular, has seen widespread e-commerce growth. With the continued growth of e-commerce transactions, trucks are entering cities more than ever, with the negative consequences of increased congestion and pollution. Miguel Jaler et al. (2020) first demonstrated basic buying behaviors — both in-store and online — using US survey data. With a quick analysis between in-store and online buying, they estimated the effects of fast delivery, basket size, and level of

aggregation. The results confirmed the importance of managing the urban transportation system, including services and delivery operations, to strengthen a sustainable urban environment [31]. According to previous research on sustainability, Panda et al. intended to buy green in traditional purchases; in fact, they focused on social and environmental sustainability. They named social and environmental sustainability factors and examined their relationship to altruism and green shopping intentions. The results showed that awareness of social and environmental sustainability affects altruism and altruism on the intention to buy green, so in fact, awareness of social and environmental sustainability directly impacts the intention to buy green [32].

Table 1 classified the studies on the sustainability dimension when the customers' purchase and repurchase intention in an OGB have been explored. According to Table 1, although former studies examined the components of sustainability in traditional and online buying, it is not studied in an OGB. In general, integrating the dimensions of sustainability, satisfaction, and quality of the website could help discover the determinants of OGB intention from different points of view. Therefore, this issue is examined in this study. Of course, a variety of stakeholders are involved in an OGB. This research focuses on the customers' perspectives on sustainability and its effect on buying intention from an OGB site.

**Tab. 1. Prior literature on purchase intention**

| Sources of Indicator | Sustainability dimension |          |               | Independent variable(s)                                   | Dependent variable(s) related to sustainability dimensions | Key findings                 |
|----------------------|--------------------------|----------|---------------|---|--|------------------------------|
|                      | Social                   | Economic | Environmental |   |  |                              |
| [2]                  | ✓                        |          |               | Trust (TR)  | Purchase intention (PI)                                    | TR → PI                      |
| [5]                  |                          | ✓        |               | Price (PR)  | Purchase intention (PI)                                    | PR → PI                      |
| [8]                  |                          | ✓        |               | Cheap price (CP)  | Purchase intention (PI)                                    | CP → PI                      |
| [9]                  |                          |          |               | Social interaction ties (SI), trust, value of sharing (V) | Active participation (AP)                                  | SI → AP, TR → AP, V → AP     |
| [10]                 |                          |          |               | Trust (TR), satisfaction (ST)                             | Repeat purchase intention (RPI)                            | TR → RPI, ST → RPI, CV → RPI |
| [19]                 |                          |          |               | Trust (TR), satisfaction (ST)                             | Intention to online group buying (IT)                      | TR → ST, TR → IT, ST → IT    |
| [21]                 |                          |          |               | Trust (TR), satisfaction (ST)                             | Repurchase intention (RI)                                  | TR → RI, ST → RI             |
| [22]                 |                          |          |               | Trust (TR), price (PR)                                    | Revisit intention (RI)                                     | TR → PR, PR → RI,            |

| Sources of Indicator | Sustainability dimension | Independent variable(s)  | Dependent variable(s) related to sustainability | Key findings  |
|----------------------|--------------------------|--|---|---|
| [26]                 | ✓                        | Trust (TR), perceived value (PV)   | Intention to participate in OGB (IP)            | TR → RI<br>PV → TR,<br>TR → PI,<br>PV → (-) IP  |
| [27]                 | ✓                        | Trust (TR), social influence (SI)  | Purchase intention (PI)                         | TR → PI<br>SI → PI  |
| [32]                 | ✓ ✓                      | Trust (TR), price (PR)   | Purchase intention (PI)                         | TR → PR,<br>PR → PI,<br>TR → PI   |
| [33]                 | ✓                        | Service Quality (SQ), Trust (TR)   | Repurchase intention (RI)                       | SQ → RI<br>TR → RI  |
| Current research     | ✓ ✓ ✓                    | Social interaction ties (SI), trust (TR), value of sharing (V), price (PR), save money (SM), income (IC), awareness of environmental changes (AE), Personal responsibility (PR), Satisfaction (ST), website quality (WB) | Purchase intention (PI)                         | SI → PI<br>TR → PI<br>V → PI<br>PR → PI<br>SM → PI<br>IC → PI<br>AE → PI<br>PR → PI<br>ST → PI<br>WB → PI |

According to previous research, one of these categories mentioned in many studies is the social dimension [27]. Many studies in this category reported factors such as trust (the highest cited factor), perceived value, and social interaction ties [9].

Trust means the consumer's belief or confidence in purchasing in e-commerce [2]; [4]; [13]; [26], and some forms of trust, such as trust in sellers and website [21], trust in an intermediary, and trust with the technology acceptance model commonly deployed in studies related to intention to buy [34]. According to previous studies, the trust factor has been mentioned in most research related to OGB. Moreover, the value of sharing as an essential factor in previous studies directly affects social capital. It has a positive effect on consumer benefits through intermediaries. Furthermore, social interaction ties mean the consumer understands social relationships and communication between other consumers. In previous studies, it is one of the factors of social capital that has a positive consequence on customer profit and participation in a purchase [9].

The next category that could remark on is the economic dimension. The product or service price is the most considered factor in this category. Moreover, customers' financial ability, income, and savings are also mentioned as economic factors in buying intention from OGB websites. Other factors studied in this area are a utilitarian benefit, hedonic benefit, and

interpersonal benefit [9]; [13].

Price is a crucial factor in stimulating customers to decide whether they will make a purchase or not. Various forms of price such as price consciousness consumers look for the lowest prices for this item [34], pricing [24], and price satisfaction for final auction price which has a remarkable impact on contribution in the OGB [5]. Price and saving money have been mentioned as economic factors in previous studies [13]. Because saving money comes from personal income, income is also an essential factor in the economic dimension. It could be an excellent question to study the personal income effects on purchasing behavior of consumers. In previous research, only the factors mentioned above have been mentioned, and the factors of income and money savings have not been examined, even though they are pivotal factors in determining the extent of customers' purchases.

On the other hand, a new trend that encourages customers to buy online is the environmental issue. Customers' concern about ecological destruction resulted in new buying models, online buying schemes became more popular, and OGB as an online platform stimulated more attention [17]; [31]; [32]. Previous studies show that reducing transportation and optimizing mobility in e-commerce can reduce the harmful effects of buying on the environment [32]; [35]. However, tackling this issue as one of the customers' buying intentions is not mentioned in the previous OGB studies. Therefore, this research

examines the dimensions of sustainability and its impact on purchase intention along with the satisfaction and quality of the website.

### 3. Research Model

OGB is a form of participatory online buying in which the customer buys with virtual partners [2]. Customers use shared online buying websites to purchase enjoyable benefits by getting products

with buying partners [10]. Here, based on the theoretical background in OGB and OB, a model is proposed to examine the buying intention of the OGBs' customers, as shown in Figure1. The rest of this section explains the selected constructs and develops the hypotheses considered in the model. By investigating the variables and studying previous research, the following hypotheses are formed:

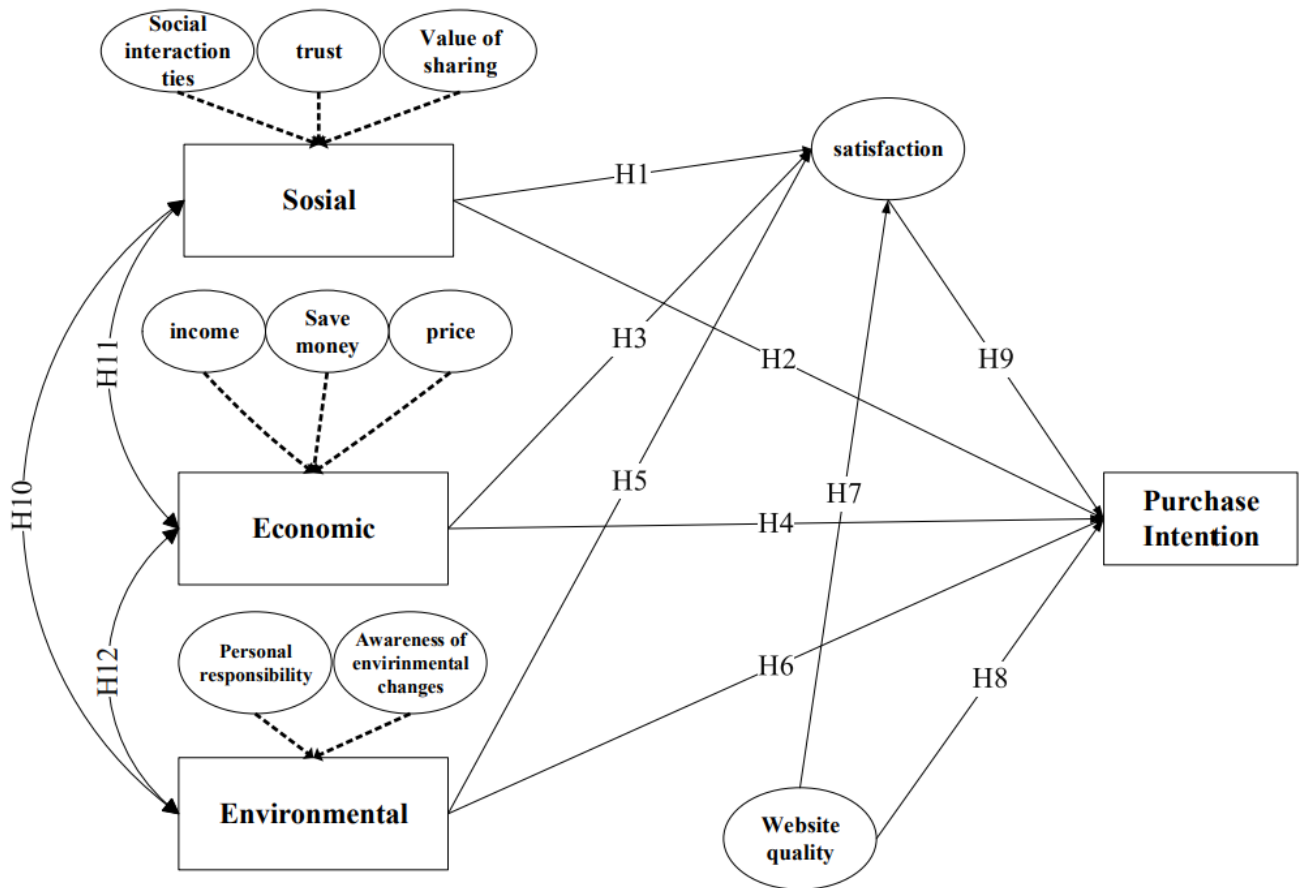


Fig. 1. Research model

- **Social dimension and satisfaction**

Many social factors have been mentioned in previous research, including trust [5]; [21]; [22], perceived value [26], the value of sharing. This research considers three factors of trust, sharing value and mutual social relations [9]. Trust is one of the factors of the social dimension; it arises from the feeling of security in social exchanges. However, satisfaction is the customer's post-purchase evaluation and emotional response to the buying experience. Additionally, research shows that trust and social factors are highly associated with satisfaction [21]. Thus, the following hypothesis is presented.

**H1.** The social dimension is positively related to satisfaction.

- **Social dimension and OGB intention**

Social factors such as trust, value sharing, and social interaction ties have been revealed to play an essential role in online trading [9]. Lack of trust and confidence in sellers reduces the desire to continue operating in online transactions [20]. The positive effect of social dimensions on purchase intention has been evaluated by many studies [19]; [27], and the following hypothesis is presented:

**H2.** The social dimension is positively related to the intention to participate in OGB.

- **Economic dimension and satisfaction**

The price and the income, which are vital factors in the economic dimension, play an essential role in an online trading process, and lower costs in online trading, of course, along with acceptable

quality, play a vital role for customer satisfaction after purchase [8]. Thus, customers may buy because of the reasonable price and satisfaction increases. Thus, the following hypothesis is presented:

**H3.** The economic dimension is positively related to satisfaction.

- Economic dimension and intention to participate in OGB

It has been proven that cost and income are essential in online buying, as they can significantly impact the number of purchases. Moreover, lower price ensures continuing online buying [10]; [8]. Many studies have experimentally proved the positive effect of economic dimensions on buying intention. Therefore, the following hypothesis is presented:

**H4.** The economic dimension is positively related to the intention to participate in OGB.

- Environmental dimension and satisfaction

One of the most prominent issues for individuals and companies is the environment. People may ignore the environment in practice; however, they show enthusiasm regarding environmental protection. As a result, customers are satisfied with online buying, which preserves the environment [32]. Therefore, the following hypothesis is presented:

**H5.** The environmental dimension is positively related to satisfaction.

- Environmental dimension and OGB intention

As mentioned before, one of the most critical issues is to pay attention to the environment. In fact, with a sense of personal responsibility, online buying reduces the number of shipments and leads to less environmental pollution; therefore, this attention to the environment increases the intention of consumers to buy from OGB websites [36]. Thus, the following hypothesis is presented:

**H6.** The environmental dimension is positively related to OGB intention.

- Website quality and satisfaction

Previous research has shown that website quality can be essential to customer satisfaction [37]. When customers visit a website to buy products/services, they may feel that it provides quick and easy access to information and can be an excellent place to shop. Therefore, this experience increases customer satisfaction [10]. Thus, the following hypothesis is presented:

**H7.** Website quality is positively related to satisfaction.

- Website quality and OGB intention

According to previous research, the quality of the

website affects the intention of customers to buy; because in OGB, when a customer finds required information about products/services quickly through the website, this sense of easy access and good quality of the website increases the customer's desire to buy, and thus leads to buying from the website [10]; [21]. Therefore, the following hypothesis is presented.

**H8.** Website quality is positively related to the intention to participate in OGB.

- Satisfaction and intention to buy from an OGB

Previous studies have shown that customers' intention to buy could be influenced by their level of satisfaction, and satisfied customers usually intend to buy more seriously. It is also demonstrated empirical evidence for an association between satisfaction and buying intention [10]. Therefore, the following hypothesis is presented.

**H9.** Satisfaction is positively related to the intention to buy from an OGB.

- Environmental dimension and social dimension

Steg et al. reported that relevant social values play an essential role in saving the environment; therefore, awareness of environmental changes can be crucial in igniting customers' moral responsibility regarding the environment. In addition, it is also shown that awareness of environmental changes, directly and indirectly, affects consumers' norms about society [32]. Therefore, the following hypothesis is presented:

**H10.** Environmental is positively related to the social dimension.

- Social dimension and economic dimension

Many researchers have explored the social and economic factors of business relationships. However, their relative importance to each other is not evident yet, especially in the field of OGB [38]. For example, trust is one of the essential social factors that can reduce price sensitivity. Therefore, the following hypothesis is presented:

**H11.** The social dimension is positively related to the economic dimension.

- Economic dimension and environmental dimension

The literature on economic growth and pollution refers to what is known as the Kuznets environmental curve (EKC). That is an inverted U-shape that indicates pollution emissions increase and environmental quality declines in the early stages of industrialization and then improves with increasing revenue. Because income is one of the factors in the economic dimension, with increasing income, personal



responsibility for the environment also increases. As a result, the quality of the environment improves [39]. It results that:

**H12.** The economic dimension is positively related to the environmental dimension.

Finally, to ensure, several control variables were employed in the model. Past studies recommended that experience, gender, age, and income may influence purchasing intent [21]. Hence, these control variables' impact on customers' purchase intention is explored.

**4. Methodology**

**4.1. Measurement development**

The measurement items in the proposed model are employed according to the reported studies and existing literature. Items measuring the price were adapted from Kauffman, , and Xiao to measure save money and income [5]; [13]. Items for measuring the quality of the website and satisfaction has been adopted from Hsu, Chang et al. while items used to measure trust in the website, social interaction ties, and value of sharing were reported by Chen, Wu et al. Items used to measure awareness of environmental changes and personal responsibility has been borrowed from De Silva, Wang et al, Panda, Kumar et al , and items for measuring OGB intention were adapted from Sharma and Klein, Hossain, Akter et al. Most scale items and the additional items have been adapted from the OGB and online buying context, except environmental-related measures adapted from traditional buying. Considered scales were checked for face validity by four knowledgeable

judges. A 5-point Likert Scale was used to measure the items. The research measurement and questionnaire items are composed in Table 2.

**4.2. Survey administration**

There are several OGB websites in Iran. Takhfifan is the first and the most popular OGB platform in Iran, which started its activities in 2011 to provide exceptional services and creates a good sense of excitement. To evaluate the current model, the customers of the Takhfifan website were targeted (<https://takhfifan.com/>). Takhfifan is a platform for providing various services and products used in everyday life, including restaurant reservations, train tickets, plane tickets, tour reservations, hotel reservations, discounted pool ticket purchases, and discount codes from online stores and thousands of other jobs. Takhfifan aims to provide the best services and goods with the highest discount to give everyone the most access and excitement. Creating a suitable web platform through the Takhfifan website and providing services on phones and tablets using the mobile application allows companions to access all active offers on the site as soon as possible and in the simplest way.

This study used an online questionnaire to collect data, and Takhfifan's social media followers with OGB experience were invited to participate in this survey. The returned questionnaires were initially checked for reliability, and 252 valid questionnaires were collected from 310 questionnaires.

**Tab. 2. Measurement items**

| Dimension | Construct        | Item                    | Scale item   | loading  | Sources |      |
|-----------|------------------|-------------------------|--|--|---------|------|
| social    | trust            | 1                       | I think the sellers are reliable.  | 0.79   | [21]    |      |
|           |                  | 2                       | Takhfifan will always keep the promises they make.   | 0.85   | [9]     |      |
|           |                  | 3                       | Takhfifan always keeps members' best interests in mind.  | 0.77   | [10]    |      |
|           | Value of sharing | 4                       | Takhfifan members have the same expectation of getting a good product/service at a reasonable price. | 0.70   | [9]     |      |
|           |                  | 5                       | Takhfifan members believe that it helps them in discovering new products/services.                   | 0.76   | [9]     |      |
|           |                  | social interaction ties | 6  | I would like to buy online buying because I enjoy sharing my opinions about buying.  | 0.80    | [40] |
|           |                  |                         | 7  | I would like to go to Takhfifan because I can express myself freely on the internet. | 0.87    | [40] |
| economic  | price            | 8                       | The current price makes me feel the product is cheap.  | 0.79   | [5]     |      |
|           |                  | 9                       | I would like to go to Takhfifan because I can get a lower product price.                             | 0.75   | [40]    |      |
|           |                  | 10                      | I would like to go to Takhfifan because I enjoy  | 0.80   | [40]    |      |

**Tab. 2. Measurement items**

| Dimension       | Construct                          | Item | Scale item   | loading | Sources |
|-----------------|------------------------------------|------|--|---------|---------|
|                 |                                    |      | looking for discounts.   |         |         |
|                 | income                             | 11   | Takhfifan is suitable for middle-income people.  | 0.84    | -       |
|                 |                                    | 12   | I buy more products/services from Takhfifan with a higher income.  | 0.85    | -       |
|                 | save money                         | 13   | When I have more savings, I buy from Takhfifan.  | 0.85    | -       |
|                 |                                    | 14   | I buy from Takhfifan because it helps me to save more money.   | 0.82    | -       |
| environmental   | Awareness of environmental changes | 15   | Unless each of us recognizes the need to protect the environment, future generations will suffer the consequences. | 0.74    | [35]    |
|                 |                                    | 16   | I know buying from Takhfifan helps reduce pollution.   | 0.68    | [35]    |
|                 |                                    | 17   | Strict global measures must be taken immediately to halt the environmental decline.                                | 0.81    | [35]    |
|                 | Personal responsibility            | 18   | I use Takhfifan to reduce the number of shipments.   | 0.81    | -       |
|                 |                                    | 19   | I know, I can make a big difference in educating others about protecting the environment by buying from Takhfifan. | 0.70    | [41]    |
|                 |                                    | 20   | I feel I can influence through my behavior to protect the environment.   | 0.86    | [42]    |
| OGB Intention   |                                    | 21   | I am willing to participate in a group-buying purchase.  | 0.81    | [26]    |
|                 |                                    | 22   | I would probably participate in a group-buying purchase.   | 0.81    | [26]    |
|                 |                                    | 23   | I am interested in participating in a group-buying purchase.   | 0.80    | [26]    |
| Satisfaction    |                                    | 24   | I feel good about my decision to purchase products from Takhfifan.   | 0.68    | [10]    |
|                 |                                    | 25   | I am satisfied with the experience of purchasing products from Takhfifan.  | 0.68    | [10]    |
|                 |                                    | 26   | I think purchasing from Takhfifan is a good idea.  | 0.70    | -       |
| Website quality |                                    | 27   | I feel the Takhfifan website is easy to use.   | 0.84    | [20]    |
|                 |                                    | 28   | The Takhfifan is well designed for users.  | 0.87    | [10]    |
|                 |                                    | 29   | The Takhfifan provides up-to-date information.   | 0.86    | [20]    |
|                 |                                    | 30   | The Takhfifan gives prompt service to consumers.   | 0.78    | [10]    |

Sources Tab. 3 lists the demographics of the respondents. Interestingly, the results show that most buyers were women, aged between 19 - 30 years. Due to the lack of previous data and the amount of available data, 58.8% of the

respondents had less than one year of shopping experience. It indicates that online group buying has become more popular among people in recent years.

**Tab. 3. The profile of the respondents**

| Variable          | Classification          | Frequency | Percentage (%) |
|-------------------|-------------------------|-----------|----------------|
| Gender            | Male                    | 113       | 44.84          |
|                   | Female                  | 139       | 55.16          |
| Age               | Less than 18            | 9         | 3.6            |
|                   | 19-30                   | 121       | 48             |
|                   | 31-40                   | 79        | 31.3           |
|                   | 41-60                   | 43        | 17.1           |
| Experience on OGB | Less than one year      | 148       | 58.8           |
|                   | 1-less than three years | 69        | 27.6           |
|                   | 3-less than five years  | 19        | 7.6            |
|                   | Above five years        | 16        | 6              |

|                  |                             |     |      |
|------------------|-----------------------------|-----|------|
| Frequency on OGB | At least once per week      | 9   | 3.6  |
|                  | At least once per month     | 16  | 6.3  |
|                  | At least once per season    | 27  | 10.7 |
|                  | At least once per half-year | 98  | 38.9 |
|                  | At least once per year      | 102 | 40.5 |
| Monthly income   | Less than 1,500,000 Tomans  | 94  | 37.3 |
|                  | 1,500,000-3,000,000 Tomans  | 76  | 30.2 |
|                  | 3,000,000-6,000,000 Tomans  | 48  | 19   |
|                  | 6,000,000-10,000,000 Tomans | 23  | 9.1  |
|                  | Above 10,000,000 Tomans     | 11  | 4.4  |

**5. Data Analysis and Results**

In this study, the measurement model test in the SPSS software was examined to perform data analysis, then the structural relationships between hidden structures were investigated. SPSS is a statistical analysis, and data management and data documentation are also features of the software. Moreover, the structural equation model (SEM) is an essential statistical method that can estimate the relationships between

Tab. 4, the values range from 0.790 to 0.849, which are all above the recommended level of values > 0.7. Correspondingly, according to the table, the standardized factor load for all questions is more than 0.4, which is desirable. Therefore, there is no need to change or remove the question in the research model and questionnaire.

As shown in

Tab. 5, the chi-square value in the first-order factor analysis model is 2.360 and less than 3.

independent and dependent variables [43]. Here, SPSS and Amos are employed as data processing tools in this study.

**5.1. Measurement model**

This study used confirmatory factor analysis to analyze the difference and convergence validity among multiple variables indicators. The internal consistency of the scale was assessed utilizing Cronbach's alpha coefficient. As shown in Also, the root mean Square error of approximation (RMSEA) is 0.074 and less than 0.08. The comparative fit index (CFI), incremental fit index (IFI), and goodness of fit index (GFI) are 0.92, 0.92, and 0.88, respectively. Therefore, the optimal fit of the model was concluded.

Tab. 5 shows that the confirmatory factor analysis of the structures of the questionnaire used had a good fit, and the structures of the questionnaire show the relevant variables well.

**Tab. 4. Reliability analysis of variables**

| Variable                           | Item | Standard coefficient | Mean | Cronbach's $\alpha$ |
|------------------------------------|------|----------------------|------|---------------------|
| trust                              | Q1   | 0.790                |      | 0.849               |
|                                    | Q2   | 0.854                |      |                     |
|                                    | Q3   | 0.773                |      |                     |
| Value of sharing                   | Q4   | 0.703                | 3.38 | 0.799               |
|                                    | Q5   | 0.765                |      |                     |
| social interaction ties            | Q6   | 0.800                |      | 0.822               |
|                                    | Q7   | 0.872                |      |                     |
|                                    | Q8   | 0.793                |      |                     |
| price                              | Q9   | 0.750                |      | 0.824               |
|                                    | Q10  | 0.801                |      |                     |
| income                             | Q11  | 0.838                | 3.71 | 0.829               |
|                                    | Q12  | 0.846                |      |                     |
| save money                         | Q13  | 0.848                |      | 0.817               |
|                                    | Q14  | 0.815                |      |                     |
| Awareness of environmental changes | Q15  | 0.735                |      | 0.790               |
|                                    | Q16  | 0.678                | 3.60 |                     |
|                                    | Q17  | 0.806                |      |                     |

|                         |     |       |      |       |
|-------------------------|-----|-------|------|-------|
|                         | Q18 | 0.809 |      |       |
| Personal responsibility | Q19 | 0.699 |      | 0.828 |
|                         | Q20 | 0.858 |      |       |
|                         | Q21 | 0.811 |      |       |
| OGB Intention           | Q22 | 0.810 | 3.46 | 0.846 |
|                         | Q23 | 0.796 |      |       |
|                         | Q24 | 0.676 |      |       |
| Satisfaction            | Q25 | 0.684 | 3.68 | 0.722 |
|                         | Q26 | 0.696 |      |       |
|                         | Q27 | 0.841 |      |       |
| Website quality         | Q28 | 0.868 |      |       |
|                         | Q29 | 0.858 | 3.52 | 0.902 |
|                         | Q30 | 0.783 |      |       |

**Tab. 5. Results of the fitness test**

| Index       | Evaluation criterion | The amount obtained |
|-------------|----------------------|---------------------|
| $\chi^2/df$ | < 3                  | 2.506               |
| RMSEA       | < 0.08               | 0.078               |
| CFI         | > 0.9                | 0.93                |
| IFI         | > 0.9                | 0.92                |
| GFI         | >0.8                 | 0.88                |

The correlation coefficient is a statistic used to measure the power or degree of a linear relationship between two variables, and Pearson correlation (r) is the most famous correlation coefficient. It ranges from -1 to +1. The closer this value is to +1, the stronger and more positive the relationship between the two variables. In other words, an increase in each variable increases the others, and vice versa. This test examines the following hypothesis:

Null hypothesis: The correlation coefficient

between the two variables is zero.

Opposite hypothesis: The correlation coefficient between the two variables is not zero.

The results of the correlation test are shown in Tab. 6. As can be seen, the significance level of the correlation test between all research variables was less than 0.05. Therefore, it is perceived that there is a positive and significant correlation between the studied variables.

**Tab. 6. Pearson correlation test between variables**

| variable           | Social | Economic | Environmenta<br>l | OGB intention | Satisfaction | Website quality |
|--------------------|--------|----------|-------------------|---------------|--------------|-----------------|
| Social             | 1      |          |                   |               |              |                 |
| Economic           | 0.547  | 1        |                   |               |              |                 |
| Environment<br>al  | 0.247  | 0.425    | 1                 |               |              |                 |
| OGB<br>intention   | 0.518  | 0.569    | 0.390             | 1             |              |                 |
| Satisfaction       | 0.426  | 0.488    | 0.368             | 0.520         | 1            |                 |
| Website<br>quality | 0.210  | 0.255    | 0.397             | 0.376         | 0.319        | 1               |

### 5.2. Structural model

The proposed model's path coefficients and explained variances are shown in Fig. 2, and the statistical significance of the estimated parameter is evaluated using a bootstrapping procedure with 200 subsamples. In examining the parameters, the

relationships between the model variables are all significant at different levels. As expected, H1 with a coefficient of 0.25 confirms a positive relationship between the social dimension and satisfaction, which is in line with Hsu et al [10]; [21]. Correspondingly, a coefficient of 0.22

indicates a significant relationship between the social dimension and the intention to participate in OGB, as stated by Klein and Sharma [4]. By examining the relationships between economic dimension and satisfaction with coefficients of 0.37, H3 is accepted, and relationships between economic dimension and intention to buy from an OGB with coefficients of 0.26, H4 is accepted, it is consistent with Leong et al. and Che et al. [22]; [34].

The results show a positive influence of the environmental dimension on satisfaction and purchase intention with 0.14 for both paths. However, according to Byrne, coefficients less than 0.2 could be interpreted as weak or ineffective relationships. It could be inferred that these variables have a counterproductive effect; thus, H5 and H6 are accepted with inadequate results. They are nonetheless consistent with Panda et al [32].

The website quality was expected to significantly affect satisfaction; however, the website quality with a coefficient of 0.16 has a lower impact on the satisfaction variable, and H7 is accepted. Website quality with a factor of 0.12 affects the intention to buy, which proves H8. However, the

value of website quality path coefficients is low compared to other variables, implying this variable's low impact. Finally, satisfaction with a coefficient of 0.29 affects the purchase intention, and H9 is approved.

Dimensions of sustainability have bilateral relations. This means determining the cycle rotation. According to H10, the social and economic dimensions of the purchase problem are related by a factor of 0.65. The economic and environmental dimension with a coefficient of 0.42 confirms hypothesis H11, and the social and environmental dimension with a coefficient of 0.32 proves hypothesis H12. Within the sustainability dimensions, the lowest coefficient value is the relationship between the social dimension and the environmental, which shows the inadequate attention of customers to the environmental aspects while they buy from an OGB. Correspondingly, the coefficients show the greater importance of price and economic dimension on satisfaction and intention to buy. Based on the resulted coefficients, the most remarkable effect on purchase intention is supported by satisfaction compared to the quality of the website and sustainability dimensions.

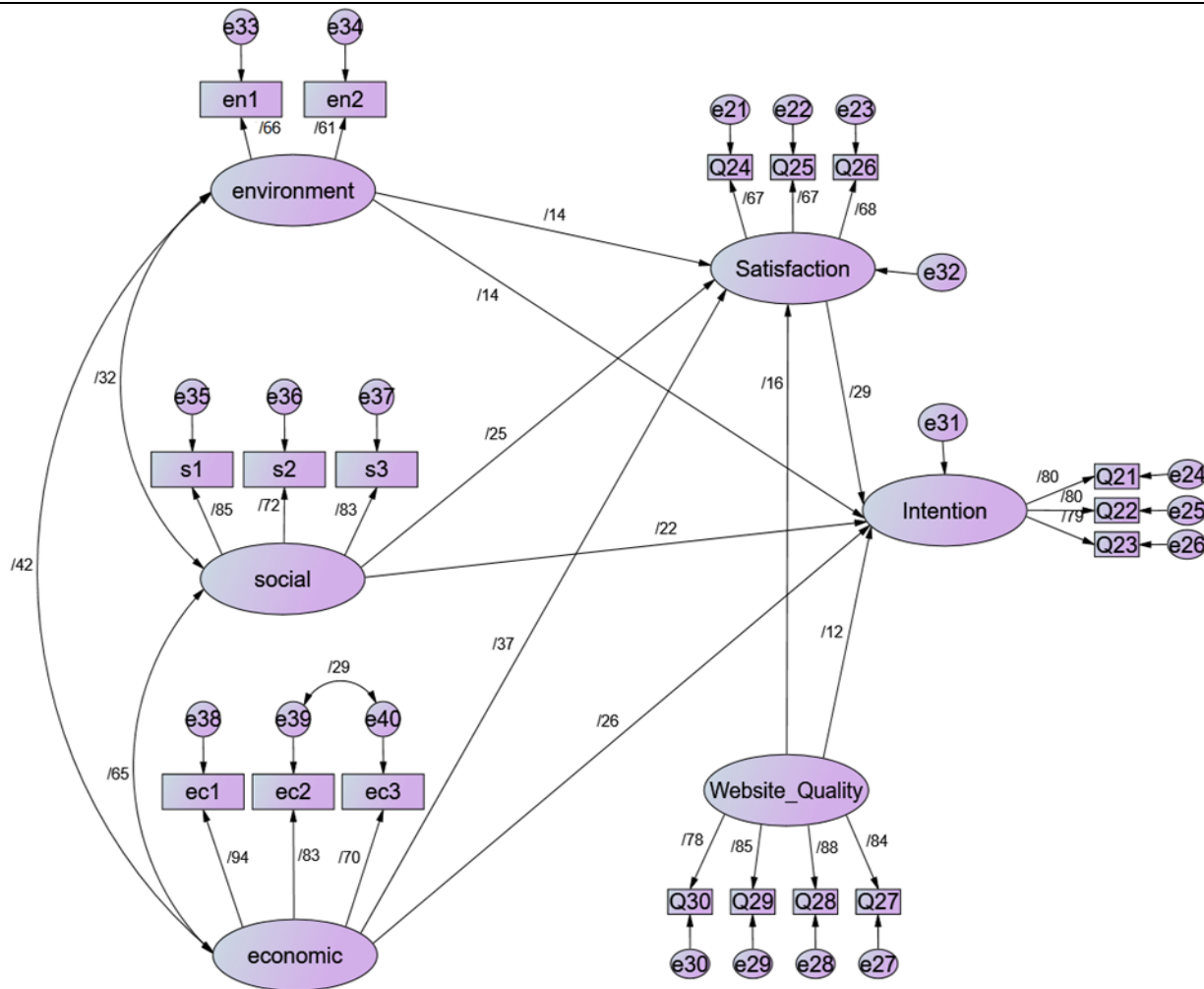


Fig. 2. SEM analysis of structural model

6. Discussion and Conclusion

This study examined the factors affecting customer's purchasing intent to participate in an OGB and explores the importance of sustainability issues in customers' motivation to buy from an OGB. In theory, the first contribution of this study was considering the sustainability notion in OGB; however, three dimensions of sustainability related to the OGB are examined here. In this study, the social, economic, and environmental dimensions are considered in the model, and their effects are examined on customer's satisfaction and purchase intention. Further studies can rely on the results of this study to explore the different player's impact on e-commerce success.

The results showed that the social and economic dimensions have more significant impact than the environmental dimension, and Iranian consumers pay less attention to the environment when they buy from an OGB. In previous research, a study comparing the United Kingdom and China has proven that people take care of the environment more when they buy in developed countries [35]. Also, the results agree with the impact of wealth

on the environmental attention of consumers as well.

Consistent with prior literature, the findings represent that satisfaction remarkably affects trust a significant factor in the social dimension, and website quality positively correlates with customer satisfaction, consistent with several former studies. However, more profound research and attention to path coefficients show the weakness of this relationship compared to other variables. Since the path coefficient from the quality of the website to satisfaction and intention to buy is small, it reveals that improving the website's features effectively increases the path coefficients.

As Chen et al. showed, social dimension variables such as trust, the value of sharing and social interaction ties positively affect customer purchase intention. They can also affect satisfaction, which agrees well with this study. Previous studies considered save money and price as economic factors, as income is a crucial factor in buying, customers do not buy from OGB if their income is not sufficient [8]; [9]. Therefore, the results of our study showed that

the confirmation of the positive effects of economic variables such as price, save money, and income on customers' intention to buy, as well as their impact on satisfaction, supports the claims of ECM. Our investigation also shown a strong relationship between the economic dimension and satisfaction, with the most significant impact coming from price.

The environmental concern has not been examined in OGB, but previous studies have shown the positive impact of this environmental factors on online and traditional buying. However, the results shown that customers' awareness of environmental changes and individual responsibility for the environment can increase the satisfaction of environmentally friendly customers and have a positive impact on OGB. Satisfaction level also has significant impact on the intention to buy and the number of customers' purchases.

Furthermore, this study examined the most critical variables of each dimension of sustainability, including trust, which showed that trust has a positive effect on both website satisfaction and quality. In addition to trust, the impact of the value of sharing and social interaction ties are also proven on the social dimension of the purchase intention. This study included characteristics of websites and explored their encouragement of trust in an OGB that extended the previous literature on trust. Finally, this study also addressed the related relationship between the sustainability dimensions from the OGB customer's point of view.

For managers of OGB websites, this study offers several excellent recommendations that they may use. It is shown that website quality is related to website satisfaction and purchase intention. Therefore, website management should facilitate online transactions. On the other hand, the quality of the website affects satisfaction, which in turn affects the intention to buy. Moreover, marketers must provide adequate and accurate information on their websites and social networking sites. They must also provide better customer service and after-sales service when using OGB websites.

Community factors such as trust are critical in facilitating customer satisfaction. Since reputation is an essential record of trust, they need to increase their credibility through advertising and promotions. Website reputation can be enhanced by doing corporate social responsibility activities such as environmental protection. According to the research findings, they can also attract customers by adding green

products or services or considering an environmental logo. By doing so, it both serves its environment and attracts more customers with more specific promotions.

On the other hand, in today's economic situation, where people are looking for discounts and more reasonable prices, by highlighting more discounts on some occasions or introducing other friends for more extended discounts, they are eager to make customers want to buy more. This study developed a model that explains the factors influencing purchase intention in OGB. It examined their effects on purchase intention by including sustainability dimensions, website quality, and satisfaction. Findings provide practical implications for OGB professionals. Although our conclusions offer several practical implications, two main limitations are related to the factors influencing the intention to buy, which may differ from other types of websites, where the data are cross-sectional.

Further studies can use a longitudinal perspective to examine the effect of trust and satisfaction on purchasing intention. In addition, according to previous research, trust and satisfaction in OGB can be divided into several types, such as trust in sellers, and trust in websites. Third, future research may assess the findings of this study in different cultures and with varying habits of buying customers to evaluate the generalizability of results. Fourth, further studies are needed to examine the determinants of repeat purchase intention from different perspectives in an OGB. Finally, Researchers are advised to use more extensive data for future research to get more detailed analysis.

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