A Conceptual Model for Determining Factors Influencing Online Purchasing Behavior

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Abstract

The world over, with the increase use of the internet, online commerce is also witnessing a huge jump. It is mainly because online retailing offers a lot of advantages for the consumer in terms of convenience, options, anytime, easy accessibility and so. However, it does suffer from some disadvantages in the form of say the physical absence of the product, security risks, privacy concern, non-delivery risks and so on. But still then, online retailing is growing at an unstoppable speed. And with this understanding of factors influencing online purchase behavior becomes more and more serious matter.

Researchers have been exploring online consumer behavior for many years and two widely accepted views stand out in the e-commerce literatures: consumer-oriented and technology oriented view. The consumer oriented view places focus on consumers’ salient beliefs about online shopping, whereas the technology-oriented view studies the impact of website design and usability on consumers’ behavior. Most of the researches are based on Technology Acceptance Model (TAM) and the Theory of Planned Behavior to understand the behavior of online consumers.

However, India, a country where internet penetration is still low, becomes a different case altogether. Though the number of people using the internet is increasing, e-commerce is not witnessing a proportionate increase. The question in the case of Indian customers is of Adoption of online retailing i.e. what are the factors that influences consumers to shop or not to shop in Internet. Thus, in that sense it can be seen as just an issue of New Product Adoption process, considering online retailing as just a new product for offering services to the consumers.

This study is done to incorporate the product adoption process model with the research models of TAM/TPB and others, to provide a comprehensive roadmap for further studies. The model ‘Online Shopping Adoption Model’, suggested here incorporates the major findings of studies done on consumer behavior in India and abroad.

Keywords: Online consumer behavior, Product Adoption process, Decomposed TPB, Online Shopping Adoption Model

1. Introduction

It is clear that e-commerce has created opportunities for both small and large companies and a wide range of benefits for consumers as well. Compared to traditional brick-and-mortar stores,
online stores have many advantages for consumers, including convenience, saving time and transportation costs, multiple options, any time availability, easy access to information, etc. Although online stores have many advantages, they also have disadvantages over brick-and-mortar stores. One of the most important disadvantage is the fact the consumers cannot touch, feel, taste or smell the products; this prevents consumers from assessing product quality and increases risk perceptions. Other disadvantages are related to delivery delays, security and privacy concerns which can affect the consumer’s trust on online stores.

The relative growth of the Internet in developing countries is outpacing the developed countries in the recent times. And as the number of internet users is increasing, so is the number of consumers who shop over the internet. Despite the fact that the figures show increasing online sales, many online consumers use information gathered online to make purchases offline, this is evidenced by the high abandon rates of shopping carts (Kiang et al., 2011). Consumers use online stores to gain market knowledge, they learn about price levels and product differences, yet they don’t make final transactions with the online stores (Broekhuizen and Huizingh, 2009).

In spite of a number of evidence showing the growth of Internet usage by Indian consumers, Internet sales show less than 1 percent of the total retail sales in India. In India too, the Internet is mainly used on regular bases for searching product information, comparing prices, and /or checking consumer reviews rather than making a purchase. Many Indian consumers have low self-efficacy in using the Internet. Thus, it becomes interesting to study as to whether the reasons for Indian shoppers not shopping online are the same as the ones identified in other countries online shopping environment? Or there are certain special factors influencing only the Indian consumers? In order to address these research questions, it is important to check previously identified concerns (in other countries) as well as Indian-specific concerns associated with online shopping.

Previous studies (i.e Bhatnagar et al. (2000); Jarvenpaa and Todd (1997); Vijayasarathy (2002), etc.) attempted to identify factors affecting Indian consumers' online purchases. However, only risk and benefit factors identified from the US studies were applied to the Indian online shopping context, failing to incorporate Indian culture- specific factors.

Thus, an attempt has been made in this study to conceptualize a model incorporating various factors that identify Indian consumers' online shopping behavior. In addition to the previously identified factors i.e risk and benefits, this study tried to incorporate Indian specific factors like culture, society, infrastructure, etc. that may play an important role in determining Internet adoption for e-commerce. Apart from these demographic factors like gender, income, etc. is also considered as these factors are very much diverse and dispersed in India.

1.1 Online Consumer Behavior Research

Given the widespread proliferation of online shopping, online consumer behavior has become an important topic among researchers, this is illustrated by the great number of publications on different fields such as information systems, marketing, management and psychology (Cheung et al., 2005).

Researchers have been exploring online consumer behavior for many years and two widely accepted views stand out in the e-commerce literatures: consumer-oriented and technology oriented views. The consumer oriented view places focus on consumers’ salient beliefs about
online shopping, whereas the technology-oriented view studies the impact of website design and its usability on consumers’ behavior (Zhou et al., 2007).

Prior research shows that there are numerous factors that affect online consumer behavior, nonetheless there are mixed findings in literature and many factors that influence online consumer purchasing behavior has yet to be explored, especially considering the dynamics of technology and consumer needs, which are constantly evolving, and as a result significant factors few years ago may differ today as consumers become more experienced internet users. Furthermore, most of the previous online shopping researches focus on one specific type of product such as books (Gefen et al., 2003; Lin, 2007), Clothing (Kim and Kim, 2004; Yoh et al., 2003), groceries (Hansen et al., 2004), financial services (McKechine et al., 2006) and Car insurance (Broekhuizen and Huizingh, 2009).

Previous research has also investigated product characteristics and online behavior using a conventional product classification scheme, exploring how search, experience, and credence goods vary in their impact on purchase intentions (Brown et al., 2003). Few studies have explored different product types and intentions behind online purchases using a classification scheme that takes into account the specific features of internet (Vijayasarathy, 2002), and the findings show mixed results.

2. Problem statement and Research questions

From the preceding introduction, it is apparent that the fast technological progress is changing consumer shopping habits. Research on online consumer behavior is becoming more prominent in literature and prior studies have set the foundation into the factors that influence online consumers, however, it is still not clear what drives consumers to shop online. Moreover, e-commerce has become an important marketing and sales channel, complimenting traditional channels, thus, it is important for retailers to understand the determinants of online purchasing and what types of products or services are more suitable to be marketed online, as knowing these factors will enable retailers to meet consumer’s needs and for marketers to target consumers effectively.

The fundamental problem that motivated this study is ‘what factors influence consumer’s to adopt the e-commerce?’; ‘what factors determine an online purchasing behavior?’

3. Literature Review

3.1 Online consumer behavior

Traditional offline consumer behavior and the drivers that take consumers into action have been studied from different perspectives and disciplines like marketing, psychology and the economic view, thus making a study on consumer behavior quite rich and diverse. However, the development of the internet and e-commerce have made an impact on consumers’ lives, the way they transact and their decision making process. Online consumers are using a computer and getting cues from a virtual environment, thus information technology has great influence on online consumer behavior and the drivers that motivate their actions, therefore creating differences between consumer online behavior and traditional offline behavior (Pavlou, 2003; Pavlou and Fygenson, 2006).
Online consumer behavior has been studied from two widely accepted views: consumer oriented and technology oriented. The findings in previous studies support both views (Cheung et al., 2005; Lin, 2007; Taylor and Todd, 1995), furthermore the two views compliment and reinforce each other (Zhou et al., 2007). The consumer – oriented view focuses on consumer’s salient beliefs about online shopping and the influence of such beliefs on purchase channel selection (Zhou et al., 2007). For example, online consumer behavior research has been examined from the perspective of shopping orientations, shopping motivations, personal traits, internet experience, among others (Zhou et al., 2007). On the other hand, the technology- oriented view focuses on predicting consumer acceptance of online shopping by studying web site design and contents as well as system usability (Zhou et al., 2007).

3.2 Major Research Models

In order to understand consumers’ online behavior and the determinants of online purchasing, researchers have relied on the Theory of Reasoned Criteria (TRA), Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), Expectation-Confirmation Theory (ECT), Innovation Diffusion Theory (IDT) and the Transaction Cost Theory (TCT). However, Cheung et al., (2005) found that in most research studies the backbone for understanding online behavior was based mainly on TAM and TPB with the other theories integrated into these research models.

3.2.1 The Theory of Reasoned Action (TRA)

A very well established theory of the social-psychology discipline, proposed by Fishbein and Ajzen (1975), TRA postulates that an individual’s behavior is determined by the individual’s behavioral intention. In TRA behavioral intention is a function of two primary determinants: attitude towards the behavior, and subjective norm, i.e. an individual’s perception of normative social pressure to perform the behavior. Attitude towards the behavior is measured by the combination of salient beliefs about the behavior and the evaluation of the outcome resulting from the behavior by an individual. Additionally, subjective norm is measured by the combination of salient beliefs regarding a relevant reference group opinion about the behavior and an individual’s motivation to comply with the reference group (Fishbein and Ajzen, 1975).

In the context of online consumer behavior, TRA has been used in empirical research, for example, Kim and Kim (2004) explored online clothing purchase intention yielding results with relative low predictive power, while Yoh et al., (2003) used TRA and incorporated aspects of innovation diffusion theory, thereby increasing the explanatory power of their research model.

3.2.2 Technology Acceptance Model (TAM)

Developed by Davis (1989), TAM seeks to explain user’s adoption of information technology. Based on TRA, TAM adopts the belief-attitude-intention-behavioral causal relationship to explain the adoption of computer-based technologies in the workplace.

TAM postulates that behavioral intention to use a new technology will lead to actual system use. Furthermore, behavioral intention to use a new technology is determined by an individual’s attitude toward using the new technology. The model posits that there are two determinants that influence attitude toward using a new technology: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Davis, 1989). PU is defined as ‘the degree to which a person believes that using
a particular system would enhance his or her job performance’ and PEOU is defined as ‘the degree to which a person believes that using a particular system would be free of effort’ (Davis, 1989). Additionally, an improved version of TAM (Davis, 1993) suggests that PU is influenced by PEOU and not the other way around, the rationale behind it is that easy-to-use technology is more than hard-to-use technology and useful technology may not necessarily be easy to use.

TAM has been widely adopted in information system (IS) research and it has been successfully applied as a theoretical framework to predict online purchasing behavior (Pavlou, 2003).

3.2.3 Theory of Planned Behavior (TPB)

Ajzen’s TPB is an extension of TRA (Fishbein and Ajzen, 1975). TPB takes into account conditions where individuals do not have complete control over their behavior. In addition to an individual’s attitude towards the behavior and the subjective norm proposed in TRA. TPB integrates perceived behavioral control (PBC) into the model. PBC is defined as an individual’s perception of how easy or difficult would be to carry out a behavior (Ajzen, 1991).

TPB postulates that the actual behavior is determined by both, the behavioral intention and PBC. Behavioral intention, in turn, is predicted by subjective norm, attitude towards the behavior and PBC.
Empirical research has shown the appropriateness of this model to understand consumers’ behavior in the context of online shopping (Hansen et al., 2004). Hansen et al., (2004) tested both TRA and TPB and found that TPB provided a better explanation of online consumer behavior that TRA did. However, like TAM, many researchers have added constructs to the model to better reflect the characteristics of consumer online behavior (Cheung et al., 2005). Pavlou and Fygenson (2006) tested one of the most comprehensive TPB model extensions in a longitudinal study, which explored two behaviors: getting information and actual product purchasing. The study findings confirmed the significance of technology adoption variables (perceived usefulness and perceived ease of use) for the prediction of e-commerce adoption; additional significant constructs were trusts, consumer skills, time and monetary resources, and product characteristics.

### 3.2.4 Decomposed theory of Planned Behavior (DPTB)

Taylor and Todd (1995) introduced the idea that TPB beliefs can be decomposed into multidimensional constructs. They argued that the aggregation of beliefs to create measures of attitude, subjective norm and PBC, proposed by Ajzen and Fishbein, does not identify factors that might predict a particular behavior. Moreover, Taylor and Todd argue that ‘the decomposed TPB model has advantages similar to TAM in that it identifies salient beliefs that may influence IT usage’, (Taylor and Todd, 1995).

According to Taylor and Todd (1995), in the decomposed TPB i.e DTPB attitudinal, normative and control beliefs are decomposed into multidimensional beliefs construct.

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**Fig. 4: The Decomposed Theory of Planned Behavior**

The decomposition of attitudinal beliefs has three characteristics of innovation that influence behavioral intentions: these are based on the diffusion of innovation theory proposed by Rogers (1995): relative advantage, complexity, and compatibility. Relative advantage can be defined as the degree to which an innovation provides benefits which supersede those of its precursor and may incorporate factors such as economic benefits, image enhancement, convenience and satisfaction (Rogers, 1995). Considering that PU in TAM is ‘the degree to which a person believes that using a particular system would enhance his or her job performance’ (Davis, 1989). Taylor and Todd, (1995) suggest that PU, as defined in TAM is equivalent to Roger’s relative advantage, since both constructs refer to a relative improvement in performance and their measures have been operationalized in terms of their relative impact on performance. According to Rogers (1995), complexity represents the degree to which an innovation is perceived to be difficult to understand, learn or operate. Taylor and Todd (1995) suggested that PEOU (the degree to which a person believes that using a particular system would be free of effort) is analogous to Roger’s complexity construct, although in an opposite way. Compatibility refers to the degree to which the innovation fits with the potential adopter’s existing values, previous experiences, and current needs (Rogers, 1995).

Previous studies have suggested the decomposition of subjective norm into two dimensions: interpersonal influence and external influence (Bhattacherjee, 2000; Lin, 2007). Interpersonal influence refers to word-of-mouth influence by friends, colleagues, while external influence is related to mass media reports, expert’s opinion and other non-personal information.

Ajzen (1991) decomposed the PBC component into two dimensions: self-efficacy and facilitating conditions. The dimension of self-efficacy is defined as an individual’s perception of his or her individual capabilities; in the context of online shopping, it refers to the consumer’s self-assessment of his or her capabilities to shop online. The second dimension, facilitating conditions, is concerned with external resource constraints that may influence on engaging a particular behavior, such as time, money and technology, in the context of online shopping the issue of technology constraint is related to the availability of supporting internet equipment (Ajzen 1991; Ajzen, 2002; Lin, 2007).

DTPB has been successfully applied as a research model in online shopping to predict purchasing behavior, repurchase intention and as a model to understand the relation of two behaviors such as getting information and actual online purchasing (Lin, 2007; Pavlou and Fygenson, 2006).

3.2.5 Online Shopping Acceptance Model

Zhou, Dai, and Zhang (2007) developed a reference model called Online Shopping Acceptance Model (OSAM) by synthesizing the identified factors and representing a holistic view of the antecedents of consumer acceptance of online shopping. OSAM extends TAM by taking specific characteristics of online shopping environment into considerations.

Zhou et al. (2007) observed that TAM does not capture the characteristics that are specific to online shopping. For example, the ultimate goal of an online shopping environment is to entice consumers to shop online, not to just be a generic information system. Thus, they incorporated consumer factors form traditional retailing and marketing theories to develop the OSAM model. In addition, they argued that those factors inherited from TAM needs to be re-examined in the context of online shopping.
OSAM tries to predict and explain consumers’ acceptance of online shopping by extending the belief-attitude-intention-behavior relationship in TAM from the following perspectives:

- Perceived usefulness was replaced by perceived outcome to cover both potential benefits and risks of online shopping.
- Three new factors were added as antecedents of online shopping intention. Two of them, namely shopping orientation and shopping motivation are identified from traditional retailing and marketing literature, and the third one, online experience, is derived from the results of empirical studies.
- Satisfaction was a new mediating factor between behavior and shopping intention to account for repeated online shopping.
- Consumer demographics, internet and online shopping experience, and normative belief and their direct or indirect effects on online shopping intention are incorporated.

In the figure below, dotted lines denote causality relationships that have received mixed findings in existing studies.

![Online Shopping Acceptance Model (OSAM)](image-url)

Fig1. Online Shopping Acceptance Model (OSAM) (Source Zhou et al., 2007)

The above extensions and changes are described as:

- **Perceived Outcome**: In OSAM, perceived outcome refers to the perception of possible outcomes (positive or negative) of certain behavior. It can also be considered as a cognitive behavioral belief similar to ‘the subjective probability that the behavior will produce a given outcome’. Based on TPB, an individual chooses online shopping indirectly based on the probability that it will produce a given outcome.
- **Shopping orientation**: Shopping orientation is a new construct in OSAM, is a specific dimension of consumer lifestyles, is influenced by consumer’s normative beliefs or recommendations from others. In addition, consumer gender has an impact on shopping orientation.
- **Online Experience**: Online experience is unique in that it is formed during the navigation of online shopping sites rather than before or after shopping. It was reported that the number of aborted online transactions amounts to nearly four times as many as the number of completed transactions. Online experience and flow play an important role in the online
navigation process and help determine whether a transaction will be finally carried out or not.

- Shopping motivation: In the case of TAM, the pre-assumed usefulness of an information system is to ‘enhance job performance’, which emphasizes the pure utilitarian motivation for using a system. However, shopping, which has both utilitarian and hedonic motivations is different. Shopping motivation has both a direct and an indirect effect on online shopping intention through online experience, and affect in particular. Internet experience influences consumer’s motivations for online shopping.

- Satisfaction: Satisfaction is user’s general feelings about past online shopping experience. It is a stronger predictor of continuance intention that perceived usefulness because the effect of the latter decreases over time. Satisfaction is primarily predicted by the consumer’s confirmation of expectations based on experiences and secondarily by the perceived usefulness from the initial use of an information system. Satisfaction is incorporated into OSAM as an extension to address the long –term continuance of online shopping.

- Consumer Demographics: Consumer demographics can affect online shopping intention both directly and indirectly through the aforementioned factors (i.e. Perceived outcomes, shopping orientations, and shopping motivations). However, the findings on the direct effects of age, education, and internet experience on consumer’s intention to shop online are mixed. Since the population of online consumers and the pervasiveness of e-commerce have increased dramatically in the 21st century, the effects of demographic factors may require re-examination.

3.3 Some other significant Factors

3.3.1 Trust and Risk Perceptions

Trust is a central element in exchange relationships that are characterized by uncertainty and vulnerability. The importance of trust increase in the online context because perceptions of uncertainty may be especially significant in an e-commerce environment, where certain cues that evoke trust cannot be fully assessed (e.g. Product characteristics, physical store, sales person). Several studies have shown significant effects of trust on online shopping intention, Suh, and Han (2003); Chen and Tan, 2004; Ling et al. 2010)

Uncertainties related to online transactions create different risks. Pavlou (2003) distinguished economic risks (financial loss), seller performance risks (regarding transaction fulfillment), privacy risks (illegal disclosure of personal information), and security risks (theft of credit card information). Bhatnagar et al. (2000) investigated how risk affects online shopping, the study differentiated two types of risk: product category risk, which is associated with the product itself, and financial risk, which is associated with the security concerning credit card information over the internet. The result showed that as consumers become more knowledgeable, their perceptions of product and financial risks decrease.

Several studies incorporated both perceived risk and trust in their research model, their findings support the significance of both constructs, however, trust shows stronger significance in influencing the attitude and purchase intention (Jarvenpaa et al. 2000, Pavlou, 2003)
3.3.2 Product Types and Purchase Intention

Online shopping for a product or service incorporate different considerations, as consumers may engage in different purchasing decision processes in different product categories (Lowengart and Tractinsky, 2001).

Several studies have explored the influence of a product type upon online behavior and found that consumers prefer to use the internet to buy, search product rather than experience products (Kargaonkar et al, 2006). Vijayasarathy (2002) suggested that tangibility of the product has a significant effect on intention to shop online but cost does not have an effect. Ian and Sui Meng (2000) found that product type influences consumer choice between physical and virtual stores, the results suggest that products and services that have a low outlay, are frequently purchased, have an intangible value proposition, and relatively high on differentiation are more likely to be purchased online.

3.3.3 Culture

“Culture is the distinct way of life of a group of people and their complete design for living”. Culture influences the pattern of living, of consumption, of decision-making by individuals. It is a comprehensive concept and includes all those things that influence an individual in his thinking and behavior. Culture provides a framework within which individuals and households build their pattern of living or exhibit their lifestyles.

![Fig. A theoretical model of Culture’s influence on Behavior](source)


3.3.4 Infrastructure and Service variable

One of the challenges for e-commerce adoption in developing countries like India is the lack of telecommunication infrastructure (e.g. Low computer usage and internet penetration along with the lack of qualified staff to develop and support e-commerce sites) (Bingi et al. 2000). The
concerns associated with delivery of the product ordered, such as delayed delivery, not receiving, receiving in bad condition etc. is mostly for unreliable delivery agencies. The ease of returning products once purchased is also a concern to the consumers (Teo, 2002).

3.4 New Product Adoption Process

It is often assumed that the consumer moves through five stages in arriving at a decision to adopt or reject a new product: (i) awareness (ii) interest (iii) evaluation (iv) trial and (v) adoption. The assumption underlying the adoption process is that consumers engages in an extensive information search.

1. Awareness: Consumer is first exposed to the product innovation
2. Interest: Consumer is interested in the product and searches for additional information
3. Evaluation: Consumer decides whether or not to believe that this product or service will satisfy the need, a kind of ‘mental trial’
4. The Trial: Consumer uses the product on a limited basis
5. Adoption (or rejection): If the trial is favorable, the consumer decides to use the product on a fuller rather than a limited basis – if unfavorable, the consumer decides to reject it.

Although the traditional adoption process model is insightful in its simplicity, it does not adequately reflect the full complexity of the consumer adoption process. For one, it does not adequately acknowledge that there is quite often a need or problem – recognition stage that consumers face before acquiring an awareness of potential option or solution (A need recognition preceding the awareness stage). Moreover, the adoption process does not adequately provide for the possibility of evaluation and rejection of a new product or service after each stage, especially after the trial (i.e consumer may reject the product after the trial or never use the product on a continuous basis). Finally, it does not explicitly include post adoption or post purchase evaluation, which can lead to a strengthened commitment or to a decision to discontinue the use. The figure below presents an enhanced representation of the adoption process model.

![An enhanced Adoption Process Model](Source: L.G. Schiffman & L.L. Kanuk, Consumer Behavior, 9th Ed.)
4. The suggested Conceptual Model – ‘Online Shopping Adoption Model (OSHAM)’

In this section, a conceptual model based on the new product adoption model and incorporating all significant factors affecting online consumer behavior. The conceptual model draws upon the idea credited to Taylor and Todd (1995) that TPB beliefs can be decomposed into multi-dimensional constructs, additionally trust beliefs are integrated into the model based on the literature review and empirical findings that support trust as a major determinant of consumer online behavior; finally product type and its influence on behavioral intention is incorporated in the analysis.

The figure below illustrates the conceptual model:

OSHAM tries to predict and explain consumer adoption of online shopping by:

- Merging the TAM concept (belief-attitude-intention-behavior) with the new product adoption process to better explain the intricacies of consumer adoption of online shopping.
The new factors were added as antecedents of online shopping intention. Two of them, namely shopping orientation and shopping motivation are identified from traditional retailing and marketing literature, and the third one, online experience, is derived from the results of empirical studies.

Satisfaction was a new mediating factor between behavior and shopping intention to account for repeated online shopping.

Consumer demographics, internet and online shopping experience, and normative belief and their direct or indirect effects on online shopping intention are incorporated.

Attitude Formation: Attitude formation is a combination of awareness and interest for the online shopping. Before even evaluating the merits of the online shopping, the consumer first needs to have awareness and interest on it. The awareness and interest is influenced by factors like demographic characteristics, culture, technological innovativeness, and subjective norms. The factors are being linked based on the literature review done. The subjective norm is again influenced by the interpersonal and external influences as explained earlier.

Online Shopping Intention: This is basically the evaluation stage, and most important from the consumer’s point of view. The consumer evaluates the potential of the online shopping based on the perceived ease of use and perceived usefulness. Besides, trust and risk factors also play a major role as has been explained in the literature above.

Behavior: This phase is basically the trial phase and the most important phase from the retailer’s point of view. As it was already mentioned in the literature review, the number of orders not completed is four times more than successful transactions. It clearly says that there is an issue with the behavioral stage. Especially in India, where people lack self-efficacy.

Experience: Depending on the user behavioral response to the trial phase, the user is likely to accept or reject the product. This experience talks about a holistic experience in terms of using the online shopping, including internet connection speed, website user interface, user friendliness and so on. Thus, the retailer needs to understand the fact that it’s an overall experience of the online shopping and being good in only one factor may not result in overall satisfaction.

Continuation: The stage when the consumer finds his experience satisfactory and decides to adopt the product or finally become a regular user of the online shopping.

References


