AN INVESTIGATION INTO THE FACTORS INFLUENCING CONSUMER
INFORMATION SEARCH BEHAVIOR ON THE INTERNET

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Abstract

Background: With the prevalence of the Internet and huge boom in e-commerce industry, more and more companies provide product information online so as to meet the demands of a growing number of online shoppers. Undoubtedly, the Internet has become a universal marketplace where millions of consumers could access a variety of products through searching. As information search behavior is the second stage in consumer buying decision-making process, having an understanding of online search phenomenon and factors that influence consumers to use the Internet for information search is essential for success of E-firms.

Aims: This research aims to explore and analyze the factors influencing consumer information search behavior on the Internet and try to seek out a relationship between these elements.

Methods: Quantitative approach is employed in this study, which involves a formal questionnaire that designed to collect data from the participants above 18 in Sheffield. Also, Pearson’s correlation analysis and mediation test with regression analysis are adopted for data analysis on a convenience sample of respondents in Sheffield (n=86).

Results: The main results are that perceived benefit, perceived (low) cost of online information search, perceived ability to online search and consumer’s amount of daily online time are positively related to use of the Internet for pre-purchase information search. Meanwhile, perceived ability has a partial mediating effort in the relationship between daily time spent online and use of the Internet for information search.

Conclusion: Among these three determinants, perceived benefit of online information search is the most significant factor impacting consumers to spend more time on the Internet for product information search than off-line, and then is perceived ability to online search and perceived cost of search holds the least affect.
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CHAPTER 1: INTRODUCTION

This chapter provides an introduction to this study, including background information, significance of the research, research scope as well as research aim and objectives. Besides, a clear structure of the whole study is outlined at the end of chapter one.
1.1 Background information:

Since the inventions of the Internet in the late 1990s, people have witnessed a series of legends created by some start-ups in an emerging industry, namely e-commerce. Later, with the readiness of technology and consumers, a large number of firms begin attaching great importance to the e-commerce transactions as the rapid development of e-commerce caused a drastic revolution of business model to the world. It appeared as a new form of retailing to meet consumer’s demands and allowed them to enter a new era of trade.

According to the latest survey results from E-marketer (2014), it indicates that the global business-to-consumers ecommerce sales maintains a growing trend from 2012 to 2014; the volume of online sales worldwide in 2013 has hit to 1.2 trillion and it forecasts the number will reach to 1.5 trillion by 2014, which expected to increase at an annual rate of 10% to 20% in subsequent years. As for the situation in UK, the Statistics Portal (2013) reveals the overall number of British online shoppers has climbed from 37 to 40 million since 2011, and there are 41.2 million people in the UK are predicted to use the Internet for shopping by 2014. Besides, Internet shopping is more popular in the UK than other countries. Almost 24 % of population purchase goods for delivery at least once a week and 73% do so per month. (Ofcom, 2013) They even spend nearly five times more on the Internet shopping than in-store.

Based on the above figures, it is crystal clear that there are more and more people turning to the Internet for shopping instead of other places, which also implies more purchase-decisions will be made online by these consumers. Since information search is treated as one of the most significant steps in consumer’s purchase decision-making process (Nazim, 2008), getting an insight into consumer information search behavior in the context of the Internet is essential for today’s e-commerce corporations.

Due to the dramatic effect of Internet on people’s shopping pattern, the information
search behavior of consumers is also going through a vital shift. Before the Internet becomes universal, consumers usually search for relevant information from traditional sources such as TV, magazine or broadcast. Sometimes they acquire information by asking people in person such as friends, family or sales staff. (Bei, Chen & Widdows, 2004) However, since the huge boom of World Wide Web in 1990s, the Internet has become a new major information source for consumers. It eliminates the time and space that ever restricted consumers in real stores, allowing them to access to vast quantities of information in a virtual environment with minimum cost and efforts. (Brynjolfsson & Smith, 2000, Kumar, Lang & Peng, 2005)

Undoubtedly, the certain characteristics of Internet leads to consumers produce a growing dependency on the Internet for information search rather than other places. According to the latest findings, it shows the total number of British Internet users is more than 57 million in the current time, which accounts for nearly 90% of the whole population in the UK. (Internetlivestats, 2014) Besides, there are 73% of British adults accessed the Internet every day in 2013, 43% more than in 2006. (Office for National Statistics) Yunus and Khayal (2000) claimed that the Internet has ranked first in the list of information sources for net citizens search in today’s computer age.

1.2 Significance of the research

Hence, it is vital to get an understanding of online information search phenomenon for e-commerce firms. One explanation is that knowing search behavior of consumers on the Internet not only helps the marketing departments of companies to establish better marketing champions to customers but also could provide foundation for corporate marketing decision-making in the future. More specifically, finding out what kind of factors affecting consumer online information search behavior could enable many enterprises to further understand consumers and their information needs; this would assist them to spread more customized product or service information into the hands of their target audiences in the electronic marketplace so as to enhance its competitive
1.3 Research scope and purpose

1.3.1 Research scope:
Since ‘consumers’ and ‘online information search behavior’ are two key concepts that underpin this research, consumers here are defined as the product shoppers who make purchase both online and offline. As for the online information search behavior, it refers to the process of acquiring product information on the Internet.

1.3.2 Research aims:
The purpose of this research is to explore and analyze the factors affecting consumer online information search behavior and try to seek out a relationship between these elements.

Thus, the research question is: what are the factors affecting consumers use of the Internet for information search?

1.3.3 Research objectives:
Based on the research aims, the objectives are identified as follows:
1. To have a basic understanding about information search phenomenon and examine consumer information search behavior in the context of the Internet.
2. To evaluate the impact of the Internet on consumer information search pattern and further understand the online information search behavior of consumers.
3. To build up a theoretical framework for analyzing consumer information search behavior online based on previous studies because there are hundreds of factors.
4. To investigate the factors and explore whether there is a certain relationship between these elements.
1.4 Research process:

In this dissertation, the research process can be divided into the following steps: the first step is to identify specific research objectives after introducing the research background and significance briefly. The second step is to review literatures regarding consumer’s online information behavior and its influence factors. After that, a set of hypotheses are put forward based on the previous literatures. The fourth step focuses on the research methodology comprising instrument design, sampling, etc. The fifth step is to analyze the generated data and present the findings accordingly. Lastly, conclusions and some discussion including limitation, suggestion for further research are provided at the end.

**Figure 1: Research Process**

- Identify Research Objectives
- Literature Review
- Proposed Hypotheses
- Research Methodology
- Data Analysis and Results
- Discussion and Conclusion
CHAPTER 2: LITERATURE REVIEW

In this chapter, myriads of previous literatures relate to consumer information search behavior on the Internet are synthesized, which are categorized into four parts. First of all, this chapter introduces several general works about consumer information search including definition, types, primary purpose as well as sources.

Secondly, the unique capabilities of the Internet influencing on consumer information search is presented in order to understand the profound changes of information search pattern in the context of the Internet, and then online information search behavior of consumes is particularly discussed with pertaining literatures. The first two parts of literatures review aims to inform the first and second research objective.

Information economics and various researches regarding factors that affect consumer information search behavior are revealed in the third section. It aims to build up a theoretical framework for this research, which focuses on the third and fourth research objective. The last section describes the chosen factors according to some existing literatures and researches.
2.1 Consumer information search behavior

2.1.1 Definition and types of information search behavior

According to Schmidt & Spreng (1996), information search is defined as a stage of the decision-making process during which consumers collect and integrate information from both external and internal sources, prior to making a purchase choice. A few research scholars such as Desarbo and Choi (1999) categorized consumer information search behavior into two types: external and internal information search. External information search is usually happened when a person has no previous knowledge about a product, which then drives them to search for information from personal or public sources. For instance, before buying a phone, some people may ask family members or friends’ opinions, visit several web sites or read product reviews in online forums and consumer reports. Beyond that, people sometimes seek information from market-dominated sources such as advertising and sales person. Consumers are more likely to implement an external search when their prior knowledge and experience is considered limited. (Peterson & Merino, 2003; Verplanken, Hazenberg & Palenewen, 1992; Duncan & Olshavasky, 1982) Beatty and Smith (1987) also described external search as the effort which aims at collecting environmental information relate to the specific buying under consideration. It normally starts when the consumer takes the purchase into account earnestly and ends with the real purchase.

On the other hand, internal search is concerned with a consumer’s memory or recall of one specific product, which is mainly resulted from a consumer’s previous personal experience. It is the process wherein the consumers can receive or recollect information from their stored memory to check whether they have past experience with the product or not. If the product is perceived as a familiar item that purchased before, the internal search effort may eventually trigger a purchase. (Peterson & Merino, 2003; Bettman, 1979) Although external and internal information search are two completely different concepts by definition, there is an interrelation between them
in reality. Internal search generally takes place before external information search. Peterson and Merino (2003) explained that internal and external search relies heavily on the memory and the entire information search process is iterative.

For a further understanding, external information search behavior can be divided into two types, one is pre-purchase search, and the other is ongoing search. The former refers to a goal-directed effort that acquires information for specific purchase decision after recognizing the problem, while ongoing search happens on a regular basis, in spite of whether consumers is making a purchase choice, consumers may seek information regularly that they interested in for entertainment or because they have a high level of enduring involvement with one particular product. (Hoyer, Macinnis & Pieters, 2008; Bloch, Sherrell & Ridgway, 1986)

2.1.2 The purpose and information sources
Srinivasan & Ratchford (1991) explained that the fundamental reason why consumers search for information online or offline prior to making a choice is because they want to handle and reduce the uncertainty and risks involved in the buying decision at the most extent.

Among the numerous researches on consumer information search behavior, there are several studies have explored the information sources of consumer use. One is established by Beatty and Smith (1987); they classified the sources of consumers search for information into four types: the first type is media including traditional media such as newspaper, magazines, TV and broadcast and new media such as the Internet. The second type is interpersonal relationships (e.g. sales persons, experts, friends or family) and the last two are sellers such as stores and catalogues, and personal experience, respectively. Besides, the sources of information for consumer search can be sorted based on the identity who controls the information content, which are marketer, reseller, third party as well as interpersonal. (Schmidt & Spreng,
Klein and Ford (2003) categorized the information source into three dimensionalities: independent or seller-dominated source, interpersonal or impersonal source, and on-line and off-line.

2.2 The impact of Internet on consumer information search behavior:

Before the appearance of the Internet, consumers used to find product information from traditional information sources such as the TV, newspaper and broadcast, they sometimes gathered word-of-mouth communication from friends, family or experts. But since the prevalence of the Internet throughout the world, it opens tremendous opportunities for consumers to seek information. The internet not only reduces the time and place of consumer’s traditional information search activity, but also provides consumers with a sizeable amount of free and valuable information. (Brynjolfsson & Smith, 2000, Kumar, Lang & Peng, 2005) For instance, for people who are keen on cars, they no longer need to go to physical car stores to acquire product information from sales staff. Instead, they can seek out vast amount of useful information about cars via the Internet with a few finger clicks.

Since there is a profound change has taken place in the consumer information search behavior under the influence of the Internet, in this section the impact will be further discussed in terms of the Internet’s capabilities because these characteristics serve as a great foundation to produce implications for consumer’s online information search behavior. (Peterson & Merino, 2003)

One of the capabilities of the Internet is it offers consumers with cheap and a mass of stored-information in different virtual spaces. Thus the abundant information provided by the Internet is accessible easily for people in every corner of the earth. Secondly, the Internet contains a unique capability of searching, organizing and spreading the stored information in an effective and efficiency way, which could largely meet people’s different information needs and demands. Another powerful characteristic of
the Internet refers to its interactivity because it affords people a huge platform for communicating with each other. (Peterson, Balasubramanian and Bronnenberg 1997) Consumers can share their ideas or user experience about one specific product on online forums or social networks such as Facebook and Twitter. As a consequence, consumers could seek out much more available information at a variety of places through the Internet. Further, Kraut (1998) claimed the Internet enables consumers to gain plenty of information that previously is not possible to be found, while Kulviwat, Guo and Engchanil (2004) hold the view that the Internet accelerates the mutual exchange of information greatly, but they consider this information super highway doesn’t create any new information or enlarge the information universe because the information available on the Internet has been already emerged in different forms everywhere on the planet.

Clearly, these powerful functions of the Internet bring a lot of benefits to consumers, which results in many consumers begin to develop an awareness of the importance of the Internet. They may consciously or unconsciously change their information search behavior due to these advantages of the Internet. Nevertheless, there remains a highly controversial topic about whether the Internet produces the benefits to consumers or not in the current time. Chen (2002) believes the Internet facilitate consumers to carry out information seeking activity while Nachmias and Gilad (2002) argued that the development of the Internet brings the problem of information overload to consumers, which makes them have difficulties undertaking information search activities actively. As for this debate, Peterson and Merino (2003) empathized that it still needs a lot of empirical studies to demonstrate because the Internet is such a complex issue that can’t be fully understand by today’s researchers. But in effect, no matter whose point of view is correct, it has become an undeniable fact that the Internet has and will continue to influence significantly on consumer information search behavior due to its unique features.
2.3 Online information search behavior:

Because of these certain capabilities, the use of the Internet has grown sharply along with the size of online population, especially the number of people who search for product information online. A survey investigated by E-marketer (2008) estimated that 80% of Internet users all over the world used the Internet to seek information and about 63% of respondents engaged in product or service information search activities. Moreover, according to an existing finding (Office for National Statistics), it shows that approximately 66% of British adults searched for product and service information through the Internet in 2013, which increased by 8% compared to the 2007. People connect to the Internet to find product information only ranks second to E-mail as the most popular online activities. It also indicates that almost 77% of British people who aged from 25 to 34 have a high level of use in seeking online information on products and service on a regular basis in 2013.

As the above general description of consumer information search behavior comprising external and internal search doesn’t categorized by specifying a particular information source, it is suitable for investigating information search behavior of consumers both online and offline. Further, Shim, Eastlick Lotza & Warrington (2001) stated only when consumer come up with an idea of finding specific product information or the goal is to collect general information about a product category, they would use the Internet to undertake an information search activity, which is analogous to the pre-purchase and ongoing information search.

In fact, other than the numerous web sites, consumers often prefer utilize a number of efficient search tools such as the search engines, browsers and intelligent agents to retrieve information on their desired products. According to Jupier Media Matrix (2001), he claimed that 28% of consumers would type product information on search engines to do information retrieval, while 23% go straight to store sites. Besides, a recent report from Fleishman-Hillard (2012) reveals that almost 90 percent of
consumers use Google, Bing or other search engines to hunt for product information to steer their buying decision.

In an examination of online information search behavior, Choo, Detlor and Turnbull (2000) put forward four scanning manners that consumers generally perform in an online search activity, which are undirected looking, conditioned viewing, informal search and formal search. Since search engines only require specific information can they employed successfully in an information search, formal search has been treated as the typical online search behavior because it was defined as the search effort to collect and integrate specific information by users.

Ellis (1993) and Kumar, Lang and Peng (2004) further separated the formal search behavior into six stages and extended these steps onto the Internet information search process when using search engines. They found that online information search activities of consumer could begin with typing queries or few key words to collect clues from the search results. Next, consumer may follow up with the pertinent sites from the initial results or go back to start over. Sometimes consumers might undertake continuous searching via numerous online channels. (Spink, et al., 2002, Lin, 2001). They also might carry out browsing activities at the beginning, which refers to looking through the found results offered by search engine. After that, consumers may take part in the differentiating events which involved with selecting and filtering the information from the various sources. The final step is extracting activities, which allows consumers to identify the best results they perceive during the entire online information search process.

2.4 Economics of information:

In an exploration of factors affecting on Internet information search behavior, plenty of relevant researches are found based on the theory of information economics, which was proposed by Stigler in 1961. The basic principle of information economy theory
indicates that the more available information consumers acquire and integrate; the better purchase decision they would make. But it doesn’t mean consumers would keep searching information in an endless way because the process of information searching brings consumer certain benefits as well as costs. Kilviwat, Guo & Engchanil (2004) extended this conventional information economic theory and stated that consumes would keep searching for information actively if they perceived the benefit is greater than the cost involved. However, once the perceived cost equals or surpasses the expected benefit, consumers would stop searching and no longer engage in this information search activity. According to Stigler’s concept of information economic theory, cost and benefit of search are emphasized as two leading indicators that influence consumer online information search behavior. As thus, a basic theory framework can be created in this research, which is seeking out the factors that relate to the above two determinants.

2.5 Models for analyzing consumer information search behavior

In this following section, a number of typical researches concerning the determinants affecting consumer online information search behavior are reviewed. Meanwhile, it is vital to start with looking at consumer’s traditional information search model firstly to draw lessons from them, and then put the focus on examining consumer online information search behavior to identify the factors. One explanation is because there are some common factors that influence consumer information search behavior both on-line and off-line.

Srinivasan and Ratchford (1991) conducted an empirical research of external information search of automobile buyers by considering a set of factors affecting search effort such as the perceived benefits, cost of search and perceived risks. Besides, the amount of experience, product knowledge and cost of search are also taken into account in this study. It totally involves nine different variables and eventually models an interrelationship between these elements. The proposed model
Another representative study was piloted by Schmidt and Spreng (1996) without implementing empirical test, but they made a comprehensive sum-up on former study and developed a new model of the determinants of external information search. A total of 23 variables are included in this model, which are the level of education, subjective/objective knowledge, satisfaction, situational involvement, time pressure, perceived cost/benefit of search, motivation to search and so on. The detailed model is shown in Figure 3.
Figure 3: A theoretical model of external information search  
(Schmidt & Spreng, 1996)

Kulviwat, Guo & Engchanil (2004) did a theoretical research of online information search behavior for consumers based on information economics. They proposed a set of factors affecting consumer’s online information search behavior. Among these various determinants, the factors relate to perceived benefits are the ease of use, effectiveness of search and user satisfaction; the element relate to perceived cost is perceived risk and others including education degree, user experience, buying strategies, situational factor, etc.

Figure 4: An integrated conceptual model of online search  
(Kulviwat, Guo & Engchanil, 2004)

Moreover, as shown in Figure 5, Jepsen (2007) established a structural equation model of contributing factors of pre-purchase information search, which is tested by means of survey data from Danish Internet users. The model mainly considers how perceived search cost, availability of information, time used Internet, product interest and others affect the use of Internet for information search.
Figure 5: An Internet Search Model
(Jepsen, 2007)

Table 1: A summary list of consumer information search research models

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Factors</th>
<th>On-offline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schmidt &amp; Spreng (1996)</td>
<td>Perceived ability to search, Cost of Search, Benefit of search, Motivation to Search, etc. Dependent Variables: External information search</td>
<td>Off-line</td>
</tr>
<tr>
<td>Moorthy, Ratchford &amp; Talukdar (1997)</td>
<td>Prior brand perceptions, Consume expertise and knowledge. Dependent Variables: Search strategies</td>
<td>On-line</td>
</tr>
<tr>
<td>Kulviwat, Guo and Engchanil (2004)</td>
<td>Ease of use, Effectiveness of Search, perceived benefit and cost. Ability to search, personality factor, etc. Dependent Variables: online search amount</td>
<td>On-line</td>
</tr>
<tr>
<td>Jepsen (2007)</td>
<td>In-home shopper, perceived low cost, age, time used Internet, shopping enjoyment, interest in product, etc. Dependent Variables: use of Internet for searching</td>
<td>On-line</td>
</tr>
</tbody>
</table>

It is clear to see that there are hundreds of factors can cause direct or indirect impact
on consumer online information search behavior. In the above investigation of factors affecting online information search behavior, most of them are identified based on the theory of information economics. Therefore, a few factors are selected from the above models for this research.

2.6 Factors identified to influence online information search behavior

2.6.1 Perceived cost of online information search
The first factor that identified to affect consumer Internet information search behavior is perceived cost of online information search. That is, consumer’s cognitive costs of using the Internet for product information search. Perceived cost of search consists of monetary expenditures and the costs such as the time and efforts invest in search. Thus it also can be described as the perceived monetary outlays and time of engaging in the search effort. (Klein & Ford, 2003) According to Kumar, Lang and Peng (2004), monetary cost has been essentially reduced to zero since the diffusion of the Internet, which largely changed people’s information acquisition pattern. In the past few decades, it usually takes relatively more monetary cost to search for product information from traditional places. As an example, consumers used to buy different kinds of magazines or visit several dealerships, even spend consulting fee to gather relevant information about specific products. But as the Internet has been widely used, consumers no longer need to spend unnecessary cost to search the information. They can search the same even vaster amount of information in an inexpensively way, no any extra money involved.

Likewise, the physical effort devoted on searching also has been reduced to a few finger clicks because of the Internet. Consumers don’t have to go to the physical stores to ask for information from sales persons any more. Instead, they can use the Internet to grab what information they want with just a swipe of finger. Additionally, compared to other places, the available information on the Internet enables consumers
to find information in a shorter time due to the easy online tools. They can obtain massive information via the Internet in seconds that saves a lot of time.

Another component of perceived search cost refers to the psychological cost of processing information during the search process. (Chiang, 2006) Nevertheless, Nachmias & Gilad, (2002) claimed that the wealthy of online information produces a problem of information overload to consumers. It makes consumer feel dizzy and find it difficult to seek the information they really need on the Internet as it is a vast ocean of information. Furthermore, Alba et al., (1997) stated that a large amount of useful information on the Internet is chaotic, which is not organized systematically and adequately for consumers search. As thus, it is more likely to increase their psychological cost of integrating incoming information in their search.

Despite the positive or negative impact, it cannot be denied that perceived search cost influences significantly on consumer information search behavior on the Internet. Based on Punj & Staelin (1983) and Kulviwat, Guo & Engchanil (2004), there is a negative correlation between cost of search and consumer information search effort. Hence, in this research, perceived low cost of online information search is expected to have a positive influence on consumer’s use of the Internet for information search. It means the less cost of online information search perceived by consumers, they will tend to spend more time on the Internet to search for product information compared to the offline. Thus here is first hypothesis in this research:

**H1:** If consumers perceived the Internet costs less to find product information, they will increase the use of the Internet for information search.

### 2.6.2 Perceived credibility of online information

Perceived credibility of online information is considered as individual’s perceptions of believability towards information on the Internet. Undoubtedly, the Internet is a giant place allows freedom of speech, where everyone can express their personal opinion
and post the information they want. Nowadays, millions of people around the world publish information on this ideal place for any purpose every day. As a consequence, quantities of websites are filled with false information and hoaxes that spread by some unknown net-citizens, especially the product reviews on the Internet: the new form of electronic word-of-mouth. (Litvin, Goldsmith & Pan, 2008; Magnini, 2011)

With more and more consumers have developed a habit of reading product reviews prior to making a choice, it is no question that unauthentic information and the spread of falsehood on the Internet make consumers run into some level of risks. Consumers have to spend more time and effort distinguishing the true from the false information so that the uncertain can be reduced, but it ultimately increases consumer’s perceived cost of search.

Moreover, Kusumasondjaja et al., (2012) stated that many posts in forums and social media contain untrue information which made up deliberately by some individuals. It usually misleads consumers on their information search and caused wrong purchase decision for them. As a result, there is a growing number of consumers raise doubt about the authenticity of online information. Some even regard the Internet as an unreliable information source and turn to other types of information for the search more than using the Internet due to the crisis of trust. Thus the assumptions can be as follows:

**H2:** If consumers perceive the online information is impartial and authentic, their use of the Internet for information search will increase.

**H2a:** Perceived cost could cause a mediating effort in the relationship between perceived credibility of online information and use of the Internet for search.

### 2.6.3 Perceived benefit of information search using the Internet

Perceived benefit here is defined as the possibility of finding a greater alternative or the increase in efficiency of information search. It is also considered as the outcomes
of helping ones achieve a superior target or more valuable things as well as the reduction in risks. (Olshavsy, 1979, Klein & Ford, 2003). It’s said that even if the search cost perceived by consumers in traditional ways is equal to the ones on the Internet, the perceived benefit of using the Internet for information search is still different with the traditional search pattern especially in terms of the availability of information. Kulviwat, Guo & Engchanil (2004) deemed one major benefit generated from using the Internet for information search is it provides a great deal of dynamic information available for consumers to form their purchase-decision evaluation. Researches also highlighting the online information are more personalized and consumer-oriented than other traditional places, which allow them to generate better information for their search activities. According to existing research achievements (Srinivasan & Ratchford, 1991, Kulviwat, Guo & Engchanil 2004), perceived benefit is found to have a strongly positive influence on information search activities. So the hypothesis is as follows:

**H3:** If consumers perceive more benefit of using the Internet to search for product information, they will increase the use of the Internet for information search.

### 2.6.4 Effectiveness of information search

By definition, effectiveness of information search is described as consumer’s ability of obtaining and using relevant information from the external environment. (Punj & Staelin 1983) The feature of effectiveness primarily reflects the Internet enables consumers to obtain much relevant information more convenient and simple with the help of search engines. Haubl & Trifts’s study (2000) reveals that the characteristic of interactivity of the Internet allows consumers to organize all kinds of information better thereby helping them seek out the information they need, which might increase consumer’s perceived benefits of online search. According to Kulviwat, Guo and Engchanil’s research (2004), it has been proved that effectiveness of online search is positively related to consumer’s perceived benefit. Thus effectiveness of online search can be expected to have a potential influence on online information search effort. The
hypotheses are:

**H4:** If consumers perceive the Internet more effective to use for finding information, they will increase the use of the Internet for their pre-purchase information search.

**H4a:** Perceived benefit could cause a mediating effect in the relationship between perceived effectiveness of online search and use of the Internet for information search.

### 2.6.5 Perceived ability to online information search

Other than the perceived search cost and benefit, the third key determinants that explored to directly affect consumer information search behavior on the Internet is the ability to search. One explanation is online information search behavior is strongly related to consumer’s ability to utilize the Internet with proficiency or the capability to navigate in this broad online environment. (Klein and Ford, 2003; Hoffman and Novak, 1996)

As said by Schmidt and Spreng (1996), perceived ability to information search is considered as the capability of cognizing and processing the incoming information. In general, consumers tend to search more amounts of information or more frequently when they feel more able to do this. In today’s IT age, the Internet affords people a wide range of powerful search tools such as search engine Google, which not only provides consumers with an immediate and free access to the abundant information content, but also helps them seek the product information they want more effectively and efficiently. Clearly, the use of the Internet gives consumers more confidence and ability to control over the information. Bettman & Park’s research (1980) has ever proved that ability to information search has a positive relationship with conventional information search behavior of consumers. Kulviwat, Guo & Engchanil’s research (2004) showed that there is a positive relationship between perceived ability to online information search and Internet information search effort. Therefore, the hypothesis in this study can be:

**H5:** There is a positive correlation between perceived ability to online information
search and consumer’s use of the Internet for information search.

2.6.6 The daily time spend on the Internet
Since the Internet has been widely used over ten years, Hoffman and Yung (2000) stated that dedicated Internet users who spend longer time on the Internet daily are more familiar with the search tools and know well how to seek the relevant product information than others in terms of Internet experience. Experience primarily drives information search by enhancing one’s ability to search (Newman and Staelin, 1971). Also, Jepsen’s study (2007) found the amount of Internet use affects consumer’s online search behavior positively. Thus daily amount of time on the Internet can be expected to increase online information search activities through improving one’s perceived ability to search. Since Kulviwat (2004) has proved that experience with the Internet is positively related to ability to search, it is possible to assume there is a positive correlation between daily amount of online time and perceived ability to online search. So a set of hypotheses are made in this research

H6: There is a positive correlation between daily time used on the Internet and perceived ability to online information search.

H6a: There is a positive correlation between amount of daily time online and use of the Internet for information search.

H6b: Perceived ability to online search mediates the relationship between daily online time used and consumer’s use of the Internet for information search.

2.6.7 Education
Previous researches (Ratchford et al, 2003, Schmidt and Spreng, 1996) showed that the education level of Internet users is higher than non-users because people who have higher education level are more willing to accept new things and learn how to use advanced technology. Besides, higher education degree could result in increased information search activity. (Kiel & Layton, 1981) Further, Studies (Sohn et al., 2002) emphasizing higher education level enables consumers to obtain more knowledge,
which makes them feel better equipped when dealing with the search. That is to say, higher level of education could improve consumer’s perceived ability to absorb, locate and integrate pertinent information. Since the Internet belongs to a technology product, there is reason to assume that consumers with higher education are more able to use the Internet to search for product information and it would facilitate their online information search activity.

H7: There is a positive correlation between education level and perceived ability to online information search.

H7a: There is a positive correlation between education level and consumer’s use of the Internet for information search

H7b: Perceived ability to online search mediates the relationship between education level and use of the Internet for information search.

2.6.8 Shopping enjoyment

Shopping enjoyment is described as people’s pleasure on shopping in the real world instead of the Internet. (Jespen, 2007) It is worth to mention that not all of consumers might modify their traditional information search behavior into online pattern (Peterson & Merino, 2003); some consumers are still keen on going outside for shopping and willing to gather relevant information from sales staffs in real stores. One critical reason is they prefer hands-on experience with the products before making a purchase. Besides, most consumers consider window shopping is a social event that provides them with a chance to hang out and socialize with peoples in the real world, which is beyond the scope of the Internet as it cannot have the same social effort. (Jespen, 2007) Hence, consumer’s enthusiasm in shopping can be expected to have a negative effect on consumer’s use of the Internet for information search, which means the more pleasure consumer perceived in window shopping, the less time they would spend on the Internet for information search.

H8: There is a negative correlation between consumer’s shopping enjoyment and use of the Internet for information search.
According to the previous literatures, a conceptual framework has been built up in this research, which can be depicted in the following graphic:

**Figure 6**: The Theoretical Framework for This Research
CHAPTER 3: RESEARCH METHODOLOGY

This chapter mainly describes the research methodology I used in the study including my research instrument, participants, procedures and the detailed approaches for data analysis. A number of ethical issues are also involved as well as the research aims and objectives. Besides, this chapter provides a rationale for the above specific approaches and gives a description of different aspects of instrument design in the research.
3.1 Introduction

My research aims to explore and analyze the factors influencing consumer online information search behavior. Owing to the limitation of objectives conditions such as the time and funding issues, it is unrealistic to conduct the research towards the whole population in the UK. Hence, I decided to put the focus of study on Sheffield city.

In the case of research tradition or paradigm, there are two broad types of researches: quantitative and qualitative research. According to Aliaga and Gunderson (2000), quantitative research is fundamentally about explaining a particular phenomenon by generating numerical data that are analyzed using mathematically based on methods such as the statistics. On the other hand, qualitative research is mainly dealing with the qualitative issues. For example, it is usually applied to investigate the reasons for human behavior. Other than the interviews, qualitative research is also described as an umbrella term comprising a great variety of methods such as case studies, discourse analysis and other projective techniques. (Edmondson & McManus, 2007)

Clearly, the above description of the types of research shows a fact that there are two basic forms of approaches to research: quantitative and qualitative approach. The former encompasses the collection of data in quantitative form which can be analyzed strictly in a formal and rigid fashion, (Bryman, 2004) while qualitative method is more focus on subjective evaluation of human opinions, attitudes, experiences and behaviors.

3.2 Research Method

In my research, quantitative approach was mainly employed with several important reasons. The first cause is quantitative approach is very suitable for answering my research question as Punch (2013) stated the questions of explaining a particular phenomenon is best answered by using quantitative approaches. For instance, ‘what
factors lead to a large number of people unemployed?’ or ‘what factors change the views of people on the Internet?’ Besides, a lot of statistical techniques also can be utilized to help researcher mark score on different variables. Another type of questions for which quantitative method is particularly suited is the testing of hypotheses. It refers to if some scholars intend to do a tentative explanation by putting forward a series of hypotheses, quantitative research approach can be the best choice to allow researchers to test. (Aliaga & Gunderson, 2000) Based on this rationale, it is obvious to see a quantitative approach is the most appropriate method to my research because my research question is ‘what factors affecting consumer online information search behavior’ and I also proposed a set of hypotheses that need to be tested, which fully conforms the above requirements.

The second critical reason is the instrument of quantitative approach, questionnaire, is one of the most convenient ways to collect huge amount of data in social science. As my research needs to investigate a lot of peoples’ opinions and online information search experience, questionnaire could allow me to generate a vast quantity of information from many people in a short period of time. Besides, an electronic questionnaire is relatively cost-effective compared to the interviews or case studies. Researchers can distribute the online survey via E-mail, social networking and various online forums at any time, which could collect numerous responses from participants. Meanwhile, it is easy to quantify the results from a questionnaire and the generated data can be analyzed more objectively and scientifically than qualitative approaches. (Wright, 2005) Therefore, a quantitative approach, questionnaire is applied in this research.

3.2.1 Instrument design
As one of the most popular instruments for quantitative approach, questionnaire is a systematically prepared form or inquiry document which contains a set of questions that designed purposely to elicit information and responses from participants with the
aim of collecting data. (Wright, 2005) It generally falls into two kinds of questions: open-ended and closed-ended question. Open-ended question is exploratory in nature. It typically starts with the words such as ‘What’, ‘Why’ and ‘How’ that requires respondents to give more depth and lengthier answers. On the contrary, closed-ended question is usually answered with either a single word or simple phrase such as ‘yes’ or ‘no’. It is a question format that provides respondents with a list of definite answer choices, from which they have to select one or more explicit options to answer. In other words, respondents are not allowed to give an unanticipated answer in closed-end questions. (Giddens, 2011)

Hence, only closed-ended questions were used in this questionnaire survey because it is much easier and quicker for respondents to answer. One major advantage of using close-ended questions is the collected data can be easily quantifiable due to the characteristic of conclusiveness. The answers are also easy to code and convenient to analyze statistically, which are quite useful for demographic studies. At the same time, close-ended question is commonly applied in various kinds of scale formats where respondents can choose to rate the situation such as Likert scale. As one of the most widely used methods to scaling responses in questionnaire, Likert scale is a psychometric scale that measures attitudes or opinions by asking people to answer a set of statements about one topic, and using five or more scale points to describe what extent do respondents agree or disagree with this particular statement. (Ware & Gandek, 1998)

In this survey questionnaire, most of closed-ended questions are designed on Likert scale with five ‘anchors’, which refers to strongly disagree, disagree, neutral, agree and strongly agree. The purpose is to measure the strength of respondents’ attitude towards different variables. Moreover, in order to ensure the quality of research data, the length of questions are shortened no more than 20 words to avoid participants giving up thinking or reading the questions during the questionnaire process.
3.2.2 Questionnaire content
The questionnaire consists of six parts altogether; the first part is intended to gather information about participators’ background information that comprising gender, age, the level of education, etc. so that I can create a comprehensive demographic profile. The second part of questionnaire is designed to measure two independent variables: perceived benefit of using the Internet to search for product information and perceived effectiveness of online information search, which are modified based on Srinivasan and Ratchford’s study (1991) and Punj and Staelin (1983)’s research. The reason why put these two elements together is because I consider there is an internal connection between them.

The third part is mainly focus on another two variables, which are perceived cost and perceived credibility of online information. The former is amended on the basis of Jepsen’s research (2007), while the questions concerning perceived credibility of online information is created by me. The forth part of questionnaire is designed to measure consumers’ perceived ability to online information search, which is revised from Schmidt and Spreng (1996) and Klein &Ford’s report (2003). Likewise, the fifth part is produced deliberately to test a variable named shopping enjoyment and the last part is designed to measure other two important variables: use of the Internet for information search and its frequency. The sources are referenced from Jepsen’s study (2007).

3.2.3 Participants
The target participants of this research are the people above 18 in Sheffield, especially who recently had product information search experience on the Internet. The potential participants can be recruited and identified through online discussion, advertisements on Facebook or Twitter and other online forums. Also, there will be no any potential physical and psychological harm to them in this research.
3.2.4 Research ethics

Additionally, several ethical issues relating to participants are needed to be outlined. As the proposed research involves human participants, I have submitted a research project to the Information School Research Ethics Panel for approval. After the application for Research Ethics has been examined by the Committee, I obtained the permission to start work on data collection. (See Appendix 1)

During the whole process of data collection and analysis, there are a number of ethical issues should be aware of and addressed to guarantee this research is going through under low risks. First of all, I should confirm that the proposed research is accordance with the University of Sheffield’s policies and procedures, including the University’s ‘Financial Regulations’, ‘Good Research Practice Standards’ and the ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue’.

Secondly, in order to get the informed consent of participators, I must explain to them ‘what the research is about, the objectives, how is used and by whom’ before giving them the questionnaire. At the third place, I need to anonymize the personal data and code the computer files with a random number to make sure the confidentiality of personal data, which means the data will be collected with no identifying information retained. Moreover, I also should keep these personal data into files and store them onto school service with password protected, so that the issues of personal safety would not be involved in this research. Last but not the least; I should be analyzing the data for inclusion only in my dissertation, after that point, the collected data need to be destroyed thoroughly by IT staff.

3.2.5 Sampling

As previously mentioned, it is almost impossible for researchers to study the entire population when conducting research. As a consequence, people tend to use sampling
as a method to collect information or data so that the limitations of objective condition such as time and resources can be addressed. According to Altmann (1974), sampling is defined as a research technique that selects and studies the characteristics of a small portion of people from a relatively larger population to draw valid inferences about the entire population. There are two broad types of sampling methods: probability sampling and non-probability sampling. The former is concerned with the random selection of units of population with equal probability, which means each member of the population has an equal chance of being chosen in the sample. The sampling error can be calculated and results are more reliable in case of probability sampling. As for non-probability sampling, the units of individuals are selected from the population based on researcher’s’ own judgment. The advantage of non-probability sampling is it can ensure a sufficient sample size with an inexpensive way. (Kahneman & Tyersky, 1974; Altmann, 1974)

In this research, continence sampling was adopted and the size of sample ranged from 50 to 100. One explanation is the population over 18 in Sheffield is still too large for the research to investigate all of its members; the sample size is also too small to conduct random sampling. Therefore, I selected the students who study in the University of Sheffield as my major target participants. Other potential participants can be also obtained through Facebook, Twitter, online forums, etc.

3.2.6 Procedures
The main procedures of data collection are as follows:
1. I created a web-based questionnaire by using an online tool called Qualtrics on July 15
2. After producing the questionnaire, I distributed the survey link via different online platforms such as Facebook, Twitter and university G-mail for recruiting my participants.
3. In order to collect more data, I also went to the school library of the University of
Sheffield to recruit participants by asking personally, and before giving them an electronic questionnaire, I explained to them in detail about my research purpose and content as well as several ethical issues.

4. When the size of sample reaches the required range, I downloaded an Excel that contains raw data with an initial report for analyzing.

5. I saved the anonymous data into school service with passwords protected and moved to the next step of data analysis.

3.2.7 Dada analysis methods

The quality of results obtained through the survey greatly depends on how the data is analyzed. Thus understanding how to use what kind of techniques to analyze data is important for the researcher. As Hair et al., 2006 claimed the raw data generated from questionnaires must undergo preliminary preparation before analyzing, it can be the first step of data analysis and the preparation mainly refers to data editing and coding. The second step is to implement data summarization and visualization. Tabulations can be a good method because it can display the features of data and help researcher discover the error as well. Also, Excel can be treated as a useful tool for viewing the large number of chaotic data due to its simplicity and conveniences.

3.2.7.1 Validity analysis

As the most common software package for statistical analysis, SPSS has been utilized to analyze the generated data in this research. To be specific, I firstly adopted factor analysis approach for analyzing the validity of the scale, but before that, I applied KMO and Bartlett's Test to verify whether the collected data is suitable for using factorial analysis or not. Principal components and Vriamax method were also used to extract vital factors when undertaking the factor analysis.
3.2.7.2 Reliability analysis

As for the reliability test, an overall consistency of a measure, I have employed Cronbach’s alpha coefficient to examine the dependability of the questionnaire because it is the most significant model in the evaluation of assessments and surveys. (Santos, 1999)

3.2.7.3 Hypothesis testing

In order to further conduct the hypothesis testing, I firstly adopted summated scales to measure each construct. It refers to plus the scores of every item altogether and work out an average score, and then use the average score to stand for each factor. The next step I have implemented was using Pearson’s correlation coefficient to test the degree of association between these variables. According to the formal questionnaire (see Appendix 2), the questions designed to measure independent variables are rated from strongly disagree to strongly agree based on Likert-type scale, which stands for the score from 1 to 5. But the question designed to verify dependent variable, the use of the Internet for information search, is rated from 5 to 1. As thus, I should pay attention to the sequence when pasting the generated data into SPSS. It is better to organize the data in the correct order so that the following correlation analysis can be explained reasonably. Last but not the least, the test of mediating effect with regression analysis and a whole regression model were used with the aim of seek out a relationship between these elements.
CHAPTER 4: RESULTS

The main findings of the research are organized and revealed in this chapter. First of all, a demographic profile of sample is shown in brief, and then the results of validity and reliability analysis are displayed later. The last part of this chapter chiefly describes the results of hypothesis testing with the discussion of related statistics data. The different methods employed for data analysis will be also revisited along with the results. Not only that, the research objectives are also presented to indicate whether the final results achieved the objectives or not at the end.
4.1 Demographic characteristics

Table 2: Demographic Profile of Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Classification of Variable</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>30</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>59</td>
<td>66%</td>
</tr>
<tr>
<td>Age</td>
<td>Under 20</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>20-29</td>
<td>77</td>
<td>86%</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>50 and over</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Level of Education</td>
<td>Undergraduate</td>
<td>16</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>63</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>8</td>
<td>9%</td>
</tr>
<tr>
<td>Internet Access Daily</td>
<td>Less than 1 hour</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>1-3 hours</td>
<td>12</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>4-6 hours</td>
<td>29</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>More than 6 hours</td>
<td>30</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>Always On</td>
<td>19</td>
<td>21%</td>
</tr>
<tr>
<td>Monthly expenses On online shopping</td>
<td>&lt; 100 pounds</td>
<td>20</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>100-199 pounds</td>
<td>16</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>200-299 pounds</td>
<td>32</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>300-399 pounds</td>
<td>15</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>400 pounds or more</td>
<td>7</td>
<td>8%</td>
</tr>
</tbody>
</table>

The demographic profile of sample is illustrated in Table 1; which displays five demographic characteristics of participants: gender, age, level of education, daily Internet access and monthly expenditures on online shopping.

As shown in Table 2, it indicates that 34% of the research samples are male while female takes up 66%. There are 30 male respondents and 59 female respondents participate in this survey. Among these respondents, the number of female is two times of the male. As for the age distribution, 77 participants are around 20-29 years old, which occupies the largest proportion of the overall sample; that is 86%. The number of respondents who are older than 30 is 12 in total, and there is only one
participant’s age is below 20. The percentages they account for the whole sample are 12% and 1%, respectively.

Thirdly, it is clear to see that respondents with master degree hold the majority quantity of the entire sample, which takes up 72 percentages with 63 people; while the numbers of respondents with undergraduate or PhD degree are relatively small, which has 16 and 8 persons, and each holds 18% and 9% of the research.

The above graphic also displays participants’ day-to-day time invest on the Internet. It shows that most of participants spend at least four hours daily connecting to the Internet. No one accesses the Internet less than one hour daily and only 13% of respondents do so for 1-3 hours. There are 32% of respondents spend 4-6 hours on the Internet per day and another 33% respondents need to take more than 6 hours to do certain things online. What is more, the table 1 illustrates that 21% of respondents are always on the Internet every day, which suggests these respondents have a strong engagement with the Internet.

According to the table 2, it is easy to find that there are 32 participants cost 200-299 pounds to undertake online shopping per month, accounting for 36% of the total population. The second largest part is the respondents who spend expenditures less than 100 pounds monthly. It takes up 21 % and the number of people is 20. Also, 16 respondents spend 100-199 pounds on Internet shopping every month, which is one more than the number of people who invested 300-399 pounds monthly. For respondents whose monthly expenses on online shopping is more than 400 pounds, the number is fairly small, which is only 7 and holds 8% of the whole sample.

4.2 Results of validity analysis:

As stated before, factor analysis is employed in this study in order to make sure the questions designed are related to the constructs I intended to measure. But prior to
implementing this method, I need to adopt KMO test firstly to ensure the generated data is appropriate for using factorial analysis. As Hair et al., (2006) pointed out that if the value of KMO is closer to 1, a factor analysis will be more useful with the data. In general, it is acceptable to adopt a factor analysis when the value is greater than 0.5. Value ranges from 0.6 to 0.7 is middling; value between 0.7 and 0.8 is good and it will be excellent if the value of KMO is above 0.9. According to the following table 3, it shows that the KMO value of this research is 0.805, which is within the scope of being good. Thus a factor analysis is suitable for these collected data.

Table 3: KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th></th>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>Bartlett’s Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approx. Chi-Square</td>
<td>df</td>
</tr>
<tr>
<td>KMO</td>
<td>.805</td>
<td>868.986</td>
</tr>
<tr>
<td>df</td>
<td>210</td>
<td>Sig.</td>
</tr>
<tr>
<td>Sig</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

Principal Component Analysis and Varimax with Kaiser Normalization are used as extraction and rotation methods in factor analysis. The purpose is to extract the factors whose eigenvalues is greater than 1. As a consequence, some items in questionnaire are needed to be abandoned because they failed to pass the validity analysis, which can be seen in table 4. The result of factor analysis also has been output by SPSS, which illustrates a rotated component matrix in Table 5.

There are also several criterions need to take into account seriously about the format of this matrix in particular the findings after rotation. First of all, these factors loading which below than 0.4 should be deleted and not presented in the table 5 because these data are regarded as suppressed ones. Secondly, each variable’s factor loading should be displayed in an order by size. If researchers do not follow the above two standards, the final output and results will be confused and different to a great degree. (Field, 2009) Furthermore, after filtering out the factor loading less than 0.4 and listed others in the order based on the size, the next decision researchers need to make is extract
appropriate factors according to the constructs and component they fall into.

Table 4: The results of Items in questionnaire

<table>
<thead>
<tr>
<th>Construct</th>
<th>No.</th>
<th>Item</th>
<th>Results</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Benefit</td>
<td>A1</td>
<td>Online information search helps me made better purchase-decision than traditional media</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A2</td>
<td>I usually get ideal products by search information through the Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>Online information search enables me to make sure which product is more suitable for me</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A4</td>
<td>Using the Internet to search for product information usually helps me get the best price</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>A5</td>
<td>Online information search enhances my efficiency of gathering product information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A6</td>
<td>Information search online allows me to make purchase decisions more quickly</td>
<td>Deleted</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>A7</td>
<td>Information search online enables me to collect more useful information about products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Cost</td>
<td>B1</td>
<td>It’s cheaper, easier and less time to search product information online than other places</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>B2</td>
<td>Spending less time, effort and money to search for product information is important to me</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B3</td>
<td>The reason why I choose to online information search is it can save me a lot of time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creditability</td>
<td>B4</td>
<td>There is much helpful information on the Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B5</td>
<td>I think most of product reviews online is objective</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>B6</td>
<td>I consider online information is authentic and fair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ability</td>
<td>C1</td>
<td>I know very well how to search for relevant product information on the Internet</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>I’m quite familiar with the websites that relate to IT products</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>I can do a better job of searching for product information online than my friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C4</td>
<td>Friends have been asking me for help in finding product information on the Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C5</td>
<td>I have plenty of time to use the Internet to search for product information</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td>Shopping Enjoyment</td>
<td>D1</td>
<td>Go shopping provides me with a chance to go out and do something exciting</td>
<td>Deleted</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D2</td>
<td>I am interested in shopping and like to go shopping with my friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D3</td>
<td>I prefer hands-on experience with the products before making purchase decisions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Fail to aggregate into one factor
2. Fall into wrong component

Table 5: The results of factor analysis

<table>
<thead>
<tr>
<th>Rotated Component Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>B2</td>
</tr>
<tr>
<td>B3</td>
</tr>
<tr>
<td>C4</td>
</tr>
<tr>
<td>C3</td>
</tr>
<tr>
<td>C2</td>
</tr>
<tr>
<td>A2</td>
</tr>
<tr>
<td>A1</td>
</tr>
<tr>
<td>A3</td>
</tr>
<tr>
<td>B5</td>
</tr>
<tr>
<td>B6</td>
</tr>
</tbody>
</table>

44
As shown in Table 5, there are five constructs pulled out from the factor analysis, which are perceived benefit, perceived cost, and creditability of online information, perceived ability and shopping enjoyment. The construct ‘effectiveness of online information search’ is no longer considered because its factors loadings of items failed to aggregate into one factor. Meanwhile, as is revealed in Figure 7, it shows that the eigenvalues associated with these five factors are all above 1.0 during the process of factor analysis. Hence, there are five constructs passed through the validity analysis.

4.3 Results of reliability analysis

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 6: Cronbach’s alpha coefficients of five construct</td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>0.897</td>
</tr>
<tr>
<td>D3</td>
<td>0.656</td>
</tr>
</tbody>
</table>

Figure7: Scree Plot
As Hair et al., (1995) pointed out earlier, the higher numerical value of alpha reaches, the more reliable and desirable the resulted will be obtained. In a general rule, the value of alpha should be more than 0.7. Nevertheless, there are a variety of researches fields setting different standards for the acceptable values of alpha. It is said that the value of alpha can be less than 0.7 but at least more than 0.5 in an exploratory research. (Hair et al., 1995). Furthermore, Tavakol and Dennick (2011) interpreted a low value of alpha may be resulted from a low number of questions or a poor interrelatedness among these items. Likewise, a superb value of alpha doesn’t absolutely mean the questions have a high level of reliability; it could be due to the redundant and similar items. As for this research, it can be seen that perceived benefit, imparity of online information search, perceived ability are approved by the alpha test, their alpha value are all above 0.7. Perceived cost and shopping enjoyment are relatively lower than 0.7 but over 0.6. They may due to the small number of questions. Therefore, these two constructs are considered being accepted grudgingly.

### 4.4 Results of hypotheses testing

#### 4.4.1 Correlation analysis

Through the test of Pearson’s correlation coefficient, the major results are indicated in the table 7-1. Also, there are several accepted guidelines for explaining the correlation coefficient. Normally, the values of correlation coefficient range from -1 to +1. When the correlation coefficient is between 0 and 1, it indicates the two constructs is positively related, while there is a negative correlation between them when the value
is between 0 and -1. Beyond that, if the correlation coefficient is zero, it shows there is no relationship between two variables. (Hunt, 1986)

**Table 7-1: Correlations Matrix**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Online info. search</th>
<th>Perceived benefit</th>
<th>Perceived cost</th>
<th>Impartiality online info</th>
<th>Perceived ability</th>
<th>Shopping enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online info. search</td>
<td>1</td>
<td>.478**</td>
<td>.356**</td>
<td>.160</td>
<td>.419**</td>
<td>.001</td>
</tr>
<tr>
<td>Correlation</td>
<td>.000</td>
<td>.001</td>
<td>.138</td>
<td>.000</td>
<td>.996</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>89</td>
<td>88</td>
<td>89</td>
<td>87</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>Perceived benefit</td>
<td>.478**</td>
<td>1</td>
<td>.498**</td>
<td>.199</td>
<td>.507**</td>
<td>-.054</td>
</tr>
<tr>
<td>Correlation</td>
<td>.000</td>
<td>.000</td>
<td>.065</td>
<td>.000</td>
<td>.618</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>89</td>
<td>89</td>
<td>89</td>
<td>87</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>Perceived cost</td>
<td>.356**</td>
<td>.498**</td>
<td>1</td>
<td>.141</td>
<td>.484**</td>
<td>.249*</td>
</tr>
<tr>
<td>Correlation</td>
<td>.001</td>
<td>.000</td>
<td>.190</td>
<td>.000</td>
<td>.019</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>89</td>
<td>89</td>
<td>90</td>
<td>88</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Credibility online info.</td>
<td>.160</td>
<td>.199</td>
<td>.141</td>
<td>1</td>
<td>.070</td>
<td>-.265*</td>
</tr>
<tr>
<td>Correlation</td>
<td>.138</td>
<td>.065</td>
<td>.190</td>
<td>.518</td>
<td>.013</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>87</td>
<td>87</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>Perceived ability</td>
<td>.419**</td>
<td>.507**</td>
<td>.484**</td>
<td>.070</td>
<td>1</td>
<td>.167</td>
</tr>
<tr>
<td>Correlation</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.518</td>
<td>.118</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>89</td>
<td>89</td>
<td>90</td>
<td>88</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Shopping enjoyment</td>
<td>.001</td>
<td>-.054</td>
<td>.249*</td>
<td>-.265*</td>
<td>.167</td>
<td>1</td>
</tr>
<tr>
<td>Correlation</td>
<td>.996</td>
<td>.618</td>
<td>.019</td>
<td>.013</td>
<td>.118</td>
<td></td>
</tr>
<tr>
<td>Sig.(2-tailed)</td>
<td>88</td>
<td>88</td>
<td>89</td>
<td>88</td>
<td>89</td>
<td>89</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed)  ** Correlation is significant at the 0.01 level (2-tailed)

According to the test results of Table 7-1, it is easy to find that the use of the Internet for information search is positively related to three constructs: perceived benefit, perceived (low) cost as well as perceived ability to online search. The correlation index of each construct is 0.478, 0.356 and 0.419, respectively. All of these correlations are significant at the 0.01 level (2-tailed). Hence, It can come to a conclusion that if consumers perceived more benefit of online information search, they will increase the use of the Internet for information search; when people perceived the Internet costs less to search for information, they would tend to spend more time on online information search than off-line, and if consumer perceived more ability to online search, they will increasingly utilize the Internet for information search, too.

Other than the above constructs, there are also a few variables such as the level of
education and amount of daily online time involved in the research. As pointed out earlier, I assumed these two variables could affect online information search behavior of consumers significantly via the factor perceived ability; thereby these two elements also have been analyzed by means of Pearson’s correlation coefficient.

**Table 7-2: Correlations Matrix**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Online info. Search</th>
<th>Education</th>
<th>Daily online time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online info. Search</td>
<td>Pearson Correlation</td>
<td>.063</td>
<td>.398**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.567</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>89</td>
<td>86</td>
<td>89</td>
</tr>
<tr>
<td>Education Level</td>
<td>Pearson Correlation</td>
<td>.063</td>
<td>.376**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.567</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>86</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Daily Online Time</td>
<td>Pearson Correlation</td>
<td>.398**</td>
<td>.376**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>89</td>
<td>87</td>
<td>90</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

**Table 7-3: Correlations Matrix**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Perceived ability to online search</th>
<th>Education</th>
<th>Daily online time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived ability to online search</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.144</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.183</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>89</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td>Education Level</td>
<td>Pearson Correlation</td>
<td>.144</td>
<td>.376**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.183</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>87</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Daily Online Time</td>
<td>Pearson Correlation</td>
<td>.482**</td>
<td>.376**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>87</td>
<td>90</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Based on the correlation results in Table 7-2, we can find that the use of the Internet for information search is positively related to the amount of daily time online with the coefficient of 0.398. Although the level of education is found to have no correlation...
with this dependent variable, there is a positive relationship between daily amount of time online and education degree. In addition, Table 7-3 illustrates that the daily time used Internet is positively related to the perceived ability to online information search. Its coefficient of association is 0.482 at the significant level of 0.01. It means the longer time consumer spend on the Internet, the more powerful ability of online information search will be perceived by consumer, and eventually the total use of the Internet for pre-purchase information search will also increase because of these two factors.

As for the positive correlation between education level and daily time used Internet in this research, it can draw a conclusion that consumers with higher level of education normally spend more time accessing the Internet. Though this summing-up is beyond the range of hypothesis in this study, it indirectly suggests the demographic features of consumers who engage in online information search activities.

4.4.2 Mediation testing with regression analysis

According to the above results, only ‘daily time spent online’ is eligible to go through the mediation testing with regression analysis. Mediation is an assumed causal chain where one factor influences the other variable, and then affects a third variable in turn. (Baron & Kenny, 1986) As I previously hypothesized that perceived ability to online search could cause a mediating effect in the relationship between amount of daily time online and use of the Internet for information search. It means the intervening variable; perceived ability mediates the connection between the predictor, amount of daily time online, and the outcome, consumer’s use of the Internet for information search. Baron and Kenny (1986) proposed a four-step method of mediation testing with regression analysis, which can be illustrated in the following graphic:
The results of mediation test for perceived ability are shown in Table 8-1, 8-2, 8-3 and 8-4.

**Table 8-1: Mediation test for perceived ability to online search**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>2.271</td>
<td>.427</td>
<td>.427</td>
<td>5.318</td>
</tr>
<tr>
<td>Daily online time</td>
<td>.461</td>
<td>.114</td>
<td>.398</td>
<td>4.053</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Use of the Internet for information search

Use of the Internet for information search = c \times \text{Daily online time} + e1

= 0.461 \times \text{Daily online time} + 2.271

**Table 8-2: Mediation test for perceived ability to online search**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>2 (Constant)</td>
<td>2.096</td>
<td>.353</td>
<td>.353</td>
<td>5.946</td>
</tr>
<tr>
<td>Daily online time</td>
<td>.485</td>
<td>.094</td>
<td>.482</td>
<td>5.160</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Perceived ability to online search

Perceived ability to online search = a \times \text{Daily online time} + e2

= 0.485 \times \text{Daily online time} + 2.096
Table 8-3: Mediation test for perceived ability to online search

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficient</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>3 (Constant)</td>
<td>2.093</td>
<td>.443</td>
<td>.481</td>
<td>4.720</td>
</tr>
<tr>
<td>Perceived ability</td>
<td>.481</td>
<td>.112</td>
<td>.419</td>
<td>4.370</td>
</tr>
</tbody>
</table>

a. Dependent Variable: use of the Internet for information search

Use of the Internet for information search = b × Perceived ability + e3

= 0.481 × Perceived ability + 2.093

Table 8-4: Mediation test for perceived ability to online search

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficient</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>4 (Constant)</td>
<td>1.572</td>
<td>.486</td>
<td>.295</td>
<td>3.233</td>
</tr>
<tr>
<td>Daily online time</td>
<td>.295</td>
<td>.126</td>
<td>.255</td>
<td>2.343</td>
</tr>
<tr>
<td>Perceived ability</td>
<td>.339</td>
<td>.125</td>
<td>.295</td>
<td>2.715</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Use of the Internet for information search

Use of the Internet for information search

= c’ × Daily online time + b × perceived ability + e3

= 0.295 × Daily online time + 0.339 × perceived ability + 1.572

Judd, Kenny and McClelland (2001) claimed that mediation testing with multiple regression analysis is only meaningful unless the first three steps are supported at the significant level of 0.05, it is clear to see that path c, a, b are all significant, which meets the requirements As for the path c’, Baron and Kenny (1986) stated that if the coefficient c’ keeps significant when path b is controlled, it demonstrates that the mediator M can cause a partial mediating effort between predictor and the outcome, while the findings support full mediation if path c’ remains significant. From the table 8-4, it displays that path c’ stays significant with the number of 0.021, which shows
the result supports partial mediation. That is to say, the major influence of amount of daily online time caused on the use of the Internet for information search is partly through perceived ability to online research.

**4.4.3 Whole regression model**

So as to further test the extent of influence of each major factor on this dependent variable, use of the Internet for information search. A regression model involved with three constructs is applied in this research and it utilizes a stepwise approach for choosing these three variables.

**Table 9: Regression Model for perceived benefit, cost and ability of online search**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-.211</td>
<td>.783</td>
</tr>
<tr>
<td></td>
<td>Perceived Benefit</td>
<td>.602</td>
<td>.221</td>
</tr>
<tr>
<td></td>
<td>Perceived Cost</td>
<td>.187</td>
<td>.169</td>
</tr>
<tr>
<td></td>
<td>Perceived Ability</td>
<td>.232</td>
<td>.131</td>
</tr>
</tbody>
</table>

According to the result in Table 9, the regression model can be described into the following formulation:

Use of the Internet for information search behavior = - 0.211 + 0.602 × Perceived benefit + 0.187 × Perceived cost + 0.232 × Perceived ability

Table 9 shows that the standardized coefficient of three constructs is 0.312, 0.124 and 0.201, which implies perceived benefit of online search affects the use of the Internet for information search more significant than perceived cost and perceived ability to online search.
4.5 Discussion

The major objective of this research is to explore and analyze the factors influencing consumer online information search behavior and to seek out a relationship between these factors. According to the results of hypotheses testing (see Table 10), it indicates that perceived benefit of online search, perceived search cost, perceived ability to online information and amount of daily time online are all positively related to consumer’s use of the Internet for information search. Moreover, perceived benefit of online search affects consumer’s use of the Internet for information search more significant than perceived cost and ability to online search based on the regression coefficient (see Table 9). The second dominant factor is perceived ability to online search and perceived cost holds the least influence. For the objective of finding a relationship between these factors, the results illustrate that perceived ability to online information search can play a partial mediating effect in the relationship between daily time spend online and use of the Internet for information search. Moreover, the amount of daily time online has been found to have a positive correlation with education level.

Table 10: The results of hypotheses testing

<table>
<thead>
<tr>
<th>No.</th>
<th>Hypothesis</th>
<th>Result</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>If consumers perceive the Internet costs less to find information, they will increase the use of the Internet for information search.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>If consumers perceive the online information is impartial and authentic, their use of Internet for information search will grow.</td>
<td>×</td>
<td>1</td>
</tr>
<tr>
<td>H2a</td>
<td>Perceived cost causes a mediating effect between impartiality of online information and use of the Internet for information search.</td>
<td>×</td>
<td>1</td>
</tr>
<tr>
<td>H3</td>
<td>If consumers perceive more benefit of using the Internet to search for product information, they will increase the use of the Internet for information search.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>If consumers perceive the Internet more effective to use for finding product information, they will increase the use of Internet for information search.</td>
<td>×</td>
<td>2</td>
</tr>
<tr>
<td>H4a</td>
<td>Perceived benefit causes a mediating effect in the relationship between effectiveness of online search and use of the Internet for information search.</td>
<td>×</td>
<td>2</td>
</tr>
<tr>
<td>H5</td>
<td>There is a positive correlation between perceived ability to online search and consumer’s use of the Internet for information search.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>There is a positive correlation between daily time used Internet and perceived ability to online search</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H6a</td>
<td>There is a positive correlation between daily time used Internet and consumer’s use of the Internet for information search</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H6b</td>
<td>Perceived ability to online search mediates the relationship between daily online time and consumer’s use of the Internet for information search</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H7</td>
<td>There is a positive correlation between education level and perceived ability to online search</td>
<td>×</td>
<td>①</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>H7a</td>
<td>There is a positive correlation between education level and consumer’s use of the Internet for information search</td>
<td>×</td>
<td>①</td>
</tr>
<tr>
<td>H7b</td>
<td>Perceived ability to online search mediates the relationship between education level and consumer’s use of the Internet for information search</td>
<td>×</td>
<td>①</td>
</tr>
<tr>
<td>H8</td>
<td>There is a negative correlation between consumer’s shopping enjoyment and use of the Internet for information search</td>
<td>×</td>
<td>①</td>
</tr>
</tbody>
</table>

① Rejected by Pearson's correlation analysis
② Rejected by reliability or validity analysis
CHAPTER 5: CONCLUSION AND DISCUSSION

In this chapter, a series of concluding statements are articulated and summarized based on the previous findings. Also, a set of discussions are presented in light of the results of this study, which comprising the limitations of the study, implications as well as the recommendations for future research.
5.1 Conclusion

It is no doubt that the widespread use of the Internet and the unique capabilities it provided such as characteristic of interactivity and limitless amount of information have essentially changed information search behavior of consumers. In the current time, consumers increasingly rely on the Internet instead of physical world when they have a demand of product information search. Therefore, understanding of an online information search phenomenon and the determinants affecting consumer information search behavior on the Internet is extremely vital for today’s marketers.

To sum up, the factors that influence on consumer online information search behavior are mainly divided into four types in this research. The first type is the factors relate to perceived benefit of online information search. The second and third categories are the elements regarding perceived cost and ability. Factors related to traditional media is the fourth type such as shopping enjoyment and the last type is demographic features of consumers.

Owing to the restrictions of objective conditions, only a few variables are involved in this study because there are hundreds of factors could cause a major impact on online information search behaviors of consumers. It is impossible to explore and analyze all of them. As for the first type of factors, two factors are considered: consumer’s perceived benefit of using the Internet for information search and their perceived effectiveness of information search on the Internet. Based on the previsions results, the latter fails to pass through the test of validity analysis, thereby its correlation analysis and hypothesis testing cannot be further conducted and measured.

Among all of the variables chosen in this research, perceived benefit has been demonstrated as the most significant factor that affects consumer information search behavior on the Internet. Its regression coefficient is 0.602, which has the biggest weight in influencing variables. Meanwhile, the results of correlation analysis shows
that if consumers perceived more benefit of using the Internet for information search, their use of Internet for product information search will increase, which refers to consumer will spend more time on the Internet to search for product information than off-line.

With respect to the second type of factors, perceived cost of online information search and consumer’s perceived credibility of online information are taken into account in this research. Both of them are supported by reliabilities and validities test. However, there is no correlation between perceived credibility of online information and the use of Internet for information search, which indicates this factor is not the determinant of consumer online information search behavior. Perceived cost of online information search has a major impact on the use of the Internet for information search with a regression coefficient of 0.187. Although this value is relatively lower than perceived benefit, it still accounts for a determinant to some extent and it is positively related to the use of Internet of information search. As perceived cost is designed into perceived (low) cost of online information search in the questionnaire (see Appendix 2) which is reference from Jespen (2007), thus the positive correlation reveals that if consumers perceive the Internet costs less to find product information, they will spend more time on the Internet to seek out product information compared to the off-line. In a word, the low perceived cost has a positive influence on consumer’s use of the Internet for information search.

Perceived ability to online information search, the level of education and consumer’s daily time used on the Internet are the third and fifth type of elements. Through the correlation and regression analysis, perceived ability and amount of daily online time have been found to have a positive relationship with the use of Internet for information search except the education. Besides, perceived ability to online search causes a partial mediating effect in the relationship between daily amount of time spend on the Internet and use of the Internet for information search. Also, according to the illustrated regression model (see Table 9), it indicates that perceived ability has an
essential effect on the use of the Internet for information search with a regression coefficient of 0.232, ranking only second to perceived benefit as a dominant factor. In brief, consumer’s perceived ability to online information search affects the utilization of the Internet for information search positively.

Consumer’s pleasure in shopping is considered as the forth type of factors in this research. Nevertheless, there is no positive or negative correlation between shopping enjoyment and the use of the Internet for information search.

In summary, there are three major factors affecting consumer online information search behavior, which are consumer’s perceived benefit, (low) cost and perceived ability of online search, respectively. All of them have been demonstrated to influence the use of the Internet for information search positively. The amount of daily time on the Internet is also positively related to it and the influence it caused is partly through perceived ability to online search. Moreover, among these three factors, perceived benefit is the most dominant factor influencing consumer’s use of the Internet for information search, the second significant factor is perceived ability, and then is perceived cost.

5.2 Discussion

5.2.1 Implications

Facing the great boom in e-commerce area along with the growing number of online shoppers, more and more companies provide product information on the Internet in order to attract consumers’ attention and meet the demands. Since information search behavior is one of the most important steps in consumer buying decision-making process, getting an insight into the online search phenomenon is essential for today’s E-firms.
According to the research outcomes, perceived benefit, perceived benefit, ability and cost are the major factors influencing consumer online information search behavior. Therefore, for e-companies which usually invest a lot of marketing resources on the Internet every year, they should take these three elements into consideration, which refers to take measures to increase consumer’s perceived benefit of online information search firstly, and then try to enable consumer to feel more able to search for product information effectively and finally consider to reduce consumers’ perceptions of search cost on the Internet.

To be specific, the first step that companies should do is provide relevant product information timely and lists the advantages of products such as price and quality information available on the Internet. Meanwhile, they should offer more personalized and customized product information on company website to let consumer perceive more benefit when shoppers visit this site. Therefore, each company should afford product information with its own unique selling point. Secondly, e-firms need to reinforce its company website construction in terms of intelligent services. Companies are suggested to provide easy use of search engines, shopping bots, recommendation agents, etc. for consumers to find product information so that consumer’s perceived ability can be enhanced. Thirdly, marketers should offer consumers free and quick access to product information on the Internet so as to build strong engagement with them.

Additionally, online companies should pay highly attention to the audiences they targeted. Since consumer’s daily online time is significantly correlated to consumer’s use of the Internet for information search, companies should think about whether their marketing segments match the features of online consumers so that they can spread the product information into the hands of right audiences.

In brief, having an understanding of factors influencing consumer online information search behavior can help the marketing departments of companies to establish better
marketing champions on the Internet in the future.

5.2.2 Limitations
There are some limitations to this research that need to be mentioned. First of all, the size of sample is too small to represent the whole population in Sheffield. It only generates 100 responses in total and only 86 respondents complete all the questions. As the target participants of this study is people who above 18 in Sheffield, it is nearly impossible for researcher to survey all of them due to the objective condition constrains such as the time and funding.

In fact, a majority of respondents in this survey are students because the research is conducted in the University of Sheffield, mainly at the school library. Hence the sample is not representative enough for the people in Sheffield in terms of the distribution of age. In other words, the target participants of this study are very limited; their perspectives cannot be treated as the representative view of the entire population in Sheffield because this research was implemented without considering other age groups. Additionally, as this research was carried out in Sheffield only, it leads to the results of research is only suitable for Sheffield, rather than any other cities in the UK. Besides, many respondents showed perfunctory attitude when they were filling out a questionnaire. Some are in a rush to do it because they consider there is no benefit. As a consequence, the collected data is more likely to be inaccurate and non-objective for the final results.

The second drawback of this study is the limited number of researches concerning consumer information search behavior on the Internet. Although some of them have identified possible factors affecting consumer information search phenomenon, these studies are mainly conducted in other countries such as Denmark and the United States instead of the UK. Thus some factors may be not appropriate for the situation in the UK due to the different national conditions. Perhaps that is the reason why a
few factors are not supported by the test of reliability and validity. Furthermore, the questionnaire regard to perceived credibility of online information is created without referencing other sources. This is relatively insufficient to support the methodology section of this research.

As for the failures in correlation test, it can be resulted from the low size of sample. One explanation is that a small sample size could lead to the power of a test becomes insufficient. As thus, some constructs are more likely to be rejected through the test. Maybe that is root cause why factors such as shopping enjoyment and credibility of online information have to be abandoned, or maybe there is indeed no correlation between these variables.

Last but not the least, although a wide range of factors have been identified in this study, there are still a lot of determinants should be considered in this study such as the brand preference, interest in product, time pressure or other demographic features of consumers (e.g. occupation, geographic dispersion and religions.) It’s important to know that some elements might be out of date or no longer affect significantly because the Internet is such as complex phenomenon that keeps changing all the time.

5.2.3 Recommendations for further research
According to the above stated limitations, there are some suggestions outlined for further research: In the first place, choosing a larger size of sample and wider range of population will be more useful with the results. It mainly refers to consider different age groups of people in Sheffield as target participants and try to reach an appropriate number in the sample because this way can more reliably reflect the entire population in Sheffield. As for the type of sampling, simple random sampling is more suitable than convenience sampling in this study because it could produce more representative results.

The second recommendation is that I should implement a small-scale questionnaire in
advance, and then modify the questions based on the pre-test findings, and eventually launch a formal questionnaire via the Internet. One major advantage of this way is it can collect more accurate data and better figure out an appropriate size of sample for the research. Meanwhile, it is necessary to design questions in light of previously existing researches so that the reliability and validity of collected data can be enhanced.

Thirdly, researches regarding consumer online information search behavior should be examined more specifically. Other than exploring the factors why consumers prefer to spend more time on the Internet for information search than off-line, this study can put the emphasis on online information search behavior in terms of product category, number of hours on different sources, frequency or the amount of product information they searched. For instance, Bei, Chen and Widdows (2004) investigated consumers’ online information search behavior by comparing their search amount of information about search products versus experience products on the Internet. Klein and Ford (2003) primarily inspected consumers’ usage of the Internet for information search across different sources with number of hours.

In addition, it will be more persuasive if this research considers more determinants of online search behavior such as product factors (e.g. brand, quality, etc.), personal factors (e.g. consumer’s knowledge or interest in products, income level) and other motivational or situational factors. Furthermore, the research findings may become more desirable if various methods of data collection or analysis can be used in this study such as a combination of quantitative and qualitative approach. For example, a formal questionnaire to ordinary consumers and several interviews with experts who major in information search behavior can be employed together in further research.

Word count: 13570
Bibliography


65


http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr13/2013_UK_CMR.pdf


Appendix 1 Ethics Approval

Information School Research Ethics Panel

Letter of Approval

Date: 15th July 2014

TO: Huihao Ma

The Information School Research Ethics Panel has examined the following application:

Title: An investigation into the factors affecting consumer’s online information search behaviour

Submitted by: Huihao Ma

And found the proposed research involving human participants to be in accordance with the University of Sheffield’s policies and procedures, which include the University’s ‘Financial Regulations’, ‘Good Research Practice Standards’ and the ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue’ (Ethics Policy).

This letter is the official record of ethics approval by the School, and should accompany any formal requests for evidence of research ethics approval.

Effective Date: 15th July 2014

[Signature]

Dr Angela Lin
Research Ethics Coordinator
Appendix 2 Questionnaire

Dear sir or madam,

Thanks for participating in this survey. I’m a postgraduate student who currently study Information Management at The University of Sheffield. This questionnaire is designed for analyzing the factors that influences on consumer online information search behavior. It only takes 5-10 minutes to complete and all the information you fill will be anonymous and confidential.

Again, thank you for your precious time to participate in my research. If you have any question about it, please contact me with the following email address: hma8@sheffield.ac.uk

1. Gender:
   - Male
   - Female

2. Age:
   - Under 20
   - 20-29
   - 30-39
   - 40-49
   - 50 and over

3. Level of Education:
   - Undergraduate
   - Master
   - PhD
4. How much time do you spend on the Internet daily?

- Less than one hour
- 1-3 hours
- 4-6 hours
- more than 6 hours
- Always on

5. How much do you spend on online shopping per month?

- Less than 100 pounds
- 100-199 pounds
- 200-299 pounds
- 300-399 pounds
- 400 pounds or more

Now, please recall your most recent purchase of a digital or IT product, and complete the following items according to how you felt at that time.

<table>
<thead>
<tr>
<th>1. Using the Internet to search for product information helps me make better purchase-decision than traditional media.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. I usually get ideal products by searching information through the Internet.</td>
<td></td>
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<tr>
<td>3. Using the Internet to search for product information enables me to make sure which kind of product is more suitable for me.</td>
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<td>4. Using the Internet to search for product information usually helps me get the best price.</td>
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<td>5. Using the Internet for information search enhances my efficiency of gathering product information.</td>
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<td>6. Using the Internet to search for product information allows me to make purchase decisions more quickly.</td>
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<tr>
<td>7. Compared with other places, the Internet enables me to collect more useful information about my desired item.</td>
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<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly Agree</td>
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<tr>
<td>1. It's cheaper, easier and takes less time to search product information on the Internet than other places.</td>
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<tr>
<td>2. Spending less time, effort and money to search for product information is very important to me.</td>
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<tr>
<td>3. The reason why I chose to use the Internet to search for product information is it can save a lot of time.</td>
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<td>4. There is much helpful information on the Internet.</td>
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<tr>
<td>5. I think most of product reviews online is objective.</td>
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<tr>
<td>6. I consider the online information is authentic and fair.</td>
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<tr>
<td>1. I know very well how to search for relevant product information on the Internet.</td>
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<td>2. I'm quite familiar with the websites that relate to IT products.</td>
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<tr>
<td>3. I can do a better job of searching for product information online than my friends.</td>
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<td>4. Friends have been asking me for help in finding product information on the Internet.</td>
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<td>5. I have plenty of time to use the Internet to search for product information.</td>
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</tr>
<tr>
<td>1. Go shopping provides me with a chance to go out and do something exciting.</td>
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<tr>
<td>2. I am interested in shopping and like to go shopping with my friends.</td>
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<tr>
<td>3. I prefer hands-on experience with the products before making purchase decisions.</td>
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</tbody>
</table>
6. Of all the time you spent searching for product information (online and off-line), how much of it do you spend it on the Internet?

- All of the time
- About 80%
- About 60%
- About 40%
- About 20% or less
Appendix 3 Research Ethics Form

The University of Sheffield.
Information School

Students
This proposal submitted by:
Undergraduate
X Postgraduate (Taught) – PGT
Postgraduate (Research) – PGR

Staff
This proposal is for:
Specific research project
Generic research project
This project is funded by:

Proposal for
Research Ethics Review

Project Title: An investigation into the factors affecting consumer's online information search behaviour

Start Date: End Date:

Principal Investigator (PI):
(student for supervised UG/PGT/PGR research) Huihao Ma
Email: 123099966@qq.com or hma8@sheffield.ac.uk

Supervisor:
(if PI is a student) Elaine Toms
Email: etoms@sheffield.ac.uk

Indicate if the research: (put an X in front of all that apply)

- Involves adults with mental incapacity or mental illness, or those unable to make a personal decision
- Involves prisoners or others in custodial care (e.g. young offenders)
- Involves children or young people aged under 18 years of age
- Involves highly sensitive topics such as ‘race’ or ethnicity; political opinion; religious, spiritual or other beliefs; physical or mental health conditions; sexuality; abuse (child, adult); nudity and the body; criminal activities; political asylum; conflict situations; and personal violence.

Please indicate by inserting an “X” in the left hand box that you are conversant with the University's policy on the handling of human participants and their data.
Part B. Summary of the Research

B1. Briefly summarise the project’s aims and objectives:
(This must be in language comprehensible to a layperson and should take no more than one-half page. Provide enough information so that the reviewer can understand the intent of the research)

Summary:
The aim of this project is
1). To explore and analyse the different factors that affect consumers’ online information search
behaviour and to seek out a relationship between these elements.
(The factors are perceived cost, perceived benefit, perceived ability of online information search, etc.)

B2. Methodology:
Provide a broad overview of the methodology in no more than one-half page.

Overview of Methods:
It will carry out a questionnaire that includes five parts, which mainly focus on the people over 18 who recently have online product information search experience in Sheffield.

If more than one method, e.g., survey, interview, etc. is used, please respond to the questions in Section C
for each method. That is, if you are using both a survey and interviews, duplicate the page and answer
the questions for each method; you need not duplicate the information, and may simply indicate, “see previous
section.”

C1. Briefly describe how each method will be applied

Method (e.g., survey, interview, observation, experiment):
Description - how will you apply the method?
My questionnaire mainly has five parts and each part is to measure the factors which are variable. I
will make two formats of my questionnaire: electronic and hard copy. In order to ensure the quality, I
will try to make the word count of each question short and easy to understand. Also, I will include an
appendix with questions in my survey.

About your Participants

C2. Who will be potential participants?
Adults over 18 in Sheffield

C3. How will the potential participants be identified and recruited?
They can be identified and recruited through online discussion, advertisements on Facebook or Twitter and other online forums.

C4. What is the potential for physical and/or psychological harm / distress to participants?
   None

C5. Will informed consent be obtained from the participants?

   
<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   If Yes, please explain how informed consent will be obtained?
   Before giving my participants questionnaire, I will get the permission of responders by explaining what the research is about, the objectives, how is used and by whom. They can make a signature to prove that they agree with my request.

   If No, please explain why you need to do this, and how the participants will be de-briefed?

C6. Will financial / in kind payments (other than reasonable expenses and compensation for time) be offered to participants? (Indicate how much and on what basis this has been decided)

   
   
   
   
   
   

   About the Data

C7. What data will be collected? (Tick all that apply)

   
   
   
   
   
   

   Participant observation | Print | Digital
   Audio recording
   Video recording
   Computer logs
   Questionnaires/Surveys | X
   Other:
   Other:

C8. What measures will be put in place to ensure confidentiality of personal data, where appropriate?
I will anonymize the personal data and collect them by random number.

C9. How/Where will the data be stored?
I will keep these personal data into files and save the files onto school service with password protected.

C10. Will the data be stored for future re-use? If so, please explain
No, the data will be deleted by the IT staff after the dissertation is marked

About the Procedure

C11. Does your research raise any issues of personal safety for you or other researchers involved in the project (especially if taking place outside working hours or off University premises)? If so, please explain how it will be managed.
No
Title of Research Project: [Insert project title here]

We confirm our responsibility to deliver the research project in accordance with the University of Sheffield's policies and procedures, which include the University’s ‘Financial Regulations’, ‘Good Research Practice Standards’ and the ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue’ (Ethics Policy) and, where externally funded, with the terms and conditions of the research funder.

Title of Research Project: [Insert project title here]

We confirm our responsibility to deliver the research project in accordance with the University of Sheffield’s policies and procedures, which include the University’s ‘Financial Regulations’, ‘Good Research Practice Standards’ and the ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue’ (Ethics Policy) and, where externally funded, with the terms and conditions of the research funder.

In submitting this research ethics application form I am also confirming that:

- The form is accurate to the best of our knowledge and belief.
- The project will abide by the University’s Ethics Policy.
- There is no potential material interest that may, or may appear to, impair the independence and objectivity of researchers conducting this project.
- Subject to the research being approved, we undertake to adhere to the project protocol without unagreed deviation and to comply with any conditions set out in the letter from the University ethics reviewers notifying me of this.
- We undertake to inform the ethics reviewers of significant changes to the protocol (by contacting our academic department’s Ethics Coordinator in the first instance).
- We are aware of our responsibility to be up to date and comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data, including the need to register when necessary with the appropriate Data Protection Officer (within the University the Data Protection Officer is based in C/CS).
- We understand that the project, including research records and data, may be subject to inspection for audit purposes, if required in future.
- We understand that personal data about us as researchers in this form will be held by those involved in the ethics review procedure (e.g., the Ethics Administrator and/or ethics reviewers) and that this will be managed according to Data Protection Act principles.
- If this is an application for a ‘generic’ project all the individual projects that fit under the generic project are compatible with this application.
- We understand that this project cannot be submitted for ethics approval in more than one department, and that if I wish to appeal against the decision made, this must be done through the original department.

Name of the Student (if applicable):
Huihao Ma

Name of Principal Investigator (or the Supervisor):
Elaine Toms

Date: 17/06/14
### Researchers
Name: Huihao Ma  
Supervisor’s Name: Elaine Toms  
Tel: 07985731550  
Tel: 0114 222 2659  
E-mail: 123099966@qq.com or hma8@sheffield.ac.uk  
E-mail: e.toms@sheffield.ac.uk

### Purpose of the research
The purpose of this research is to explore and analyze the different factors that influence on consumer’s online information search behavior and try to seek out a relationship between these elements.  
(The factors are perceived cost, perceived benefit, perceived ability of online information search, etc.)

### Who will be participating?
We are inviting the people above 18 who have recently had online product information search experience in Sheffield.

### What will you be asked to do?
At first, we will ask you to complete a brief demographic questionnaire so that we have a profile of our participant group. Then we will list some questions and let you complete these items according to your actual feeling.

### What are the potential risks of participating?
No greater than these experience in everyday life

**What data will we collect?**

Responders to questions on a survey instrument

**What will we do with the data?**

We will be analyzing the data for inclusion in my master dissertation. After that point, the data will be destroyed.

**Will my participation be confidential?**

We are anonymising the data and coding the computer files with a random number. No identifying information will be retained.

**What will happen to the results of the research project?**

The results of this study will be included in my master’s dissertation which will be publicly available. Please contact the School in six months.

I confirm that I have read and understand the description of the research project, and that I have had an opportunity to ask questions about the project.

I understand that my participation is voluntary and that I am free to withdraw at any time without any negative consequences.

I understand that I may decline to answer any particular question or questions, or to do any of the activities. If I stop participating at all time, all of my data will be purged.

I understand that my responses will be kept strictly confidential, that my name or identity will not be linked to any research materials, and that I will not be identified or identifiable in any report or reports that result from the research.

I give permission for the research team members to have access to my anonymised responses.

I give permission for the research team to re-use my data for future research as specified above.

I agree to take part in the research project as described above.
Participant Name (Please print)    Participant Signature

Researcher Name (Please print)    Researcher Signature

Date

Note: If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, please contact Dr. Angela Lin, Research Ethics Coordinator, Information School, The University of Sheffield (ischool_ethics@sheffield.ac.uk), or to the University Registrar and Secretary.
Appendix 5 Access to Dissertation

A Dissertation submitted to the University may be held by the Department (or School) within which the Dissertation was undertaken and made available for borrowing or consultation in accordance with University Regulations.

Requests for the loan of dissertations may be received from libraries in the UK and overseas. The Department may also receive requests from other organisations, as well as individuals. The conservation of the original dissertation is better assured if the Department and/or Library can fulfill such requests by sending a copy. The Department may also make your dissertation available via its web pages.

In certain cases where confidentiality of information is concerned, if either the author or the supervisor so requests, the Department will withhold the dissertation from loan or consultation for the period specified below. Where no such restriction is in force, the Department may also deposit the Dissertation in the University of Sheffield Library.

To be completed by the Author – Select (a) or (b) by placing a tick in the appropriate box.

If you are willing to give permission for the Information School to make your dissertation available in these ways, please complete the following:

(a) Subject to the General Regulation on Intellectual Property, I, the author, agree to this dissertation being made immediately available through the Department and/or University Library for consultation, and for the Department and/or Library to reproduce this dissertation in whole or part in order to supply single copies for the purpose of research or private study.

(b) Subject to the General Regulation on Intellectual Property, I, the author, request that this dissertation be withheld from loan, consultation or reproduction for a period of [ ] years from the date of its submission. Subsequent to this period, I agree to this dissertation being made available through the Department and/or University Library for consultation, and for the Department and/or Library to reproduce this dissertation in whole or part in order to supply single copies for the purpose of research or private study.

Name Huihao Ma
Department
Signed Huihao Ma
Date 1st September 2014
To be completed by the Supervisor – Select (a) or (b) by placing a tick in the appropriate box

☐ (a) I, the supervisor, agree to this dissertation being made immediately available through the Department and/or University Library for loan or consultation, subject to any special restrictions (*) agreed with external organisations as part of a collaborative project.

*Special restrictions

☐ (b) I, the supervisor, request that this dissertation be withheld from loan, consultation or reproduction for a period of [ ] years from the date of its submission. Subsequent to this period, I agree to this dissertation being made available through the Department and/or University Library for loan or consultation, subject to any special restrictions (*) agreed with external organisations as part of a collaborative project.

Name
Department
Signed                     Date

THIS SHEET MUST BE SUBMITTED WITH DISSERTATIONS BY DEPARTMENTAL REQUIREMENTS.