

# An Exploration into the Factors Driving Consumers in Singapore towards or away from the Adoption of Online Shopping

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## Abstract

**Purpose:** This paper explores the factors affecting consumers' decision to shop online, and how the adoption can be affected by product type.

**Design/methodology/approach:** A questionnaire was designed to be self-completed and internet mediated a deliberate decision for several reasons. The survey was administered in Singapore, involving 168 respondents.

**Findings:** The results suggest that availability of product information on websites serves as an important attribute for online shopping website to possess. Easiness to use especially with regards to the payment process is another encouraging factor. On product type, the paper finds entertainment related products such as movies, music and video games as more acceptable items for online purchasing.

**Keywords:** Online Shopping, Consumers, Product type, Singapore

**Paper Type:** Research Paper

## Introduction

With rapid and continuous advancements in technology, the e-commerce industry is one that has grown significantly. Global business to consumer e-commerce sales have been forecasted to increase by 20.1% in 2014 to reach \$USD 1.5 trillion according to digital marketing research firm eMarketer (2014). Another interesting fact to take away from eMarketer's forecasts is that 2014 marks the first time that consumers in the Asia-Pacific region will spend online more than consumers in North America, overtaking the latter as the largest regional e-commerce market worldwide. This forecast is supported in a paper by Demandware (2013) who concluded that the Asia-Pacific region is expected to have an average annual growth rate of 33% from 2010 to 2015, making it the fastest growing e-commerce market globally.

It is perhaps surprising that there seems to be a gap on the literature in regards to studies in the Asia-Pacific region, with the vast majority of studies seem to focus on data collected from the United States or European countries (Ha & Stoel, 2012; Sorce, et al, 2005).

These studies may not be applicable to a country in the Asia-Pacific region, such as Singapore due to cultural differences and other factors, which shows the need for a study based on primary data collected in such a country.

Another thing to note is that the literature in the field of online retailing pertaining to consumer adoption, seems to take one of two extreme approaches, either focusing down on a very specific sectors of retailers, such as online grocers (Morganosky & Cude, 2000; Tanskanen et al., 2002), or generalise online shopping without taking into account the type of product being retailed (Jiang, et al., 2013; Wu, 2003). Both approaches did not explore the differences in consumer adoption that might arise because of differences in product type.

This study aims to bridge this gap in knowledge.<sup>1</sup>With a particular reference to Singapore, this paper investigates the factors which affect a consumer's adoption of online shopping, and how adoption can be affected by product type. A brief description of Singapore may be useful at this juncture. The Republic of Singapore is a small sovereign city-state in South-East Asia, with a land mass of only 716.1 square kilometres and a population of approximately 5.4 million (Singapore Department of Statistics, 2013). Upon its independence from Malaysia in 1965, Singapore faced a small domestic market which had high levels of poverty and unemployment, and therefore focused on developing its economic attractiveness (Siddiqui, 2010). An example of Singapore's success in this regard is the fact that it tops the rankings of the Global Enabling Trade Index, which benchmarks economies in four critical areas, namely their market access, border administration, infrastructure, and business environment (World Economic Forum, 2014). Wong (2003) analysed the diffusion of e-commerce in Singapore, and concluded that the country seems to have a favourable environment for the adoption of e-commerce. Positive factors for the country include an advanced telecommunications infrastructure and a trusted legal and financial system, yet these positives can be offset by other factors such as a very small domestic market, trade frictions and political uncertainties.

In summary, the survey results undertaken in Singapore suggest that availability of product information on websites serves as an important attribute for online shopping website to possess. Easiness to use especially with regards to the payment process is another encouraging factor. On product type, the paper finds entertainment related products such as movies, music and video games as relatively more acceptable items for online purchasing. The implications of the results on business firms will be discussed in the concluding section of the paper.

### **Literature Review**

With the increasing number of people being able to access the World Wide Web and the resulting commercialisation of the Internet in the early 1990s, the coining of the term e-commerce soon followed (Turban, et al., 2002). However academic literature has not been able to agree on a single definition for the term, with various definitions being devised.

In a comprehensive review of 275 journal articles directly relating to e-commerce research, Ngai & Wat (2002) outline four definitions which correspond to different perspectives on the topic. The communications perspective views e-commerce as the delivery of

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<sup>1</sup> It is also worth noting that academic studies on online shopping adoption mentioned tend to focus entirely on the consumer perspective, focusing on consumer behaviour and psychology behind adoption of online shopping, but there was less focus on what the implications that the consumer's attitude towards online shopping has on business performance. This is another gap in knowledge that this research paper attempts to address.

information, products/services, or payments via telephone lines, computer networks, or any other means. The business process perspective views e-commerce as the application of technology toward the automation of business transactions and workflow. The service perspective views e-commerce as a tool that addresses the desire of firms, consumers, and management to cut service costs while improving the quality of goods and increasing the speed of service delivery. Finally, the online perspective views e-commerce as providing the capability of buying and selling products and information on the Internet and other online services.

The fact that there are several definitions and perspectives identified by Ngai & Wat (2002) suggests the complexity of e-commerce, resulting in academics leaning towards definitions that apply to their particular field or research objectives, a view that is supported by other academics (Kling & Wigand, 1997; Wilkins, et al., 2000). With the vast surges of Internet users from its ambitious beginnings, the needs of the users have also increased (Bontis & Castro, 2000). The Internet is no longer just used for tasks such as communicating by electronic mail. It has been used for a multitude of other tasks, one of which is engaging in commercial activity.

Several studies have argued that there is a positive correlation between governments with active policies towards information technology and e-commerce adoption appears to have formed, for example in Italy (Scupola, 2003) and China (Cui, et al., 2006). In the case of Singapore, Mia & Dutta (2007) reported that the Singapore government have a clear focus on promoting information technology diffusion and penetration. The Singaporean government's decision to create the statutory board of Infocomm Development Authority (IDA) is evidence of such, as it is responsible for the development and growth of the infocomm sector in Singapore. The IDA oversees a variety of initiatives, the key programme currently being the Intelligent Nation 2015 master plan, which aims to enhance the competitiveness of economic sectors and also better connect Singapore's society through the use of technology. Another initiative the IDA are running is an 'E-commerce & Operations Management' programme, which aims to help retailers to gain an e-commerce presence by establishing a retail services framework and ensuring an open e-commerce ecosystem.

Outside of governmental influence, the legal environment of a nation plays a role in e-commerce adoption as it helps to build assurance and confidence in the marketplace (Zhu & Thatcher, 2010). Molla & Licker (2005) suggested that the lack of development in supporting industries such as the financial sector could inhibit e-commerce adoption in the nation. In regards to market competitiveness and the relation to e-commerce adoption, there seems to be a disagreement amongst academics. Some believe that with a highly competitive market comes higher adoption of e-commerce (Forman, 2005; To & Ngai, 2006), a view based on the theory that the failure to adopt e-commerce would result in a loss of competitive advantage. However, others have argued that a highly competitive market comes with a reduction in e-commerce adoption (Hsu, et al., 2006; Rodríguez & Meseguer, 2010), suggesting that the increased competitive pressure results in a lack of sufficient resources required for adoption of e-commerce. Even during the early years of e-commerce growth academics such as Vigoroso (1999) pointed out that businesses who failed to develop visibility on the Internet would lose business competitiveness soon after. Many of the businesses that adopted e-commerce would often develop a website to provide company and product information (Duffy & Dale, 2002; Wang, 2001). Liang, et al. (2004) have gone further and devised three e-commerce models that businesses may adopt. The first of these models is the information provision model, where traditional brick-and-

mortar businesses develop websites that focus on providing information for consumers, no transactions occur online. The second model is the pure web model, where businesses operate entirely virtually, with an online store providing products or services for purchase. The third and final model is the hybrid model, where businesses have a traditional brick-and-mortar presence, but also operate a virtual storefront where transactions can take place. Reynolds (2000) however, argues that e-commerce adoption by businesses has advanced from the development of websites, and focused more on customer service and personalisation models. Given the extra costs, this may be a strategy that is not affordable for smaller businesses.

Academic literature relevant to understanding consumers' intentions to shop online is extremely fragmented, with studies focusing on different aspects of consumer behaviour and characteristics or focusing more on the technological aspects of online shopping, with a wide variety of research scopes. This can make comparing and analysing various factors affecting consumer adoption of online shopping relatively challenging, due to the difficulty in directly applying results to other studies.

The technology acceptance model (Davis, 1993) has been applied to the topic of online shopping, with the two main constructs 'perceived usefulness' and 'perceived ease of use' being applicable to online shopping adoption. Perceived usefulness is defined by Davis (1993) as "the degree to which a person believes that using a particular system would enhance his or her job performance", and perceived ease-of-use, is defined as "the degree to which a person believes that using a particular system would be free from effort". When applying these definitions to the particular topic of online shopping, usefulness would therefore refer to the degree that a consumer believes using the Internet enhances the outcome of their shopping experience, and ease of use would refer to the consumer's perception of the effort involved in the online shopping process. However, it is important to note that the technology acceptance model has been criticised for ignoring other factors that can influence technology acceptance (Chen, et al., 2002). This may be explained by the original design of the model for determining technology acceptance in the corporate environment, and not for determining consumer behaviour, suggesting that studies that strictly follow the technology acceptance model could be failing to acknowledge possible factors that affect online shopping adoption.

Some studies have specifically aimed at exploring other factors that affect online shopping, Pentina, et al. (2011) focus on website functions and how they affect satisfaction and online retail performance, an area they claim was not researched prior to their paper. Data regression was employed to create a sample of 115 large online retailers, and an online survey was administered to explore customer perceptions of online shopping experiences. The findings of the study confirmed the supporting role of website satisfaction in increasing online retail performance. There are however a few limitations with the study conducted, and Pentina, et al. (2011) themselves point out some of these limitations. Pentina, et al. (2011) suggest that future research in the area consider the role that other factors apart from web site features and functions play in customer satisfaction, such as customer service, price, and shipping policies. Pentina, et al. (2011) also recognise that their choice to utilise a sample of 115 large online retailers warrants caution in applying the results to a wider context, another reason being that differences amongst product types were also not tested for. Another limitation that was not picked up by the researchers, but is still applicable to the application of the results in a wider context is that the online survey in the survey was administered to undergraduate businesses students in two

American universities. This is a particularly specific sample, which raises issues as the applicability of results for other demographics.

**Research Methodology**

A questionnaire was designed to be self-completed and internet mediated a deliberate decision for several reasons. First of all, given that the positivist research philosophy encourages the researcher to be value-neutral, a self-completed questionnaire aids in that aspect by reducing the influence a researcher can have in the completion of the questionnaire. Another reason is that the self-completed questionnaire would give the respondent more convenience, as they were free to complete the questionnaire when they felt they had ample time to give thoughtful and proper responses, instead of being rushed by the researcher.

In regards to questionnaire content, a pilot study was conducted with ten participants that the researcher found invaluable to refining the questionnaire and identifying potential issues. Reliability was improved through the use of the pilot study as certain questions were identified as being interpreted slightly differently, so these were reworded to ensure they were made clearer. To aid in reliability, a short description was added by the researcher to each section in order to explain to the respondent what the particular section was trying to find out, for example whether different types of products affect willingness to shop online. Both quantitative and qualitative questions were included, with a total of 13 questions in total, with 7 being closed and 5 being open. The respondent was also ensured of their confidentiality, and the questionnaire collected absolutely no personally identifying data from respondents.

Research data was collected over a two week period in April 2014 order to gain a ‘snapshot’ of consumers’ adoption of online shopping in Singapore. 168 persons responded to the survey. As can be seen from Figure 1, females made up a slightly higher percentage of respondents at 57%. Respondents in the age group of 19 to 29 years old are overrepresented, accounting for 76% of the total respondents.

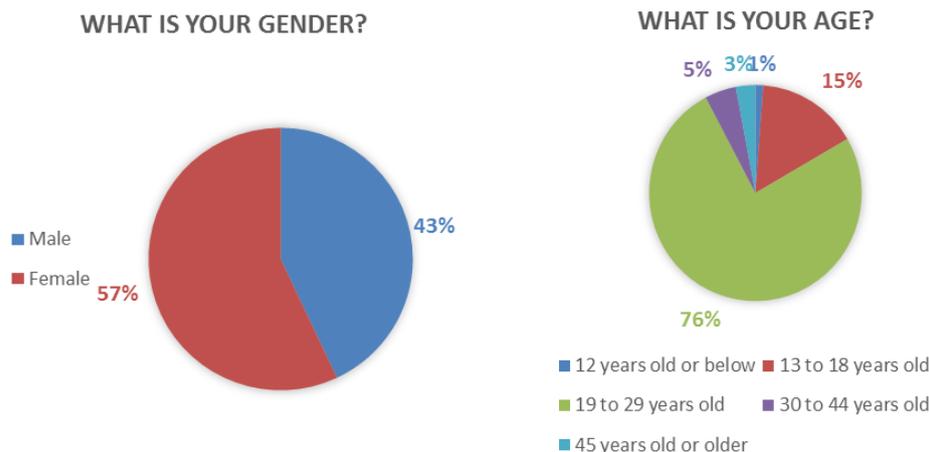


Figure 1

**Research Findings**

A vast majority of respondents makes use of the Internet for shopping related activities. 97% of the respondents would go online to find out more information about products

(Figure 2). This shows that using the Internet as a tool for information gathering purposes is extremely popular. However, this does not equate to purchases.

DO YOU GO ONLINE TO FIND OUT INFORMATION ABOUT PRODUCTS?

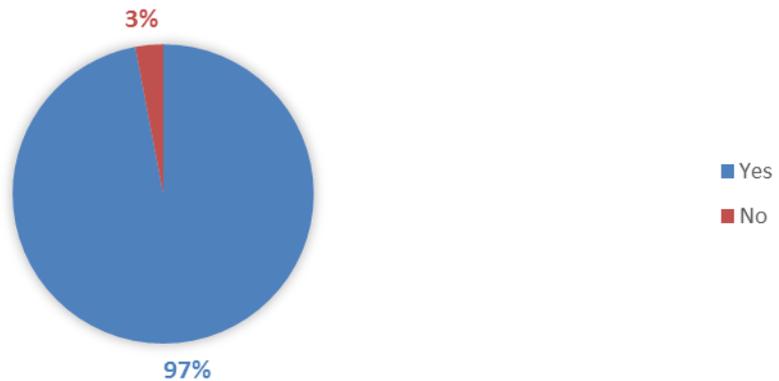


Figure 2

In regards to frequency of purchasing products online (Figure 3), only 8% of respondents have not purchased products online before. Weekly shoppers accounted for 13% of the respondents, with 19% purchasing once a year or more, 24% purchasing once every six months, and the majority of 37% purchasing once a month.

HOW FREQUENTLY DO YOU PURCHASE PRODUCTS ONLINE?

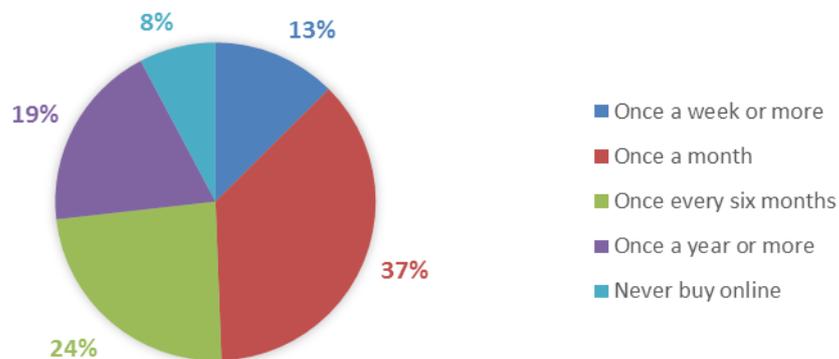


Figure 3

When cross-referencing the genders of the respondents with their chosen frequency to purchase products online (Figure 4), some differences could be observed. On regular shoppers who purchased products once a week or more, 17% of the female respondents fit into this category, while only 5% of the male respondents do. On the opposite end of the scale, 25% of the male respondents only purchase a product online once a year or more, while only 15% of the female respondents fit into this category. Female shoppers tend to purchase products online more frequently when compared to their male counterparts.

### HOW FREQUENTLY DO YOU PURCHASE PRODUCTS ONLINE?

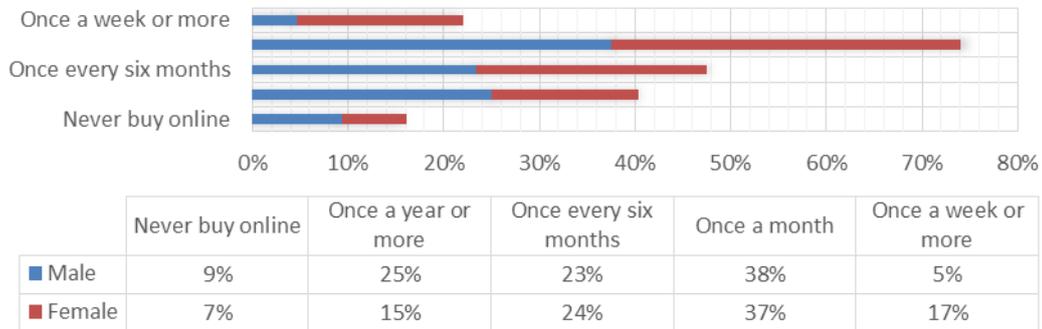


Figure 4

Respondents were asked to identify factors that encouraged them to shop online in the form of a list question where they ticked any factors that applied to them, the list of factors were chosen from feedback during the pilot study. Figure 5 shows that two factors stand out as being more important for the respondents. 80% of the respondents ranked convenience as an important factor, while 77% ranked lower prices. Out of the provided factors, variety was not placed of as much importance by respondents, with only 46% choosing a variety of places to purchase from as an encouraging factor for online shopping. This suggests that the respondents generally prefer to purchase their items from a particular online outlet, and the data suggests that they will opt for an outlet which focuses on convenience and affordable prices.

### HAVE ANY OF THE FOLLOWING FACTORS ENCOURAGED YOU TO SHOP ONLINE?



Figure 5

One factor that was identified as a result of the open question was the reliance on online shopping for goods that are not available locally in Singapore. One respondent, for example, explained how “the brand of makeup I buy is from Korea, and the only way I can get it is buy online or ask friends to buy it for me”. This is a factor that could be more prominent in a country such as Singapore with such a small market. Another factor that was identified was uniquely found amongst male respondents who stated that shopping online for more personal items, such as condoms, was preferable as they are likely to “feel embarrassed buying these sorts of items in a retail shop”.

As with the encouraging factors, respondents were asked to identify factors that discouraged them to shop online in the form of a list question where they ticked any factors that applied to them.

As can be seen from the quantitative data of factors that discouraged respondents to shop online (Figure 6), the most discouraging factor was product quality, with 91% of the respondents ranking it as a discouraging factor. Personal interaction and familiarity with online shopping have been identified as potential discouraging factors for online shopping with 18% of the respondents citing lack of personal interaction as a discouraging factor, and 20% citing lack of familiarity as one.



Figure 6

In order to explore whether different types of products affect the willingness to shop online, respondents were given a list of product types and asked to select whether they would prefer to purchase said product type online or in a retail store instead. Following this quantitative question, respondents were then asked two qualitative open questions in order to gather a deeper understanding as to why they chose to purchase the products online or in a retail store when compared to the alternative.

Analysis of the quantitative data (Figure 7) shows that overall the respondents have a clear preference of where they would prefer to purchase each of the given eight product types.

WHERE WOULD YOU PREFER TO PURCHASE THE FOLLOWING ITEMS?

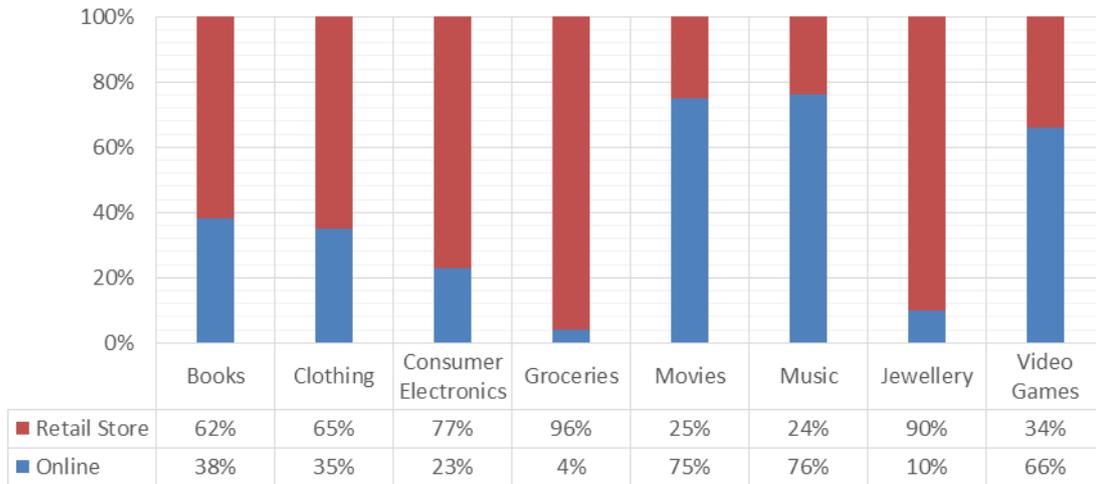


Figure 7

The most definitive preference is for the purchase of groceries. 96% of the respondents stated they would prefer to do so in a retail store. Upon analysis of the qualitative data, reasons discouraging respondents from purchasing groceries online revolve around the need to physically be able to check for quality, especially in regards to purchasing things such as fruits and vegetables. One respondent stated how they would like their “groceries to be fresh when I buy them, and I can make sure of that when buying it in store”. This links back and supports the identification of product quality as a primary concern for the respondents. These concerns of product quality resonate with explanations as to why respondents prefer purchasing consumer electronics or jewellery in a retail store, with the additional factor of the potential high cost of such products also emphasising the need to ensure product quality is satisfactory. Also, in regards to jewellery and clothing, the need to try the product on to ensure a good fit was commonly mentioned as a reason for preferring to purchase in a retail store. A respondent mentioned that “not all stores use the same sizing system, so I don’t want to risk getting the wrong size, I’d prefer to try it on”. The preference for purchasing products online seems to correlate with entertainment media, with movies, music, and video games all showing a clear preference to be purchased online. The qualitative data from the open question shows support for the data collected in regards to factors that encourage online shopping, with convenience and cheaper prices regularly mentioned as reasons for the preference to purchase certain products online. That there is a clear preference to purchase entertainment media online is in support of the view that media-related products and services such as movies, music, and video games could be purchased in a digital format. Respondents have stated that being able to “download and access everything immediately is great”, and these digital downloads are often priced lower as they do not require costs on the consumers side such as shipping, or costs on the sellers side such as storage or packaging for example. Interestingly, although books are a form of entertainment media, and available as a digital download, 62% of respondents still prefer to purchase them in a retail store. The results suggest that respondents prefer physical copies of books as opposed to digital ones. Some respondents also mentioned that they find it easier to browse through books in a retail store, as they can “easily pick up a book and read a few pages” to see if they are interested.

There seems to be a relationship between the respondent’s gender and their preferred choice of purchasing on two product types, ‘consumer electronics’ and ‘clothing’. While the other product types had similar results between the male and female respondents, the ‘consumer electronics’ and ‘clothing’ product types showed the most variance between the genders (Figure 8). Although ultimately purchasing both product types in a retail store is more popular for both genders, there is a larger gap between those that are comfortable with purchasing the product online when comparing genders.

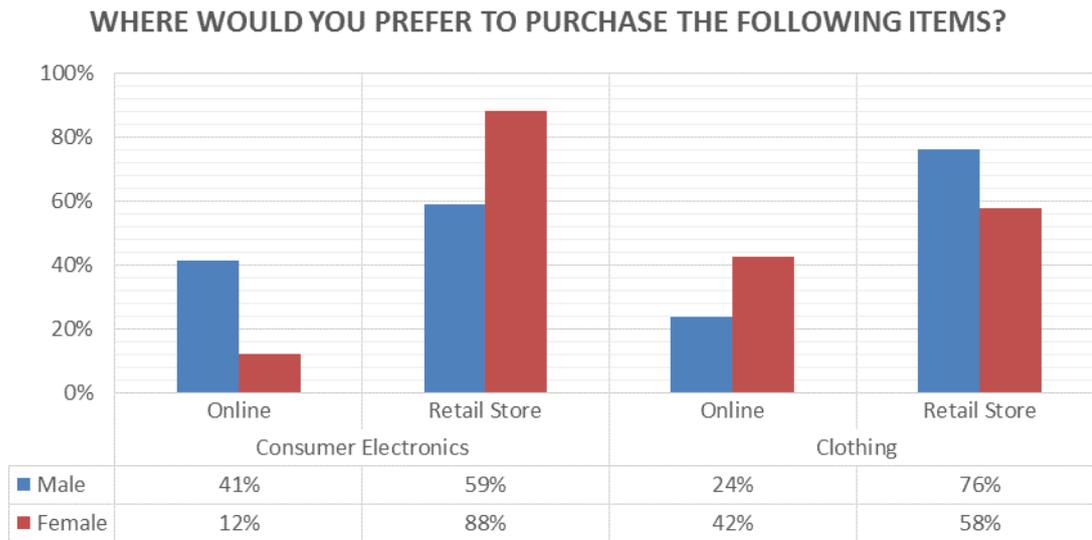


Figure 8

For consumer electronics, only 12% of female respondents selected online shopping as their preferred purchase method. In comparison, 41% of male respondents selected online shopping as their preferred purchase method. This shows that male respondents were more likely to purchase consumer electronics online when compared to females. When examining the clothing product type, only 24% of male respondents selected online shopping as their preferred purchase method. In comparison, 42% of female respondents selected online shopping as their preferred purchase method. In this case, female respondents were more likely to purchase clothing online when compared to males.

Respondents were asked to rank the importance of twelve attributes of an online shopping website on a Likert scale. Following this quantitative question, respondents were then given an open qualitative question in order to give them an opportunity to list down any other attributes they believe are important for an online shopping website to have.

Figure 9 shows that with the exception of ‘social media presence’ which only had 37% of respondents mark it is important, all of the remaining eleven attributes had a majority of over 50% of respondents believing that they were important attributes for an online shopping website to have. The most important attribute for an online shopping website, with 85% of respondents ranking it as important, is the availability of detailed product information. The availability of product ratings and reviews was the second most important factor, with 78% of respondents ranking it as important. Only slightly behind is the third most important attribute, a simple payment process, which 76% of respondents ranked as an important attribute for an online shopping website to have.

**PLEASE RATE HOW IMPORTANT YOU CONSIDER THE FOLLOWING  
ATTRIBUTES ON AN ONLINE SHOPPING WEBSITE**

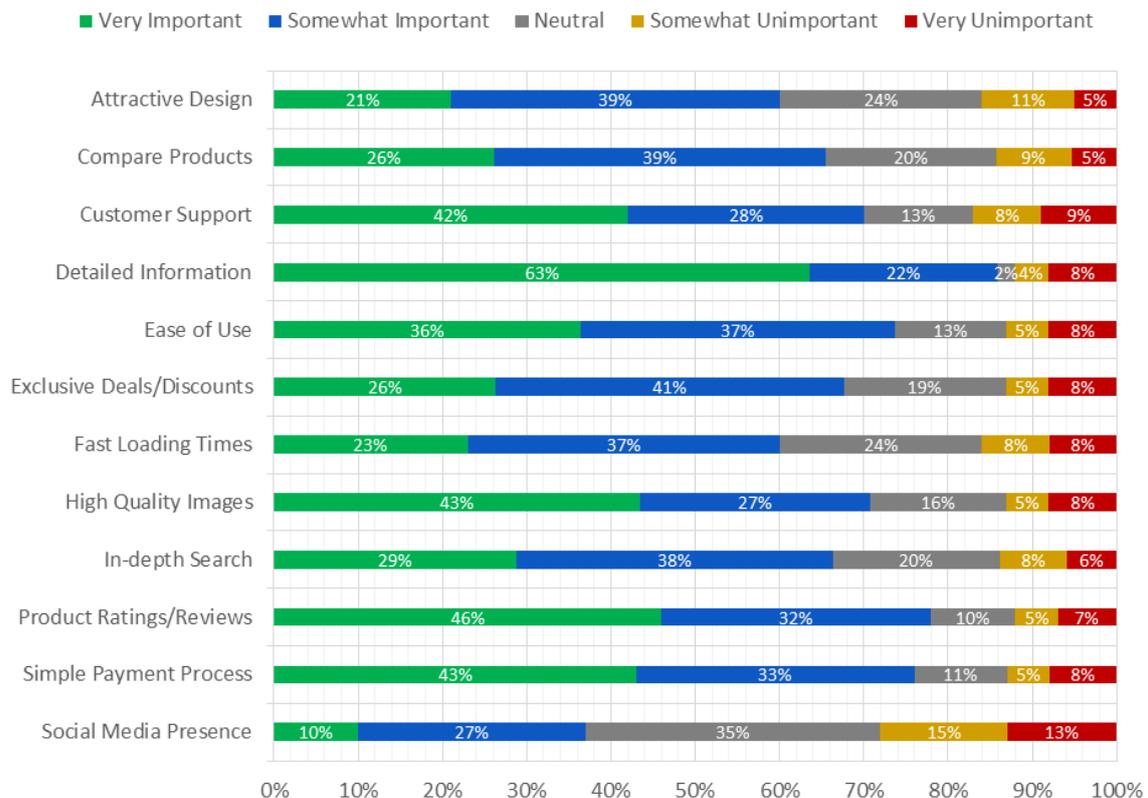


Figure 9

In regards to the open quantitative data collected, some additional attributes were identified as important by the respondents. One attribute was the ability to track the delivery status of orders. Some of the respondents commented that they did not mind waiting for delivery, but they needed to know when products will be delivered as they may have to “sign for them or arrange for someone to be at home to accept the package”. Another attribute that was identified was actually something the respondents did not want to website to have, which is intrusive or annoying advertisement, for example in the form of pop-up windows.

**Concluding Remarks and Implications of the Study**

The paper shows that:

- In regards to ‘perceived usefulness’, the use of the online shopping websites often relates to the availability of product information on said websites. 97% of the respondents go online to find out information about products, and 85% of respondents ranked detailed product information as an important attribute for an online shopping website to have. The findings show that in terms of perceived usefulness, information is considered one of the more important factors for respondents in regards to adoption of online shopping.
- In regards to ‘perceived ease of use’, convenience was ranked by respondents as the most encouraging factor for them to shop online, with 80% of respondents stating it as a reason. Many of the attributes that were ranked important for online shopping

website to have also related to ease of use, such as a simple payment process, which had 76% of respondents ranking it as important.

- In relation to factors that discourage consumers from adopting online shopping, 63% of the respondents have ranked security and privacy concerns as a discouraging factor, and 91% of respondents ranked concerns about product quality as a discouraging factor.
- The paper finds that entertainment related products such as movies, music and video games are more acceptable items for online purchasing. This could be attributed to the availability of product information, including online testing of the product prior to purchase. On the contrary, 96% of respondents prefer to buy groceries in a retail store rather than online, with the common reasoning being they can easily check the quality of produce such as fruits and vegetables in a store, and do not shop online for groceries due to that reason. 90% of respondents prefer to buy jewellery in a retail store, and 77% of respondents prefer to buy consumer electronics in a retail store. The reasoning here is that these products are often expensive, so the respondents want to ensure good product quality by physically checking the product.
- There are contrasting opinions between the male and female respondents in several areas. Data on the frequency of purchasing products online show that females tend to purchase products online more frequently when compared to males. Females also seem more comfortable purchasing clothing items online when compared to males, while males seem more comfortable purchasing consumer electronics online when compared to females.
- Some of the findings from the open qualitative questions seemed to portray factors unique to a country such as Singapore with a small market. One such example is respondents stating that the reason they are encouraged to purchase products online is because those products are not available locally in retail stores, the reason possibly being that the cost of doing so is not deemed worthwhile by the supplier or seller. In contrast, some respondents stated that they are discouraged from online shopping as some online stores do not deliver their products to Singapore. To get around this issue, consumers would have to pay extra for a third party service that will offer a forwarding address in order to get the goods delivered into Singapore. Considering the importance of cheaper prices, this is not something consumers are willing to do.

The research findings inject several implications for businesses that are planning to implement an e-commerce model. These businesses should aim to focus their business model on the encouraging factors identified through the research project, such as convenience and cheaper prices. At the same time, businesses should take note of the factors that are discouraging adoption of e-commerce and aim to alleviate concerns about product quality and security by adopting secure transaction processing services. In the design and implementation of an online shopping website, it is equally important to project high quality images and reviews online. The type of product the business wishes to offer for sale online can play a major role in a consumer's willingness to purchase it online. The research findings have noted that consumers are much more willing to purchase products such as digital media online when compared to products such as groceries. Businesses should also note the differences in attitudes between genders (for example, females seem to be more likely to purchase clothes online than males) so as to better position and segment the target market.

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