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### Paper:

Kapoor, K., Dwivedi, Y. & Williams, M. (2015). Conceptualising the role of innovation-attributes for examining consumer adoption of entertainment-related innovations. *International Journal of Indian Culture and Business Management*, 10(3), 367

<http://dx.doi.org/10.1504/IJICBM.2015.068500>

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**CONCEPTUALIZING THE ROLE OF INNOVATION-ATTRIBUTES FOR  
EXAMINING CONSUMER ADOPTION OF ENTERTAINMENT RELATED  
INNOVATIONS IN INDIAN CONTEXT**

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## Abstract

Several enhancements and new features have been introduced in the television entertainment industry to offer the viewers with a high quality viewing experience when it comes to contemporary home entertainment services. *Tata SKY's direct-to-home (DTH) service* is one such service that has been recently introduced in the Indian context. For achieving an increased adoption rate of this innovation, it is important to gain an understanding of the behaviour of different factors that influence the potential consumers to form positive intentions about such innovations, in turn attracting them to accept and use of such innovations. This paper, thus aims at developing a theory-based conceptual framework for examining the consumer adoption of entertainment related innovations using the innovation-attributes that have been acknowledged in the recent literature as having considerable influences on the acceptance of various innovations. Innovation-attributes from Rogers' *diffusion of innovations* theory, Tornatzky and Klein's *meta-analysis*, and Moore and Benbasat's *perceived characteristics of innovating* theory will be used here to develop a conceptual framework suitable for investigating the adoption of entertainment related innovations.

**Keywords** Adoption, Behavioral Intention, Conceptual framework, Innovation-attributes, DTH, Indian context

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## 1. Introduction

Tata Sky's *Direct-To-Home (DTH)* service is India's leading home entertainment service offering its viewers superior DVD picture quality, CD sound quality, and new age interactive services. They offer a wide range of channels and services which can be tailor designed to suit the needs of their different subscribers. Since 2008, Tata sky has been launching newer and better services (surround sound, 1080i resolution, sharper than usual images) to enhance the television viewing experience for its viewers. Amongst its products are *Tata Sky+*, *Tata Sky HD*, *Video on Demand*, and *Multi-TV connection* (TataSKY, 2013).

Upon the purchase of a set top box, the viewers get to choose from a range of base subscription packs, which can then be upgraded with various add-ons. Their interactive services include music, English learning service, mall services for purchasing electronic and household goods and more, cooking, preschoolers, learning for 7-11 year olds, stories, games, sports, religious broadcasts, and access to latest blockbusters. These packs can be recharged – online through credit cards and net banking accounts, voucher recharge through a Tata Sky dealer, using the Tata Sky Helpline, using mobile payments, or by the auto debit facility, whereby, a standing order to debit subscriber's bank account for a fixed amount every month is placed, or by using the cheque payment facility.

As Earp and Ennett (1991) suggest, the conceptual models help summarize and integrate the acquired knowledge for defining concepts, explaining casual linkages, and generating the associated hypotheses, which essentially is conceptualizing the literature on the basis of the existing theoretical foundations (Lucarelli and Brorstrom, 2013). This paper thus proposes a conceptual model for studying the aforementioned innovation in an Indian context. The paper begins with reviewing the literature on innovation-adoption models and the innovation-attributes in current use, for examining varied technological innovations. This will be followed by the theoretical justifications for selecting the chosen set of innovation-attributes for studying entertainment related innovations, accompanied by the formulation of the relevant hypotheses for testing the designed conceptual model. Finally, the paper will culminate with the identification of the implications and suggestions for future research directions.

## 2. Extant Models for Examining Innovation-Adoption

The subject of innovation-adoption research has gained attention across diverse disciplines, for instance – anthropology, communication, geography, early/rural sociology, public health, management, medical sociology, education, marketing, and many others (Rogers, 2003). The increasing level of competition in today's consumer markets has led to the concept of innovations gain increased visibility. The success of any technological innovations is measurable only through an examination and analysis of their acceptance in the respective target markets. The literature houses several such theoretical models that were mostly developed from the psychology and sociology theories (Venkatesh et al., 2003; Venkatesh et al., 2012), such as - the Diffusion of Innovations theory [DOI] (Rogers, 1962), the Theory of Reasoned action [TRA] (Fishbein and Ajzen, 1975), the Theory of Planned Behavior [TPB] (Ajzen, 1985; Ajzen and Fishbein, 1980), the Technology Acceptance Model [TAM] (Davis, 1989), the decomposed Theory of Planned Behavior (Taylor and Todd, 1995), the extended Technology Acceptance Model (Venkatesh and Davis, 2000), and the Unified Theory of Acceptance and Use of Technology [UTAUT] (Venkatesh et al., 2003).

From all of the above mentioned, well recognized, used, and validated models for evaluating innovation-adoption, one model best suiting the current study had to be chosen. According to Rogers (2003), the following five attributes that came to be recognized as the *perceived attributes of innovations* – relative advantage, compatibility, complexity, trialability, and observability were the most essential for examining innovation adoptions. Of all the aforementioned theories Rogers' diffusion of innovations theory is very well established and most used theory in the field of innovations (Tornatzky and Klein, 1982; Greenhalgh et al., 2004; Legare et al., 2008; Hester and Scott, 2008, Kapoor et al., 2013). The *diffusion of innovations* theory is possibly the principal theoretical perspective on technology adoption at both individual and organizational levels, offering a conceptual framework for discussing adoption at a global level (Dillon and Morris, 1996). Also, all of the above listed innovation-adoption models (TAM, TRA, TPB, UTAUT, and their other extended or modified variants of these models) used more or less the similar types of innovation-attributes. Therefore, Rogers' Diffusion of Innovations theory was selected as the base point for this study. In addition Rogers' DOI theory, two other pieces of work that were substantially recognized when it came to the attributes affecting intention and adoption of different innovations were – (a) *meta-analysis* by Tornatzky and Klein (1982), where 30 attributes (five of which were Rogers') were identified; and (b) *perceived characteristics of innovating* theory by Moore and Benbasat (1991), where five attributes (two of which were Rogers') were identified. After Rogers, Tornatzky and Klein's meta-analysis from 1982 was marked as a significant contribution in this field of innovation-diffusion. They examined IT innovations by discussing the use of Rogers' innovation-attributes in the IT world. In addition to Rogers' five attributes, they identified twenty five other innovation-attributes in use then. Since Tornatzky and Klein had picked these innovation-attributes from the publications in the field of innovations, it was clear that these attributes had marked their presence in the innovation literature, and had gained recognition as the innovation-attributes that influenced the adoption of varied innovations. Therefore, these other 25 attributes were deemed appropriate for this study, and thereby included to be studied under this review. In their work, Tornatzky and Klein (1982, p28) state that “innovation characteristics research describes the relationship between the attributes or characteristics of an innovation and the adoption or implementation”. It therefore becomes important to study these innovation-attributes as they can greatly impact adoption decision for any innovation under consideration. Tornatzky and Klein (1982) also provided a conceptual yardstick in their paper which typically laid out seven features of an *ideal innovation-attribute study*.

It is important to take note at this point that there have been very few studies potentially dealing with the review of studies investigating the impact of innovation-attributes. After Tornatzky and Klein's meta-analysis in 1982, Moore and Benbasat presented their findings in this area in 1991, where they focussed much on developing an instrument to measure individual perceptions of adopting IT innovations. In the list of attributes that they discussed, a few attributes from both *Rogers* and *Tornatzky and Klein* were placed interest in. They studied eight attributes in total, five out of which were either from Rogers', or from Tornatzky and Klein's. However, there were three new attributes exclusively identified by them – *image*, *voluntariness*, and *result demonstrability*, all of which technically found their basis from some of Rogers' attributes. In total, this study was interested in these 33 innovation-attributes, and their influences on the adoption, and adoption intention aspects of an innovation.

To ensure that these 33 innovation-attributes were still in use in the recent literature, a literature search had to be undertaken. In doing so, all publications that cited Rogers' DOI theory were aimed at and extracted using Google scholar and ISI web of knowledge as the

two search engines. All publications from 1996 onwards were retrieved. Primarily, the study wanted to retrieve all publications citing this theory post the release of Rogers' last book (2003). However, the literature extraction started showing that a considerable number of studies still preferred citing the 4<sup>th</sup> edition of his book, even after the release of the 5<sup>th</sup>. Upon further enquiry, it was found that the two editions were not very different from each other, and thus studies citing both these editions. Therefore the start year had to be pushed back to after the release of the 4<sup>th</sup> edition of his book, and hence the year 1996 onwards. Many screenings later, the conclusion arrived at was that 19 of these 33 attributes were either no longer in use by the recent studies, or had been utilized by five or less publications. Such attributes were thereby refused consideration and removed from the list of attributes to be analysed by this study. The 33 innovation-attributes were eventually narrowed down to only 14 innovation-attributes, which had been in active use by the studies published on innovations since the year 1996; in addition to Rogers' five attributes, the other nine attributes of relevance shortlisted here were – cost, risk, ease of use, image, visibility, voluntariness, result demonstrability, social approval, divisibility, and communicability.

### **3. Reviewing the Literature on Entertainment Related Innovations**

In terms of the literature existing on this technology, a study chose 80 nuclear families (from only one city, Vadodara city, from the West part of India) using the DTH services (Dish TV and Tata SKY) to know their opinions on the DTH services (Maniar and Muley, 2009); a book on television in India discusses satellite TV in the political and cultural change context with no specific interest in the diffusion of DTH services in India (Mehta, 2008); an article mentions Tata SKY as a major DTH operator in discussing the pay-TV evolution in India (Taylor, 2008); a study undertakes a comparative investigation in Gujarat, a state in West India, to examine the user perceptions and satisfaction with the DTH services (Patel and Patel, 2012); another article by Kohli-Khandekar (2011) discusses the early years of DTH services in India; another study on globalization of the Indian television industry does a revenue estimation of the Tata Sky and the other Indian DTH services (Singh and Gupta, 2013); in summary, there are no studies examining the adoption factors of Tata SKY's DTH service in the Indian context; it will thus be interesting to explore the extent of diffusion of this technology from the adoption-attributes perspective to arrive at insightful conclusions about what draws the consumers towards Tata SKY over its other competitors. Therefore, there exists a need for undertaking empirical investigations on the potential factors that may act as the promoters or barriers to the adoption and diffusion of this technology. The primary aim of this study is therefore to create a conceptual framework that will examine the role of different innovation-attributes in the adoption of such entertainment related services.

### **4. Developing the Conceptual Framework and Associated Hypotheses**

The Tata SKY's DTH service being examined under this study was *voluntary* by nature, in that, the choice of whether or not to adopt this innovation was an individual decision of the target consumers. According to Rogers (2003), these types of free willed adoption decisions of the consumers are referred to as the *optional innovations decisions*, whereby, the choice of either adopting or rejecting an innovation are made by the individuals independent of the decisions of the other members of the social system (Rogers, 2003). Rogers explains that it is the individual's perception of the innovation-attributes and not the attribute as classified objectively, that affects the adoption rate of an innovation. Technological innovation creates uncertainty about the consequences of its use in the minds of the potential adopters which is alleviated upon seeking answers to the questions like – what is the innovation, what are its consequences, advantages and disadvantages, how and why does it work?; all of which can

be measured using the five perceived attributes of innovation (Rogers, 2003). With this study an additional nine attributes will be used to address the aforementioned concerns. All of the 14 attributes of interest to this study have been listed in table 1 alongside their definitions and sources for easy reference.

**Table 1** The final 15 innovation-attributes, their definitions, and item sources

Innovation-Attributes	Definitions	Sources
<b>Relative Advantage</b>	Degree to which an innovation is perceived as better than the idea it supersedes	Rogers (2003)
<b>Compatibility</b>	Degree to which an innovation is perceived as consistent with existing values, past experiences and needs of potential adopters	Rogers (2003)
<b>Complexity</b>	Degree to which an innovation is perceived as relatively difficult to understand and use	Rogers (2003)
<b>Trialability</b>	Degree to which an innovation maybe experimented with on a limited basis	Rogers (2003)
<b>Observability</b>	Degree to which the results of an innovation are visible to others	Rogers (2003)
<b>Cost</b>	Relates to the costs associated with the use of an innovation. Lower costs increase the rate of innovation-adoption	Tornatzky and Klein (1982)
<b>Risk</b>	Multidimensional component involving performance, financial, social, physical, psychological, time loss, product breakdown and the like types of risks	Tornatzky and Klein (1982)
<b>Ease of use</b>	Degree to which an individual believes that using a particular system would be free of physical and mental effort	Davis (1986); Moore and Benbasat (1991)
<b>Image</b>	Degree to which the use of an innovation is perceived to enhance one's image or status in one's social system	Tornatzky and Klein (1982)
<b>Visibility</b>	Degree to which the use of a particular innovation is apparent	Tornatzky and Klein (1982)
<b>Voluntariness</b>	Degree to which use of an innovation is perceived as being voluntary or of free will	Tornatzky and Klein (1982)
<b>Result Demonstrability</b>	Dimension concentrated on the tangibility of the results of using an innovation, including their observability and communicability	Moore and Benbasat (1991)
<b>Social Approval</b>	Nonfinancial aspect of reward	Tornatzky and Klein (1982)
<b>Divisibility</b>	Degree to which parts can be tried out separately and implemented separately	Tornatzky and Klein (1982)
<b>Communicability</b>	Degree to which an innovation can be clearly and easily understood	Tornatzky and Klein (1982)

Innovations that are perceived by the potential adopters as having higher – relative advantage, compatibility, trialability, observability, visibility, and communicability; lower – complexity, risk and cost associations; greater demonstrability of results, increased social approval and having the capability of acting as image enhancers will have a tendency of being adopted more quickly than the other innovations (Rogers, 2003; 1995; Teo and Pok, 2003; Tornatzky and Klein, 1982). Another point worth mentioning at this stage would be of the extensive similarity existing between two shortlisted innovation-attributes which are *complexity* and *ease of use*. Both these attributes are much evidently measuring the same thing, but in opposite directions. It would therefore, by logic, be appropriate to consider them together as a single attribute for this research. However, given that they have been identified differently in

different theories, it was deemed more appropriate to treat them as two exclusive attributes in this research, hence the different sets of hypotheses for both attributes.

This section will now focus on proposing hypotheses for the voluntary innovation under consideration. Each of the 14 innovation-attributes will be exclusively discussed, and the associated hypotheses will be proposed.

#### *4.1 RELATIVE ADVANTAGE FOR ENTERTAINMENT RELATED INNOVATIONS*

If the potential users of an innovation see no relative advantages in using that innovation then they place no further consideration in it (Greenhalgh et al., 2004). Looking back at the literature in this field, many entertainment related studies have examined the influences of relative advantage on both adoption and adoption intentions for different innovations, for instance – study on digital television adoption explored the effects of relative advantage on both use intention and adoption (Chan-Olmsted and Chang, 2006); a smart television adoption study by Bae and Chang (2012) reported that relative advantage had the strongest influence on use intention; a interactive cable television service adoption study by Sarrina (2004) investigated the effect of relative advantage on adoption; studies on mobile television (Jung et al., 2009), IPTV (Shin, 2009b) and television commerce (Yu et al., 2005) looked into the influences of perceived usefulness (in this case, relative advantage) on the intention to use.

Tata SKY's DTH service is a new television entertainment platform that brings to the fore, in comparison to the regular television experience, features such as relatively superior and sharper DVD picture quality, surround sound quality, new age interactive services, and the facility of ordering movies directly at the convenience of consumers' own homes, all of which are being offered at affordable subscription-price plans (TataSKY, 2013); and all of these can be accounted as clear advantages over the regular television experience. Therefore, studying this attribute in the Tata SKY's DTH service context was considered appropriate, and the following hypotheses were proposed –

**H21a:** *Relative advantage of Tata SKY's DTH service will significantly influence the behavioral intentions of the potential consumers.*

**H21b:** *Relative advantage will significantly influence the adoption of Tata SKY's DTH service.*

#### *4.2 COMPATIBILITY FOR ENTERTAINMENT RELATED INNOVATIONS*

Any innovation fitting a potential consumer's situation more closely will be more readily and quickly adopted by that consumer (Rogers, 2003). The basic nature of Tata SKY's DTH service is fundamentally the same as the conventional type of broadcasting (analogue/cable TV), in that, entertaining video content from different channels is delivered to the viewers to meet their daily entertainment needs. In addition to this, Tata SKY installs a set-top box at the time of subscription which connects to the viewers' television sets to enhance their television viewing experiences. In comparison to the regular/cable television, Tata SKY brings to its viewers increased number of channels and movie options, and added interactive services fitting with their everyday home-television viewing needs. Past studies on digital television (Chan-Olmsted and Chang, 2006), mobile TV (Lee et al., 2011a), IPTV (Lee et al., 2011b), smart TV (Bae and Chang, 2012), and others have studied compatibility as an innovation



attribute and have found it to be significantly influencing the use intentions of the potential viewers. The hypothesis formulates in this regard therefore was –

**H22:** *Compatibility of Tata SKY's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.3 COMPLEXITY FOR ENTERTAINMENT RELATED INNOVATIONS

This direct to home service by Tata SKY is integrated with a user friendly interface that allows the viewers to navigate through a multitude of channels and associated information content, as desired. The design of this user interface through which the viewer gets to interact with the DTH service, is a significant determinant of the complexity or the ease involved in using this DTH service, which relatively differs from user to user. Therefore, in order to measure the level of perceived complexity or ease of use by the potential consumers for this service, this attribute was included to be studied. Several television-entertainment related innovation-studies have chosen to measure the influence of this attribute on the behavioral intentions of their potential users; for instance – Weniger (2010) and Lee et al (2011b) study the effect of ease of using IPTV on the use intentions of its users; Lee et al (2011a) too, explore the impact of ease of use on the use intentions for mobile TV; Dupagne (2006) explore the effects of complexity on use intentions.

**H23:** *Lower Complexity associated with the use of SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.4 TRIALABILITY FOR ENTERTAINMENT RELATED INNOVATIONS

The technological innovations that allow trial of that innovation prior to the adoption decision tend to reduce the uncertainty on the part of the potential users by allowing them to familiarize themselves with the innovation; such innovations hold a tendency of being adopted more rapidly (Rogers, 2003). A handful of television entertainment related studies were found to be using this attribute, and reporting significant influence of this attribute on the behavioral intentions of the potential users, for instance – IPTV adoption studies by Kinugasa et al (2012) and Lee et al (2011b), digital television adoption study by Chan-Olmsted and Chang (2006), smart television by Bae and Chang (2012), and others. The hypothesis thus formulated for this attribute was –

**H24:** *Trialability of SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.5 OBSERVABILITY FOR ENTERTAINMENT RELATED INNOVATIONS

When it comes to digital television experience, the analogue/cable viewers will need to see/observe the added value that comes along digital television viewing, in that, the personalized on-demand content, the time adjustable or the time shifted viewing, web services/commerce on TV, will all have to come the fore to persuade the viewers towards its adoption (Berte et al., 2010). The more the benefits or outcomes of an innovation are observable by its potential users, the quicker is its adoption (Rogers, 2003).

Given that Tata SKY's DTH service offers genre based subscription packs that can be tailored to meet the viewers' entertainment preferences, program recording and later viewing features, mall service for buying electronic goods, household goods, and more, in order to analyze how observable these characteristics are to the potential users, observability was

included to be measured in this study. Television entertainment studies like the digital television adoption study by Chan-Olmsted and Chang (2006), smart television adoption study by Bae and Chang (2012), and others, have presented significant findings on the effects of observability on the use intentions of the users. This attribute was thus posited as –

**H25:** *Observability of SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.6 COST FOR ENTERTAINMENT RELATED INNOVATIONS

As aptly explained by Lee et al (2011b), when an innovation is aimed at personal use like the DTH service in this case, the costs tend to be assumed by the users, in that, the costs associated with the use of Tata SKY's DTH service relative to their personal incomes, could be a significantly important factor affecting the users' adoption decisions. It is well known that less expensive innovations are always more appealing to the target masses. If an established base, such as the analogue/cable television is already meeting the viewers' entertainment needs, the viewers will need added incentives in terms of cost and performance to be sufficiently persuaded to adopt the newer technology (Weerakkody, 2012).

When it comes to Tata SKY DTH service, there exist different types of costs –the start up and installation costs, the upgrades and add-ons cost, the recharge costs and so on. In order to account for how these costs/charges impact the users' adoption decisions, the element of cost was considered to be a valid factor in this regard, and hence included in the study. Television entertainment related studies from the past have reported a significant relationship between cost and adoption, for instance – mobile television study (Shin, 2009a), IPTV study (Lee et al., 2011b), television commerce study (Brown et al., 2006). This attribute was also explored for its influence on the behavioral intentions of the users, for instance – mobile television (Constantiou and Mahnke, 2010; Lee et al., 2011a), IPTV (Weniger, 2010, Lee et al., 2011b). The hypotheses thus formulated for cost as an innovation attribute were –

**H26a:** *Lower cost associations to the use of SKY TV's DTH service will positively influence the behavioral intentions of the potential consumers.*

**H26b:** *Lower cost associations to the use of SKY TV's DTH service will positively influence its adoption by the potential consumers.*

#### 4.7 RISK FOR ENTERTAINMENT RELATED INNOVATIONS

Adoption of any technological innovation is often associated to the risk perceptions of the potential users of that innovation. The existing literature on new technology products adoption regards risk as a function of an unexpected outcome of a technological innovation-adoption and the variation in that outcome in the form of a deviation from the expected outcomes by the potential users (Forsythe and She, 2003; Hirunyawipada and Paswan, 2006; Weber and Hsee, 1998). There are evidences of television entertainment studies (Chan-Olmsted and Chang, 2006; Hirunyawipada and Paswan, 2006) employing risk as an innovation attribute to account for its influence on the behavioral intentions of the potential adopters. Therefore, this attribute was posited as follows –

**H27:** *Lower risk associations to the use of SKY TV's DTH service will positively influence the behavioral intentions of the consumers.*

#### 4.8 EASE OF USE FOR ENTERTAINMENT RELATED INNOVATIONS

Clearly, there are differences in operating/navigating through a normal cable television and a television that is SKY-DTH activated. As it is with every individual system, this DTH service also has a particular set of functionalities and incorporates an interface which allows the users to navigate to their desired content, to all of which a user will need to adapt to. In order to evaluate the perceptions of the existing and potential users with respect to the ease of using this service, this innovation-attribute was incorporated to be studied. Jung et al (2009) found that the perceived ease of use had a significant impact on the adoption intentions formed for the adoption of mobile TV. On the other hand, a study on IPTV adoption by Lee et al. (2011b) captured a non-significant impact of ease of use on use intentions; they reasoned that since IPTV was still in its commercialization stage, the newness of this innovation may not have given many people a chance to familiarize themselves with its use and benefits, because of which they must have presumed that IPTV would simply turn out to be yet another technological burden. In order to find out if SKY TV's DTH service also suffers such consumer perceptions, this innovation-attribute will have to be studied in greater detail.

The studies of the past also embed evidences that the ease of use involved in operating the television-entertainment related innovations has a significant impact on the perceived usefulness, or the relative advantage of these innovations; Some examples of such studies are – IPTV studies (Ha et al., 2009; Ha and Yook, 2009; Weniger, 2010), mobile IPTV study (Shin et al., 2008), mobile TV study (Jung et al., 2009), HDTV adoption study (Baaren et al., 2011), television commerce study (Yu et al., 2005), and others. The hypotheses thus formulated for this attribute were -

**H28a:** *Ease of using SKY TV's DTH service will positively influence the behavioral intentions of the potential consumers.*

**H28b:** *Ease of use will significantly influence the relative advantage of SKY TV's DTH service.*

#### 4.9 IMAGE FOR ENTERTAINMENT RELATED INNOVATIONS

There have been numerous studies recorded in the existing literature that discuss the impacts of social image on the adoption of innovations. Zhu and He (2002) proposed in their study that the use of an innovation/new technology is often perceived as a status symbol amongst peers, which significantly impacts the adoption of such innovations. Chan-Olmsted and Chang (2006) reported a satisfactory and significant relationship between image and adoption intention in the terrestrial digital television context. On the contrary, another mobile television study reported a non-significant relationship for image and behavioral intention (De Marez et al., 2007). There are evidences of other studies on e-commerce (Slyke et al., 2010) and web shopping (Slyke et al., 2004) that have also reported a non-significant impact of image on use intentions. In order to explore how image behaves in the SKY TV's DTH service context, the following hypothesis was proposed –

**H29:** *Better image associations with SKY TV's DTH service will positively influence the behavioral intentions of the potential consumers.*

#### 4.10 VISIBILITY FOR ENTERTAINMENT RELATED INNOVATIONS

Slyke et al. (2005) showed in their e-commerce study that greater visibility increases awareness, and in turn considerably affects the user intentions. A mobile internet adoption study by Hsu et al. (2007) also showcased significant effects of this attribute on use

intentions. As Shin and Hwang (2011) suggest in their study on the diffusion of IPTV, visibility tends to raise the relative exposure of an innovation that leads to discussions amongst the members of a social system; this much productive information exchange then in turn leads to the faster diffusion of an innovation. Visibility is therefore an innovation-attribute that can contribute to a very significant extent towards the quicker diffusion of an innovation under consideration. Although many studies were found making visibility associations to observability owing to the discussions from Moore and Benbasat (1991), Rogers (2003), and others on the similarity between these two attributes, the literature on entertainment related innovations does not house many studies examining the exclusively effect of visibility as an innovation-attribute on the adoption of a given innovation. The following hypothesis was posited to learn about the behavior of this attribute –

**H30:** *Visibility of the SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.11 VOLUNTARINESS FOR ENTERTAINMENT RELATED INNOVATIONS

Agarwal and Prasad (2008) frame voluntariness to be the extent to which the potential users of any innovation perceive their adoption decision to be non-mandatory; in that, this attribute is representative of any felt pressure from an individual user's social environment. They further explain that the potential users can perceive and experience varying levels of compulsion in the adoption of a given innovation. Voluntariness was found to be more famous for being used as moderator in the literature pertaining to entertainment related adoption; for instances, studies on adoption of digital TV (Papa et al., 2009; Sapio et al., 2010; Quico et al., 2012) mostly found researchers interested in exploring the moderating effects of this innovation-attribute in determining the adoption intentions and use of an innovation. However, other studies such as the study on adoption of multimedia messaging service by Hsu et al. (2007), IT adoption studies by Karahanna et al. (1999), Kishore and McLean (2007), internet banking adoption study by Gounaris and Koritos (2008) have all studies voluntariness as an innovation-attribute and reported for its significant influences on behavioral intentions. With this research, voluntariness will be exclusively examined for its behavior in SKY TV's DTH service context, for which the proposed hypothesis is –

**H31:** *Voluntariness of the SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.12 RESULT DEMONSTRABILITY FOR ENTERTAINMENT RELATED INNOVATIONS

When a new technology is introduced in the target setting, effective demonstrability of the outcomes of using that technology to a good extent impacts the acceptance or refusal of that technology. Choi et al. (2003) showed in their study results that the result demonstrability positively influenced the users' attitudes towards the adoption of interactive TV. Lee et al. (2011) in their study on mobile TV adoption showed that the groups of actual adoption and likely adoption of mobile TV had an attitude of higher result demonstrability than groups of discontinuous adoption and non-adoption. Very few television-related innovation studies examined the exclusive effects of this attribute. However, other innovations that in way had an element of entertainment associated with them, like in the case of adoption of internet (which these days is mostly used for entertainment purposes), or the mobile internet (which is again mostly used for personal entertainment on the go) have studied the effect of result demonstrability on the use intentions; for instance, Hsu et al. (2007) reported a non-significant effect of this attribute on use intentions for mobile internet. On the other hand,

Zhu and He (2002) in their study on internet adoption found positive and significant impact of this attribute on use intentions. To clarify the behavior of this attribute in the DTH service context, and to add to the literature for this attribute in the television-entertainment context, result demonstrability was hypothesized in the following manner for this study –

**H32:** *Result demonstrability of the SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.13 SOCIAL APPROVAL FOR ENTERTAINMENT RELATED INNOVATIONS

According to Venkatesh et al. (2003), social influence is the degree to which the potential users perceive that their important peers believe that they should use the given innovation under consideration. Lee et al. (2011b) cite Banerjee (1992) to explain a *herding behavior* that they find applicable to the IPTV adoption; in that, the decision to adopt IPTV stays more inclined on the social/observational learning in which the potential users tend to follow others' decisions. The same may apply to the SKY TV's DTH service – say if in a housing society a few houses initially adopt this service, the other houses may just follow through their adoption decision without applying much personal judgment. In order to explore this social influence in the SKY TV context, social approval was included to be examined in detail.

Kulviwat et al. (2009), in examining the moderating effect of a product's public/private status on a consumer's adoption intentions of high-tech innovations concluded that social influence had a positive impact on their adoption intentions. The literature has a handful of entertainment related studies supporting the significant impact of social approval/influence on the behavioral intentions of the target consumers, for instance – IPTV adoption studies by Lee et al. (2011b), Shin (2009b), and t-commerce study by Yu et al. (2005). The hypothesis posited for this attribute thus was –

**H33:** *Social approval of SKY TV's DTH service will significantly influence the behavioral intentions of the potential consumers.*

#### 4.14 COMMUNICABILITY FOR ENTERTAINMENT RELATED INNOVATIONS

An innovation whose positives can be relatively easily communicated will be more readily adopted in comparison to the innovation whose product qualities suffer from a relatively difficult communicability. As for the other evidences in the literature, a meager number of studies related to television-entertainment innovation were found deriving statistical findings for communicability, which could be of use for this research. Other innovations like mobile internet adoption (Grepott, 2011), new product adoption (Holak and Lehmann, 1990) and mobile gaming - Kleijnen et al. (2003) and Kleijnen et al. (2004) were found reporting a significant impact of this attribute on their adoption.

In a mini case study on SKY+ in the British context by Philip (2007), they highlighted that this innovation was a simple concept that was comparatively easier to communicate; in addition, in addressing SKY's advertising campaign, which was aimed at tailored viewing suiting individual viewer needs, the author mentions that it was clearly aimed at the communicability aspect. The author also brings to the fore light the fact that SKY+ was being put in use as a verb off late. All of which also sits well in line with the case of Tata SKY's DTH service in the Indian context – for starters, it is a similar direct-to-home service innovation, but in the Indian context, and the advertising campaigns are also aimed an

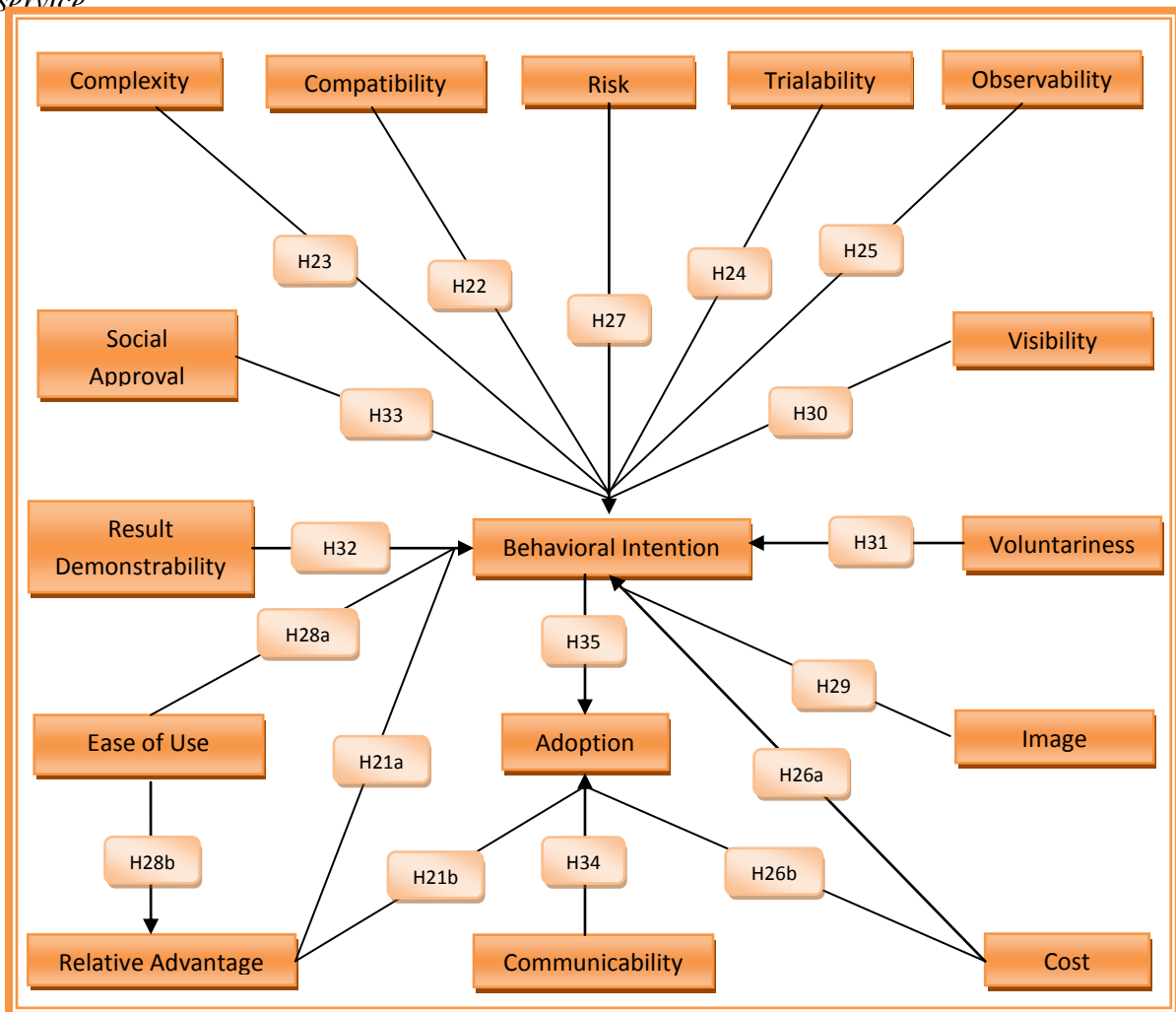
tailored television viewing experiences; To add, Tata SKY has also been noticed for getting to be spoken/addressed as verb in the Indian context as well. All of the above arguments iterate the idea that communicability can play a significant role in influencing the consumer intentions. In order to measure how this attribute contributes towards the adoption of the DTH service, the following hypothesis was proposed –

**H34:** *Communicability will significantly influence the adoption of SKY TV’s DTH service.*

#### 4.15 BEHAVIORAL INTENTION FOR ENTERTAINMENT RELATED INNOVATIONS

Behavioral intention of the users essentially implies the underlying intention of the users towards the adoption of a technological innovation in question. While some past studies (Ajzen, 1991; Ajjan and Hartshorne, 2008) regard behavioral intention to be the most important predictor of the adoption decisions of the potential users, other studies (Gumussoy and Calisir, 2009) consider this attribute to be the immediate predictor of the actual adoption of an innovation. Having been used as an immediate predictor of actual use of television entertainment related innovations in past studies (Kaasinen et al., 2005; Lee et al., 2011a; Sapio et al., 2010), this attribute, in this study’s context, was hypothesized as follows –

**H35:** *Behavioral intention will have a significant influence on the adoption of SKY TV’s DTH service*



**Figure 1** Proposed Conceptual Model for Entertainment Related Innovations

In summary, it was thus hypothesized that higher degree of - relative advantage, compatibility, trialability, observability, and ease of use, increased levels of – image, visibility, voluntariness, result demonstrability, and social approval, and lower degree of - complexity, costs and risks will significantly impact the users’ *behavioural intentions towards use of Tata SKY’s DTH service*. In addition, ease of use was expected to have a significant impact on the *relative advantage* of this application. Also, increased relative advantage, lower cost, higher communicability, and behavioural intentions were postulated to have a significant effect on the *adoption* of Tata SKY’s DTH service in the Indian context (Figure 1). The proposed hypotheses for this

**Table 2** Proposed Hypotheses for Entertainment Related Innovation Adoption in the Indian Context

Hypotheses Numbers	Independent Variables	Dependent Variables
H21a	Relative Advantage	Behavioral Intention
H21b	Relative Advantage	Adoption
H22	Compatibility	Behavioral Intention
H23	Complexity	Behavioral Intention
H24	Trialability	Behavioral Intention
H25	Observability	Behavioral Intention
H26a	Cost	Behavioral Intention
H26b	Cost	Adoption
H27	Risk	Behavioral Intention
H28a	Ease of Use	Behavioral Intention
H28b	Ease of Use	Relative Advantage
H29	Image	Behavioral Intention
H30	Visibility	Behavioral Intention
H31	Voluntariness	Behavioral Intention
H32	Result Demonstrability	Behavioral Intention
H33	Social Approval	Behavioral Intention
H34	Communicability	Adoption
H20	Behavioral Intention	Adoption

## 5. Research Implications

This paper is an attempt to build on the present understanding of the existing relationships between the shortlisted 14 innovation-attributes (independent variables) and the relative advantage, behavioural intention and adoption (dependent variables) of the entertainment related innovations. The conceptual framework proposed in this paper, instead of using one of the many already existing models (that have been identified in section 2) attempt to integrate attributes from three distinct and well recognized pieces of work in the field of innovation-diffusion – (a) Rogers’ diffusion of innovations theory, (b) Tornatzky and Klein’s meta-analysis, and (c) Moore and Benbasat’s perceived characteristics of innovating theory. The proposed conceptual model is directed at bringing to the fore, the few important aspects of entertainment related innovation adoption and their usefulness for both the academicians and the implementers/mangers of such entertainment related innovations. The researchers in this area can use this framework to undertake empirical examinations for entertainment related innovations.

From the academic perspective, we propose to evaluate the behaviour of these attributes not only on the *adoption* aspect, or only on the *intention* aspect, but taking into consideration all the past evidences, we propose to study the influence of these innovation-attributes on both adoption, intention, and any other probable relationship that was observed being validated by the past studies; like the effect of ease of use on the relative advantage. As pointed out earlier,

the absence of literature on the adoption of Tata SKY's DTH service in the Indian context make the proposed conceptual framework by this study all the more informative from the future research perspectives for such technologies. Proposing an examination of the influences of 14 noteworthy innovation-attributes on the use intentions, adoption, and relative advantage of using the entertainment related innovations, this conceptual model serves as a potential foundation, or a base point that the future researchers could use to build upon, or even modify by undertaking empirical investigations for the influence of these factors on the adoption of the entertainment related services. With the new concepts entering the consumer markets every day, and the consumers' increasing willingness to pay for enhanced experiences for higher and improvised standard of living, innovations as these that offer better home television viewing experiences have great potential in the consumer markets. For its acceptance, a sound understanding of the factors that steer its diffusion and actual adoption is necessary; which is exactly what this study attempts to offer to the practitioners of this technology - a solution, that although for now is partial, in the form of a conceptual model defining relationships to be empirically tested for determining the strongest adoption factors impacting the adoption of such entertainment related innovations.

In terms of practical implications, the managers and implementers of such innovations can consider the following insights that were extracted whilst reviewing the influences of the 14 shortlisted innovation-attributes reported by the past studies. When it comes to ease of use, studies tend to suggest that the real influence of this attribute can be examined only when the direction in which it is being measured is clearly identified, for instance, an e-government study makes a suggestion for future studies, asking them to clearly demarcate the ease of use, along the desired lines of (a) ease for gathering information from the e-government bodies, or (b) ease in completing a transaction using e-government, and so on (Carter and Belanger, 2004). Similarly, while studying this factor in the entertainment innovation perspective, the studies should clearly identify what aspect of ease of using the DTH service they are trying to measure. Another study on e-reverse auction suggests that ease of use can be enhanced by some compatibility related factors, which in turn may impact use intention (Gumussoy and Calisir, 2009). Another commonly proposed implication for this innovation-attribute is of an easy to use innovation, and cultivation of an environment that fosters it are both critical to favourably influence adoption rates of different innovations (Chau, 1996).

Most mobile commerce studies found image to significantly impact the adoption of mobile commerce related technologies (Allen, 2004; Teo and Pok, 2003; Hsu et al., 2007). Rogers (2003) explains that diffusion has a special character when it comes to the newness of the idea in the message content, in that, a certain degree of uncertainty and *perceived risk* is present in the diffusion process. Moore and Benbasat (1991), in talking about cost as an innovation-attribute say that the actual cost price of an innovation is a primary attribute, but the perception of the *associated cost* becomes the secondary attribute; they further explain that what seems expensive to one consumer may be perceived as inexpensive by another depending on their relative levels of income, which leads them to conclude that cost has the greatest influence on consumers' buying behaviour (Moore and Benbasat, 1991). In addition, studies are often found suggesting economic resource allocations that are assumed to leverage increased sales, and typically the reduced cost associations to the use of an innovation always attracts more consumers (Zhu et al., 2006; Damanpour and Scheider, 2009; Shin, 2010). Another worthwhile suggestion in the lead was that the cost associations to an innovation should be lesser than or equal to the systems it is superseding (Vrechopoulos et al., 2001). Riskiness was again, more often than not, recommended to be broken down into specific desired risk aspects to be evaluated, and not to be measured and relied upon as a general risk



component, for instance, breaking down the risk component into evaluating the security and privacy risks in particular (Tanakinjal et al., 2010). Visibility was found to be an attribute essential for targeting the late majority type of consumers, wherein observing the use an innovation influenced them for adoption (Hsu et al., 2007; Occhiocupo, 2011). Advertising the benefits of using that innovation to increase its visibility was also reported as an efficient tactic for attracting more consumers (Slyke et al., 2005). Whilst voluntariness was assumed to function through the compliance processes (Karahanna et al., 1999), positivity about an innovation from social groups and indirect social pressures were found to be significantly influencing adoption intentions (Lee-Partridge and Ho, 2003; Bernstein and Singh, 2008).

All of these above summarized influences can be effectively tested in the entertainment related innovations context only by empirically examining the proposed conceptual framework in this study. To further add, people are not short of options when it comes to television viewing. They already have the other well dominant options such as that of cable TV that has been well integrated with their lifestyles since a very long time now. To pull the customers off their old comfortable zone, and tempt them to use this new DTH service, these services will have to invest efforts in offering something extra in terms of the added features that come along, and the pricing at which all of it is being offered to ensure maximum adoption. In doing so, to determine what factors in such an application are most appealing, or of no interest to the consumers need to be understood which can all be examined by empirically testing the conceptual model proposed in this study. Reiterating how the research and practice on DTH services in the Indian context has still not evolved, and the opportunities in terms of research, business processes, and consumer behaviour are enormous, today, the testing and validation of the conceptual model proposed in this paper for investigating the Tata SKY's DTH service adoption, sets in motion the theory and research on a new age technology in today's world.

## **6. Conclusions**

The framework presented in this paper is an attempt to offer the researchers on entertainment related innovations, and the planners of such innovations, with an organized and theoretically sound medium that can be used to empirically examine the adoption of entertainment related innovations (Tata SKY's DTH service); all of which will help gain a constructive understanding of what leads the customers to adopt such new age entertainment services. This framework is not limited to the Tata SKY DTH service, and can be easily fit to study any entertainment related innovation. This conceptual framework is the first step in designing a sound methodology that the researchers and the stakeholders of entertainment related innovations can employ to assist them with building a plan that attracts maximum number of consumers towards the use of such new age innovations. Most work remains incomplete for this study in terms of support from empirical examinations. The authors of this study have a plan underway to apply this conceptual framework targeting an appropriate respondent group for evaluating and building further on the usefulness of the proposed framework in this study.

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