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## A Multi-Stage Model of Adoption of Online Buying in India

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### ABSTRACT

An understanding of adoption of online buying is important in order to develop the right strategies to promote ecommerce in emerging markets. The article reviews various models of adoption in the Internet and technology areas and presents a multi-stage model of adoption of online buying. The model was tested with an empirical study which supports the stages of the model proposed. Further, the model explains certain situations in which an Internet user may skip a stage in the adoption process. The skipping of a stage is also supported by the findings. The article also explores various antecedents, motivating factors, and demographic characteristics which propel an Internet user to move from one stage to the next in the adoption process. The findings confirm that trust plays an important role in one of the stages of the adoption process. Further, online buyers were found to be more affluent than offline buyers.

### KEYWORDS

Adoption process; online buying; information seeking; information sharing; stage modeling; Internet user

### Introduction

Research into adoption of innovations has dealt with two key aspects: adoption process and innovativeness. For the adoption process, Rogers' (1959) model is the earliest and the most well-known, followed by other models. On the determinants of innovativeness, there has been considerably more research.

In the area of adoption of the Internet and its innovativeness, a lot of work has been done, especially in the last decade, as Internet and online buying have been growing at a phenomenal pace (Kaplan & Haenlein, 2010; Wei, Frankwick, Gao, & Zhou, 2011). While a large part of the work on Internet adoption relates to the factors influencing Internet adoption, a few researchers have advanced models of the adoption process itself. In emerging markets, where online buying is in its infancy or in an early growth stage, it is important to study the process of adoption of online buying, as one can use the understanding to increase the pace of adoption of online buying and ecommerce in such markets. It is in this respect that the study of the adoption process model of online buying becomes important.

A review of the models of adoption in the Internet and online buying areas indicates that these may be grouped broadly into two types. One relates to factors that influence adoption, and the other tries to conceptualize the stages an individual goes through in the process of adoption. Models that belong to the first type include Davis's Technology Acceptance Model (TAM) (Davis, 1985), the UTAUT model of Venkatesh, Morris, Gordon, Davis, and Fred (2003), and several extensions of the model by a number of researchers (Lin & Anol, 2008; Sykes, Venkatesh, & Gosain, 2009; Venkatesh, Thong, & Xu, 2012; Wang, Wu, & Wang, 2009). Models that belong to the second type include Nolan's Stage Model (Gibson & Nolan, 1974; Nolan, 1973, 1979), which outlines the various stages an organization goes through while adopting information technology, and a model of adoption by Roy and Ghose (2006), who postulated that online buying is a two-stage behavioral transition process. In Roy and Ghose's (2006) model, the first stage involves the transition of an individual from Internet nonuser to Internet user and, in the second, from Internet user to online buyer. Here, the online buying is conceptualized as a

single-stage adoption process from the time an individual becomes an Internet user until he becomes an online buyer.

Our article deals with the second kind of adoption process models, which are concerned with the stages an individual goes through in the process of adoption. This is particularly useful in emerging markets, and a thorough understanding of the factors which play a role in propelling an individual to move from one stage to the next helps those in ecommerce industry to increase the pace of adoption.

The objective of our article is to conceptualize and empirically test a model of adoption an individual goes through from becoming an Internet user to online buyer and beyond. In this article, we conceptualize a multi-stage model of adoption with Roy and Ghose's (2006) model as a starting point. Theirs is a two-stage model in which an individual becomes an Internet user in the first stage and then becomes an online buyer in the second stage. An enormous volume of research has been done in the last decade following Roy and Ghose's (2006) model, and the new research findings suggest that individuals go through more than just one stage while moving from an Internet user to an online buyer. More specifically, we postulate that the model of Internet adoption of online buying by Roy and Ghose (2006) is not a single-stage process but a multi-stage process. We develop a conceptual framework for the model, elaborate the various stages of the model, and explore the factors that propel an individual to move from one stage to the next in the adoption process. A study has been conducted to test and validate our model.

This article is organized as follows. First, we review the literature on models of adoption process in the Internet and information technology field. Second, we provide a conceptual framework for the multi-stage adoption process and suggest the factors and innovative characteristics that propel an individual to move forward from one stage to the next. Third, we conduct an empirical study and provide our findings. Finally, we suggest research and managerial implications of the study findings.

## Literature review

We confine our review of the literature on adoption process models to those related to Internet and information technology. In this area, there has been a lot of work done and several models have been postulated.

As mentioned earlier, these models of adoption may be grouped broadly into two types. One relates to factors that influence adoption, and the other tries to conceptualize the stages an individual goes through in the process of adoption.

There are several models of the first kind that deal with factors influencing adoption. One of the earlier models in this area is Davis's (1985) Technology Acceptance Model (TAM). This model studies the factors that influence the adoption. The three factors that influence adoption, according to the TAM model are "perceived ease of use," "perceived usefulness," and "attitude towards using the system." Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) model also falls into this group. The UTAUT model tries to explain an individual's intention to adopt and his actual behavior using around 50 independent variables under four basic constructs: (a) performance expectancy; (b) effort expectancy; (c) social influence; and (d) facilitating condition. There have been a number of extensions to this model by various authors (Lin & Anol, 2008; Sykes et al., 2009; Venkatesh, Thong, & Xu, 2012; Wang et al., 2009). In Table 1, we provide a summary of these models which are based on factors which influence adoption. The second kind of adoption models are concerned with stages of adoption, like the one by Rogers (1959, 1995), and these are fewer in number. One of the earlier models of this kind is Nolan's model (Nolan, 1973; Gibson & Nolan, 1974; Nolan, 1979). It conceptualizes adoption of information technology as a multi-stage process, comprising four stages: Initiation, Contagion, Control, and Integration. Nolan's model relates to adoption by organizations, while the focus of our article is adoption by individuals.

Roy and Ghose (2006) have also proposed a stage model of adoption. As mentioned earlier, they postulated that Internet adoption is a two-stage transition process. In the first stage, an individual makes a transition from being an "Internet nonuser" to becoming an "Internet user." In this stage, the "product of adoption" is the Internet. In the second stage, the individual makes a second transition from an Internet user to online buyer. In this stage, the product of adoption is online buying. In Table 1, we provide a summary of these models, which are stage models of adoption.

While researchers have postulated stage models for "path-to-purchase" (Shankar, Kleijnen, Ramanathan, Rizley, Holland, & Morrissey, 2016) which deal with

**Table 1.** Summary of models of adoption of Internet and information technology by types of models in chronological order.

Paper	Methodology used/ Type of paper	Major findings
<b>A. Models based on determinants/factors influencing adoption</b>		
Davis (1985)	Theoretical model of adoption of information technologies, empirically validated through a study among companies	Davis (1985) developed the Technology Acceptance Model (TAM model), which deals with the prediction of the acceptability of an information system, based on Theory of Reasoned Action. This model suggests that the acceptability of an information system is determined by two main factors: perceived usefulness and perceived ease of use.
Venkatesh et al. (2003)	Theoretical model of adoption of information system, empirically validated in a longitudinal study	The paper reviewed eight models of adoption which are based on the theory of reasoned action, the technology acceptance model, a motivational model, the theory of planned behavior, a model combining the technology acceptance model and the theory of planned behavior, a model of PC utilization, innovation diffusion theory, and social cognitive theory. Subsequently, the authors formulate a unified theory (UTAUT model) which integrates elements across the eight models, and empirically validates the unified model.
Lin & Anol (2008)	This is an extension of the UTAUT model, and empirically validated	This is an extended model of UTAUT, with the inclusion of influence of online social support on network information technology usage. The empirical study found that social influence plays an important role in affecting online social support.
Sykes et al. (2009)	This is an extension of the UTAUT model, and empirically validated	The paper proposed an extension of the UTAUT model, with the inclusion of “social network” perspective added as a further explanatory variable. The model incorporates an individual’s embeddedness in the social network, network density, and network centrality in the UTAUT model. The model was validated in a study among employees of a company over a three-month period.
Wang et al. (2009)	This is an extension of the UTAUT model, and empirically validated	The paper proposed an extension of the UTAUT model, adding two constructs (perceived playfulness and self-management of learning) to the UTAUT in the acceptance of m-learning. The study found that performance expectancy, effort expectancy, social influence, perceived playfulness, and self-management of learning were all significant determinants of behavioral intention to use m-learning. It was also found that age differences moderate the effects of effort expectancy and social influence on m-learning use intention and that gender differences moderate the effects of social influence and self-management of learning on m-learning use intention.
Venkatesh et al. (2012)	This is an extension of the UTAUT model, and empirically validated	The modified version of the UTAUT model, named UTAUT2, incorporates three constructs into the original UTAUT model: hedonic motivation, price value, and habit. Individual differences—namely, age, gender, and experience—are hypothesized to moderate the effects of these constructs on behavioral intention and technology use. Findings from a two-stage online survey supported the model. Compared to UTAUT, the extensions proposed in UTAUT2 produced a substantial improvement in the variance explained in behavioral intention and technology use.
<b>B. Models based on stages of adoption</b>		
Rogers (1959)	Theoretical model	This is the classical adoption model of innovations having five stages of adoption; viz., awareness, interest, evaluation, trial, and adoption.
Nolan (1973)	Theoretical model of adoption, empirically validated	The model conceptualizes adoption of information technology as a multi-stage process, comprising four stages: Initiation, Contagion, Control, and Integration. The model relates to adoption of computer systems by organizations.
Gibson & Nolan (1974)	Theoretical model	The model suggests four stages to explain EDP growth in business organizations: Initiation, Expansion, Formalization, and Maturity.
Nolan (1979)	Theoretical model	In this revised model, Nolan proposed six stages of data processing growth in organizations: Initiation, Contagion, Control, Integration, Data Administration, and Maturity.
Roy & Ghose (2006)	Theoretical model of adoption, empirically validated	The model conceptualizes Internet adoption as a two-stage transition process. In the first stage, an individual makes a transition from being an Internet nonuser to becoming an Internet user. In this stage, the product of adoption is the Internet. In the second stage, the individual makes a second transition from an Internet user to online buyer. The model was empirically validated.

purchase of a product online, there is no model which explains the adoption of online buying, which deals with buying a product online *for the first time*. The first online purchase of a product or service represents the adoption of the innovation, “online buying.” Hence, this is important from a theoretical perspective. We expect the proposed model to answer a few key questions in this article. What are the various stages an individual goes through before he becomes an

online buyer? What are the cognitive and behavioral changes involved in each of these stages? What are the motivating factors that propel an individual to move from one stage to the next in the adoption process? These are important questions to be answered in order to not only understand the stages, but also how a marketer can influence Internet users to move through the various stages and facilitate adoption faster. It is in this respect that this article proposes a

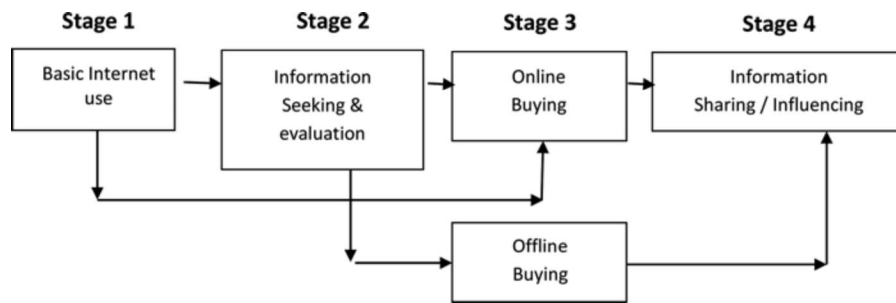


Figure 1. Model of Internet adoption process for online buying.

multi-stage adoption process model in the area of online buying.

### Multi-stage adoption of online buying process: Proposed model

In this article, we propose a model of adoption process which an Internet user goes through in becoming an online buyer. Here, the model is about adoption of the *innovation*, ‘online buying’ by an individual. It concerns the processes and stages he goes through before he completes his *first online transaction* and becomes an online buyer. Until then, he had been buying products and services off-line. Hence, the model we propose in this article is a model of adoption of online buying and not a model of path-to-purchase of a product or service online, which concerns any online purchase.

We focus, in our model, on the stages and processes an individual goes through in adopting online buying for the *first time*. The first online purchase transaction signifies an important stage, which is a behavioral transition. While Roy and Ghose (2006) postulated this to be a single stage, we argue that it is a multi-stage process. The extant research suggests that an individual, after becoming an Internet user, does not immediately start buying products or services online (Chatterjee, 2011). When these non-users become users of the Internet, they spend a considerable period of time in familiarizing themselves with various aspects of the Internet and various features and applications like e-mail, search functions, Facebook, and so on.

It is only after the initial process of familiarization, which forms the first stage of adoption in our model (Early Internet Use), that the Internet user starts to look at other features like online buying. However, before he makes an online purchase for the first time, he needs to evaluate between offline buying and online buying and convince himself that he is making the right decision.

He gathers information and evaluates a number of options in order to avoid various uncertainties accompanying online buying as compared to offline buying with which he is familiar (Al-Gahtani, 2011; Alshibly, 2015; Kim & Forsythe, 2010). This information search and evaluation of options constitutes the second stage in our model. The actual act of purchasing, or the first physical online transaction itself, constitutes the third stage. This key stage, in which the individual makes a behavioral change from offline to online buying, involves not just the physical transaction, but it also involves placing trust in online shopping sites and in the vendors from whom he decides to buy online.

We further postulate that the process of adoption does not end with the online purchase. The individual, after becoming an online buyer, continues with other purchases online over a period of time. He continues to browse the information sites which helped him evaluate products and services in the second stage for subsequent online purchases. Over a period of time, he not only gets familiar with these information sites, but he also gains confidence in sharing his own experience on these sites. This *sharing of information* constitutes the fourth and final stage of our model of adoption of online buying. The proposed model of adoption of online buying is presented in Figure 1. The proposed model also allows skipping of the second and third stages, under certain conditions discussed later in the article.

Before we elaborate the proposed model and provide theoretical support from the various stages of the model, we give a short summary of the model as follows:

Stage 1 is the “Basic use of Internet,” which occurs immediately after an individual becomes an Internet user. This is mainly the early stage of Internet usage. Stage 2 is one where the Internet user gathers information and evaluates options which help him decide



whether to become an *online buyer*. Stage 3 is the transaction stage, wherein the Internet user actually carries out the online buying of the product or service for the first time and becomes an online buyer. In stage 4, the Internet user shares his product experience with others over the Internet.

Skipping of stages has been proposed in our model. It is likely that the “Information Seeking & Evaluation” stage may be skipped in some cases. For example, in a developed country like the US or UK, an Internet user may buy a product online, without going through any information seeking, as online buying may be considered a normal way of buying a product. Another stage that may be skipped in the model is the “online buying” stage. This may happen due to factors like lack of trust in online sites or vendors. In such cases, an individual may buy a product offline, but shares his product experience online later. It is to be noted that, in such cases, the individual does not become an adopter of online buying. We propose the skipping of this stage in the model only to present a comprehensive set of probabilities.

We propose the following hypotheses:

H1a: The adoption of the online buying process consists of four stages, in which an Internet user engages in use of basic applications of the Internet in stage 1, information seeking and evaluation in stage 2, online buying in stage 3, and information sharing in stage 4.

H1b: Some individuals may skip the “information seeking & evaluation” stage and move to the online buying stage.

H1c: Some individuals may skip the online buying stage and move to the information sharing stage.

### **Elaboration of the model and theoretical support**

#### **Stage 1: Basic use of Internet, basic applications: What characterizes the stage?**

The first stage is characterized by the period that occurs immediately after an individual becomes an adopter of the Internet. In this period, his activities usually cover basic functions of the Internet, including e-mails, search, Facebook, and similar popular sites.

This stage is essentially a stage of initial *exploration of the Internet* without any goal-directed behavior. The Internet offers a wide variety of options like e-mail, search, gaming, entertainment, socializing, and so on. Some individuals who explore the Internet more often may quickly move to using various applications in the

early stage itself. These individuals also chance upon product information that appears in sites like Facebook (Chatterjee, 2011). This would still form “early Internet use,” as this is more of a chance discovery of product information and not a focused process which they engage in at this stage.

#### **Stage 2: Information seeking and evaluation stage: What characterizes the stage and what propels an individual to go through to the “information seeking” stage?**

What characterizes the “Information seeking stage”? In the second stage, the Internet user is at the threshold of becoming an online buyer for the first time. He needs information to *evaluate online buying vs. offline buying* and convince himself that online buying offers greater benefits as compared to offline buying. Hence, he specifically seeks information to that end. This is a *goal-directed behavior* in that he needs the information in order to make the decision whether to buy online or offline. Some of the early Internet users, in the first stage, may also receive information, but this is passive, in that they come across the information and are not specifically looking for it (Chatterjee, 2011; Mathwick, 2002; Schlosser, 2005). In the second stage, the user needs to collect information in order to evaluate between online buying and offline buying and so will proceed to seek the information. The decision to buy online creates an anxiety in his mind (Celik, 2011) and he perceives certain risks and uncertainties associated with it. Hence, he tries to gather information in order to lower the uncertainties that are associated with online buying (Yildirim, Gal-Or, & Geylani, 2013). This need to reduce risk and uncertainty leading to an information search has also been observed by other researchers (Kim, Mattila, & Baloglu, 2011; Maity, Dass, & Malhotra, 2014; Pornpitakpan, 2004).

*Motivations for seeking information:* At a broader level, the need to reduce anxiety and uncertainty associated with online buying is the key motivation for an information search. At a more specific level, the uncertainty presents in the form of product-level uncertainty, uncertainty relating to price, or other aspects, and these factors lead to an information search.

As for “product-level uncertainty,” Maity et al. (2014) defined it as consumers’ lack of information about available alternatives or fit of products with user needs, and they found that such product uncertainty is one

of the key factors driving an information search. Several dimensions of product-level uncertainty have been studied by various researchers and these studies have confirmed that such uncertainties trigger information seeking by Internet users. The various dimensions of product-level uncertainty covered in past studies include *inability to assess the quality of the product shown online*, which leads the individual to access information about it through online reviews (Li & Hitt, 2008, Shriver, Nair, & Hofstetter, 2013), and peer evaluations based on social networking (Katona, Zubcsek, & Sarvary, 2011). Product-level uncertainty from intangible product attributes has been found to motivate an individual to access product information like expert reviews and consumer testimonials (Moe & Schweidel 2012; Yildirim et al., 2013). Brynjolfsson, Hu, and Smith (2006) found that individuals undertake an information search in order to ensure that the product available meets specific needs.

While the need to reduce product uncertainty is one of the key motivating factors, there are also other factors that lead to information searches by individuals. These factors include the need to find a lower price and saving time (Horrigan, 2008). The overall uncertainty around the online shopping experience also triggers information-seeking behavior (Dellarocas, 2003).

In line with these factors, we state our hypothesis relating to information seeking as follows:

H2: Information seekers seek information relating to product, prices, and brands, more than those who are in the “Early Internet Use” stage.

### **Stage 3: Online buying stage: What characterizes the stage and what propels an individual to move to the stage of online buying?**

*What characterizes the online buying stage:* While the preceding stage of “information seeking & evaluation” provides the conviction to buy a product or service online for the first time, it is in the third stage that the individual makes the *first physical transaction* of online purchase. This constitutes the key behavioral change from being an offline buyer to becoming an online buyer. This first online purchase needs some degree of conviction and trust in the Internet as a medium and in the online outlet as a trustworthy channel to buy from.

*Motivations:* Some of the factors that lead to information seeking among individuals also play a crucial role in converting an individual to an online

buyer. These factors include lower price and finding a product that meets one’s personal needs. Brynjolfsson et al. (2006) and Fagerstrom and Ghinea (2011) found that lower price found in online sites triggers online purchases and this converts an individual to an online buyer. Horrigan (2008) and Ofek, Katona, and Sarvary (2011) found that finding products that match one’s personal needs, including customization of products to suit one’s needs (Gu & Tayi, 2015), triggers online purchase.

Another factor that plays a crucial role in converting an individual to an online buyer is online trust. An Internet user may not make the behavioral transition to becoming an online buyer unless he places trust in the *Internet as a medium* and in the online vendors as *trustworthy sources* to buy from. Wobker, Eberhardt, and Kenning (2015) found that trust reduces complexity in online purchases. Akman and Mishra (2017) also found that trust was one of the key factors that led to online buying. In a cross-national study, Tsai and Zhang (2016) found that perceived trust in a website contributed to online buying among consumers in the US.

The researchers who studied barriers to online buying found lack of trust to be a key barrier (Kaur & Quareshi, 2015). The barriers include online identity theft (Acoca, 2007; Reisig, Pratt, & Holtfreter, 2009), which hinders adoption of online buying.

As trust is an important motivation in the adoption of online buying, we tested two hypotheses relating to “trust,” as follows:

H3a: Online trust is greater among online buyers than offline buyers.

H3b: Online buyers will have a greater trust in the safety of their online identity than offline buyers.

*Demographic/ socio-economic characteristics:* Various authors (Venkatesh & Morris, 2000; Venkatesh et al., 2003) expressed that it is necessary to include socio-economic variables such as gender, age, and income to complete the explanatory capacity of the models analyzed. There has been mixed results in studies that examined the effect of demographic and socio-economic variables on adoption of Internet and online buying. Past studies by Assael (2005), Huang, Shen, Lin, and Chang (2007), and Vrechopoulos, Siomkos, and Doukidis (2001) found age, gender, and income to be positively associated with online buying, while those by Hernandez, Jamenez, and Jose Martin (2011), Khare

(2016), Li, Kuo, and Russell (1999), and Roy and Ghose (2006) did not find any association with online buying. In a recent cross-cultural study, it was found that e-shopping model relationships are moderated by gender (Heinrichs, Al-Aali, Lim, & Lim, 2016). In view of the mixed findings in the past, our hypothesis with respect to demographic variables is as follows:

H4: There will be no difference between online buyers and offline buyers in terms of gender, age, or income.

**Stage 4: Information sharing stage: What characterizes the stage and what propels an individual to move to this stage from the online buying stage?**

*What characterizes the information sharing stage:* In this stage, the individual shares his product experience with others. Product experience thus shared influences other consumers' decisions to buy a product online. A variety of reasons trigger an individual to share his product experience. This is an important stage in the adoption process and information provided in this stage helps those in the second stage, who look for credible product information. Extant research shows that consumers consider information provided by users ("user-generated content") to be more credible as compared to manufacturer-provided content (Foux, 2006; Johnson & Kaye, 2004; Krishnamurthy & Dou, 2008; Mangold & Faulds, 2009; Muñiz & Schau, 2005). Hence, the stage of information sharing is a crucial stage and forms a part of the adoption process, even though the online buying stage technically marks the end of adoption.

*Motivations for sharing information:* A number of researchers have studied the motivations for consumers who share product information. Research on "market mavens," "product experience & complaining behaviour," and "involvement with product and brands" provides understanding of why consumers share information.

Market mavens are defined as "individuals who have information about many kinds of products, places to shop, and other facets of markets, and initiate discussions with consumers and respond to requests from consumers for market information" (Feick & Price, 1987). They diffuse a range of consequential market information and are understood to be market helpers (Price, Feick, & Guskey, 1995). A desire to help others is a prime motivating factor for enacting market mavenism (Stokburger-Sauer, & Hoyer, 2009;

Walsh, Gwinner, & Swanson, 2004). Market mavens share market and product information in order to reduce others' consumption risks (Walsh et al., 2004).

Product experience and complaining behavior also lead an individual to share information on the Internet. "Satisfaction and dissatisfaction with product used," one of the dimensions of product experience, has also been found to be a key trigger for sharing product information in a number of studies (Sweeney, Soutar, & Mazzarol, 2008). Dellarocas and Narayan (2006), who studied movie reviews, found that consumers typically post reviews for either very good or very bad movies. Other researchers also found similar effects in their studies (Bailey, 2005; Dellarocas, Gao, & Narayan, 2010). As for "complaining behavior," some consumers share their product experience with the specific purpose of influencing others' opinion and purchase decisions. Research in the area of complaining behavior shows that consumers who are unhappy with their product experience share their unhappiness by giving negative product reviews on various social networking sites (SNSs), (anti) brand communities, review sites, and micro-blogs (Ward & Ostrom, 2006). These consumers post negative word-of-mouth to warn other consumers and to collectively retaliate against a company responsible for a negative consumption experience (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Ward & Ostrom, 2006).

In addition to the previously detailed motivating factors, an individual's involvement with the product and brand also play a role in information sharing (Wolny & Mueller, 2013).

To summarize, market mavenism, complaining behavior, and satisfaction with product used are the key motivations for consumers to share their product experience. In this study, we chose to study the motivation relating to product satisfaction. Accordingly, we test the hypothesis:

H5: The valence or degree of satisfaction with the product bought online has no impact on information sharing by online buyers.

*Characteristics of information providers:* Several researchers have studied the association between demographic variables and information sharing. Morrison, Cheong, and McMillan (2013) found, in their study, that more men than women share product information. In another study, by Rialti, Zollo, Pellegrini,



and Ciappei (2017), men tended to share product information more. Morrison et al. (2013) found that younger people shared information more than older people. However, they did not find any difference in income between those who share information and others.

This leads us to the next hypothesis:

H6a: “Information providers” are more likely to be men and younger as compared to “online buyers” and “information receivers.”

H6b: There will be no difference in income between “information providers” and the other groups.

### ***Skipping of stages while going through adoption***

The model of adoption proposed in Figure 1 indicates that Internet users may skip some stages in the process of adoption of online buying. In our model, an Internet user can skip the “information seeking and evaluation” stage and/or the online buying stage.

*Skipping the stage of information seeking & evaluation:* The stage of information seeking is a very important stage, as it is in this stage that the user makes the key decision to buy a product online for the first time. However, the likelihood of an Internet user skipping this crucial stage cannot be ruled out, particularly in developed markets where online buying is a normal activity. This can occur when the Internet user does not even give much thought to the online transaction, as it is something very common or may even be the only option. There will also be other cases where some Internet users may skip this stage when the perceived risk of online buying may be negligible and/or the effort involved in seeking information may not be commensurate with the benefits derived (Maity et al., 2014). This direct movement to online buying after skipping the information-seeking stage could also be a forced occurrence directed by some external factors. To give an example, in India, after the government announced in November 2016 the demonetization of Rs.500 and Rs.1,000 denomination currency notes that constituted over 75% of the notes in circulation, an extensive cash-crunch followed in the economy. Many people moved to online buying from e-tailers, in addition to the use of credit card and banking transactions.

*Skipping the online buying stage and moving to the information seeking stage:* In emerging markets like India, where online buying is still evolving, it is likely

that many Internet users would be averse to using it owing to lack of trust (Kaur & Quareshi, 2015). Hence, some Internet users may choose to buy products and services offline. However, these Internet users may be very active over the Internet and be very familiar with various product reviews and other sites which evaluate products, some of which they may have used. After buying a product or service offline, these Internet users may decide to share their product experience online. In essence, these Internet users skip the “online buying stage” and move to the last stage of “information sharing.” It is to be noted that, in such cases, the individual does not become an adopter of online buying. We include the skipping of this stage in the model only to present a comprehensive set of probabilities of skipping of stages.

### ***The study***

For the study, a sample of Internet users was drawn from a national panel of Internet users in India. The panel, known as the “Web Audience Measurement” (WAM) Panel, measures the Internet usage behavior of Internet users who access the Internet at least once every month or more often. The WAM panel is a very large panel consisting of over 100,000 members recruited mainly from the top eight metropolitan cities of India. The panel is representative of Internet users in these cities in terms of gender (male and female), various age groups (15–24 years, 25–34 years, and 35 years and above), and various socio-economic groups (SEC A, SEC B, SEC C, and SEC D), and they access the Internet once a month or more often.

For our study, we drew a sample of Internet users who accessed the Internet once every day or once every week. These Internet users were selected at random and we sent an e-mail requesting them to participate in the study. The participation was incentivized with “shop vouchers” that could be exchanged for a variety of products. A total of 416 Internet users from the panel responded to the study. The profile of the participants who responded to the study shows that they are more frequent users of the Internet as compared to the general population of Internet users in India. A total of 84% of the respondents access the Internet every day and the remaining 16% at least once a week. The participants are also more experienced Internet users, with 59% of them using the Internet for five years or for a longer period.

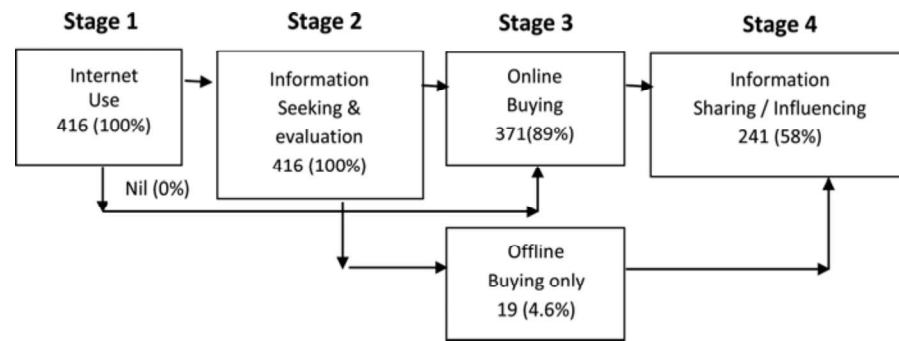


Figure 2. Model of Internet adoption process for online buying—findings.

## Results

### Confirmation of the four-stage adoption process: (H1)

The findings of the study, shown in Figure 2, confirm the four-stage adoption model proposed in this article. The key findings with respect to our hypotheses H1a, H1b, and H1c may be summarized as follows:

- The four-stage adoption model of online buying is supported by the study findings. Of the 416 Internet users in the sample, all 416 crossed the first two stages of adoption; viz., “early Internet use” and “information seeking & evaluation.” Further, 317 Internet users crossed the third stage of “online buying” and 241 Internet users crossed the fourth stage of “information sharing.” Accordingly, our hypothesis, H1a, is supported by the study findings.
- In our model, we postulated skipping of stages by the Internet users. We found partial support for this hypothesis from the study findings. It was hypothesized that some Internet users may skip the “information seeking & evaluation” stage and move directly to the “online buying” stage (H1b). The findings show that all 371 online buyers had gone through the second stage of “information seeking & evaluation” and none skipped it.
- However, we found support for our hypothesis on skipping a stage with respect to skipping of the “online buying” stage. The findings give support to the hypothesis (H1c) and we find a significant number (19 of them) of Internet users skipping the online buying stage, but sharing their product experience online, representing 4.6% of the entire sample.

### Findings relating to motivations, antecedents and characteristics of consumers in various stages

**Hypothesis relating to the information seeking stage:** The hypothesis (H2) states that information seekers seek information relating to product specifications, prices, and brands, more than those who are in the Early Internet Use stage. The hypothesis was to be tested using a T-Test comparing the two groups on information seeking. However, this could not be tested, as all of the respondents in the study had crossed the Early Internet Use stage and had become information seekers. The findings among the information seekers indicate that there is a considerable degree of information seeking, which includes information on product specifications, online prices, products, and brands, as shown in Table 2.

### Hypothesis relating to online buying stage

We expected online buyers to have higher online trust, as previously found in a number of studies (Koufaris, 2002; Van der Heijden, Verhagen, & Creemers, 2003). The hypothesis (H3a) that online trust is greater among online buyers than offline buyers was tested with a T-test using two statements, of which the first one, “I trust online sites for buying products online,” was supported by the findings, while the second statement, “Online shopping sites do not cheat people,” was not supported.

Table 2. Type of information sought by information seekers.

Statement	Information seekers (%)
<i>Base: Number of respondents (416)</i>	
– to understand specifications	64
– to get information about the product	82
– to compare brands	69
– to get online prices	73
– to read reviews given by others	52
– to find out shops where I can buy it	38

**Table 3.** Influence of trust and socio-economic variables on online buying.

	Statement	Online Buyers (% Agree)	Offline Buyers (% Agree)
	<i>Base: Number of respondents</i>	(371)	(45)
	<b>Online Trust</b>		
H3a	— I trust online for buying products	71 <sup>(**)</sup>	44
	— Online shopping sites do not cheat people	46	36
H3b	— I trust online for safekeeping of my personal information	56	51
	<b>Demographic variables</b>		
H4	— Male	86	80
	— Mean age	28.8	26.3
	— Monthly household income in US dollars	883 <sup>(**)</sup>	258

Note: T-Test—

(\*\*) Significant at 1%.

We also tested the related hypothesis (H3b) that online buyers will have greater trust in safety of their online identity. This hypothesis, however, was not supported by the study findings. On the whole, there is a partial support for the hypothesis that online buyers will have higher online trust (see Table 3).

On the differences in demographic characteristics between online buyers and offline buyers, the study findings show that there is no significant difference between online and offline buyers in terms of gender or age. However, when it comes to income, the findings showed that online buyers are more affluent, with higher income than offline buyers. The findings provide partial support for H4 (see Table 3).

#### **Hypothesis relating to information sharing stage**

We hypothesized that the valence or the degree of satisfaction with the product bought online will not have an impact on information sharing by online buyers (H5). The hypothesis was tested with a T-test and the findings of the study support this hypothesis, as seen in Table 4. On the differences in demographic characteristics between online buyers who share product information and those online buyers who did not, we did not find any difference in age, gender, or income. Hence, our hypothesis H6a relating to age and gender was not

supported, while H6b relating to income was supported by the study.

#### **Implications of the study**

*Implications for further research:* This article discusses the model of adoption for the online buying process only. It needs to be noted that online buying is not the only innovation an individual can adopt. There are several other innovations which Internet users can adopt, including adoption of online gaming, Internet banking, e-publishing, and so on. The process of adoption of these innovations is likely to be quite different from that found in this study for online buying. For example, the process of adoption of online gaming may not have any “information seeking” stage, but there may be some “learning” stage involving learning of the new online game. There is a need for further research on these other adoption processes and these will benefit gaming developers, e-publishers, and so on.

*Adoption of online buying in emerging markets:* While in developed markets online buying is widely prevalent, in emerging markets online buying is still in its infancy. Key online players like Amazon and other companies selling products online have a large stake in accelerating the adoption of online buying in such

**Table 4.** Effect of product experience and demographic variables on information sharing.

	Statement	Online buyers who shared information (%)	Online buyers who did not share information (%)
	<i>Base: Number of respondents</i>	(241)	(130)
	<b>Product Experience</b>		
H5	— Satisfied with product used	88	92
	— Dissatisfied with product used	3	1
	— Extremely satisfied or extremely dissatisfied with product used	64	62
	<b>Gender &amp; Age</b>		
H6	— Male	88	82
	— Mean age	29.5	27.4
	— Monthly household income in US dollars	917	883

Note: T-Test—Not Significant.

emerging markets. This study has confirmed the four key stages of the adoption process and online players can devise strategies around each stage of adoption in order to move the consumer faster towards adoption of online buying.

In order to hasten the movement through the second stage of “information seeking,” the strategies that can be adopted by key market players include making information seeking easier and making the information relevant so that the search effort is minimized. Both these objectives can be achieved by creating and managing information portals on various product categories and popularizing them so that consumers can not only seek information from these sites but also, to post their experience in them. Some of the product information sites available today have information but not all of them have relevant information or, just the right information. Online players should ensure that the information available in these websites have concise information and those that help with decision making easier.

In order to hasten the movement through the third stage of “online buying,” the strategies to be adopted can include providing trust and offering risk-reduction solutions to consumers. The e-commerce industry as a whole has a role to play, especially in emerging markets, by running communication campaigns providing this trust. It should also ensure that all of the e-commerce players build adequate security so that the online identities of consumers are safe.

Another area that is worth exploring is how information sharing can be used to promote online buying adoption. Currently, there is very little effort to promote such online information sharing. Most efforts in this area are voluntary, barring a few portals which are managed mainly by manufacturers and brand owners. Online portals which do not have much stake in any specific brands or in any manufacturers’ products should create opportunities for consumers to share their product experience online. This will help other consumers to access such information, which will go a long way in converting Internet users to online buyers. This will also help in reducing perceived risk; seeing larger numbers of other consumers engaging in online buying may lead to faster adoption of online buying.

**Social implication:** The article has social implications in emerging markets like India, where most people transact in cash rather than through banking

transactions, much less through e-commerce. Understanding the process helps e-commerce players to push online buying at the right stages to increase the pace of adoption not only for their own benefit, but also for the benefit of the country. A widespread adoption of Internet and online buying/e-commerce will make transactions more transparent and ensure that social benefits reach the masses in an open manner.

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