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ITV viewers' attitudes towards iTV advertising and their influence on interactive behavior

Abstract

The implementation of computer-based systems on traditional broadcasted television (TV), and the ability of interactivity, may bring about a revolution in consumers' viewing habits and a positive change in attitude towards TV advertising. Consumers' attitudes towards advertising have long been considered a significant antecedent of advertising message elaboration as well as purchase intention. The aims of this research are to explore current attitudes towards interactive television (iTV) advertising and to examine their effect on TV viewers' interactive behavior after exposure to iTV advertising. The current study shows that the attitude towards iTV advertising is neither negative nor positive among iTV viewers. Furthermore, by examining the iTV viewer's interactive behavior, a significant positive relationship was found to exist between his/her attitude towards iTV advertising and the extent of his/her interactive behavior. These findings confirm the effects of attitude towards iTV advertising on consumers' interactive information-seeking behavior. Their purchase intention, however, depends more on their involvement with a specific product.

Keywords: advertising, interactive TV, attitude, interactivity, purchase intention.

Introduction

Consumers' attitudes towards advertising have long been considered a significant antecedent of *advertising message elaboration* as well as *purchase intention* (Mehta, 2000), and its importance is well reflected in the extensive research that has been conducted on the subject (O'Donohoe, 1995) to date. People's experience with the traditional media and their confrontation with a multitude of advertising have served to shape their personal feelings and attitudes towards different aspects of advertising. In turn, their perceptions about advertising have an effect on their attitude towards specific advertising (Lutz, 1985; Muehling, 1987) and, as a result, on their attitude towards the brand being advertised (Simp, 1981; MacKenzie, Lutz, & Belch, 1986). Feelings towards advertising tend to influence the advertisement's power to persuade the viewer (Aaker & Stayman, 1990). Hence, these feelings may detract from the advertisement's credibility and, in turn, reduce marketing efficiency (Pollay & Mittal, 1993).

The implementation of computer-based systems on traditional broadcasted television (TV), and the ability of interactivity, may bring about a revolution in consumers' viewing habits and a positive change in attitude towards TV advertising. *Interactivity* is described and hereby defined as an interaction between the user and the system (Sunder & Kim, 2005). For the last few decades, watching TV has, for the most part, been a passive activity (Schumann, Artis, & Rivera, 2001), a relaxing, stress-relieving tool, rooted in a sense of escapism (Lee & Lee, 1995). The only 'active' function was changing channels. In contrast, the development of computerized interactive technology has enhanced the capabilities of the traditional TV with added functionality; TV viewing now includes two-way

communication capabilities like the Internet. The TV screen replaces the computer monitor and the TV remote control is used instead of a mouse (for a more detailed description and definition see Cauberghe & De Pelsmacker, 2006). Currently, relatively little is still understood about interactive behavior on interactive television (iTV). In the past, within the framework of the traditional media, the advertiser had complete control over the information being communicated. Alternatively, in interactive media, the media consumer enjoys more control over the surrounding environment, and control over the advertising process is constantly moving towards the consumer (McQuail, 1997; Rodgers & Thorson, 2000). As regards iTV, the degree of interactivity depends mostly on the ability and willingness of TV viewers to participate in and influence the media environment in real time (Steuer, 1992). The use of this interactive functionality in TV advertising allows the consumer to initiate a certain virtual dialog with the marketer by accessing additional information about the advertised product; it also encourages easy product purchasing.

Considering viewers' control over the information flow as an important dimension of interactivity (Bezjian-Avery, Calder, & Lacobucci, 1998), and the fact that interactivity represents the major difference between the interactive media and the traditional media (Rafaeli & Sudweeks, 1997), we can define iTV advertisements and distinguish them from traditional TV advertisements as those that give the viewer more control over the communicated information stream and environment, and allow for interaction between the user and the system.

At the present time, decisions regarding interactive advertising on TV are currently being made with

little knowledge about iTV viewers' feelings. Furthermore, iTV advertising has received very little academic research attention. As yet, only a handful of studies have systematically examined the new interactive media with respect to advertising (Rodgers & Thorson, 2000; Lekakos & Giaglis, 2004; Cauberghe & De Pelsmacker, 2006, 2008; Levy & Nebenzahl, 2006, 2008; Bellman, Schweda, & Varan, 2010a, 2010b). To date, there are no studies that have actually investigated the above-mentioned attitude toward iTV advertising and its influence on consumers' interactive behavior. Thus, it is of high importance for both academics and practitioners alike to more thoroughly understand viewers' feelings towards iTV advertising, its impact over interactive activity, information processing, and purchase intent. Accordingly, the present study attempts to examine iTV viewers' attitudes toward iTV advertising and their influence on viewers by tracking their pre-purchase information search processes and purchase intent.

1. Theoretical and empirical background

1.1. Attitude towards advertising. *Attitude towards advertising* has been defined as "a learned predisposition to respond in a consistently favorable or unfavorable manner to advertising in general" (Lutz, 1985, p. 53). The construct of an 'attitude' is grounded in consumers' beliefs toward advertising in general (Lutz, 1985).

There seems to be an almost general consensus about consumers' negative attitudes toward advertising. In fact, people's opinions about traditional media advertising seem to become more and more adverse over the years. Zano (1984) reviewed 38 public opinion polls, conducted since the early 1930s, and found that people's negative opinions about advertising increased during the 1960s and 1970s. This tendency was later confirmed in most additional studies (Muehling, 1987; Andrews, 1989; Pollay & Mittal, 1993; Mittal, 1994; Alwitt & Prabhaker, 1994; Nebenzahl, 1996). This negative opinion about advertising has been associated with the increased use of advertising, particularly on TV (Zano, 1984; Nebenzahl, 1996; Alwitt & Prabhaker, 1992, 1994). More recently, however, we have found that the negative trend regarding advertising seems to be changing (Shavitt, Lowery, & Haefner, 1998).

Though most research studies found viewers' feelings towards advertising in general to be negative, we can't look at the 'media' as a single entity. People's feelings towards advertising are diversified, rather than unequivocal, and therefore depend significantly on the specific medium in question. For example, Alwitt and Prabhaker (1992)

indicated that feelings towards TV advertising are much more negative than feelings towards advertising in general. In addition, Mittal (1994) compared feelings towards TV advertising with feelings towards advertising on the radio, in newspapers, and in magazines – TV advertising was consistently perceived as being more negative. Similar findings were found in various other studies (Hoek & Gendal, 1994; Wolin & Korgaonkar, 2003). Mittal (1994) and Nebenzahl (1996) reviewed studies, which clarified that viewers' attitudes towards TV advertising become more negative over time, as exposure to TV increases. In this respect, more recent studies, focused on relatively new interactive advertising media, such as the Internet, indicate generally positive opinions about advertising among Internet users (Ducaffe, 1996; Schlosser, Shavitt, & Kanfer, 1999) and positive attitudes as they relate to traditional media advertising (Wolin & Korgaonkar, 2003). However, Burnett (2006) showed that disabled people – usually heavy Internet users – hold stronger negative attitudes towards web advertising than the non-disabled.

An empirical study conducted by Tsang, Ho, and Liang (2004) revealed a negative attitude towards mobile advertising, unless respondents have specifically consented to it. Winkler and Buckner (2006), in their study on product placement in online gaming environments showed that the majority of respondents were negative about advertising in general and were also negative about advertising in games. On the other hand, Karson, McCloy, and Bonner (2006), using three years of data gathered from a consecutive student sample, found that attitudes towards web site advertising are relatively stable. These diverse feelings indicate the positive effect of innovation on attitude and the need to examine each new medium as an individual entity.

For the most part, negative attitudes towards TV advertising occur mainly because of unfavorable feelings connected to program intrusiveness (Mittal, 1994) and viewers' lack of control regarding exposure; thus, it would stand to reason that iTV advertising – as a new TV-related function – must have a similar effect. However, research indicates a positive effect of interactivity on users' attitudes and behavior (Cho & Leckenby 1999; Wu, 1999; Yoo & Stout, 2001). iTV presents a new medium involving voluntary processing, where TV viewers have much more control, so that participation is a matter of individual choice, dependent mostly upon the ability and willingness of the viewer. This perspective leads to the assessment that people's perceptions about iTV advertising will be more favorable than

unfavorable. Considering the positive effect of innovation on attitude and despite the negative perspective of traditional TV advertising, this study suggests that iTV viewers will not have a negative attitude towards iTV advertising. This leads us to propose the first hypothesis:

H1: General attitudes towards iTV advertising will not be negative among iTV viewers.

1.2. Affective response. Theory and empirical research on consumers' affective response behavior clearly indicates that positive thoughts concerning advertising can affect one's attitude towards the product and eventually influence the consumer's willingness to purchase that product (Shimp, 1981; Lutz, 1985; Mackenzie, Lutz, & Belch, 1986; Muehling, 1987; Bush, Smith, & Martin, 1999). The assumption is that people do not respond directly to the stimulus; instead, their behavior is mediated by feelings, beliefs, attitudes, and estimations – and they respond accordingly. These mediating factors can be considered as filters of the advertising message.

The following empirical research indicates that people who express a more positive attitude towards advertising are more exposed to advertisements (Shavitt, Lowery, and Haefner, 1998), are more involved in the advertisements, and spend more time elaborating on advertisement-related information (James & Kover, 1992). People who like advertisements pay more attention to advertising and respond more to the advertised message (Alwitt & Parbhakat, 1992; Mehta, 2000); they are more easily persuaded by advertising and, in turn, experience more buying interest (Bush, Smith, & Martin, 1999; Mehta, 2000).

Research on consumer-controlled media, like the Internet, indicates that attitudes towards websites affect both attitudes towards web advertising (Bruner & Kumar, 2000) and the effectiveness of web advertising (Chen & Wells, 1999). A significant correlation was found to exist between positive attitudes towards web advertising, users' level of interest in clicking on the site (Wolin, Korgaonkar, & Lund, 2002), and clicking through an advertising banner (Cho, 1999). Wolin, Korgaonkar, and Lund (2002) found a significant indication of the effects of attitudes towards web advertising on advertising response behavior, such as attention and information searches. Wang et al. (2009) significantly found attitude toward online advertising to be a predictor of online behavior. Also, Tsang, Ho, and Liang's (2004) study on mobile advertising found a direct relationship between consumer attitudes and consumer behavior. However, research conducted by Karson, McCloy, and Bonner (2006) did not find

a relationship between attitudes towards web advertising and web purchasing or intention to purchase on the web.

The preceding discussions and findings correlate attitudes towards advertising with viewers' advertisement attention, information elaboration, and buying interest. Considering the fact that, as regards iTV, interactive participation depends mostly on television viewers' willingness to voluntarily participate; this study suggests a direct positive relationship between the general attitude toward iTV advertising and the different levels of interactive behavior related to iTV. Therefore, we propose the following hypothesis:

H2: iTV viewers' attitude towards iTV advertising will be positively related to:

- a) *active participation and interaction with iTV advertisements;*
- b) *the extent of the interactive participation; and*
- c) *purchase intention among viewers who exhibited interactive engagement with advertisement.*

2. Methodology

2.1. Research procedure and measures. For the empirical study, an experiment was designed to simulate an interactive television environment. Following the practice of prior studies (De Pelsmacker, Geuens, and Anckaert, 2002; Sharma, 2000), the experiment consisted of exposing each respondent to an edited video recording of a television program. Eight twelve-minute films comprised of a program and two commercials were shown. Each film started with a five-minute program segment, followed by a commercial break, continuing with a second five-minute program segment and ending with a second commercial break. The programs were presented to respondents on a PC with the mouse replacing the TV remote control. The two advertisements were for different products and facilitated interactive behavior by respondents. In order to prevent order bias, each commercial appeared alternatively in the middle of the program and at the end of the program.

To account for program involvement (Levy & Nebenzahl, 2006), two different ten-minute program segments were prepared. To assure that the results were not influenced by the type of product advertised, we prepared interactive advertisements for products belonging to four product categories as defined in the literature (Darby & Karni, 1973; Nelson, 1974; Norton & Norton, 1988). To avoid possible effects of recent exposure (De Pelsmacker, Geuens, and Anckaert, 2002), traditional TV commercials that were aired a few years prior to the

study were selected. All commercials were edited to last 25 seconds and were accompanied by an interactive strip which appeared at the bottom of the screen. Clicking on the strip opened the interactive platform consisting of HTML pages and menus where respondents could receive additional information, make a purchase decision, or exit the interactive platform and return to the TV program. Entering the commercial's interactive platform was at the full control of the respondent. All interactive platforms were identical.

Two measures of interactive behavior – the number of times a respondent clicked on an interactive menu item, and the total time spent in interactive behavior with each commercial – were automatically recorded by the interactive platform.

Following exposure to the simulated iTV, each respondent filled out a self-administered on-line questionnaire that examined viewers' attitudes; questionnaire items included an iTV advertising scale, a product involvement scale, a program involvement scale, as well as demographic questions.

In order to measure attitude toward advertising in general, previous studies used a combination of items describing different aspects of attitude towards advertising, primarily economic and social dimensions (Shavitt, Lowery, and Haefner, 1998; Mehta, 2000). In the current study, attitude towards iTV advertising in general was measured using iTV-oriented versions of Mehta's (2000) items applying to advertising in general. The items were then adapted and modified for iTV advertising. Rated on seven-point Likert scales, values ranged from 'strongly agree' to 'strongly disagree'.

Consumers who are connected to cable or satellite services and have an interactive facility, such as digital converter device are regularly exposed to iTV messages. To locate these iTV viewers and distinguish them from other participants, two additional dichotomous questions were prepared. "Are you connected to cable or satellite?" and "Are you connected through a digital converter device?" Participants who answered "yes" for both questions were treated as *iTV viewers*.

Program involvement has an effect on viewer's attention to the advertisement (Soldow & Principe, 1981). Involvement in the advertising product has been identified as one of the key factors influencing the mental processing of the advertised message (Zaichkowsky, 1985; Celsi & Olson, 1988; Chung & Zhao, 2004). Thus, to assure that attitude towards iTV advertising impacts interactivity, even when these factors are accounted for, we included 'program involvement' and 'product involvement'

as additional measures. *Program involvement* was measured by a nine-item seven-point semantic differential scale that integrates Sharma's (2000) program involvement scale and Mano and Oliver's (1993) interest evaluation scale. *Product involvement* was measured by a ten-item, seven-point semantic differential scale, taken from Zaichkowsky's (1994) Revised Personal Involvement Inventory (RPII).

2.2. Sample. Because of the need for participants who could adequately handle the iTV platform requirements, and in order to avoid unrelated learning effects regarding what comprises an interactive medium, students with past interactive media experience were selected as ideal subjects. Moreover, the use of students in a controlled experiment, distinct from a survey, is a common practice (Celsi & Olson, 1988; Mano & Oliver, 1993; Zaichkowsky, 1985). Motivation to participate in the study was provided in the form of a lottery for a home entertainment system among respondents who completed the questionnaire.

Respondents were randomly assigned to one of the eight film combinations. Each respondent was briefed before the experiment and introduced to iTV capabilities. Respondents were asked to imagine themselves in a homelike television-viewing situation and behave accordingly (Park & Young, 1986; Celsi & Olsen, 1988). The sampling framework in the current study consisted of two advertisements – each respondent was exposed to and had an opportunity to choose to interact with two advertisements. Thus, the results of the sample for some checks are number of observations, i.e. twice the number of the respondents.

Out of the 447 subjects who participated in the experiment, 421 questionnaires were found to be usable for the study's analysis and 195 of these participants were the control group. This control group was used to account for the potential effect of the essence of exposure to iTV advertisement that may influence the treatment group. Participants in the control group were provided with the same conditions; however, they were exposed to TV advertisements *without* the interactive platform. Among the 421 participants, only 251 were found to be *iTV viewers*, 130 comprised the *treatment group* and 121 were in the *control group*. This final sample consisted of 54% male and 46% female participants; most (90%) were under 35 years of age – 100% reported having a TV set at home, 96% indicated they watched television on a regular basis. Factors representing experience with interactivity were as follows: 99% reported having a computer at home, 99% said they surfed the Internet regularly, while 73% said they purchase products through the Internet.

3. Results

3.1. Overview. Measures to assess the levels of internal reliability were conducted for each of the three independent variables. Factors were analyzed using principal components analysis with a varimax rotation (5 iterations), which revealed that the factors accounted for 59 percent of the variance with factor loadings above 0.55, an acceptable score (Hair et al., 1995). Cronbach's alpha with alpha if item deleted revealed an adequate level of reliability coefficients for the attitude towards iTV advertising – with only five out of six items; thus, the sixth item was eliminated. The updated scale achieved a reasonable level of reliability with an alpha coefficient of 0.71. Product involvement was examined for each of the advertised products separately and alphas ranged between 0.92 and 0.94. Program involvement achieved an alpha coefficient of 0.91. In conclusion, sufficient internal consistency was found for the present study (Hair et al., 1995). Average responses to the questions were computed as indexes for these variables.

3.2. Attitude and affective response. Regarding iTV viewers as the main subjects of these research hypotheses, the treatment here focuses on these viewers; hence, we first checked the possible effect of the exposure itself on attitudes towards iTV advertising. We found no significant difference between the treatment group ($M = 4.02, Std. = 0.97$) and the control group ($M = 3.89, Std. = 0.73$) among iTV viewers ($F(1,249) = 1.42, p > 0.10$). Considering the above results, we can conclude that the actual exposure of the treatment group to the interactive platform has no significant effect on iTV viewers' attitudes towards iTV advertising.

Hypothesis H1 questions the general attitudes towards iTV advertising among iTV viewers. Our findings revealed a nonnegative, however quite moderate, picture of iTV viewers' attitudes towards iTV advertising ($M = 3.95, Std. = 0.86$, 4 midpoint of the scale, $t = -0.86, p > 0.10$). The same picture appears for the treatment group ($t = 0.18, p > 0.10$) and the control group ($t = -1.73, p > 0.05$) when checked separately. The above findings support Hypothesis H1.

Hypothesis H2a was tested first by using Anova to compare the levels of interactive behavior with the two advertisements as a function of attitude towards iTV advertising (see Table 1). A significant mean difference was obtained between the interactive levels. Respondents who interacted with one or both advertisements exhibited a more positive attitude towards iTV advertising. Since the variable of interactive behavior is ordinal, the relationship was also tested and confirmed by discriminant analysis.

The high significance of the discriminating functions (Wilks' Lambda = 0.89, $\chi^2(2) = 14.29, \alpha < 0.01$) indicates the positive relationship between attitude toward iTV advertising and interactive behavior.

Table 1. Mean attitude towards iTV advertising by levels of interactive behavior

Interactive behavior	N	Mean	SD
No interactivity	53	3.66	1.02
Interactivity with one ad	52	4.16	0.83
Interactivity with both ads	25	4.46	0.90

Notes: $F(2,127) = 7.56, p < 0.01$.

We conducted a logistic regression test and included two additional measures, *program involvement* and *product involvement*, to ascertain that attitude towards iTV advertising influences interactivity, even when these variables are accounted for. Here, the dependent variable, *interactivity*, is dichotomous, where 1 indicates viewer engagement in interactive behavior with an advertisement and 0 indicates a lack of viewer engagement. As has been indicated, each respondent was exposed to two different advertisements such that this dichotomous variable was composed of the data collected from the two advertisements; hence, the total sample here is the number of observations.

The results presented in Table 2 indicate that when considered jointly, together with program involvement and product involvement, attitude towards iTV advertising has a significant effect ($p < 0.01$) on interactivity. These findings support Hypothesis H2a.

Table 2. Logistic regression of interactivity with advertisements as a function of attitudes towards iTV advertising, program involvement and product involvement

Variable	B	S.E.	Wald	df	Sig	Exp(B)
Constant	-1.905	0.873	4.761	1	0.029	0.149
iTV	0.448	0.163	7.501	1	0.006	1.565
Program	-0.637	0.116	29.885	1	0.000	0.529
Product	0.544	0.127	18.346	1	0.000	1.722

Notes: $X^2(3) = 65.50, p < 0.01; R^2$ (Cox and Snell) = 0.22.

Next, we examined the extent of interactive behavior as it reflects information elaboration, in order to check Hypothesis H2b. Two measures of elaboration extent were used for each advertisement: *the number of interactive "clicks" exhibited by the participant* (the interactive mode and menus) and *the total time (in seconds) that each participant spent interactively*.

Table 3 presents the relationship between attitude towards iTV advertising and the number of

interactive “clicks” exhibited by the participant. The dependant variable here is a unification of the two advertisements. As expected, a significant mean difference was obtained between the extents of interactive behavior. The positive relationship was also tested and confirmed by discriminant analysis (Wilks’ Lambda = 0.861, $\chi^2(3) = 18.91$, $\alpha < 0.01$).

Table 3. Mean attitude towards iTV advertising by extent of interactive behavior

Interactive behavior	N	Mean	SD
No interactivity	53	3.66	1.02
One click	44	4.05	0.93
Two clicks	20	4.40	0.67
Three or more clicks	13	4.75	0.65

Notes: F (3,126) = 6.77, p < 0.01.

An ordinal regression was then conducted and the two additional measures, *program involvement* and *product involvement*, were included. Once again, the total sample is the number of observations. We limited our analysis to those participants who interacted with the advertisements, since the elaboration extent is mainly relevant to those who entered the interactive mode. The results presented in Table 4 indicate that attitude towards iTV advertising has a significant effect on interactivity ($p < 0.05$) among viewers who entered the interactive mode.

Table 4. Ordinal regression (probit) of interactivity with the advertisements as a function of attitudes towards iTV advertising, program involvement and product involvement among viewers who entered the interactive mode

Variable	Estimate	S.E.	Wald	Df	Sig
Threshold (1)	3.470	0.940	13.618	1	0.000
Threshold (2)	4.686	0.981	22.827	1	0.000
iTV	0.338	0.158	4.575	1	0.032
Program	0.132	0.101	1.705	1	0.192
Product	0.265	0.124	4.599	1	0.032

Notes: $X^2(3) = 13.87$, $p < 0.01$; R^2 (Cox and Snell) = 0.13.

A linear regression analysis was then run for the second measure of elaboration extent as a dependent variable – *the total time each participant spent interactively*. The dependent variable here is a unification of the two advertisements. We limited our analysis to those who interacted with the advertisements ($M = 38.39$, $Std. = 36.54$) since the time was recorded only for those who entered the interactive mode. The results presented in Table 5 indicate that attitude towards iTV advertising has a positive coefficient and a significant effect on interactive time. These findings confirm Hypothesis H2b.

Table 5. Linear regression of viewer’s interactive time presented as a function of attitudes towards iTV advertising, program involvement and product involvement

Variable	B	Beta	T	Sig
Constant	-36.301		-2.171	0.032
iTV	10.763	0.331	3.484	0.001
Program	0.003	0.000	0.002	0.999
Product	4.267	0.179	1.878	0.063

Notes: F (3,99) = 6.62, $p < 0.01$; $R^2 = 0.17$.

To test Hypothesis H2c, another dichotomous dependant variable was defined – *purchase intention expressed by those participants who interactively requested to engage in the purchasing process*. We limited our analysis to those participants who interacted with the advertisement and the total sample is the number of observations. A significant positive picture of attitudes towards iTV advertising appears among iTV viewers who interactively requested to engage in the purchasing process ($M = 4.50$, $Std. = 0.92$, $N = 45$, 4 midpoint of the scale, $t = 3.65$, $p < 0.01$). Logistic regression was then conducted and the two additional measures, *program involvement* and *product involvement*, were included. The results presented in Table 6 indicate that attitude towards iTV advertising has no significant effect ($p > 0.01$) on purchase intention. Though interactive searchers with purchase intention show a positive attitude towards iTV, this attitude does not affect purchase intention, whereas product involvement does. Based on these results, Hypothesis H2c was not supported.

Table 6. Logistic regression of purchase intention as a function of attitudes towards iTV advertising, program involvement and product involvement among viewers who entered the interactive mode

Variable	B	S.E.	Wald	df	Sig	Exp(B)
Constant	-4.892	1.635	8.956	1	0.003	0.008
iTV	0.408	0.267	2.346	1	0.126	1.504
Program	0.206	0.173	1.413	1	0.235	1.229
Product	0.472	0.216	4.775	1	0.029	1.603

Notes: $X^2(3) = 11.64$, $p < 0.01$; R^2 (Cox and Snell) = 0.11.

4. Discussion and managerial implications

The main goals of the present study were to enhance our current understanding of viewers’ attitudes towards iTV advertising as a new function of TV advertising and, furthermore, to understand its effects on iTV viewers’ potential interactive behavior. Generally speaking, this study confirmed what has previously been said about the importance of understanding people’s attitudes towards advertising and their effect on advertisement execution.

Our first result shows that iTV viewers tend to neither dislike nor like iTV advertising. This presents quite a different picture than that of people's negative feelings towards TV advertising indicated in the research literature (Alwitt & Prabhaker, 1992; Mittal, 1994; Nebenzahl, 1996; Hoek & Gendal, 1994; Wolin & Korgaonkar, 2003). Considering iTV as a new function of TV, this study shows that iTV advertising positively improves TV advertising attitudes, and that the moderate effect on users' attitudes is a matter of interactivity (Cho & Leckenby, 1999; Wu, 1999; Yoo & Stout, 2001). This finding resembles that of previous studies focused on new interactive media indicating generally more positive opinions relative to traditional media advertising (Ducaffe, 1996; Schlosser, Shavitt, and Kanfer, 1999; Wolin & Korgaonkar, 2003).

Next, we examined iTV viewers' interactive behavior. Significant differences were identified between levels of interactive behavior and attitude towards iTV advertising. A more positive attitude was found to exist among iTV viewers who entered the interactive mode and interacted with the advertisements. A significant positive relationship was found to exist between attitude towards iTV advertising and the extent of interactive behavior, which reflects the different levels of information elaboration. The above findings confirm the direct effects of attitude towards iTV advertising on interactive information searches.

Finally, we checked the interactive purchase intention. Though we found positive attitudes towards iTV advertising among iTV viewers who interactively requested to engage in the purchasing process, attitudes towards iTV advertising do not have a direct effect on interactive purchase intention when product involvement is controlled for. iTV viewers exhibiting positive attitudes towards iTV are expected to be highly motivated to search for information interactively; however, purchase intention depends more on their product involvement.

These findings have significant implications for practitioners. Advertising practitioners must be conscious of the fact that the existing negative attitude towards TV advertising may detract from

the effectiveness of individual TV advertising campaigns. Advertisers, media practitioners, and the TV industry may be advised to consider new and innovative ways to enhance and improve people's attitudes towards TV advertising. This, in turn, may increase viewers' interest in the advertised product and encourage them to seek out more information, and even indirectly persuade them to interactively purchase through television.

As Mittal (1994) implied, there is a need to stop further erosion and reverse the public's negative opinion trend towards TV advertising. Advertising strategy execution is advised to focus more on creativity, viewers' attention and entertainment, and less on content in order to enhance interest and improve viewers' opinions about TV advertising. Content can be sent voluntarily through the new iTV technology, and may be further enhanced by additional and freely sought interactive information and buying capabilities. iTV advertising can be used as a global communication tool as well as a marketing tool. In addition, the above-mentioned combination of iTV with sponsorships or product placement during programs or movies could be applied as a successful alternative to traditional standard TV advertising.

Some potential limitations and further research directions should be noted. First, this study was conducted under laboratory conditions and the experiment focused on students who were familiar with interactive engagement. Thus, in order to further validate the current study results, additional studies involving regular (less informed) viewers must be conducted under more natural conditions. Second, the current study's framework was limited to program involvement and product involvement as an additional important factor affecting engagement with advertisement. Additional research studies focusing on other aspects of cognitive and affective response factors (Lutz, 1985; Mackenzie, Lutz, and Belch, 1986), such as attitudes towards advertisement and attitudes towards the brand, may also serve to enhance and contribute to the existing theoretical knowledge in the field.

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