



Effectiveness of In-app Advertising on Gen Y's Attitude and Purchase Intentions

Jay P Trivedi*

Abstract

Digital marketing is growing at a very fast pace in India. A study by the telecom giant, Ericsson (2014) said Indian users spend three hours and eighteen minutes on an average everyday with their smartphones, of which one-third time is spent on apps. This has given rise to a new ecosystem consisting of many applications and advertising formats. Popular estimates projected by Mobile Marketing Association (2013) had put mobile advertising to touch Rs.430 crores in India by the end of 2014. Gen Y is charting this mobile revolution in India. For a marketer to invest in an advertising medium, it must be effective and affordable. Saladow et al. (2012) opined that more studies have focused on technology related issues of mobile advertising. This research studies the factors (Entertainment, Informativeness and Credibility) influencing the Gen Y's attitude towards In-application (app) ads; attitude towards brand advertising In-apps and Purchase Intentions thereof. Descriptive research design was used to conduct the research. Statistical analysis was done using Cronbach Alpha, Factor Analysis (EFA and CFA) using SPSS and AMOS 21.0. The hypothesis was verified with the help of structural equation modeling using AMOS 21.0. The results highlight the importance of Entertainment, Informativeness and Credibility in forming positive brand attitudes and Purchase Intentions.

* Associate Professor, Alliance University, Bangalore, India;
jaytrivedi2002@gmail.com, jay.trivedi@alliance.edu.in

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Introduction

Indian advertising is gradually adopting the digital medium. The pace of this may be arguably slow owing to the expanse and variety of population in the country. Mid 2000 saw the gradual spread of Internet in India and since then the acceptance of Internet has only grown. Mobile advertising is rising in sync with the digital revolution in India. There are various formats i.e. text, voice, image, rich media available in different environments like mobile internet applications, search, SMS, voice, coupons etc. Mobile Marketing Association estimate had revealed that the mobile advertising industry in India was expected to be at Rs. 430 Crores by the end of 2014. An IAMAI data reveals that, the Internet penetration percentage had soared from 3.6 % to 11.4 % from the year 2006 to 2012 (E-commerce in India, n.d.) The Internet user base in India, as on December 31, 2013 is 238.71 million. (E-commerce in India, n.d.). TRAI (Telecom Regulatory Authority of India) says that seven out of eight are accessing the Internet from their mobile phones (Nielsen, 2011). An IAMAI - IMRB research had estimated the number of mobile internet users to cross 165 mn by 2015 (Nielsen, 2011). VServ.mobi research data reveals that the highest mobile internet users fall in the age group of 18-24 years (Nerurkar, 2013).

India enjoys a wide user base of mobile phones. Hence advertisers have gradually started adopting this medium to reach out to their consumers. As the mobile instrument market becomes more competitive, the smartphones will outnumber basic mobile phones. Smart phones facilitate easy use of mobile applications. Gen Y, popularly defined as individuals born after 1980; use various kinds of apps, either for utility or Entertainment purpose. An opera India report reveals that Android, Apple app store, Windows market place, Nokia store etc. are leading app distribution platforms in India and there are about 1.5 - 2 million + apps available across these app stores (Indians glued to their smartphones , n.d.). Of

these 90 % are free apps, while the balance 10 % is paid apps. The same study also established that 96% of the app users were under the age of 35. As per a report published in forbes.com, India's mobile advertising market has grown by 260% since July 2013 (Indians glued to their smartphones, n.d.).

Hence the In-app advertising is sure to attract the marketing managers owing to the captive audience it provides. In the current work, the researcher has explored the consumer (Gen Y) attitudes towards In-app advertising in mobile phones and Purchase Intentions thereof.

Literature review and hypothesis development

The study of consumer attitudes and Purchase Intentions holds significant importance towards predicting acceptance of a new product or service in the market. Attitude can be defined as an individual's evaluation of an object such as a branded product. Fishbein and Ajzen (1980) proposed the theory of reasoned action which posits that behavioral intentions are formed due to an individual's attitude towards the behavior and subjective norms. Mackenzie et.al (1986) posited that Attitude towards the ad (Aad), Attitude towards the brand (AB) and Purchase Intentions (PI) are the constructs historically used to predict the acceptance of a new product or service and its marketing communication. Mackenzie et.al (1986) defined Aad as a "predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure situation". Attitude towards the brand is "recipients' affective reactions toward the advertised brand or desirable attitude toward purchasing the brand." Purchase Intention is "recipients' assessments of the likelihood that they will purchase the brand in the future."

In a landmark work on advertising, Ducoffe (1995) established that consumers judge the value of advertising on the basis of Informativeness (INF), Entertainment (ENT) and irritation. Entertainment is the enjoyment associated with the message. The information construct focuses on the ability of the advertisement to deliver up to date, timely and highly accessible information about the product. Irritation means the annoying, offending, insulting and overly manipulation of the consumers. The study done by

Ducoffe established a significant and negative relation between irritation and advertising value. Rotzoll, et al. (1989) established that Informativeness is the key aspect in advertising function. Eminent researchers also focused on Credibility of the advertisement as one more key construct. Pavlou et al. (2000) explained advertising Credibility (CRD) as the consumer's perception of the truthfulness and believability of advertisement. Pavlou also established Credibility as a significant factor influencing advertising value. Yunos et al. (2004) defined mobile advertising as marketing and advertising activities that deliver advertisements to mobile devices using wireless network and mobile advertising solutions to promote goods and services and build brand awareness. SMS advertising, QR codes, Bluetooth connect, In-app ads, and branded applications are some of the well-known forms of mobile advertising. Smart phones have brought in a revolution in the app development industry. Consumers use various kinds of apps based on their utility and brands try to reach consumers through banner ads In-app or by creating unique brand specific apps. Leppaniemi et al. (2005) suggested that mobile advertising provides brands a very fast and economical platform to communicate with its consumers compared to the other direct mediums like telephone and direct mail.

The mobile revolution in India is championed by the Gen Y. Literature defines Gen Y as those born after 1980. Gen Y forms the largest chunk of population in India today. Eminent researchers characterize Gen Y to have affinity towards technology, high disposable incomes. As they adapt to new technology faster, they download various kinds of apps for utility or Entertainment. Their acceptance of new media is also postulated to be faster compared to other age groups. The number of smart phone users has steadily increased in India. Nielsen informate mobile insights (2011) put 50 % of smart phone users in India to be below 25 years of age. This motivates the researcher to understand Gen Y as a consumer and more specifically their attitude and Purchase Intentions from In-app ads. There is a different level of acceptance among the developing and developed countries with reference to mobile advertising. There exists good literature on acceptance of mobile advertising among different countries but very little work on

understanding the In-app advertising dynamics which motivates the researcher further.

Kabir et al. (2006) explored the factors influencing consumer attitudes towards SMS-based advertising in Bangladesh. The research established that informative ads are liked by respondents. It was also established that Credibility of the message played a significant role in creating attitude towards the mobile ads. Ranchhod (2007) summarized mobile marketing in India to comprise of SMS marketing, marketing through QR codes, Bluetooth advertising and In-app advertising. The research identified personalization, interactivity and localization as the major differentiators in mobile marketing in India. Yung et al. (2008) undertook a cross culture study on major influencers on consumers' acceptance of mobile SMS. This study was undertaken in USA and Korea. The results revealed that regardless of the country, advertising that is fun and trustworthy appeals to all consumers. Credibility was the factor, which influenced the Purchase Intention of US consumers.

Ghuri & Khan (2012) studied the attitude of Pakistan consumers towards mobile phone as a commercial marketing channel. The study involved various dimensions viz. attitude of respondents towards mobile advertising, attitudes towards mobile coupons, Entertainment, mobile shopping, and mcommerce transactions. The results exhibited that consumers in Pakistan have a positive attitude towards mobile advertising and promotions. Rebecca et al. (2012) undertook a cross cultural study to understand the attitudes towards behavioural intentions to adopt mobile marketing amongst Gen Y in France, USA and China. The results revealed that Chinese Gen Y has a more positive attitude towards mobile marketing compared to USA and French Gen Y.

Myers & Rosenkrans (2012) conducted a research to study the Click through Rate of banner ads on mobile devices vis-à-vis that of banner ads displayed on non-mobile devices. The results established that there is a higher click-through rate of banner ads on mobile devices. Jain (2013) studied the attitude of Gen Y towards In-app advertising. The research gave very significant insights into the study of In-app advertising. The results showed that Gen Y in India used their phones constantly and consistently.

Gen Y used phone for information based apps. The research also established that the Gen Y also used social media sites and chat applications. Recommendation made by friends was an important factor leading to app downloads amongst Gen Y. Trivedi et al. (2014) established that Gen Y prefers apps which add value to their life. These were identified as weather, utility, search based and productivity based apps. This outcome helps the advertisers identify the kind of apps where they can put their monies into.

The literature review clearly establishes the importance of Entertainment, Informativeness and Credibility in creating attitude towards the advertisement and attitude towards the advertised brand across different continents. However, not enough literature focuses exclusively on In-app ads and its influence on Gen Y-the consumer. This leads the research to develop the following model (Figure 1) and hypothesis.

Hypothesis 1 A: Entertaining (ENT) aspect of an advertisement in the app influences the attitude towards the advertisement (Aad).

Hypothesis 1 B: Informativeness (INF) of an advertisement in the app influences the attitude towards the advertisement (Aad).

Hypothesis 1 C: Credibility (CRD) of an advertisement in the app influences the attitude towards the advertisement (Aad).

Hypothesis 2 A: Entertaining (ENT) aspect of an advertisement in the app influences the attitude towards the brand (AB).

Hypothesis 2 B: Informativeness (INF) of an advertisement in the app influences the attitude towards the brand (AB).

Hypothesis 2 C: Credibility (CRD) of an advertisement in the app influences the attitude towards the brand (AB).

Hypothesis 3: Attitude towards the ad (Aad) in the app significantly influences the attitude towards the brand (AB)

Hypothesis 4: Attitude towards the brand (AB) advertising in the app significantly influences the Purchase Intentions (PI) for the brand

Hypothesis 5: Attitude towards the advertisement (Aad) in the app influences the Purchase Intentions (PI) for the brand. Figure 1 demonstrates the hypothesis in model form.

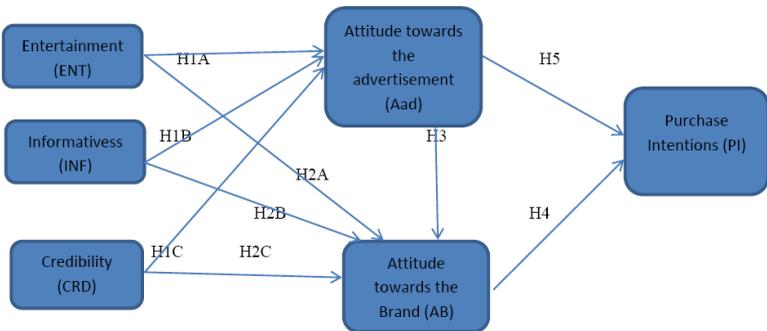


Fig. 1 Hypothesis in model form

Research Methodology

The objective of this study was to research the attitude and Purchase Intentions of Gen Y with respect to In-app advertising on mobiles. The researcher has used descriptive research design to conduct the study. Respondents were chosen conveniently but on the basis of their age between 20-25 years, pursuing post graduate education and having adequate exposure to mobile communications. The respondents were based in Bangalore city during the time of research, but hailed from various metro and tier 1 and tier 2 cities of India. The respondents were exposed to online shopping and were aware of the different traditional and new forms of media evolving in India. However, there is no assured representation of rural respondents in the sample.

The questionnaire was created on the lines of items adopted from Ducoffe (1995) Bauer et al. (2005), Biehal et al. (1992). Likert scale (1 for strongly disagree to 7 for strongly agree) was used to measure Purchase Intentions and other constructs. Google document form was created and its link was sent to the respondents. The respondents were given sufficient time to respond to the questionnaire and were instructed to respond only once. The purpose of the questionnaire was declared as purely academic in

nature. The questionnaire was sent to 364 respondents, of which, 333 duly filled forms were selected for data analysis. The questionnaire was administered in English.

To begin with, Cronbach alpha was run to test the reliability of the questionnaire. This was executed using SPSS version 17.0. All constructs exhibited alpha values above 0.70. EFA (Exploratory Factor Analysis) was executed to test the validity of the constructs. All values were above 0.60. Then CFA (Confirmatory Factor Analysis) was executed using AMOS 21.0. AMOS is one of the software which helps the researchers execute CFA, which is otherwise a limitation in SPSS. This helped us remove some items from the questionnaire and use only very proven items for the variables. Structural equation modeling (SEM), using AMOS 21.0, was executed to observe the influence of Entertainment, Informativeness and Credibility on Aad, AB and on PI.

Data analysis

To access the internal consistency of the measures, Cronbach Alpha was executed. To ensure the validity of the measures multi item scales were tested using exploratory and confirmatory factor analyses (EFA and CFA). The Cronbach Alpha values were obtained as observed in table no.1. Thereafter, Exploratory Factor Analysis was conducted to measure the validity. The factor loadings obtained were above 0.60 and hence acceptable. Then the CFA was executed. All the independent and dependent latent variables were included in a single multifactorial CFA model using AMOS version 21.0. CFA was performed using Maximum Likelihood Estimation. The model demonstrated an acceptable fit. The CMIN/DF value was 2.116, CFI was 0.965, GFI was 0.927, SRMR was 0.03 and the TLI index was 0.950. The RMSEA value was 0.05, indicating a good model fit. A value smaller than 3 is recommended for the ratio (χ^2 / df) towards accepting the model to be a good fit (Chin, et al. 1995). TLI, an incremental fit measure, with a value of 0.9 or more indicates a good fit (Hair, et al. 1998). RMSEA < 0.1 indicates good model fit (Browne & Cudeck 1993; Hair, et al. 1998). All loadings higher than or equal to 0.70 were considered. The same is exhibited in table no.2. To establish the internal consistency, the researcher calculated the CR (Composite

Reliability) and AVE. The same is exhibited in table no.2. To get satisfactory discriminant validity, the square root of average variance extracted (AVE) for each construct should be greater than the correlation between the construct and the other constructs (Bhattacharjee Premkumar 2004; Wixom, et al. 2005). The same is exhibited in table no. 3. To test the hypothesis; the researcher used SEM in AMOS version 21.0. The model demonstrated an acceptable fit with CMIN/DF value of 2.897, CFI was 0.945, GFI was 0.909, SRMR was 0.04 and the TLI was 0.925. The RMSEA value was 0.07, indicating an acceptable model fit. All values adhered to the values accepted by literature on model fit. The influence of Entertainment, Informativeness and Credibility were tested on the dependent variable–Aad. Entertainment showed a significant influence on Aad. However Informativeness did not show a significant influence on Aad ($p = 0.521$). Credibility also did not show a significant influence on Aad ($p = 0.645$). The influence of Entertainment, Informativeness and Credibility was tested on the dependent variable–AB. All the three variables significantly influenced the AB. Aad also showed a significant influence on AB ($p = 0.000$). AB showed a significant influence on PI ($p=0.000$). But Aad did not show a significant influence on PI ($p = 0.183$). The same is exhibited in table no.4. β values are exhibited in figure 2. The mediating effect of Aad and AB in measuring influence of ENT, INF and CRD was also tested. The results exhibited that CRD is the only factor influencing PI mediated by Aad and AB as exhibited in table no. 5.

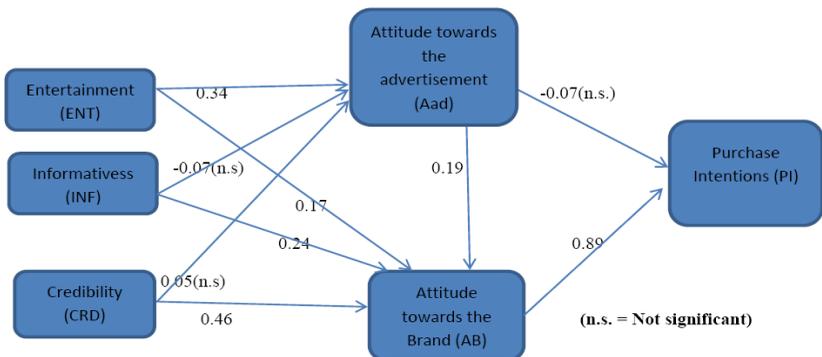


Fig 2

Discussions

Today's advertising is much cluttered and advertisers find it an uphill task to cut through the clutter. In-app advertising is a developing area in India. The advertisers should have a good knowledge of the factors that add value to their ad spends. Ducoffe (1995) established the foundation constructs for measuring advertising value viz. Entertainment and Information. Pavlov (2000) furthered it with establishing Credibility as an important construct. This research takes support of these constructs to study its impact on the attitude and Purchase Intentions of Gen Y. The results establish that Entertainment is the only factor influencing Aad amongst Gen Y. This result supports the study done by Yung (2008). The result looks very much apt as research done by Jain et al. (2013) also reported that mobile apps help reduce stress, which means that apps hold Entertainment value for the user. On the other hand AB is significantly influenced by all, i.e., Entertainment, Informativeness and Credibility of the ad. This result partially matches the work done by Bauer et al. (2005) as it established that Entertainment and Informativeness, both, drive attitude towards the mobile advertising. Aad had a significant influence on AB. This has been validated by most of researchers, especially Biehal et al. (1992). Also, AB is established to have a significant influence on PI whereas Aad is not a significant factor influencing PI. However, it should be noted that when mediated by AB, Aad did have a significant influence on PI. These results also are similar to Biehal et al. (1992), albeit it was not In-app ad specific research. The results stress on the importance of AB. AB is a strong determinant of Purchase Intentions. The mediating effect of Aad and AB in measuring the influence of ENT, INF and CRD on PI, exhibits CRD as the only factor influencing PI, mediated by Aad and AB. The result matches with the study done by Yung et al. (2008). Also Aad was found to have a significant influence on PI, when mediated by the other variables including AB. This result also confirms with the research done by Biehal et al. (1992).

Managerial Implications

In-app ads should add value to the overall brand communication strategy. For example, looking at the importance of Entertainment factor towards creating Aad and AB, apps created by brands and

ads In-apps should entertain the user. The advertisers should create ads especially suited for apps rather than mere banner ads, which may irritate the user. As Gen Y likes game based apps, advertisers must look at creating integrated game based app with the brand so as to entertain the user. This requires organisations to undertake strategic planning and systematic investment towards creating a digital business platform. This leads us to confirm that mobile advertising, especially in-app advertising, is about consumer engagement and content integration. Talking Tom is an example of Entertainment app enjoyed in India. We can certainly look at health food brand its fitness potion (where Tom gets fit by drinking a potion). A section in the game based app "Talking Tom" requires the cat's house to be painted. The paint button can be branded by a popular paint company to create a sense of involvement and fun around the paints category amongst Gen Y. This will put the brand on top amid the Gen Y - their prospective or current customers. Informativeness is also one of the factors influencing AB. Brands can create apps which can increase information about a particular matter. Hospitals can create special apps for the diabetic patients which can act as a guide for calorific value of different food items. Within these apps they can integrate their services ads. The results also focus on the Credibility factor which states that strong brand attitudes can be formed for the messages of those companies that enjoy strong Credibility. This can be made possible only if the advertising company has taken suitable steps towards creating a strong and ethical brand positioning. The advertisement manager should hence treat mobile ads very seriously as they form strong brand attitudes. In a lot of media reports it has been published that digital media is not given high importance while creating media plans. Also the digital assignment is handed over to the interns in an ad agency as per published literature. Mobile advertising involves merging creativity and technology in a single platform and hence managers should refrain from such gross negligence of digital media advertising and more specifically in-app mobile ads.

Limitations and future research areas

This research was conducted within a very rich segment mix of Gen Y, hailing from metro and non-metro cities in India. However, looking at the vast expanse of India and its depth, this research

may be separately conducted for Gen Y from rural India. This research has not looked into the gender based difference amongst Gen Y, which may be studied in the further research. Further research can encompass a detailed study where researchers can try and understand the real estate preference of consumers from mobile ads perspective, i.e., where on the mobile screen would they like to see advertisements. A similar study can also be conducted by involving incentives and then measuring attitude towards the In-app ads.

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Appendix

Table No 1

Variable	No.of Items	Cronbach Alpha
Entertainment	5	0.922
Informativeness	7	0.870
Credibility	2	0.718
Attitude towards the advertisement	5	0.797
Attitude towards the brand	4	0.834
Purchase Intentions	3	0.714
Total	26	

Table No.2 CFA and Convergent Validity Results

Item	Factor loadings	Cronbach Alpha	Composite Reliability	AVE
Entertainment				
Ads in mobile apps are exciting	0.868	0.922	0.83	0.628
Ads in mobile apps are fun to use	0.809			
Receiving ads in mobile apps is pleasing	0.821			
Ads in mobile apps are entertaining	0.819			
Ads in mobile apps are enjoyable	0.814			
Informativeness				
Ads in mobile apps is a convenient source of product information	0.765	0.822	0.798	0.607
Ads in mobile apps is a convenient source of up to date product information	0.77			
Ads in mobile apps provide me with timely information	0.802			
Credibility				
I trust ads in mobile apps	0.772	0.718	0.779	0.572
I use ads in mobile ads as a reference for purchasing	0.741			
Attitude towards the Advertisement (Aad)				
I like / Dislike ads in mobile apps	0.842	0.781	0.819	0.645
I feel mobile app ads are Good / bad	0.763			
Attitude towards the Brand (AB)				
I feel brands advertising in mobile apps are Good / Bad	0.769	0.861	0.833	0.672
I like / Dislike brands which advertise in mobile apps	0.84			
Brands advertising in mobile apps are pleasant / Unpleasant	0.847			
Purchase Intentions				
I would try a product advertised in mobile app	0.843	0.7	0.771	0.56
I will definitely buy a product advertised in mobile app if I see it in a store	0.7			

Table No.3 Discriminant Validity

	ENT	Info	Crđ	Aad	AB	PI
ENT	0.792					
Inf	0.699	0.779				
Crđ	0.623	0.633	0.756			
Aad	0.329	0.2	0.231	0.8		
AB	0.671	0.657	0.693	0.392	0.819	
PI	0.585	0.705	0.749	0.265	0.807	0.74

Table No. 4 SEM to test the hypothesis

Hypothesis		p value	t value	β	Acceptance or rejection
H1A	ENT \rightarrow Aad	0.004	2.85	0.34	Accepted
H1B	INF \rightarrow Aad	0.521	-0.642	-0.07	Rejected
H1C	CRD \rightarrow Aad	0.645	0.461	0.05	Rejected
H2A	ENT \rightarrow AB	0.046	1.991	0.17	Accepted
H2B	INF \rightarrow AB	0.003	2.993	0.24	Accepted
H2C	CRD \rightarrow AB	***	5.354	0.46	Accepted
H3	Aad \rightarrow AB	***	3.594	0.19	Accepted
H4	AB \rightarrow PI	***	12.886	0.89	Accepted
H5	Aad \rightarrow PI	0.183	-1.331	-0.07	Rejected

Table No. 5 SEM to test the mediating effect of Aad and AB on PI

		p value	t value	β Value
PI	<--- ENT	.575	-.560	-0.02
PI	<--- INF	.882	-.148	-0.01
PI	<--- CRD	***	3.323	0.29
PI	<--- Aad	.042	2.035	0.14
PI	<--- AB	***	4.493	0.34