Research And Analysis of Online Shopper Intention

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Abstract. In recent years, with the rapid development of online shopping sites, more and more consumers are accustomed to online shopping. In fact, shopping sites invest a lot of money and manpower to improve shopping applications in order to discover different items of interest to consumers. By more accurately predicting consumers' preferences for products, shopping websites can more accurately push the products they are interested in to consumers. This not only improves the experience of consumers in the online shopping process and the efficiency of shopping, but also improves the competitiveness and performance of shopping websites. This paper discusses the influence of consumer behavior on online shopping desire from four aspects: cultural factors, social factors, personal factors and psychological factors. The influence of consumer acceptance on online shopping intention is discussed. Further, this paper introduces several common methods for predicting user purchase behavior, including collaborative filtering algorithm and hybrid recommendation method. For each method, the paper also provides advantages and disadvantages in their use, which will provide reference for further research related to this topic.

Keywords: Online Shopper intention, purchase behavior, consumer behavior, intention prediction methods.

1. Introduction

In the society today a vast majority of people have embraced online shopping this shift in shopping experience even being much more accelerated with the coming of the pandemic. Shoppers now see the act of shopping online as one which saves their time and offers more convenience [1-2]. Ever since the coming of the internet, online shopping has been a popular way of everyday people making their purchases. A lot of individuals look for other alternative ways to shop and online shopping has easily become the perfect fit for that. According to Cho and Sagynov [3], online shopping refers to the action of buying products as well as services from stores and merchants who sell across the internet. A critical way of describing it is also a form of involving electronic commerce in the process of trade which gives consumers an opportunity to directly buy products and services from a particular seller through the internet with the help of a web browser or even a mobile app [4-7].

The traditional way of shopping has often times been associated with very long, dragging queues, a lot of parking issues not forgetting the hustle involved with driving around from one store to the other until one finally finds what it is they were really looking for. Online shopping on the other hand has given people the total freedom of shopping at home even in their pajamas and enabling them to get exactly what they want all this on a simple phone or personal computer [8-11]. Lissitsa and Kol [11], accord that e-commerce as it is also known, has been a growing trend not only in the American culture but also across the globe. Developing at a rapid speed, a lot of businesses are adopting to this craze and spending millions to develop shopping apps improve their websites and give their online shoppers an appealing and personalized experience while shopping. Thus, for many businesses it is very fundamental to incorporate e-commerce in their business strategy to compete in such competitive times and in the contemporary world with unceasing, never-ending consuming habits of people.

Consumers will want to enjoy the ability to compare the different available products existing in different apps and websites, to have a look at the reviews from previous purchases as well as the features of the products or services offered. Thus, the best websites and apps ensure that they design them to be easily navigable, have a quick checkout and not forgetting the customer service option which puts to use live chats and chat boxes to ensure quality customer experience. For almost each

and every product category, consumers have been seen to have a much significant preference for online shopping as it offers great variety and alternatives from which to choose from [12-13].

This essay will shine a light on why more and more people are adopting this trend and what influences the desire for online shopping. On the one hand, this paper will explore the influence of consumer behavior on online shopping desire, including cultural factors, social factors, personal factors and psychological factors. On the other hand, this paper will explore the willingness of online shopping from the perspective of consumers' acceptance of online shopping. The acceptance of online shopping will be affected by four aspects: consumer characteristics, personal perceived value, website design and products. These factors are not only the basis for analyzing the reasons that affect people's online shopping desire, but also further explore the impact of differences in different cultural backgrounds, age, gender, race, etc. on consumers' online shopping preferences.

2. Consumer behavior and how it influences the desire to shop online

Consumer behavior will ultimately influence the desire of online shoppers, thus an important factor to delve into. Consumer behavior is grouped into four prime categories these variables include; cultural factors, social factors, personal factors as well as the psychological factors.

2.1. Cultural factors

Within the cultural category online shopping desire can be affected by consumer's culture, social class and subculture. Shavitt and Cho [13], state that each and every culture will also include a subculture which essentially consist of more specific identities of the individual members. Additionally, there are four categories of subculture and they include religion, nationality groups, geographical locations and tribes. Social class can simply be defined as a division of the society based on the economic and social status of the particular group setting. The social class has been arranged in a hierarchical manner whose particular members share common values, behaviors and interests, thus all these factors will come down to whether the individual's cultural surrounding have adopted online shopping. If so the desire to shop online relatively increases as they want to feel part of the group and fit in. Not only that, there are differences in people's e-commerce behaviors in different cultural backgrounds. Ko et.al [10] found that Korean consumers living in collectivist countries exhibited higher levels of social risk than Americans. For Chinese consumers, uncertainty avoidance and long-term orientation are key cultural values that influence their acceptance of online shopping [4].

2.2. Social factors

In the social factor category, there will be a mention of the individual's reference groups, social roles, family and social status. Reference groups refer to groups that have a direct or indirect influence on an individual's behavior or attitude. Where the individual's reference group has integrated online shopping in their lifestyle, this being mostly the case. It is more than likely they will influence their desire to also switch to online shopping. In the family section there is normally two categories of family orientation, these consists one with the parents and the other one that an individual will create for themselves. While the social position of a particular individual within a group can be sectioned to their social status and social role. Gajjar [6], says role describing the various actions an individual takes in relation to those surrounding him/her. Furthermore, the role played will be correspondent to the individual's status in respect to the society.

2.3. Personal factors

The other category, personal factors relate to age, occupation, life circle stage, lifestyle, economic situation, self-concept and personality. Individuals will for sure change their online shopping preference based on age. Persons in the old age category may not be able to keep up with the new trends of technology hence their desire to shop online is negatively affected. While most of those in

the teenage and youth category will find new technology trendy increasing their desire to shop online. Alanazi et al., [1] notes down that variable such as consumer income and the price of the product and services will also have a direct impact on the preferred customer product or service as well as the manner of shopping whether online shopping or traditional shopping. On the other hand, different occupations will have different needs and show different desires to online shopping. Occupations will for example determine the type of apparel one wears, the desire to shop will be influenced by whether the item found will be appealing and a correct fit. Occupation will also bring in the notion of income. High income answers have been seen to prefer discounts on online sites where they can buy in bulk and save more.

The traditional shopping experience involved the consumer purchasing their preferred product or service by physically availing themselves in the store and buying the brands themselves. This way of shopping is no longer appealing especially to the now fast paced world with many working longer hours and many jobs thus the desirability for online shopping increases based on this. Naturally a lot of purchasing decisions will be dependent on the economic condition of the individual and their willingness to buy. Harrell and McConocha [8], posit that economic data will range from the individual's income, disposable capital, savings, attitude towards consumption and their borrowing capacity including such things as credit cards. Since credit cards are highly acceptable in online stores, consumers with a high affiliation to buy things will have high desire to shop more. Lifestyle is considered as each and every habit that an individual has possessed though one's interests, actions, beliefs as well as the small indulgences one allows themselves to have. Since the online store can easily be accessed at the palm of your hand, popups and notifications across search pages together with the individual's habit of self-indulgence will lead to an increased desire to shop the advertised product.

2.4. Psychological factors

The last category which is psychological factors discusses significant variables such as perception, motivation, learning attitudes and beliefs. Motivation will normally be caused by a motive such as recognition, hunger, thirst and devotion among others. Since online shopping is easily accessible a consumer's motivation to shop is always high. A good example is when someone is hungry but also lazy or burdened with work, the individual will be motivated to solve the hunger problem by simply ordering something online. Di Crosta et al. [5], say perceptions will influence the ways in which consumers will act and react. It is a known fact that the largest part of the human behavior is normally learnt. Learning will be produced by a combination and interaction of motives, learning from other people and stimuli. Where children have grown up in a household that was making most of their purchases online, it is mostly the case that this desire is already existent and they are likely to adopt a similar trend.

3. Online shopping desire and the consumers' acceptance

Studies done in the past have given four prime factors of online shopping and the consumer's acceptance as; personal perceived value, consumer characteristics, website design as well as the product itself.

3.1. Consumer characteristics

Consumer characteristics are generally related to personal characteristics, which include the social environment and their own knowledge and understanding of the internet. In a previous study it was seen that up to 14% of individuals shop online when there is presence of internet connection in their homes [2]. The internet is advancing rapidly and so is its popularity as well as its many uses. With the advancement of the internet, it is now easier to make purchases online leading to increased desire. Also, the aspect of self-efficacy can be discussed in this concept as it translates to the belief of an individual that they can start and action and fully complete it given all the means necessary. Humans

will naturally want to do something they are good at and when they complete their first online purchase successfully, there will be a desire to use the same method again and again. But where their first attempt was a failure, the consumer will not have the desire to carry out any more purchases online.

3.2. Personal perceived values

Personal perceived values refer to the unpleasantness or uncertainty of the outcome that comes with purchasing a good or service online, which also include the aspect of perceived danger. If an individual has the perception that their shopping experience is dangerous and have the fear that the good or service, they are seeking to buy will not be the one delivered, the consumer will opt for the traditional method of shopping rather than the online one, i.e., their desire to shop online significantly decreases. Perceived convenience will also involve time as well as the effort of making great purchases and savings. Where the products advertised on various platforms and apps are discounted, this practice is seen to entice consumers and increase their overall desire to shop online. The feature of twenty-four-hour availability is also one that is appealing to customers which is the case with all online shops, influencing positively on the level of desire.

3.3. Website design

As an online shopping platform, website design is very critical, which will affect the user experience of consumers. Where the website is easy to access and use, many consumers will have the desire to shop online more through that platform. Also, the website should have the quality of speed when it comes to making purchases, so as to be appealing to consumers and increase their desire. The other significant factor of the website is security. Jarvenpaa et al. [9], say this is here the consumer is afraid that their online transactions may not have been secure. The best and known online platforms for shoppers have advanced security to guarantee customers against cyber-attacks. Also, the consumer's desire will be influenced by the knowledge of how their personal information will be gathered and later used. Mohammadian and Khataei [12], note that a website or app that guarantees privacy for consumers will most definitely be chosen over those without these features. Lastly the availability of lots of products and services, guarantees the consumer that chances are higher they will find what they were seeking. Thus, when they find all or most of the products, they feel assured of product availability and this increases their desire to shop online.

3.4. Products

The factors influencing the consumer's desires to online shopping have been discussed above. Further, it is necessary to explore products that are more suitable for online sales and popular with online shopping consumers. The table 1 goes further to show the category of online products that are more preferred, thus bought by a large majority of people.

Table 1. Consumer Reference Wise Distribution of Respondents

S. No	Preference	Garret's mean score	Rank
1	Groceries	36.84	XI
2	Fast Food	33.78	XII
3	Cosmetics	39.42	X
4	Books	66.02	I
5	CDs/DVDs	56.02	IV
6	Toys	46.28	VII
7	Furniture	44.12	VIII
8	Clothes	53.72	VI
9	Electronic Goods	54.92	V
10	Movie Ticket	59.3	III
11	Airplane Ticket	66	II
12	Jewellery	41.58	IX

4. Analysis of purchasing behavior recommendation methods

To analyze the interaction behavior data between users and products and predict users' purchase behavior, the two most common methods are collaborative filtering algorithm and hybrid recommendation method. This article will describe these two methods in detail.

4.1. Collaborative Filtering Algorithm

The collaborative filtering algorithm was proposed by Goldberg et.al [7] in the 1990s, which divides customers into different groups according to their preferences by analyzing their historical evaluations of products. Based on the division of customer groups, merchants can customize the products they are interested in to customers. Further, in the application process, memory-based collaborative filtering algorithms and model-based collaborative filtering algorithms are proposed according to actual needs.

Specifically, memory-based collaborative filtering is divided into item- and user-based collaborative filtering. The user-product rating matrix is constructed by calculating the user's score on the product by calculating the user's past behavior duration, number of behaviors, and text comments on the product (Figure 1). The user's rating for the target product is then predicted by computing the user-product rating in the nearest neighbors. Finally, the product with the highest predicted rating is pushed to the user. On the other hand, model-based collaborative filtering algorithms are modeled by mathematical methods, which can significantly improve the accuracy of recommendations. However, this method requires more computation and takes more time and cost. If the model can be successfully built, the prediction accuracy and speed will also be significantly improved (Table 2).

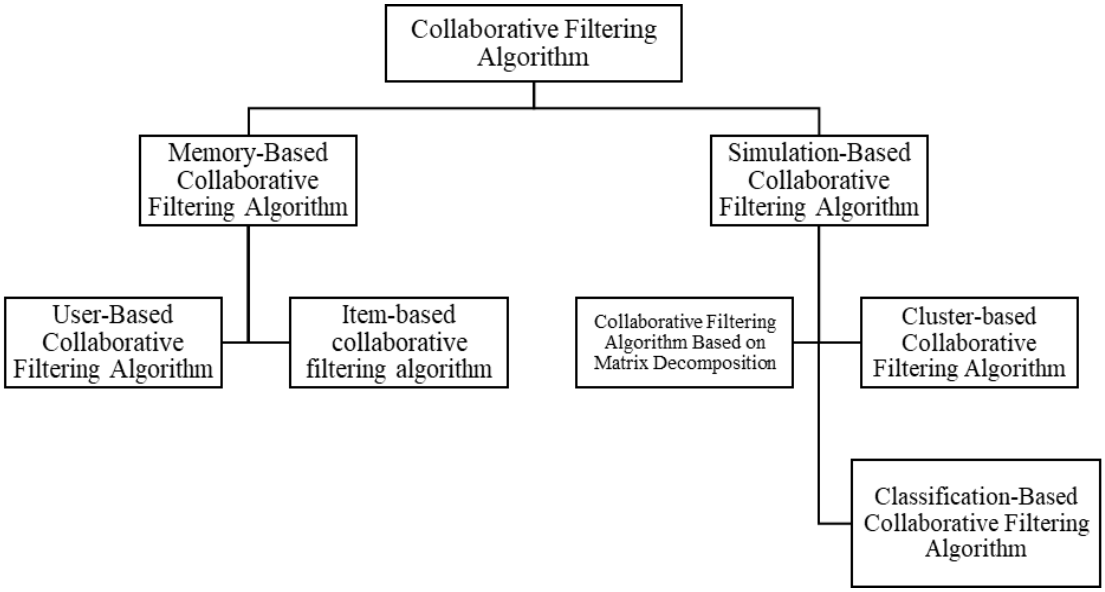


Figure 1. Collaborative Filtering Algorithm Classification

Table 2. Comparative analysis of the advantages and disadvantages of collaborative filtering algorithms

Types of Collaborative Filtering Algorithms	Advantage	Disadvantage
Memory-based collaborative filtering	Simple principle, easy to apply and explain	Lower scalability and precision, with sparsity problems
Model-based collaborative filtering	Higher speed and accuracy, rigorous theoretical basis	Modeling is complex and time-consuming

4.2. Hybrid recommendation method

The hybrid recommendation method refers to the use of a variety of different algorithms and recommendation technologies through a combination of different methods [13], so that the advantages of various methods can be used at the same time to predict the products that users may purchase. Based on the hybrid recommendation method, the defects of the single algorithm model can be avoided, and the generalization ability and robustness are also improved. As shown in figure 2, the main hybrid recommendation methods are demonstrated:

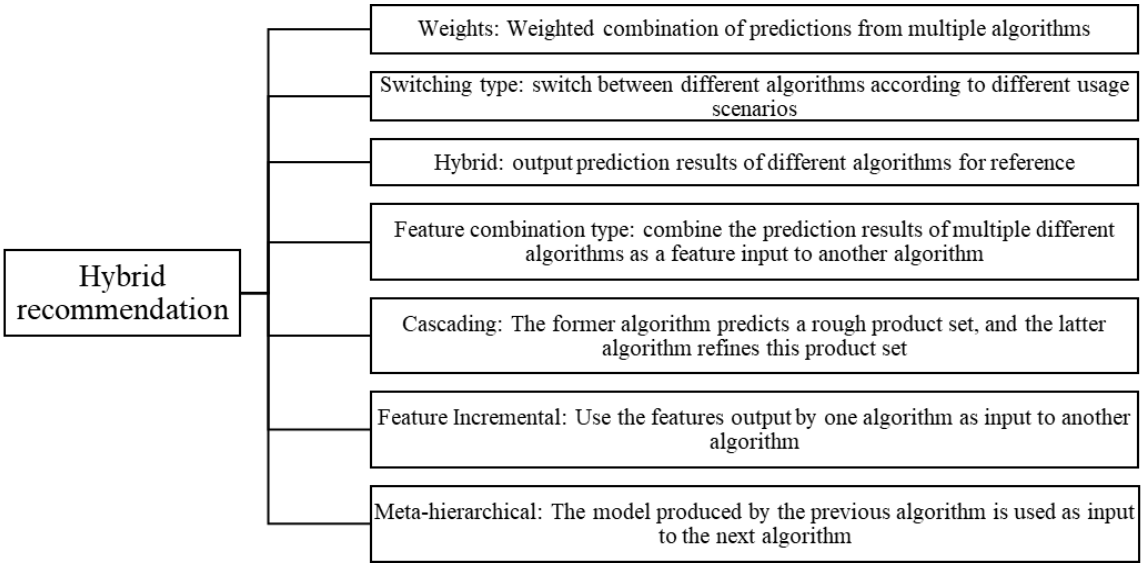


Figure 2. Hybrid Recommendation Technology Classification

5. Conclusion

The desire to shop online as can be seen can be explained in terms of the consumer's behavior then further to their own level of acceptance. The traditional way of shopping as oppose to online shopping has often times been associated with very long, dragging queues, a lot of parking issues not forgetting the hustle involved with driving around from one store to the other until one finally finds what it is they were really looking for. Hence more consumers prefer the digital way of conducting their purchases. Desire to shop online is positively influenced by attitude, perceptions, behavior, utility of the product or service, trust of the website etc. A surprising finding by Forbes conducted a while back showed that an average 59% of consumers will prefer to shop online than the remaining 35%. Thus, the desire to shop online can be seen to be on the rise daily and this trend does not seem to go away any time soon.

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