

# Decision-making Behaviours toward Online Shopping

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## Abstract

The development of online shopping services is stimulated by both retailers and consumers, and understanding the decision-making behaviours of consumers becomes one of the crucial issues for retailers. Decision-making process, which refers to brand choice and price sensitivity, is unique in online purchase. Several motivation factors, such as situational factors, characteristics of products as well as the experience of previous e-shopping can influence consumers' attitudes to shop online. Moreover, available decision support systems can help people to make wise decisions among overwhelming information. A successful online retailer—ASOS is chosen as an example of how consumers' decision making can be supported through the online arena. As a suggestion, trust building and maintaining, brand loyalty building as well as recommendation agent are key points of online retailers' development in future. Furthermore, introduction of customer design system is the key contribution of this paper and detailed illustration of that is stated in suggestions and conclusion.

**Keywords:** consumer behaviour, online shopping, decision-making process, decision support system, interactive decision aids, customer design system

## 1. Introduction

When the vast majority of people all over the world have been used of online purchase and keep buying goods in high frequency, the new purchasing trend has gradually appeared and the whole world bursts into it. Applying of Internet in commerce has created an effective and efficient way in shopping environment. It enables consumers to make decisions or transitions anytime and anywhere (Yoon & Occeña, 2015). Electronic commerce (e-commerce) has become the engine of growth of retail with a 16% compound annual growth rate (CAGR) from 2010-2014 (Mintel, 2015). According to Sehgal & Wray (2013), the online retail sales in US will grow to \$370 billion in 2017 from \$231 billion in 2012, while 58% of people will shop online in 2016. As a Chinese online market survey conducted by The Nielsen Company (2015) goes, on "Double 11" or "Single's Day" (November 11th), which is one of the created online shopping holidays by online retailers in China, overall participation and spending by consumers will increase compared with previous years. When asked about their intent to participate in "Double 11" activities in 2015, 87% of respondents said they planned to take part and 56% said they will spend more than that in 2014. Additionally, Appliances and Electronics are quickly moving to an emphasis on online shopping and even purchasing (Schultz & Block, 2015). That is to say, nothing could stop consumers' falling rashly into online shopping in the modern internet era.

Resulting from the swift growth of e-commerce and rising number of customers who use internet in order to gain information before purchasing and to make shopping decisions, the consideration about online decision making is in key importance for marketers nowadays. Even though e-commerce is expanding rapidly (Aguilar-Savén, 2004), our understanding of the behaviour of e-consumer is limited (Karimi, Papamichail, & Holland, 2015). Decision-making during online shopping is different from that in other purchasing methods, such as street shopping. Marketers need to identify the determinants of consumers' online shopping process. Smith (2003) gave a framework of online decision-making process. Zhou, Dai, & Zhang (2007) stated various ways of consumer's decision and motivation, while Monswé, Dellaert, & Ruyter (2004) argued that the motivation factors are also influenced by external factors. Saranya, Anjana, & Thomas (2014) introduced and analysed decision support systems (DSSs) as computer based information systems which can support decision making by analysing data and provide interactive information.

The intention of the study is to expand decision-making process by taking shopping motivation factors and

decision support systems into consideration. In addition, the author uses ASOS Company as an example to link the theories with practice.

## **2. Decision Making Process and Motivation Factors of Online Shopping**

### *2.1 The Differences between Online and Traditional Shopping*

The differences between the processes of online and traditional shopping might be the main driving forces that affect the sales volume of a retailer. Danaher & Davis (2003) stated that the online shopping allowed the customer to gain information of the products easily, and the buyers can also buy the previous product they bought last time by using a special online shopping list with saving engine. On the other hand, consumers take more perceived risks in an e-commerce than those who use the traditional method.

Decision-making process, which refers to brand choice and price sensitivity are quite different during traditional shopping and online purchase. To a large extent, the differences rely on consumer's information search process and purchase environment. In addition, online consumers are more conservative than those with the traditional method in the mall. For example, the well-known brand gains more popularity on websites (Danaher & Davis, 2003), which means e-consumers are afraid of trying new products without feeling and touching them in stores. The well-known brands guarantee the quality of products themselves, and e-consumers feel safe to purchase products of familiar brands in familiar sizes. Well-known brand with detailed description and lower price will attract more consumers online, and e-consumers turn out to be more conservative and sensitive with products. Furthermore, the price is one of the important factors in consumer's decision-making as well. Anderson & Gaile-Sarkane (2009) mentioned that online shopping, comparing to traditional purchase, was more money saving. While e-retailers get high levels of income, the profits are lowered down by untenable pricing, for 28% of e-consumers use a strategy of choosing the lowest price retailer (Mintel, 2015). Above all, e-consumers are sensitive with prices as well.

An important perceived disadvantage of online shopping comparing to traditional shopping is the delivery time. During the decision-making process of online shopping, e-consumers must take the delivery time into consideration. However, Khiroya (2010) believed that the delivery time would never fade the advantages of online purchase. Ahn, Ryu, & Han (2004) also held the opinion that e-consumers required and was delighted by the delivery itself, which was impossible to expect from traditional shopping. As can be seen, comparing to the consumers using traditional method, the e-consumers are unable to see, touch, or examine the goods before online purchase, however, Hoff & Penz (2008) believed that the different environments between the two ways did not have that much influence on consumers' purchasing decision.

### *2.2 Decision Making Process of Online Shopping*

The process of online decision making can be illustrated in Figure 1. It includes three main steps: the input, process and output (Smith, 2003). The paper expands Smith's (2003) framework in both the "process" and "input" steps, and adds motivation factors and decision support systems into the original graph.

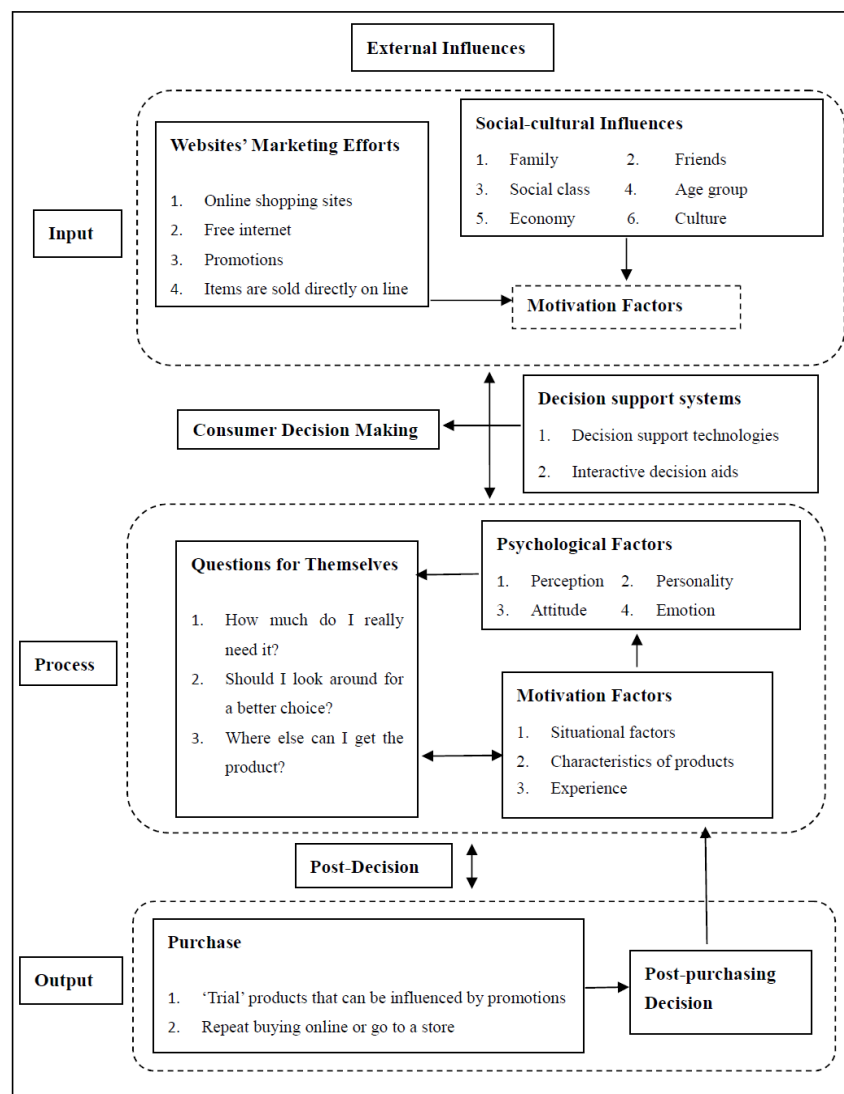


Figure 1. Consumer decision-making process of online shopping

Source: Smith, 2003.

To begin with, the input stage is determined by the consumer's recognition of the product they need. There are two major sources of information including the website marketing efforts and the sociocultural influences. The website marketing efforts use direct external factors such as TV commercials, promotions, or website advertisements in order to inform the consumers the characteristics of the products as well as where to buy them. Additionally, the use of the Internet as a source of information increases the likelihood that the Internet is also used as a shopping channel (Bhatnagar & Papatla, 2016). Moreover, the sociocultural influences also play an important role in consumers' purchasing behaviours. For example, consumers may buy online because of friends or family. As a contribution to the framework of the decision-making process, motivation factors, which belong to the "process" stage, are affected by the external influences.

Secondly, the process stage emphasises on how consumers make decisions. Many psychological factors have impacts on how the external inputs from the input stage would affect customers' recognition of product they need, pre-purchase information search as well as the choices evaluation. Furthermore, motivation factors are also introduced into this stage. As described in Figure 1, psychological factors include the perception, personality, attitudes, and emotions, while motivation factors include situational factors, characteristics of products and experiences from former purchases. In addition to product information searching, e-consumers also pay attention to prices comparing and promotions searching. According to a Nielsen report about online shopping, for the travel products or services, 63% e-consumers would look up product information, 52% would compared prices

and 46% would search for deals or coupons, while for fresh groceries, 38% would look up information, 39% would compare prices and 30% would search for promotions (Nielsen, 2016b). Furthermore, the experience that customers get during the evaluation of alternatives would also result in the psychological attributes. In particular, consumers often question themselves prior to make a decision. For instance, consumers with the motivation factor might ask themselves “How much do I really need it?” while consumers with the personality issue would ask “What websites are best suited for my personal purchasing preferences?” Decision support systems including decision support technologies and interactive decision aids are recommended in this stage to support the decision-making process.

At Last, the output stage of the decision making for online shopping includes two related post-decision actions: the purchase behaviour and post-purchase evaluation. Sometimes, consumers may buy products due to the effect of promotion. This is described as a trial purchase in which consumers evaluate the products via direct use. If the customers are satisfied, they would make repeating purchase. Hence, this would lead to the product adoption. The experience that consumers gain after the post-decision behaviour will influence the psychological factors, which again lead to the questions consumers would ask themselves. The process then continues on and on.

### *2.3 Motivation Factors of Online Shopping*

There are various ways of consumer’s decision and motivation, in which consumer’s behaviour of online shopping has been affected (Zhou, Dai, & Zhang, 2007). While the motivation factors are also influenced by external factors (Monsuwé, Dellaert, & Ruyter, 2004).

First, situational factors can moderate the relationship among consumers and their attitudes to shop online. Most consumers find the approachability and convenience from e-shopping because they can shop with comfortable feeling in their familiar environment (Monsuwé et al., 2004). Moreover, it also saves their time and effort to release from time pressure. A report for Zmags by Equation Research found that 87% of tablet owners shopped online using their tablets and spent an average of \$325 on their holiday gifts. Additionally, people preferred to shop using a tablet on couch (50%), followed by on the bed (20%), in a mall (6%), at the kitchen counter (5%) and on public transportation (3%) (Kelly, 2011). People may also think highly about e-shopping when they have special items needed, want to find attractive alternatives or overcome geographical distance. For example, when people encounter with a situation of ‘lack of mobility’, they can switch to e-shopping for lack of time for a traditional shopping. The ‘need for special items’ such as special sized clothing, shoes, which are not provided in the department store is also a reason for online shopping. According to a Nielsen report of online shopping, 49% e-consumers said they shop online to purchase products that they could hardly find in a physical store and 57% said they purchased from e-retailers outside their countries in the past six months (Nielsen, 2016b).

Secondly, the characteristics of products also determine the propensity of people to shop online. In particular, familiar or standardized products lead to higher customers’ intention to shop online (Monsuwé et al., 2004). Books and clothing were always the most popular products during online shopping, with a percentage of 46% and 41% respectively purchased in 2010 (Nielsen, 2010), while 50% and 55% respectively purchased in 2015 (Nielsen, 2016a). 62% of e-consumers said they will only shop online for electronics when the prices online were lower (Nielsen, 2016b). However, some products may not suitable for e-shopping. For instance, people may want to feel, smell, touch, and try before buying some kinds of products such as personal-care products or cars. According to a Nielsen report, only 5% of sports memorabilia and 4% of car hire were purchased online (Nielsen, 2010). Moreover, the perceived risk of a product may cause the negative effects towards people’s intention and decision making (Zhou et al., 2007). Thus, the sale-representatives are required in this case which may cause low motivation of consumers to shop online.

Lastly, the experience of previous e-shopping has direct influence on e-shopping intention (Chang, Wu, & Lai, 2010; Monsuwé et al., 2004). The good perception of information, payment form, delivery, or enjoyment, which may result in satisfaction, will lead to the positive association and repeat purchasing in the future (Monsuwé et al., 2004; Zhou et al., 2007). Credit cards are the most commonly used payment method around the world during online shopping with a percentage of 53%, followed by the digital payment systems (43%) and debit card (39%) (Nielsen, 2016a).

### **3. Decision Support Systems for Online Shopping**

Customer relationship management (CRM) is the key issue in a competitive e-commerce world, and the vast amount of data need to be mined, analysed and refined (Saranya, Anjana, & Thomas, 2014). Decision support systems (DSSs) are computer based information systems which can support decision making by analysing data and provide interactive information (Saranya et al., 2014).

### *3.1 Online Decision Making and Decision Support System*

People are used to changing their approaches of making decisions according to different environment and situations (Payne, 1982), and always try to reduce the effort related to cognition of decision making (Shugan, 1980). In this case, consumers seek support when they are encountered with too much information so as to spend less effort on making better decisions. DSSs which apply tools to help consumers choose both products and services can largely influence consumers' decision making (Bharati & Chaudhury, 2004).

There are totally two kinds of DSSs, one is decision support technologies associated with individual decision making, such as course enrolment system, the other is to search for important information in a complex online environment, such as interactive decision aids for online shopping (Kasper, 1996). The latter system refers to interactive decision aids for online decision making can direct the path of searching information before making buying decisions and monitor the purchasing process (Häubl & Trifts, 2000).

### *3.2 Decision Support Technologies of Online Shopping*

Decision support technologies commonly include clustering, classification and prediction (Saranya et al., 2014). Clustering is a popular approach to partition a set of objects into clusters according to some defined criteria (Anderberg, 1973; Everitt & Hothorn, 1980; Kaufman & Rousseeuw, 1990). K-means algorithm is widely used in online shopping web sites for its efficiency in clustering large data sets (Huang, 1998). E-consumers and marketers can find the current trends in purchasing by using this decision support technology.

Classification and Categorisation help consumers to search for the exact goods. Online decision making will be out of control of individuals in an environment with overwhelming information because of the difficulties in evaluating all the alternatives (Beach, 1993). ID3 algorithm as a simple decision tree learning algorithm can help to classify products in a DSS (Peng, Chen, & Zhou, 2009). Chang (2011) revealed that when the goods were sorted into more subcategories, consumers would experience greater ease of navigation and more shopping pleasure. However, the effect of the number of subcategories on ease of navigation, shopping pleasure, attitudes toward the store, and future purchase intentions indicated an inverted U-shaped pattern and influenced more on consumers with low choice uncertainty (Chang, 2011).

Prediction is a mechanism to predict the following steps or events from the existing databases (Saranya et al., 2014). Agrawal (1993) present an efficient algorithm to generate all significant association rules among a large database of customer transactions and applied this algorithm to sales data obtained from a retailer.

### *3.3 Interactive Decision Aids of Online Shopping*

Interactive decision aids make consumers realise their preferences, automatically transact preferences and identify advice of particular product (Wang & Benbasat, 2009). Effective decision aids need to gain benefits from the strengths and make restitution from the congenital weaknesses (Hoch & Schkade, 1996). Therefore, available interactive decision aids can help people to make wise decisions.

Three kinds of interactive decision aids are often used in online shopping decision making process. The first one is a recommendation agent (RA) which is a tool for getting advice about alternatives. For example, the column in Amazon "Customers who bought the items in your Shopping Basket also bought" gives the consumers an advice about the similar ones they may be interested in. The second tool is a comparison matrix (CM) which can organise products by prices, scores and so on. This tool can help consumers make quick and wise decisions to a large extent. While the third one is virtual try-on technology, which can enhance the entertainment value of the online shopping experience by the interactivity and customer involvement (Kim & Forsythe, 2008). For example, Burberry's online shop provides a lifelike virtual try-on system which let consumers design their own products rather than the simple size suggestion.

Similarity-attraction theory (Festinger, 1954) can explain the effectiveness of interactive decision aids. According to this theory, people are always seeking out and being attracted by others with similarities for staying in the same with others meets the evaluation of themselves. The interactive decision aids benefit from the relationship between similarity among individuals and consumer attractions (Hess, Fuller, & Mathew, 2006). By using interactive decision aids, e-consumers can make wise decisions while spending less effort (Häubl & Trifts, 2000). Therefore, the interactive decision aid will have a positive effect on consumers involved in the online shopping.

## **4. ASOS Company and Decision Support Systems**

ASOS is the largest independent online fashion and beauty retailer in the UK. The company operates a broad range of products with more than 60,000 product lines offered on its website—ASOS.com, including private and

branded label products, and about 1,300 new product lines are launched each week. The major product lines are women's apparel, men's apparel, kid's apparel, accessories, jewellery, footwear, and beauty products. Despite the world economy is in a downturn, the company's online retail business is prosperous and keeps growing. ASOS plc (ASOMY.PK, ASOMF.PK, ASC.L) reported profit before tax of 47.5 million pounds for the year to 31 August 2015 compared to 46.9 million pounds previous year (Nasdaq, 2015). Additionally, ASOS's websites attract 89.8 million visits every month in average and 9.9 million active customers in 2015 (ASOS, 2015). Mobile has been the most important part of ASOS, and there have been 5.4 million downloads of ASOS mobile apps in the past 12 months from Aug 31 2015 and 60% of traffic and 44% of orders were from mobile devices and platforms (ASOS, 2015).

#### 4.1 The Product Life Cycle of ASOS

Considering product life cycle is a method to analysis the stages of a product over time in relation to its sales. As same as individual products, the retail market also follows a life cycle. When the high street stores show declining sales, the online retail industry is still a young market showing huge growth. Figure 2 illustrates the sales of ASOS from March 2005 to March 2016, which shows a fluctuated growing trend. But in the fashion industry, the product life cycle is relatively short for the trends and tastes change regularly. ASOS introduced a range of own-brand clothes and recommended them as 'must-have' fashion items, and the product life cycle for ASOS own-brand clothes typically is as follows:

- Introduction: To introduce the products on the website, ASOS always gives some prominence and shows some details of new products on its websites on the homepage and weekly newsletters.
- Rapid growth: At this stage, the sales of the products are supported by promotion in newspapers and magazines.
- Maturity: Mature products are still shown on the website and in newsletter. ASOS tries to remind people about the products.
- Saturation: Discounts are used to clear the remaining stock of the products in this stage, which as well provide an opportunity for ASOS to introduce new products.
- Decline: Customers are tired of the products at this stage and the online fashion has moved on.

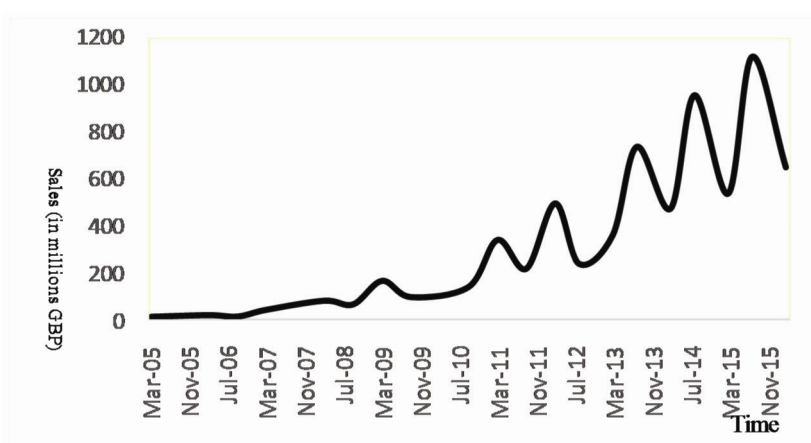


Figure 2. Sales of ASOS

Source: Osiris, May 11 2016.

At the introduction stage of the life cycle, costs of the newly introduced products are high while the revenues of them are low. However, during the growth period, revenues start to outstrip costs and contribute to the company's profitability. But the life cycle in fashion can be a matter of days. The contribution of fast introducing and promoting online seem to be in key importance. Efficient DSSs help the company to attract consumers, to occupy the fashion market and to guarantee success and moving on.

#### 4.2 Decision Support Systems in ASOS Company

By using decision support technologies, ASOS provide helpful categories and smart product search system to consumers.

#### 4.2.1 Helpful Product Categories

Within the large product range, there are some unique product-categories are provided to ASOS' shoppers. For example, the online retailer offers a category called the Green Room - an area dedicated to brands with social and ethical ethos (ASOS, 2016a). Thus the Green Room brands will satisfy the consumers who pursue green and ethical resourced products. Also, ASOS provides other collections such as working wardrobe, holiday shop and street style stars and so forth. These clear and special product categories have positive impact on information search and alternative evaluation. They are helpful in consumer decision making. It is believed that consumer welfare would be reduced when consumer are faced overload information. As a result, online retailers should reduce product complexity, and one of the ways is to reduce the attributes used to describe a category. As the amount of attributes is narrowed down, consumers could find the 'best' option easier and more quickly (Swaminathan, 2003).

#### 4.2.2 Product Search System for Online Shoppers

As it is mentioned earlier, ASOS provides a broad product range to customers, namely consumers can find a large number of alternatives on the online shop. Options are good, however when loaded with alternatives, consumers may be trapped in a 'mixed choice task' situation (Lynch & Weigold, 1988). Facing such a complex decision environment, people adapt some decision making strategies to narrow down alternatives and make the choice. People tend to minimise the cognitive effort associated with decision making (Shugan, 1980). ASOS operates a smart product search system. By using this system, consumers can easily fill in options in terms of brand, price, size and colour. In an external environment, such as a shop online, attribute-information (e.g., price & brand) has a critical impact on information evaluation. The relevant 'diagnostic' information associated with product attributes facilitates information evaluation and decision making (Ratchford, 1982).

ASOS continues with modular approach to re-platform the legacy systems and IT enhancements for customer experience, which enables the company to provide flexible and scalable products and services to e-consumers (ASOS, 2015). IT costs in ASOS company had increased to 1.7% of sales in 2015 and changed by 30% comparing to that in 2014 (ASOS, 2015).

#### 4.3 Delivery and Post-Purchase Policies

In common sense, online shopping has a belated delivery problem. ASOS has free delivery policies among most countries in the world within around 5 to 16 working days and provides next-day delivery in the UK for only £9.95 a year (ASOS, 2016c). Meantime, consumers can hardly physically touch and feel, and even try the products as they usually do in a traditional store. Such problems lead to risk and uncertainty of online shopping (Monsuwé et al., 2004). As a result, trust issue has become one of the most common concerns over e-commerce (Lee & Turban, 2001). Thus, in order to build and maintain customer trust, the online retailer should develop "trust-building interventions". ASOS accepts free returns in the UK within 28 days after receiving the original order, and offers 7 options of returning service for all customers in the UK taking up to 7 working days (ASOS, 2016b). The company found that these post-purchase policies are welcome to the customers, and resulted in positive trends in order frequency. Such post-purchase services can reduce risk of online shopping and enhance trust between the online retailers and consumers.

### 5. Suggestions and Conclusion

It is well known that online shopping is intangible, so consumers always concern about the uncertainty including transaction, delivery and refund. More than half (57%) of e-consumers doubt if the e-commerce sites will protect their privacy (Nielsen, 2016b). As a result, online trust is an important element influencing consumers' behavioural intention toward technology adoption (Faqih, 2016), and acts as a solution for the particular problem of risk (Dan, Ferrin, & Rao, 2008). Perceived trust exerts a stronger influence on purchase decisions of potential customers as compared to that of repeat customers (Kim, Xu, & Gupta, 2012). Marketers should consider how to build consumer trust and manage the perceived risks (Dan et al., 2008), while an online retailer's reputation is a powerful means of reducing product return rates (Walsh, Albrecht, Kunz, & Hofacker, 2015). Moreover, consumers are more brand and size loyal in online shopping than in traditional channel (Chu, Arce-Urriza, Cebollada-Calvo, & Chintagunta, 2010). The building of brand loyalty is much more important for an online retailer.

Due to amount of products alternatives, the recommendation agent is essential for customers to list their preferential options. It restricts products which customers do not consider as their choices and makes them select the products effectively as well. Further researches should be conducted on related online price, antecedents of trust, perceived risk and choice strategy of online decision making.

Cai & Xu (2006) stated that outcome value and process value contributed significantly to customer satisfaction and loyalty. Throughout the process of decision making for online shopping, consumer behaviours are determined by various factors. The situational factors, characteristics of products as well as the experience of previous shopping are the basic motivations for people to shop online. Moreover, presently, consumers' decision making may also be influenced by the role of DSSs including decision support technologies and interactive decision aids, which tend to help consumers by analysing and summarising the large amount of information and increase the level of convenience and satisfaction.

In addition, introduction of customer design system is an urgent solution for the increasing desire of making decision themselves. Consumers enjoy trying and fitting experience in a traditional shop, and they also want to have the same experience while online shopping. A customer design system can collect personal data of consumers such as size and facial profile, and provide enough options to consumers to specialise their own products. This kind of customer design system can totally meet consumers designing demand and realise their imaginations rather than providing a fitting room simply. By providing awards to good designs and other services can further perfect customer design system.

ASOS, the successful online retailer, is a good example of how consumers' decision making can be supported through the online arena. Above all, online decision making is driven by several factors and have unique characteristics. This is inevitably an important and challenging point that marketers in this cyber age have to consider for achieving successful marketing strategies.

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