ISSN 1816-6075 (Print), 1818-0523 (Online)
Journal of System and Management Sciences
Vol. 13 (2023) No. 1, pp. 218-240
DOI:10.33168/JSMS.2023.0113

The Identification and Prioritization of Success Factors for Online Egyptian Fashion Retailers using the Analytic Hierarchy Process

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Abstract. The rapid changes in the behavior of Egyptian online consumers, influenced by the increasing adoption of e-commerce since the COVID-19 pandemic, especially shopping online apparel, have made it essential for online fashion retailers to identify criteria that are crucial for their growth. This research attempts to discover the main factors and sub-factors which influence the preference of consumers for online fashion e-stores. The analytic hierarchy process (AHP) methodology was used to determine the criteria with their weights and prioritized. The study started off by conducting a thorough literature review in electronic retail to identify the significant elements (keys) mentioned in earlier studies. Five main factors and twenty sub-factors were identified based on these studies, in addition to, some Egyptian experts' views from the online fashion field. The AHP results revealed that the "website design" is the most influential on consumers and especially navigation, and responsiveness sub-factors. The website facilities came in the second priority with multi-payment methods and search engine as sub-factors. The third factor in importance was post-order services with order tracking and customer support sub-factors. The results reveal significant insights that can be adopted by online retailers of fashion for improving their e-stores' performance according to the relative importance of factors and can be used as cost-effective way by managing their resources efficiently. Besides, the results contribute in the current insights of the existing literature on factors that influence online consumer preferences, where research tends to be scarce especially to online fashion field in Egypt.

Keywords: E-Commerce, Online Fashion Retailers, Multi-Criterion Decision Making (MCDM), AHP; Egypt

1. Introduction

Electronic commerce (e-commerce) is defined as the telecommunication networks' usage for buying/selling or exchanging information among the organization and its external stakeholders (Chaffey,2007). E-commerce has different forms where transactions may be done through, B2C (business to customer also known as e-retail), B2B (e-commerce between business to business), C2B (e-commerce between customer and business), and C2C (e-commerce between customers (Neger & Uddin, 2020). E-commerce is considered a cost-effective way for organizations to communicate with consumers, consequently in recent years, its role has significantly increased in the consumer goods segment, especially in the specialized retail (Blazenka et al., 2021; Yang and Grice 2018). Egyptian e-commerce sales have increased from US$3.6 billion in 2018, to US$5.2 billion in 2021. The total volume of the online retail sector was US$ 2.3 billion in 2020 (Research & Markets, 2021). Furthermore, internet retail is anticipated to grow by a compound annual growth rate (CAGR) of 15.7% annually in the next three years (Statista, 2021).

E-commerce has grown significantly in different areas of the country driven by enhancing infrastructure, growing internet penetration, and moreover the increasing number of shoppers online (Kamel, 2015; El Ahmar et al., 2016; Shereen & Marwa, 2011) due to the Coronavirus pandemic, where people embraced social distancing and turned to online shopping more than before (Lokman et al., 2022). Indeed, Egyptian online retailing will be generating US$4.74 billion in 2025, and US$2.98 billion will be from online fashion retailing (Statista, 2022). Given the fast-growing and increasing importance of the retail of online fashion in Egypt, need more academic research to identify the most important factors for success and growth in this sector.

The Egyptian online fashion retailers' success such as Brantu, TFK, DressCode-DC, OPIO, RAFEYA, HK-fashion store, Mystic Evenings, Bespoke Egypt, and Style-Treasure refer to the spread and widespread acceptance of online fashion shopping among consumers. Due to the fierce competition with international brands directly such as Zara, H&M, Mango, and indirectly with Amazon, Jumia, and Noon, online fashion retailers should ensure to provide a better experience for online shoppers and overall more value proposition attraction than their competitors (Cao, 2014;). Even though many research studies have identified generally individual factors required for online retailers' success (Gupta & Dubey, 2018; Ghatak et al., 2016; Kalelkar et al., 2014) and studied the online stores' acceptance (Rouyendegh et al., 2018; Kahraman et al., 2017; Liu et al., 2015; Kabir et al., 2012), no study has particularly determined the priority of attributes that can assist in making growth and success for the online fashion segment, and especially for Egyptian sector. Thus, this research will try to fill this gap. Accordingly, the problem of the research can be stated as: "Determine and prioritize the success factors for Egyptian online fashion retail". The industry of online fashion retailing is

unique and complex compared to other sectors in online retail where the incapability to physically see the apparel, touch and try it which are considered barriers to informed decision-making for online customers (Ha et al., 2007).

While previous studies have investigated the significance of individual attributes in the websites of online fashion, such as product attributes (Flanagin et al., 2014; Chen et al., 2016), hedonic aspects [Parker & Wang 2016; Ahmad & Khan 2017), product presentation (Blanco et al., 2010; Boardman & McCormick 2019), post-purchase service (Hasan, 2016; Cao et al., 2018; Harrison and Kortuem 2018), aesthetics (Luo et al., 2012, Hasan 2016), and web-store reputation (Utz, 2012; Kim & Lennon, 2013). Current research will expand on this body of literature in order to determine the attributes which will be prioritized by the AHP method for Egyptian online fashion retailers with a view to setting up a successful business. Therefore, the objective of the study is to investigate the whole online retail of fashion in Egypt, categorizing all the identified factors in the literature according to their importance for a successful strategy for Egyptian online fashion retail. Driven by the objective of the research, two specific research questions are raised for this study:

Q1: What are the success factors for online retailers of fashion in Egypt?

Q2: What factors should online retailers of fashion prioritize?

The rest of the paper is formatted as follows: In section 2 literature review related to research for identifying the criteria which may influence consumer behaviour when interacting with online fashion websites. Section 3, the methodology explains the method and data analysis. Section 4 presents the results. The discussion is presented in section 5. Section 6 presents the conclusion.

2. Literature Review

E-commerce proliferation has drastically changed the retail market by transforming the dynamic environment of the business and the way in which organizations and individuals conduct their operations (Chaffey,2007; Kaushik et al., 2020). Today's major challenges for internet retail merchants include providing an attractive and effective design for their website (Kaushik et al., 2020; Hasan, 2016), giving a good customer service experience (Cao, 2018), lowering the perceived risks of online consumers' perceptions (Flanagin et al., 2014), and reducing the returns' items (Oghazi, 2018). Therefore, to overcome these challenges, a close examination of the existing literature has been reviewed to capture the important factors and sub-factors that have to be taken into consideration for online retailers of fashion, summarized in Table 1. The details of these factors will be explained in the next sub-sections.

2.1. Website Design

The ability of accurate design for physical, and aesthetic elements in traditional

stores to fulfill the expectations of consumers is analogy to the ability of websites for designing careful screens and interfaces for online consumers' attraction and retention (Rosen, & Purinton, 2004; Hasan, 2016). Prior researchers suggest that in online shopping, the influence of website design on consumers is just as significant as the effects of low prices and excellent service in physical retail (Hasan, 2016). In online shopping, more significance is given to website design than the service provided in traditional stores to consumers. Where customers experience and assess the quality of the service as it is displayed by the design interface of the site before making the purchasing process (Zhang & von 2002). In addition, previous studies show that consumers are more expected to visit and buy from well-designed websites (Mithas et al.,2007). Thus, website design elements are crucial in shaping consumers' initial perceptions and future purchase behavior (Karimov et al.,2011; Wells et al., 2011) as well as conveying the benefits of products and vendors to customers (Wells et al., 2011). So, developing attractive shopping websites and well-organized is essential for improving the perceptions of consumers and luring online shoppers (Ahn, et al., 2007; Chang & Chen, 2009).

2.2. Product Attributes

A product is something that a firm/s can make available to consumers on both markets (physical and digital) and that has the ability to meet their needs (Hiep, 2022). A product is a blend of two features, value in use and value, which can be tangible or intangible (Kotler & Armstrong, 2012). In this research, a product is apparel that e-retailers seek to get attention to and satisfy the needs of online consumers. Quality is considered one of the product attribute which can be defined as fault-free, which has eight key dimensions that are product features, aesthetics, product performance, durability, reliability, serviceability, confirmation, and perception of quality (Neger & Uddin, 2020).

Therefore, a high-quality product is capable of satisfying customers' needs (Kotler & Armstrong, 2008). The quality of a product is an intrinsic property and the expected product excellence standard. Improving the quality of the product has a significant effect on improving consumer satisfaction (Jaminyasa et al., 2017). In addition, offering varieties of products is a key for internet merchants to attract and maintain online customers. When given more choices, many chances will be for selling more products. According to Jaminyasa et al. (2017) online retail merchants who have offered a wide variety of products be more successful. Also, a retailer's product quality and availability are key factors in building strong customer-based brand equity (Ha et al., 2007; Flanagin et al., 2014). Therefore, for assisting online consumers in their decision-making process and give them the impression that they have an adequate selection of options available to them (Kaushik et al., 2020), electronic stores have to offer a wide variety of products and product categories (Cho & Fiorito, 2009; Cho, 2012). Another attribute of the product is price, which is

the total value (money) that a consumer has to pay for getting the product's benefits (Kotler & Armstrong, 2012). As customers like to pay online lower prices, competitive pricing has also been listed as a significant factor for improving positioning across online shops (Neger & Uddin, 2020; Chen et al., 2016).

2.3. Website Facilities

Website facilities include many attributes that have been emphasized. According to (Noh et al., 2013; Loureiro & Breazeale, 2016) a retailer's website features can influence consumers' purchasing decisions. For instance, offering a variety of payment choices is crucial for online fashion merchants because it makes the checkout process less difficult for customers. Similarly, to this, internet sellers must provide a number of delivery options. Where customers prefer online stores that have a variety of delivery alternatives, such as normal delivery, fast delivery, location-specific delivery, and instant delivery (Roy et al.,2010). Furthermore, online shoppers like e-stores that offer fewer shipping charges (Cao et al., 2018). Moreover, offering an effective search tool such as a search engine carrying advanced features for customers to discover the content of the product by using keywords, which is considered one of their favorite tools (Özkan et al., 2020; Liang et al., 2017).

2.4. Tactile Information

As a result of the inability, the physically touch a product when shopping online, tactile information is essential for assisting customers in visualizing the product and enriching their sensory experience (Morton, 2018; Liu, 2017). There are many ways to enhance tactile information, and one of them is by adding numerous enlarged images on the website (Song & Kim 2012; Verhagen et al., 2013). Using a tool of enlargement for garment images can assist in reducing perceived risk for users in online shopping as it gives them a closer look at the item with more details (Kim & Lennon 2010). The enlargement of the image is necessary for customers when viewing the product online as it lets them check in detail the quality and fabric structure (Kim & Lennon 2010). According to studies (Blanco et al., 2010; Kaushik et al., 2020; Karimov et al., 2011) the improvement of tactile information can be done by providing more information on the processes of manufacturing products, washing instructions, style, fabric, precautions, and other characteristics.

Karimov et al., (2011) emphasize the significance of information content and recommending online retail shops to provide thorough and complete product information, such as high-quality photos and product details, to help consumers make easier purchasing decisions. Actually, (Blanco et al., 2010) explained that when a product included both an image and text, buyers remembered more details about it. Especially, the information presentation of the product can remember significant responses from users (Blanco et al., 2010; Kaushik et al., 2020). Furthermore, various online merchants add product videos to their websites with the

purpose of creating attention and engagement. Videos of products can convey details about the product's design, colour, and materials, and it can increase consumer confidence in the product (Xu et al., 2015), enhancing the trust level in products and online fashion vendors (Karimov et al., 2011). Moreover, contact information is considered one attribute of tactile information. By adding it to the website, customers can contact the retailer's website for any information, query, or problem. Also, the feature of frequently asked questions (FAQs) is essential, since it delivers valuable information about online fashion retail and answers questions on a specific item (Li & Sun, 2020).

2.5. Post-order service

Online retailers have to offer sufficient support once the purchasing transaction is taken place on their website and make it appropriate for online consumers (Roy & Zhao, 2010). Customer support can be improved by offering an online link or offering a toll-free number where all inquiries can be handled (Kaushik et al., 2020). Moreover, the service of order tracking has resulted as an important factor in online shopping for repurchase intentions and satisfaction (Kaushik et al., 2020; Roy & Zhao, 2010; Cho, 2015). Also, the delivery time is a vital factor for the satisfaction and loyalty of customers (Cao et al., 2018). Customers prefer online stores with a variety of delivery alternatives, such as normal delivery, fast delivery, location-specific delivery, and instant delivery (Roy & Zhao, 2010) along with low-priced delivery (Luo et al., 2012). Furthermore, a return policy has been provided as a method for performance-enhancing by providing easy returns with the aim of improving the trust of customers and repeat purchase behaviour (Oghazi et al., 2018).

Based on the above-presented review, 20 sub-criteria have been identified (for determining which criteria should be prioritized for online retail of fashion to run the business successfully). These 20 sub-criteria are classified under five main criteria as shown in Table 1. The importance of this study is twofold. it will assist managers/decision-makers by providing knowledge about the Egyptian fashion retailing sector by classifying all factors identified from the point of their importance for improving their services, website attributes, and putting a successful strategy. Also, developers can use the result of the study as a guide when developing Egyptian e-fashion stores.

Table 1: Attributes of an online fashion retailer

Criteria	Sub-criteria	References
Website design	Visual design Navigation Information design Responsive	(Hasan, 2016; Rosen & Purinton, 2004) (Zhang &Von ,2002; Mithas et al., 2007) (Wells et al., 2011; Ahn et al., 2007) (Chang & Chen, 2009; Karimov et al., 2011)

Product attributes	Product quality	(Kotler & Armstrong, 2008; Jaminyasa et al., 2017)
	Product availability	(Ha, 2007; Flanagin et al., 2014)
	Product variety	(Cho & Fiorito, 2009; Cho, 2012)
	Price	(Neger & Uddin, 2020, Chen, 2016)
Tactile information	Extensive product details	(Morton, 2018; Liu, 2017)
	Visual merchandise	(Song & Kim 2012;] Verhagen et al., 2013)
	FAQs	(Karimov et al., 2011)
	Contact information	(Karimov et al., 2011)
Website facilities	Multi-payment methods	(Noh et al., 2013; Loureiro & Breazeale, 2016)
	Delivery options	(Roy & Zhao, 2010)
	Low cost shipping	(Cao, 2018)
	Search option	(Özkan, 2020; Liang,2017)
Post-order-services	Customer support	(Roy & Zhao, 2010)
	Order tracking	(Cho, 2015; Roy & Zhao, 2010)
	Flexible return	(Oghazi, 2018)
	On-time delivery	(Roy & Zhao, 2010)

2.6. Techniques of MCDM Approaches in Online Retail

Regarding e-commerce, various methodologies and techniques have been applied in the research. Moreover, many of the studies have investigated online retail by using decision-making approaches to analyze electronic retails and its ranking holistically. For instance, (Hsu et al., 2010) investigated many criteria in some of the online shopping platforms that run in Taiwan. The study claims that the most successful platform has no shop fee, annual fee, transaction costs, publication costs, low shop constraint, and a high level of security. Kahraman et el., (2017) tried to Prioritize many firms of B2C type by developing a multi-criteria model for the comparison of the alternatives. Ghatak et al., (2016) built a model that is a multi-criteria evaluation and subsequent prioritization of attributes for online retail patronage that can assist in improving the stores' performance. However, previous research focused mainly on B2C e-commerce assessment, and individual sub-sectors should also have equal attention to. Researches to understand the behavior of consumers towards the specific sector in online retailers such as entertainment, music, electronics, fashion, and others are not existing, thus, these types of studies deserve further investigation and better understanding, especially for Egypt. In addition, the MCDM approach is widely used, especially the AHP method because of its flexibility to give a solution for the problems of online retailing like analyzing the prioritization of critical factors in B2C e-commerce, as shown in Table 2. Therefore, this study focused on the online fashion retailer as one sector of online retail in Egypt.

Table 2: Multi-criteria studies by using MCDM techniques for assessment of online retail

Title 1	Title 2	Title 3
Comparison for some of online shopping platforms in Taiwan	AHP	(Hsu, 2010)
Applying AHP method to select among criteria and sub-criteria for best B2C firm	Fuzzy Linguistic AHP	(Kahraman, 2017)
Applying AHP method for evaluating online retail patronage in India	AHP	(Ghatak, 2016)
Understanding the dynamics of the most important factors in Indian online shops	AHP	(Kalelkar, 2014)
Evaluating the performance among five alternatives	AHP-TOPSIS	(Kabir, 2012)
Ranking Indian e-commerce websites	AHP	(Gupta & Dubey 2018)

3. Research Methodology

The decision problems that have many multifaceted are difficult to solve quantitatively. In such cases, the use of the MCDM method is better than other methods for their capability to handle decision-making problems in multidimensionality (Wang et al., 2021; Li & Sun, 2020). Yet, while solving such problems in a qualitative manner, decision-makers/managers rely on using imprecise knowledge instead of precise knowledge (Li & Sun, 2020). Therefore, the study used AHP for identifying the important criteria and sub-criteria that influence the preference of consumers online. fashion retail in Egypt. The AHP is adopted to obtain the factors' weight and the ranking is done by using the aggregated weighted scores approach.

The research aimed to determine the critical factors for online fashion retail assessment by reviewing the literature and getting the field experts' opinions. In addition, evaluating and prioritizing the factors by assessing the importance of relative weight to each factor. Therefore, the AHP methodology is used for identifying the factors of online fashion retail selection and ranking them.

3.1. Analytic Hierarchy Process (AHP)

AHP method is developed by Saaty (1980). And it is considered one of the widely used MCDM techniques (Saaty, 2013). Where AHP is a systematic procedure to solve MCDM problems (Torfi et al., 2010), and an effective method for decision-making mainly in the existence of subjectivity and it is appropriate for solving problems when the decision criteria can be structured in a hierarchical way into sub-criteria (Ishizaka & Labib, 2011). Then the prioritization mechanism is executed by giving out a number from a comparison scale as seen in Table 5 to represent the

importance of the relative factor, which is used to choose among the available alternatives, based on performing pairwise comparisons for deriving the importance of the relative selected variables (Wang et al., 2021; Li & Sun, 2020). Therefore, AHP is based on three principles: the model structure, a comparative judgment of the criteria, sub-criteria, alternatives, and priorities synthesis.

Step 1: Identification of the factors, and building problem' structure

The main aim of this step is to finalize a list of the criteria that are essential for online fashion retail. In this step, the literature review was conducted with the purpose of determining the factors, and sub-factors. Moreover, the experts' opinions have been gathered with the aim of assessing the chosen factors. Then the factors and sub-factors were identified. According to the literature review and the opinion of experts, 5 factors, and 20 sub-factors were identified.

At that point, the problem was structured in a hierarchal manner (Gupta et al., 2017). Initially, AHP divides a complex problem with multi-criteria decision-making into interrelated decision elements in a hierarchal structure (Factors, sub-factors, decision alternatives) (Albayrak & Erensal, 2004). In the AHP, the objectives, factors, sub-factors, and alternatives are arranged in a hierarchical way like a tree. There are usually three levels in a hierarchy: the top represents the problem goal, the middle has many factors with their sub-factors (if exist), and at the end decision alternatives ((Albayrak & Erensal, 2004). In the study, the goal is to identify and prioritize the factors influencing online fashion retail consumers. In the hierarchical structure, the study goal is located at level one. Level 2 consists of the main criteria and Level 3 includes the sub-criteria, which may be affecting the intention of the consumers when interacting with e-fashion stores (Gupta et al., 2017). The hierarchal structure is shown in Figure 1.

Step two: Data collection from field experts:

In this step, the data of criteria and sub-criteria pertaining to pairwise comparisons are collected from field experts (Gupta et al., 2017). Five senior field experts were contacted to get their opinion on all the factors and sub-factors that influence consumers when interacting with Egyptian online fashion stores (the details of the experts are shown in table 3). The nine-point scale (Saaty, 1988) was used to give relative scores to pairwise comparisons among different criteria from Table 4.

Step three: The determination of the normalized priority weights

In this step each criterion and sub-criteria is calculated as follows:

(1) Pairwise comparison matrices' construction. The pairwise comparisons are done to determine which factor predominates the others. These judgments are presented as integers. In AHP, it is possible to assume a set of criteria as $A = \{A_{ij} / \ j = 1, 2, 3, \ldots . n\}$.

Following pairwise comparison among "n" (n= number of factors being compared) factors, a (n × n) dimension matrix A is formed in which each component, A= [a_{ij}], represents the factors' weight given by the experts.

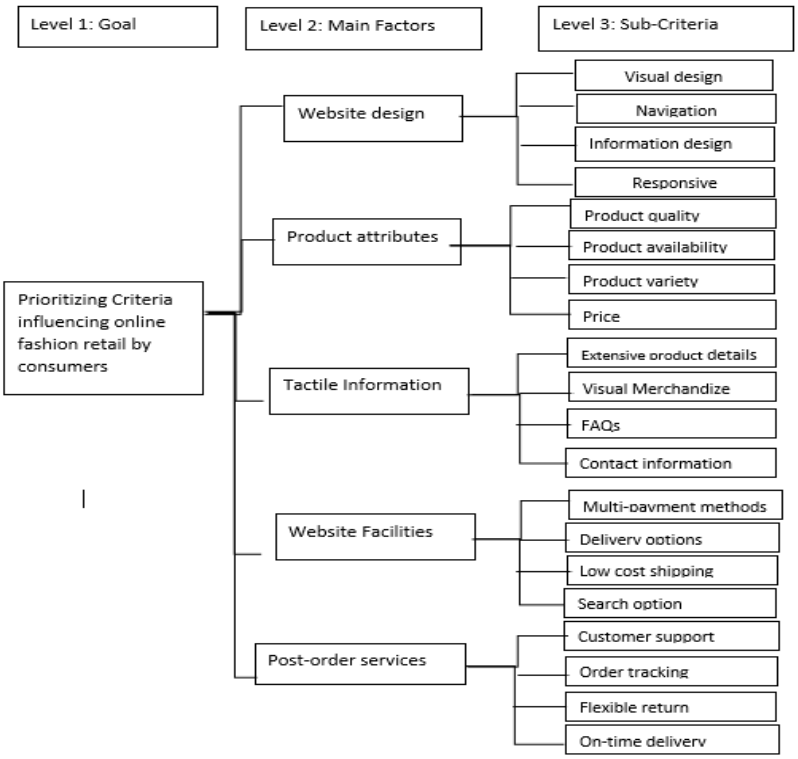

Fig. 1: Factors and sub-factors in tree structure

(2) Aggregate comparison matrix' construction: All data collected from experts for pairwise comparisons for all criteria and sub-criteria are aggregated by applying the geometric mean method to get the aggregated judgment for each entry (Gupta et al., 2017). The aggregated matrix A is constructed as follows:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}, a_{ii} = 1, a_{ji} = 1/a_{ij}, a_{ij \neq 0}. \quad (1)$$

(3) Relative weights' calculation. A normalized matrix N is constructed (by equation 2) for calculating the priorities of each criterion and sub-criteria. Equation 2.

$$N = [n_i], where\ n_{ij} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}} \quad (2)$$

Then, the corresponding weights to all criteria and sub-criteria are calculated by averaging the elements of each row of N.

- Calculating the priority vector

$$w_i = \frac{\sum_{j=1}^{n} n_{ij}}{n} \quad (3)$$

(4) Checking the consistencies. Given that it is well-known that people are sometimes inconsistent when answering questions, it is crucial to determine the consistency levels for the comparison matrices (Gupta et al., 2017). In order to calculate the accuracy level, the consistency ratio (CR) is used for measuring pair-wise comparison consistency (Gupta et al., 2017). The acceptance limit for CR is less than or equal to 0.1. If the final consistency ratio exceeds 0.1, the evaluation process has to be reviewed again by the decision maker to improve consistency (Saaty, 1988). Matrix A can be considered consistent if:

$$AW = nW \quad (4)$$

The Eigen value problem exists in equation 3, which is supposed that the biggest Eigen value is >= to n (Saaty, 1988; Gupta et al., 2017). The closer max is to n, matrix A is more consistent. And the next step represents the calculation of CR corresponding to a comparison matrix A for consistency checking:

$$AW = \lambda_{max} W \quad (5)$$

(5) The calculation of CR as follows:

$$CR = \frac{CI}{RI} \quad (6)$$

matrix A has rank 1 and λ_{max} = n, if the pairwise comparisons are entirely consistent. In this case, normalizing any of the matrix's rows or columns can be done for obtaining the weights (Liu, 2017; Li & Sun 2020). It should be emphasized that the AHP output quality is rigidly related to pairwise comparison consistency judgments (Gupta et al., 2017). The relationship between the entries of matrix A is the definition of consistency which can be calculated by (the consistency index (CI)):

$$CI = \frac{\lambda_{max} - n}{n - 1} \quad (7)$$

The final consistency ratio (CR), is applied for determining if the assessments are sufficiently consistent, can be computed by the (CI) ratio and the random index (RI), as shown in Eq. (6).

Table 3: The experts' detail who working in online fashion companies

Affiliation	Domain	Title/designation	Experience
Brantu.com	Fashion and accessories	Vendor Manager	7
OPIO.com	Fashion and accessories	Sales Manager	5
Dresscodeme.com	Women's Fashion	Category Manager	7
Mystic evening	Fashion	Product Manager	9
TFK.me	Fashion	Retail Planner	8

(5) The global weights calculation. From equation 3, local weights for criteria and sub-criteria are obtained. Then, the overall or global weights for sub-criteria are computed by equation 8, while the global weights for the main criteria are the same as their local weights.

Global weight of sub-criteria = Local weight of the sub-criteria x Global weight of the corresponding main criteria (8)

Table 4: The nine-point intensity of importance scale and its description

Definition	Intensity of importance
Equally important	1
Moderately more important	3
Strongly more important	5
Very strongly more important	7
Extremely more important	9
Intermediate values	2,4,6,8

Table 5: Random consistency index table (Saaty, 1980)

n	1	2	3	4	5	6	7	8	9	10	11	12	13
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.58	1.56

4. AHP Results

All the data gathered was analyzed by MS EXCEL software. The experts' responses were collected in the pairwise comparisons for several criteria and sub-criteria have been aggregated by applying the method of the geometric mean. All the calculations of comparison matrices, weights, and consistency tests for each of the hierarchical model's main criteria and sub-criteria are represented in Appendix A. The results revealed that all the consistency ratio (CR) values are less than 0.10, which points toward consistency of the comparison matrices, and as a result, the obtained weights can be accepted.

4.1. Main-Factors Weights

Following the transformation of the problem into a hierarchical structure, the weight of the main factors (website design, product attributes, website facilities, tactile information, and post-order services) was computed. By calculating the pairwise matrix, the main criteria weights have been obtained as shown in figure 2. It can be

observed that among the five main criteria, the website design criterion (weight = 29%) occupies the most critical success factor in influencing the consumer when interacting with Egyptian online fashion websites. This outcome is consistent with (Hasan, 2016; Luo et al., 2012; Mithas et al., 2007; Chang & Chen, 2009) that consumers encounter their initial experience with the website interface of the e-store. Accordingly, the website design elements have effects on consumers' beliefs and attitudes (Hasan, 2016). The more attractive the website, the more time consumers spend on it and purchase a lot. Positively influence the online customers' intention to continue using the fashion applications. The second highest weight is website facilities (weight = 25%) with less than 4% of the weight of website design criterion. The third factor in the row is post-order services, which obtained 24.4% weight, followed respectively by the tactile information (12.4%), and the product attributes (9.2%).

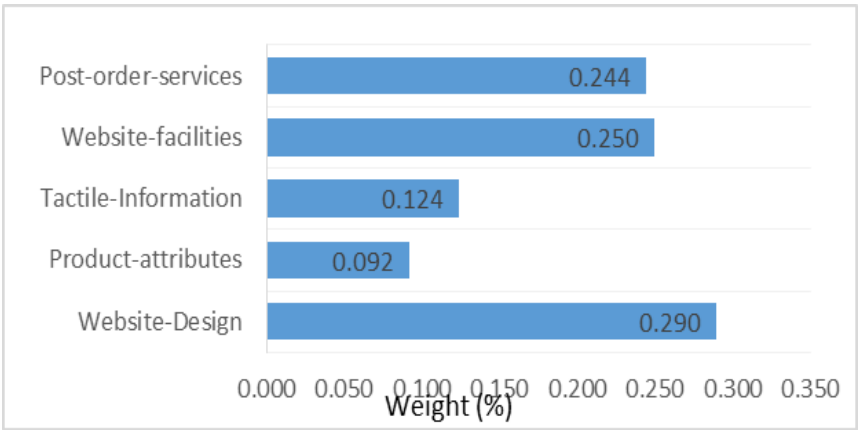

Fig. 2: The results of online fashion website' factors with respect to the goal

4.2. Website Design Weights

Also, following the computation of the main criteria weights, the sub-criteria weights were also computed by using similar steps that were used in the main criteria weights calculation. Construction of five pairwise matrices was done for each main criterion, which is presented in Appendix A (Tables A1-A6). By these matrices' solving, the weights of sub-criteria with respect to their respective main criteria were gotten. The comparison of pairwise for each sub-criteria within the "website- design" factor results that the sub-factor responsive has the highest weight of 44%, followed respectively by navigation, 28.3%, information design 16.5%, and visual design 10.7%.

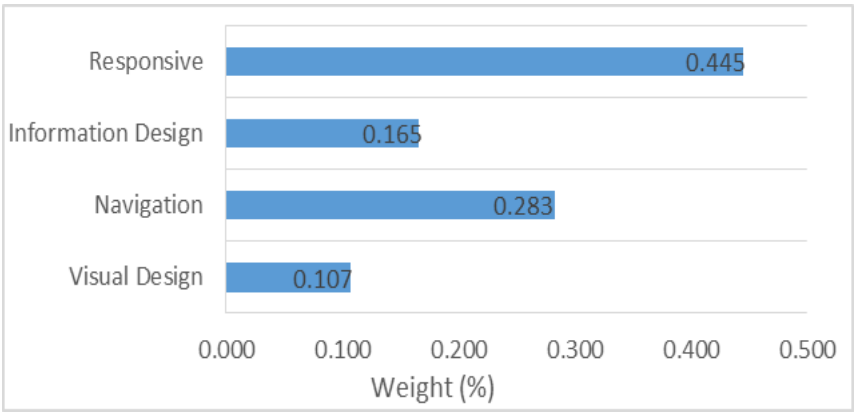

Fig. 3: The sub-criteria result with respect to the website design

4.3. Product Attributes Weights

Figure 4 displays the weights of the sub-criteria in relation to the product attributes criterion. It can be noticed that the sub-criteria product variety got the highest weight of 37.9%. The sub-factor product availability got the second highest weight of 35.8%. The price and product quality sub-criteria obtained the lowest weights of 17.9% and 8.5%, respectively.

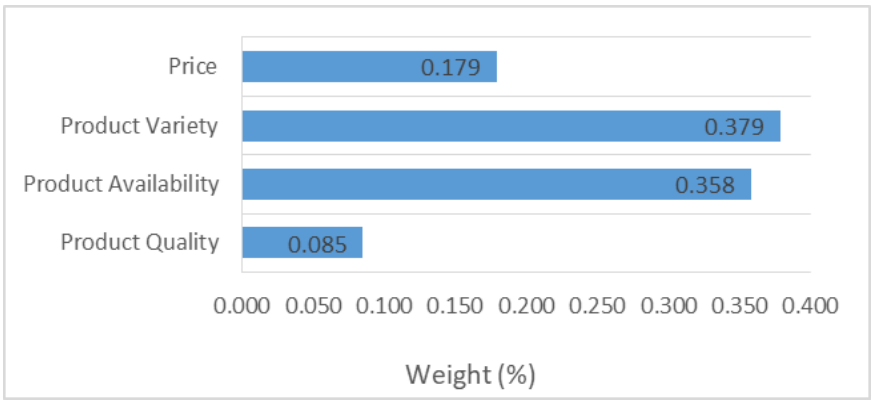

Fig. 4: The sub-criteria result with respect to the product attributes

4.4. Tactile Information Weights

The top three sub-criteria for the main factor "tactile information," as determined by the AHP technique, are FAQs, Extensive product details, and Contact information. The weights of the sub-criteria with respect to the tactile information is shown in Figure 5. The FAQs sub-criteria received 37.2% of the weight, which is the highest one achieved under the tactile information factor. The extensive product details sub-criteria received 29.2%, while visual merchandise got the lowest weight of 9%.

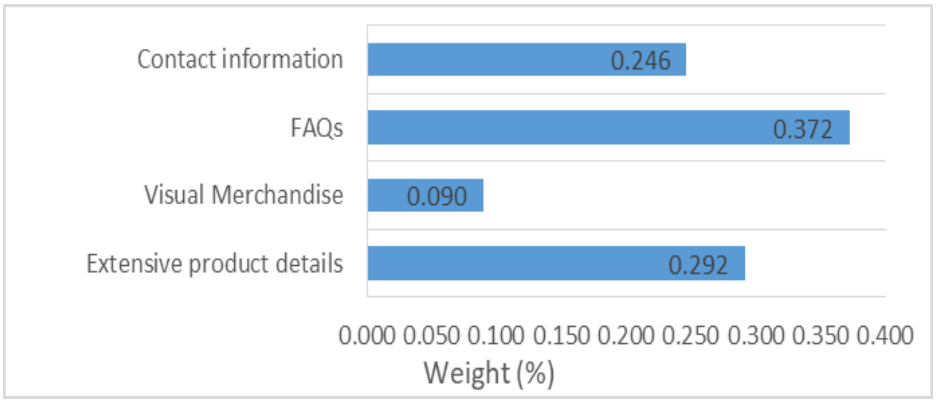

Fig. 5: The sub-criteria result with respect to the tactile information

4.5. Website Facilities Weights

The main category "Website Facilities" has four sub-factors which are search, low-cost shipping, delivery options, and multi-payment methods. Based on the result obtained from a pairwise comparison as shown in Figure 6. The multi-payment methods achieved 38.4% of the weight, which is the highest weight got under the website facilities criterion. The search option sub-criterion achieved 30%, while low-cost shipping got the lowest weight at 12.6%.

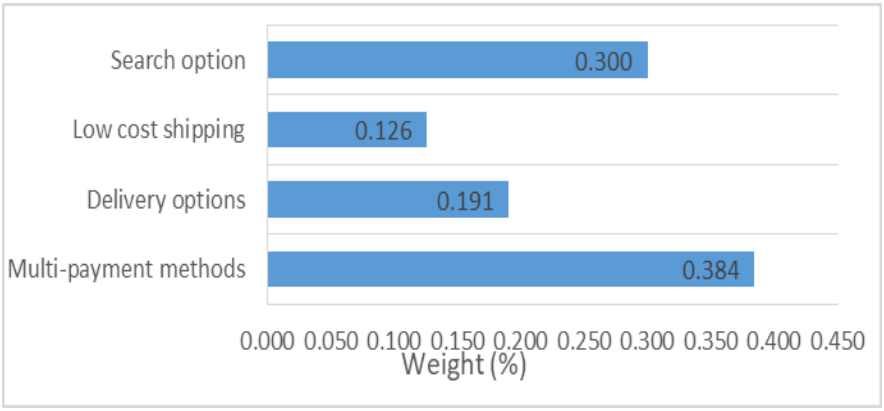

Fig. 6: The sub-criteria result with respect to the website facilities

4.6. Post-order Services Weights

Finally, the result of the comparison matrix for the main factor "Post-order services" is presented in Figure 7. The sub-criteria weight of order tracking received the highest weight of 37.5%, followed respectively by customer support at 33.6% and on-time delivery at 19%.

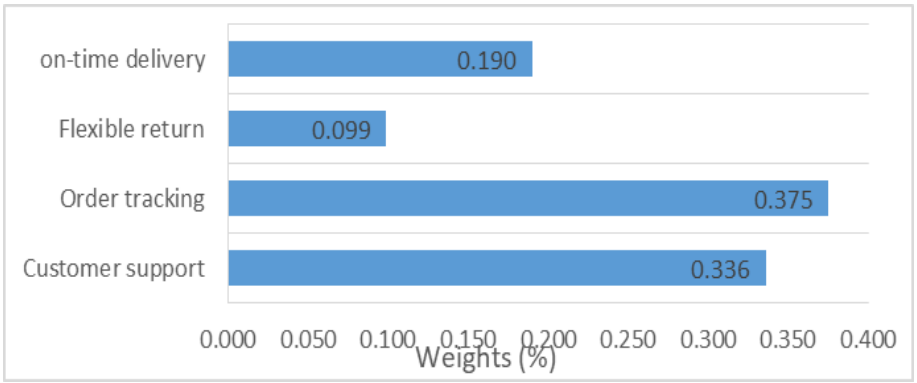

Fig. 7: The sub-criteria result with respect to the post-order services

4.7. Final Ranking of Overall Factors

In the last step, after calculating the main criteria and sub-criteria weights (with respect to the main factor), we lastly calculated the final weights of sub-criteria. The calculations were computed by multiplying the initial sub-criteria weights with their respective to weights of the main criteria. The final weights of the sub-criteria and their overall ranking are shown in Table 6. The responsive sub-criteria ranked as the very important among the 20 sub-criteria. oppositely, product quality sub-criteria were the least significant factor. The rational reason behind the low ranking of the sub-criteria may be that customers prefer to shop by using the e-store applications on mobile instead of accessing their websites, and many online fashion retailers actually have mobile applications.

Table 6: Final weights of overall online fashion website factors

Main Factor	Main Factor Weight	Sub-Factor	Sub-Factor Initial Weights	Sub-Factor Global Weights
Website design	0.290	Visual design	0.107	0.031
		Navigation	0.283	0.082
		Information design	0.165	0.048
		Responsive	0.445	0.129
Product attributes	0.092	Product quality	0.085	0.008
		Product availability	0.358	0.033
		Product variety	0.379	0.035
		price	0.179	0.016
Tactile information	0.124	Extensive product details	0.292	0.036
		Visual merchandize	0.090	0.011
		FAQs	0.372	0.046
		Contact information	0.246	0.031
Website facilities	0.250	Multi-payment method	0.384	0.096
		Delivery options	0.191	0.048
		Low-cost shipping	0.126	0.031
		Search option	0.300	0.075
Post-order services	0.244	Customer support	0.336	0.082
		Order tracking	0.375	0.092
		Flexible return	0.099	0.024
		On-time delivery	0.190	0.046

5. Discussion

In the current research, many key implications exist. The research focuses on selection attributes that are related to online retail and their comparison [12,14,15,53]. This research relied on these literature reviews and applied these elements to the Egyptian online fashion retailing context to determine whether any particular characteristics of this market exist. Furthermore, the research classifies and prioritizes all the different aspects of online fashion retailing for finding the most critical factors that have to be focused on when building an online strategy.

From a theoretical perspective, the study started by identifying related factors to online fashion retail. The most important factors that have an influence on consumers when reacting to Egyptian online fashion websites were selected. The factors suggested in this study were validated by the literature review by the author and by industry experts. A decision methodology This decision problem was determined using AHP. The AHP outcomes revealed that website design is the favorite factor when consumers interact with fashion e-stores, followed by website facilities, post-order services, tactile information, and product attributes. These results can be used by practitioners and academics for more investigation so as to understand the effect of these factors on online consumers, and for managing and successfully running this type of business.

From a practical perspective, the result of the research can be used by fashion retailers to enhance the consumers' experience in online shopping, improving their services and product attributes for enhancing the satisfaction level and retention of customers. In addition, online fashion store managers can improve the attributes of the website based on the result of factor weights. Moreover, people who are willing to make a business in the online fashion retail sector can benefit from the result of prioritization factors by serving efficiently the customers. Furthermore, market researchers can rely on these results in their analysis and market forecasting.

6. Conclusions

Previous studies have investigated attributes of e-stores and buying behavior [26,38], identified and ranked the performance of online retail [15], and evaluated and ranked e-stores [12]. The current study depends on the previous literature extension and introduced the most criteria that influence the online fashion retail aspects and which can be used in the assessment process. These criteria are website design, product attributes, tactile information, website facilities, and post-order services. Also, the research is considered the first one that has identified and prioritized one sector from B2C e-commerce, especially the Egyptian online market based on the knowledge of the author.

The rapidly growing online fashion retailing in Egypt in the past five years has resulted in many changes. The change in online consumer needs has made an

importance for identifying the factors that are essential for growth and success in online fashion retail. The research applied to the Egyptian online fashion sector for determining the website factors and sub-factors that influence the preference of consumers. The factors with their weights were determined and the evaluated model was built based on the analytic hierarchy process (AHP). Initially, five main factors and twenty sub-factors were identified based on previous research in online retail and the experts' view from the sector. The analysis resulted that the "website design" is the most influential on online consumers and especially the sub-factors of navigation, and responsiveness. The second category of importance is web facilities, followed by post-order services, and tactile information respectively. These findings shed light on the factors that are specifically important to online Egyptian retailers of fashion which will help e-store managers for focusing on its to improve the e-stores' performance according to relative importance. Additionally, managers may be able to implement e-fashion applications by achieving cost-effective through managing their resources efficiently.

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