

Impact of Online Video Advertisements on Purchase Behavior of Delhi-NCR Youth

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Abstract

The present study aims to investigate the effectiveness of online video advertisements on purchase intentions of Delhi-NCR youth. It develops a model that measures advertisement value and attitude towards online advertisement on purchase intentions. A survey was conducted among graduate/postgraduate students of engineering and management between March to October, 2017. Confirmatory factor analysis was done for measuring the validity of measurement model followed by SEM analysis and a post-hoc SEM analysis. The study examines and develops a model for measuring impact of attitudinal factors on attitude and purchase intention in case of online video advertisements which provides further scope of research. The post-hoc analysis confirmed that all constructs of advertisement value model given by Ducoffe is not applicable in case of online video advertisements. Invasiveness/Irritation has no significant impact on advertisement value as in case of Ducoffe model although in post-hoc modeling it significantly impacts attitude towards online video advertisements. Information and entertainment constructs have significant impacts on the advertisement value and attitude towards online advertisement.

Keywords: Online Video Advertisements, Structural Equation Modelling (SEM), Online Consumer Behaviour

Introduction

Rapid increase in internet penetration across the globe and the thirst for the people to connect with each other through social media have led marketers shift their advertising and communication strategies from use of traditional media advertising towards internet & social media advertising. Pricewaterhouse Cooper's report (2015) stated that internet share in total global advertising expenditure would reach 38.7% (approx.) by 2019. Also, mobile internet advertising would overtake internet display advertising in 2018 surging with a pace of 23.1%

CAGR in 2019 (Pricewaterhousecooper, 2015). Internet continues to grow as an advertising medium because the marketers are able to advertise their products & services in various customized formats as per their budget & requirements. Spalding, et al. (2009) find that online medium gives flexibility in comparison to other types by providing varied formats such as static images (e.g. JPG), animated flash formats without interaction capabilities (e.g. .swf formats) and rich media formats comprising of movie, video and interactive format. These features enable advertisers to use advertising formats as per their requirements and branding goals. One type of online advertising i.e. online stream-video advertisement has been emerging as a major category among other online methods. Pashkevich, et.al (2012) observed that in-stream video advertisements reduced the negative impact of online video advertisements considerably while retaining its advertisement value. The in-stream video advertisements was started by YouTube

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as True-View in-stream advertisements. The marketers are increasingly relying and allocating budget on this category of technology enable device for advertisement. Statista.com (2015) revealed that globally online video advertising expenditure were increased from 15.54\$ billion in 2015 to \$20.72 billion in 2016. Research shows that the consumer prefers online video advertisements over traditional TV advertisements by a wide margin as in online video advertisement, general recall rate reached 65% compared to 46% general recall for TV advertisements (Nielsen, 2010). The same report claims that online video advertisements offer higher level of brand recall, message recall and likeability than these on TV advertisements; also there has been increase in global average time spent for watching online video by 19.8% in 2016 comprising of smartphones and the growth of tablets which increased by 34.8% as compared to earlier years. The growth in consumption of online videos was also due to increase in use of smartphones and faster internet across the globe. Barnard (2015) claims that increase in online video viewership is the primary reason for increase in viewership of online video advertisements and as per his prediction, is to reach 12.8% of total internet advertisement spend by 2017. According to the Internet and Mobile Association of India (2018), internet users in India were 481 million and it was 35% of the total population in December, 2017 growing at 11.4 per cent over previous year. The report also predicted that the total internet users would go up to 500 million by 2018. The average daily use of internet via PC or tablet in India was 4 hours 22 minutes and for smart phones was around 3 hours 7 minutes (Kemp, 2016). Another important factor behind growing online video advertising market is the rapid growth of over-the-top (OTT) platforms viewership in India. Accordingly, firms are seeing online video ads as a complement to existing TV advertisements to reinforce their brand

communication (Kemp, 2016). Although there is a rise in OTT platforms, yet YouTube leads with maximum share of online video advertisements in India. Online video advertising market size is expected to grow by 41 percent annually to INR 66.7 billion in 2020 from INR 12 billion in 2015(KPMG FICCI, 2016). Present research find consumers' attitude towards online video advertisements is worth studying due to its rising importance.

Review of Literature

Marketers now are using online video advertising as a new form of advertising to target online customers across the world. This makes it essential to understand viewer's attitude towards online video advertising. To begin with, it is important to know factors that affect attitude towards traditional advertising. Larkin (1977) identifies four attitudinal factors to understand student's attitude towards advertising i.e. economic, social, ethical and regulatory factors. Sandage and Leckenby (1980) suggest that attitude towards advertising is composed of two main factors i.e. institution and instrument. 'Institution' denotes an agreement, arrangement and a solution to a significant and ongoing problem in the society; like institution serves the function of providing market information to the society. On the other hand, instrument refers to the consumers' evaluation of advertising method; for example, consumers report some advertisements offensive and annoying. Pollay and Mittal (1993) proposed that the consumer's attitude towards advertising consists of two types of factors. Firstly, personal factors that explains the personal uses and utilities of advertisement and secondly factors which reflect consumers' perception of advertising's social & cultural effects. 'Personal' factors comprise of Hedonic/Pleasure, Social role & image and Product Information; whereas 'Societal' factors encompass Materialism, Value, Corruption, Falsity and Good for Economy. According to

MacKenzie and Lutz (1989), the tendency to react in a favourable or unfavourable manner when exposed to a particular advertising stimulus is defined as attitude towards advertisement. They have taken credibility, perception and mood as main determinants of attitude toward advertiser and advertising of which 'mood' was later dropped from the study due to its testing complexity. The advent of online media brought in new matrices for measuring effectiveness of advertising. Pavlou and Stewart(2000) emphasize the need to develop new measures for online advertising effectiveness as traditional measures are inadequate because of their tendency to measure outcome only but not consumer information oriented. As large numbers of studies were focusing on consumer's attitude towards advertisements, Ducoffe(1995) introduced the concept of 'advertisement value'. Advertisement value is defined as a personal independent assessment of the relative worth and utility of an advertisement by a consumer. Ducoffe(1995) argues that advertisement value is an important concept because of various reasons. Firstly, it can serve as a customer satisfaction index for different business advertisements; secondly it helps to understand better how advertising works & how it satisfies customer needs; thirdly, it helps to report the ethical measure of the advertisement and finally, it acts as a cognitive antecedent of attitude towards advertisement.

The boom in internet advertising in the past decade has motivated researchers to do more research in this particular field. Berthon et. al. (1996) are the early researchers who have proved the relevance of World Wide Web as an advertising medium because of its unique characteristics like global & any time availability, low cost and interactivity. To use online advertising effectively, it is important for marketers to understand how the consumers perceive the web advertising as the different type of media (Online/ Web) and how their attitudes towards advertisement

are formed (Alwitt & Prabhaker, 1994). Ducoffe(1996) states that information, entertainment & irritation are the main determinants of value of web-advertising, with information & entertainment positively impacting advertisement value while on the contrary irritation impacting negatively. Also advertisement value is a significant predictor of attitude towards web advertisement reported in the same study. In a study on Cyberspace advertising, Brackett & Carr (2001) find that information, its credibility, entertainment and irritation significantly affect value of advertisement and finally attitude towards advertisement. In another study on Social media vs. Television Advertising , Logan, et al. (2012) observe that in both advertising formats 'information' and 'entertainment' are the main predictors of advertising value. Taylor, et al. (2011) in a study on social networking sites ('SNS') discuss the role of factors like information, entertainment, invasiveness, peer influence, quality of life, privacy concerns, self-brand congruity and the structure time on attitude towards SNS advertising. They find that information, entertainment, self-brand congruity and peer influence have significant & positive impacts on attitude towards SNS advertisements whereas invasiveness and privacy concern have a significant & negative impact.. Both quality of life & the structure of time were found to have no significant relationship with attitude towards SNS advertisements. The study also finds that young adults of age between 19-24 are more receptive and appreciative of the social media advertising informative messages and entertainment and these two are recognized as the most powerful factors impacting advertising value. Mukherjee & Banerjee, (2017), in a study to measure the effect of social network advertisements on consumers attitude observe that three positive attributes i.e. information, entertainment and credibility generate positive attitude towards social network advertisements which in-turn leads to purchase

intention and positive word-of-mouth intention. In a meta-analysis on attitude towards advertisement performed by Brown & Stayman (1992), 'information' emerges as the most important factor for predicting consumer's attitude towards brand. In a study on the views of advertising American consumers (Bauer & Greyser, 1968) observe that consumers find information from advertising the most important and influential part of advertising. This finding is further confirmed in a meta-analysis performed by Rotzoll, Haefner, & Sandage, (1989). Shavitt, et al. (1998) also report that consumers find information through advertisements positive when they gather information about latest products, their benefits and product position against brand competitors through these advertisements. Huarng, Yu, & Huang (2010) in a study on instructional video advertising report that information element of the online video advertisement, motivate the consumer to purchase product. Research of Alijani, et al. (2010) on online advertisements find that the consumer rate embedded video advertisements is informative and this type of advertisements is effective in motivating consumers to recall online advertisements which eventually leads to purchase of products and services.

Another variable i.e. 'entertainment' is just as important as 'information in defining advertisement effectiveness. Entertainment is the main ingredient of advertisement which makes it more receptive for audience. Advertisers make advertisement as entertaining as possible to increase effectiveness of their messages and to generate positive attitude of the audience towards advertisement (Shimp, 1981; MacKenzie & Lutz, 1989; Shavitt et.al., 1998). Lee and Lee (2011) find that among subjective variables both 'information' and 'entertainment' positively impact attitude towards online video advertisements whereas behavioral beliefs i.e. social interaction, escape, relaxation and passing time don't impact online video advertisements attitude.

Shareef et al. (2017) also confirm in their research that 'informativeness' and 'entertainment' derive advertisement value and constitute 46.3% variance in developing advertisement value construct. Also the two variables explains 65.7% of variance for attitude towards social media advertisement. In an another study on Iranian customers, Mirmehdi, et al. (2017) find that while 'information' and 'entertainment' affect attitude towards SNS advertising, irritation however does not affect the same. Song et al. (2018) in a cross-country study on SNS between Chinese and Korean customers also find that 'information' and 'entertainment' have a positive relationship with SNS brand page participation and commitment in both countries. As researched by Ducoffe & Curlo (2000), leading executives believe that advertisements publishing on new media technology can lead to selective advertising processing by consumers. This may be helpful in increasing selective advertisement value and in-turn influence shopping behaviour. This also leads to challenges for advertisers to create advertisements which carry value 'in and of itself' irrespective of the media so that they can influence purchase behavior (Schrage, 1994; Neuborne & Hof, 1998). Korgaonkar & Wolin (2002) explore the difference amongst consumer's attitude towards web advertising based on their web usage i.e. heavy, medium, and light web usage. Authors also suggest marketers to consider consumers web usage while targeting them via advertisements. Xu, et al. (2009) explore consumer perception of location based advertising 'LBA' on mobile medium using Ducoffe(1995) model and find that LBA messages generate positive attitude leading to significant impact on purchase intention. However, Edwards, et al. (2002) posit that pop advertisements which are one of the popular formats in the online environment cause irritation and create negative perception for advertisement. In another study, Ferreira & Barbosa (2017) also find that consumers

who spend more time on Facebook consider Facebook advertisements annoying.

Modelling online web advertisement:

From the above discussion and literature review Information, Entertainment, Irritation/Invasiveness and Advertisement value are brought out as major determinants of attitude towards advertisements on web.

[Figure 1–Conceptual Model For Online Video Advertising] In Appendix

As this study investigate about a format of web advertising i.e. ‘online video advertising’, in this study we adhere to the above factors in the figure 1 and hypotheses are framed.

H1: Information has a significant & positive impact on value of online advertisements.

H2: Entertainment has a significant & positive impact on value of online advertisements.

H3: Invasiveness has a significant & negative impact on value of online advertisements.

H4: Advertisement value has significant & positive impact on attitude towards online video advertisements.

H5: Attitude towards online video advertisement has a positive impact on purchase intention.

Model Testing

Two major forms of online advertising are-(a) Compulsory 30 seconds’ ads and (b) Skip-after-five-seconds advertisements. These types of formats give viewers the freedom to skip advertisements or to watch them. Such scenario arises the need to examine consumer’s/viewers attitude towards online video advertisement and its impact on purchase intention. The relationship between different variables impact viewer’s attitude towards advertisements which in-turn impact their purchase intention is tested via Structural Equation Modeling

(SEM) technique. According to Bollen(1989) SEM includes number of statistical methodologies to estimate casual relationships network derived on profound theoretical basis. The relationships are between latent variables which can be measured through observable indicators. In the present study, SEM is employed in two steps. In the first phase, confirmatory factor analysis (CFA) was done to check the acceptability of measurement model and finally structural equation modeling (SEM) analysis has been done to validate the structural model developed on theoretical basis.

Methodology of Research: Sample Design

As the youth is the biggest segment of online subscribers, we have taken college students of National Capital Region (NCR) as sample of our study. Questionnaires were personally distributed among 380 Management and Engineering students, of which 279 responses were useful for the analysis. The demographics of students are given in Table 1.

Research Instrument

A 23-item research instruments were selected to measure different latent variables on the basis of measuring instruments used in different published studies considering their relevance for this study. These instruments have been used in studies by (Knoll, 2016; Zhang & Mao, 2016; Edwards, et al.2002; Wu & Hsiao , 2017; Aydin & Karamehmet, 2017; Murillo (2017); Saxena, 2011). We have tested the reliability of the instruments of the present study by performing Cronbach’s alpha test. The results of the test are in table 2 in the Appendix.

All instruments have Cronbach’s alpha values are within the range of 0.76 to 0.60 (Hair & Anderson 2010) and hence acceptable.

Measurement Model

Measurement model is defined as an arrangement of measurement theory which shows how constructs

or latent variables are measured and operationalized by sets of observed variables. According to Hair & Anderson (2010), CFA let the researcher decide on the relationship between variable before proceeding for further analysis. The results of the conceptual model have been compared with base models of (Ducoffe, 1996; Logan et.al, 2012). Figure 2 (in Appendix).

Construct Validity

Construct validity is the extent to which set of items measures the latent construct. The reliability of scale items was examined by performing confirmatory factor analysis (CFA) using AMOS 19. Although reliability of the scale items can also be examined by performing Cronbach's alpha test, but use of SEM makes such a practice redundant and unnecessary (Bagozzi & Yi, 2012). According to (Hair & Anderson 2010) one goodness of fit index, one badness of fit index along with chi-square statistic, one incremental fit index and one absolute fit index are sufficient to measure model goodness of fit. Applying this criterion, all values in the present study falls under acceptable range approving good fit for the measurement model. See Table 3 (Appendix).

Convergent and Discriminant Validity

Convergent validity exists when items of a specific latent construct share high proportion of variance between them. "Factor loading" method is used to measure convergent validity (Salisbury, 2001). All factors are statistically significant (i.e.<0.05 threshold value) which satisfies minimum requirement for convergence. Also, all factor loadings were in range of 0.52 to 0.74, more than acceptable value of 0.50 (Hair & Anderson 2010).

Discriminant validity exists if the correlation amongst constructs is less than one (Chin, Gopal, & Salisbury, 1997). All values are much below 1, which proves existence of discriminant validity for

the present model. (See Figure 2)

Structural Model

Testing structural model is the next step after assessing validity of measurement model, while performing SEM analysis.

In the present study, validity of hypothesized model designed on the basis of literature review and objective of study were tested via two SEM model. In the first SEM model (refer Figure 3 in appendix II), hypothesized model was tested for checking the significance of all the relationships. As all the relationships in hypothesized model is not found to be significant in the first structural model, further post-hoc analysis has been performed to test the second structural model (refer Figure 4 appendix).

Estimated Standardized Path Coefficients

For an overall model fit in an SEM analysis, all the estimated standardized path coefficients should be significant to proceed further to look for model fit indices. All the hypothesized relationships are found to be significant, except invasiveness impact on advertisement value i.e. H3 is not supported as invasiveness, does not significantly impact advertisement value as expected (sig value-0.78). In the final model (Figure 4 in Appendix), we have calculated its direct impact on attitude towards advertisement following the study of Logan et al.(2012) on social media excluding the same variable in the post-hoc analysis for not having significant relation with Advertisement value.

In the post-hoc analysis all the relationships were found to be significant at significance level at both (0.01*, 0.05**) which are the minimum requirement model fitness. Amongst information and entertainment, entertainment impacts more on advertisement value with value (0.48) in comparison to (0.30).Invasiveness has a negative impact on attitude towards advertisement (-0.18)

as expected. Advertisement value has a high impact on attitude towards online video advertisement with value (0.86) whereas attitude towards online video advertisement also has high impact on purchase intention with value (0.75). (Please refer Table 4 in appendix.)

Performance of Model

Hypothesized relationships were supported by model fit indices, as all of them fell under acceptable range. CMIN/DF or χ^2/DF value met the recommended value of less than 3. (Carmines & McIver, 1981). As chi-square is sensitive to sample size other model fit indices were taken into consideration. All the other model fit indices i.e. GFI, AGFI, TLI, CFI, RMSEA were in acceptable range of recommended values. (See Table 5)

Conclusion and Implications

This study was done to test the hypothetical relationships derived on the basis of literature review and subsequently developing a model for online video advertisements discussing the role of different attitudinal factors on attitude which in-turn impacts purchase intention after watching online video advertisement. Ducoffe (1996) and Logan et al. (2012) models were considered as base models for testing advertisement value in case of online video advertisements. The advertisement value model is further elaborated by testing relationship between advertisement value and attitude towards advertisement and relationship between attitude towards advertisement and purchase intention.

While invasiveness impact advertisement value in the original advertisement value model given by Ducoffe (1995), it does not impact advertisement value directly but impacts attitude towards online video advertisement in this study. All other relationships as in base model given by (Ducoffe, 1995) are found to be significant with all the model fit indices falling in acceptable range. The results

corroborate with the results of study by Logan et al. (2012) which states that although irritation in advertisements impacts attitude towards advertising, only information and entertainment derives advertisement value in case of social media and television advertisement. Notably, although irritation negatively impacts attitude towards advertising, it has weaker relationship with attitude toward advertising in comparison to advertisement value which suggests that ultimately advertisement value plays a much larger role in formulating attitude towards advertisement.

As usage of online video advertisements is increasing day-by-day over various online platforms, there has been an increase in need to understand different factors which impact individual's attitude towards online video advertisement. This study provides detailed knowledge of different attitudinal factors impacting individual's purchase intention after watching online video advertisement to the practitioners and marketers. For e.g. Marketers can note that invasiveness/irritation does not impact advertisement value but negatively impacts attitude in case of online video advertisement. Also, entertainment has higher impact on advertisement value in comparison to information. Accordingly, marketers can design their online video advertisements to make their advertisements more watchable by increasing entertainment content and reducing irritation content in them. Since entertainment has a positive influence, advertisers should ensure that in the video advertising format they should write copies creatively to keep the audience attentive. Rational copies high on information may not be well received on this media. Another extrapolation of the findings is that copies of all types should be kept as short as possible in video advertising to reduce irritation. Online video advertisers need to look at the issue of reducing irritation, and develop new models which do not negatively intervene with the online involvement of

the consumer.

Limitations and Future Research

Authors have used only limited number of variables in the study, inclusion of personal and social factors of the consumer may lead to better insights on the topic. The sample in this research has been confined to university students, therefore the findings may not be generalized to a diverse set of population. A more representative sample of population may give insights on how consumers with different demographic variables will be predisposed. A research which may track comparison of advertisements on different SNS and online media, will be more predictive of consumer behavior. Sample population's perception of advertisement value is not affected by irritation; however, it affects the attitude towards advertisement which needs to be further explored. This study has been confined to online video advertising as a medium, a more specific research on what type of appeals and advertising formats would lead to advertising effectiveness will strengthen research in this area. A research on the elements in the online video advertisements which cause irritation, will be of great use to practitioners.

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Appendix
Table 1: Sample Design

Variable	Category	Count	%
Gender	Male	191	68
	Female	88	32
Internet Access Hardware	Mobile phone	82	29
	Desktop/laptop	197	71
Internet Connection Type	Broadband	122	44
	3G	78	28
	2G	79	28
Student Type	Undergraduate (Management)	69	25
	Postgraduate (Management)	117	42
	Engineering	93	33

Table 2: Research Instrument Reliability

Variable Name	No. of Items	Source	Cronbach's Alpha
Information	3	(Taylor, Lewin and Strutton, 2011)	0.71
Entertainment	4	(Taylor, Lewin and Strutton, 2011)	0.72
Invasiveness	5	(Taylor, Lewin and Strutton, 2011)	0.76
Advertisement Value	3	(Ducoffe, 1996)	0.76
Attitude	5	(D'Souza and Taghian, 2005)	0.75
Purchase Intention	3	(Hsu and Tsou, 2011).	0.69

Table 3: Model fit Indices for Measurement Model

Statistic	Recommended Value	Obtained Value
Chi-Square χ^2		374.978
Df		215
CMIN/DF	< 3.00	1.744
GFI	> 0.90	.901
AGFI	> 0.80	.873
TLI		.905
CFI	> 0.90	.920
RMSEA	< 0.10	.052

Table 4: Significance (p) values

			Sig.	Estimate
Addvalue	<---	Information.	.018**	.301
Addvalue	<---	Entertainment	.000*	.481
Attitude	<---	Addvalue	.000*	.856
Attitude	<---	Invasiveness	.002*	-.177
Purintention	<---	Attitude	.000*	.747

*Significant at * $p < 0.01$ and ** $p < 0.05$*

Table 5: Model fit Indices for Structural Model

Statistic	Recommended Value	Obtained Value
Chi-Square χ^2		383.945
Df		222
CMIN/DF	< 3.00	1.729
GFI	> 0.90	.898
AGFI	> 0.80	.874
TLI		.907
CFI	> 0.90	.919
RMSEA	< 0.10	.051

Figure 1: Conceptual Model For Online Vedio Advertising| In Appendix

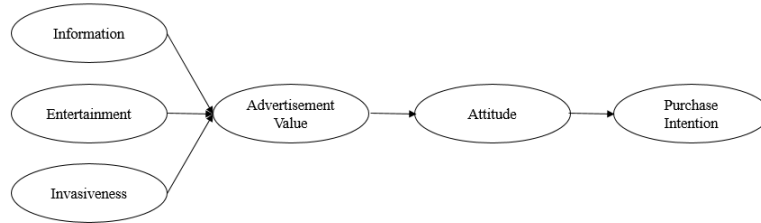


Figure 2: Measurement Model

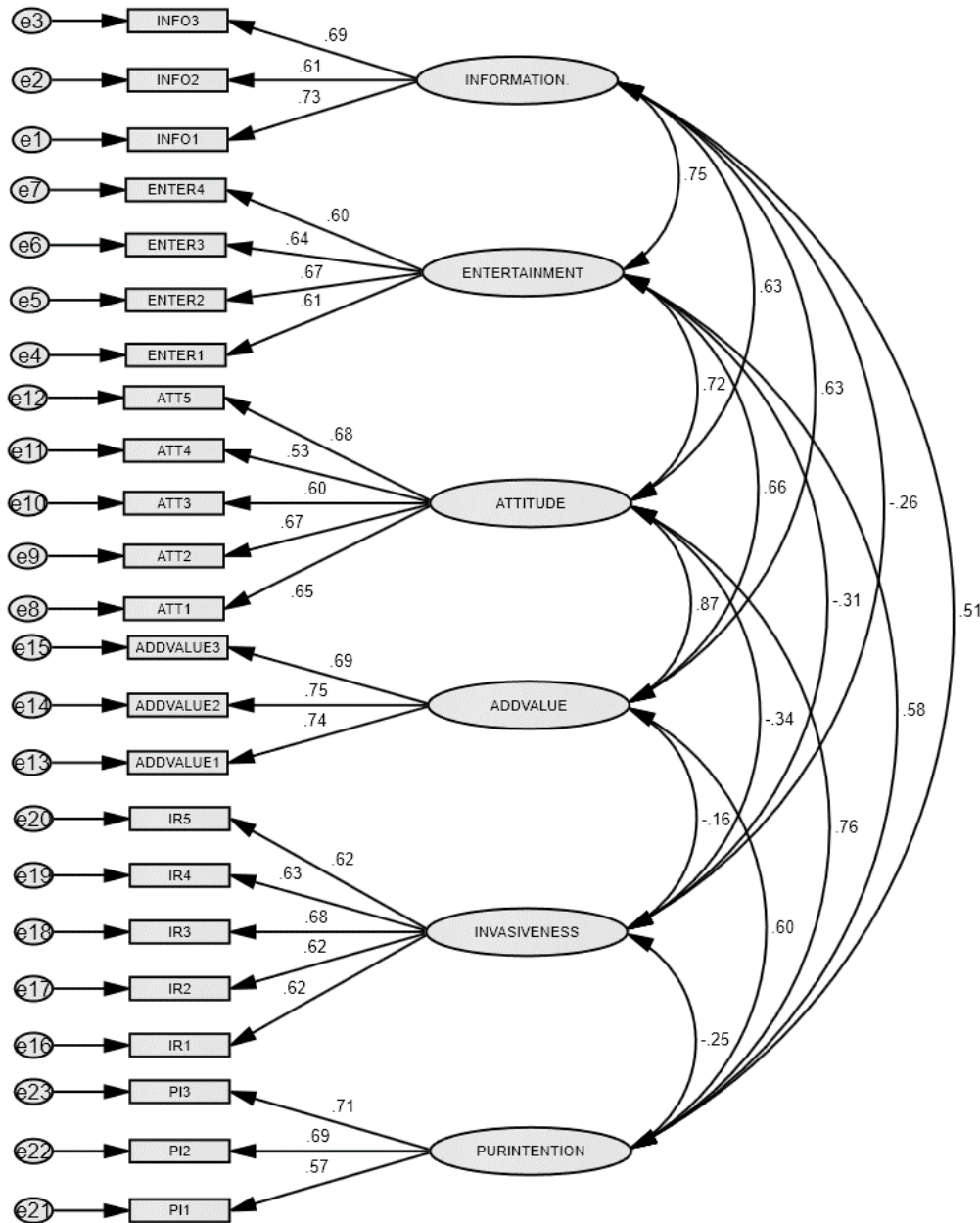


Figure 3: Structural Model 1

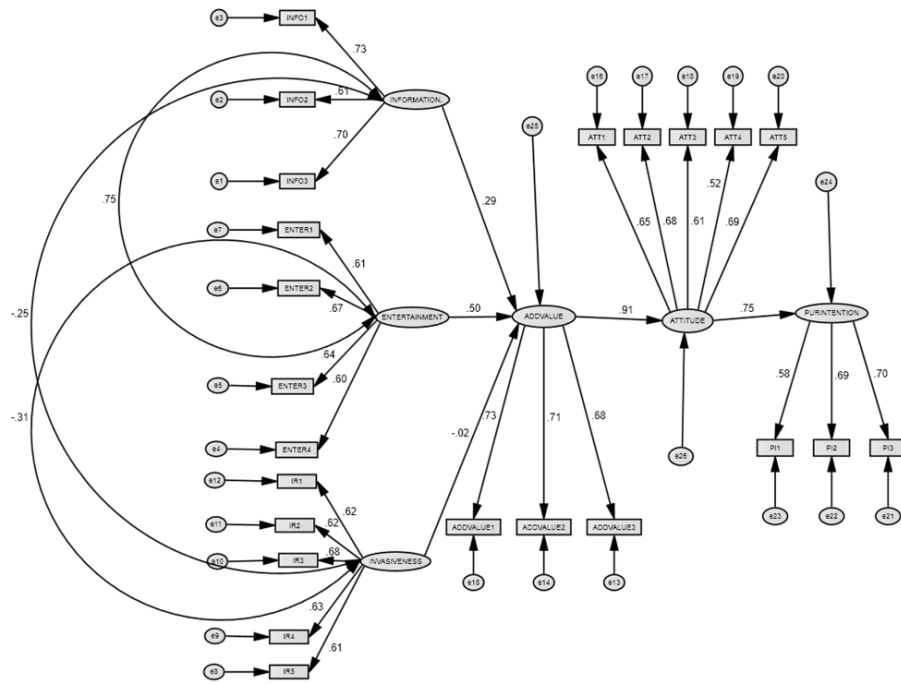


Figure 4: Structural Model 2

