

# Does the Level of Website Interactivity Affect Consumers' Behavior and Online Advertising Effectiveness?

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## Abstract

Despite the central role of interactivity in the online media, the available literature provides conflicting findings. A stream of research supports the view that increased levels of interactivity in a web environment are positively related to effective advertising results such as formation of positive attitude toward the brand and increased pre-purchase intentions. However, another stream of studies posits that enhanced levels of interactivity are associated with negative effects on the online communication process such as limited process of the provided information. Therefore, the purpose of this study is to shed light in the above discrepancies and clarify the role of interactivity on online advertising effectiveness. The paper synthesizes the emerging Internet related and marketing literature in an effort to understand the way interactivity impacts advertising effectiveness for low involvement products. An experimental study is employed aiming at examining the influence of various interactivity levels (high, medium, low) on website effectiveness expressed the attitude towards the website, intention to revisit the website and pre-purchase behavior.

Multivariate analysis was employed and released a number of interesting findings. The most remarkable finding is that the medium interactivity in a website of a low involvement product is the most effective one, as compared to the low and high interactive. In particular, medium interactivity in a website elicits most positive attitudes, greatest intention to revisit the website and highest pre-purchase behavior.

## Introduction

Today many companies reallocate resources from conventional media to the more interactive ones such as internet advertising. The increasing importance of the Internet has reinforced companies to concern with the design of attractive websites. The ultimate objective of the websites is to maximize customer experience and not just to describe a product [1]. In addition, consumers can now actively enter into a dialogue with the companies and interact with them on a number of issues related to their products and services [2,3].

Despite the central role of interactivity in the online media, the available literature provides conflicting findings. A stream of research supports the view that increased levels of interactivity in a web environment are positively related to effective advertising results such as formation of positive attitude toward the brand and increased pre-purchase intentions [4,5]. However, another stream of studies posits that enhanced levels of interactivity are associated with negative effects on the online communication process such as limited process of the provided information [6,7]. Previous studies suggest the product involvement as a factor that moderates the effectiveness of interactive websites [7,8].

Many studies explored the effectiveness of website advertising comparing high and low involvement products. In particular, Dahlen, Ekborn and Morner [9] in their banner advertising study indicated that the websites depicting low involvement product do not have any brand communication effect. What is more, Dahlen, Radch and Rosengren [10] indicated that a visit to low involvement product does not increase brand attitude. The purpose of the present study is to investigate the communication effectiveness of a website that presents a low involvement product and performs in three interactive levels (low, medium, high). The communication effects are examined in terms of attitude formation, intention to revisit the website and pre-purchase behaviour.

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The structure of the paper is as follows. First, a literature review is presented along with the hypotheses of the study. Then, the methodology with the pretests and experimental design are analyzed in detail along with the data analysis and findings. Finally, the study concludes with a discussion of the findings, implications and recommendations for further research.

## Review of Literature

### Interactivity

"Interactivity" constitutes a key element that differentiates new media from the conventional ones. Interactivity is a website dimension that is increasing directed to online experience [11,12]. It is proposed that interactivity creates brand identities [13] as well as converts visitors into interactive customers [1]. Interactivity has been defined as "*the immediately iterative process by which customers' needs and desires are uncovered, met, modified, and satisfied by the providing firm*" [6, p. 23].

It has been proposed that interactivity has three dimensions. The first is that interactivity enables users with two-way communication including feedback forms and chat rooms. The second has to do with time know as "synchronicity". The third dimension relates to "active control" which is facilitated by a number of navigational tools (such as hyperlinks, site maps and customization) [14].

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Empirical evidence indicates that actual interactivity differs from the perceived one [15,16,14]. Actual interactivity can only provide the potential to allow interaction. However, if, for whatever reason, subjects are not using interactive features, perceived interactivity can be low. Likewise, perception of high interactivity can occur even when the structures necessary for interactivity do not seem to be present [17]. No matter how interactive the web medium is able to be, the web advertising can be static if the individual is unable to manipulate an interactive advertising.

Website interactivity tends to affect the way that information is presented, processed and obtained by the visitors [18]. A plethora of internet-related studies identify perceived interactivity as the psychological sense experienced by the site-visitor throughout the process of interaction [19,15,20,21]. Bezjian-Avery et al. [6] consider that three overlapping constructs are central to identify users' perceived interactivity. These constructs are direction of communication, user control and time. Wu [15] recommends that actual and perceived interactivity should be considered simultaneously in order to obtain a comprehensive picture of interactivity. Nevertheless, functional interactivity and perceived interactivity are independent, though certainly related concepts [22]. Moreover, it is proposed that an integrative approach should be used whenever a study of interactivity is designed [15].

### Product involvement

Zaichkowsy [23,24], who has explored the concept of involvement thoroughly, concludes that product involvement can be conceptualized as its own construct, separately from purchase (situation) involvement. Moreover, she added that *"the level of involvement with product categories varies gently over individuals. For any product category, there seem to be individuals who have low involvement with the product and individuals who have high involvement with the product"*. Thus, consumers perceive the same product in a different way [23] meaning that product involvement encapsulates a person's specific characteristics.

The central premise of the literature adopts the holistic view of involvement that focuses on personal relevance to the stimulus object [25,26]. Traylor [27] defines involvement based on how consumers recognize or understand the product. The level of the involvement depends on the degree of consumer's consideration for the product. The higher the consumer's consideration for the product is, the higher the level of involvement with the product will be. Zaichkowsky [23] attributes the importance, the perception and the personal demand for the product to the involvement. Moreover, she accepts that involvement is a general construct which is considered to be more than important. It is motivating in nature. When someone is involved, he pays more attention, perceives importance and behaves in a different manner than when someone is not [24]. Engel and Blackwell [28] call involvement as a consumer's stimulation caused mainly by personal interest in the product. The above-mentioned body of literature has highlighted that the higher the level of the personal consideration the higher the level of involvement.

A growing body of experimental documents that high levels of involvement can occur under certain circumstances such as high risk perceptions [29,30] strong personal importance in an issue [31], general interest in searching information (information seekers). Most consumers seem to bring to bear low involvement, since most purchase actions are based on little information [32].

Lastivicka and Gardner [33] and Zaichkowsky [23] demonstrated the variation in involvement for any product across individuals. Moreover, Hupfer and Garder [34] conducted a survey, asking 44 students to address the importance of 20 products in relation to 20 issues on an eight-point scale. The results indicated that issues were more involving than products. In addition, there was not supported the notion that most expensive products lead to conditions of high levels of product involvement. For example, bicycles, typewriters and color television were rated as less important than beer, milk and news magazines.

It should be underlined the fact that the product involvement ought to be measured. Though the product is exactly the same, the consumers' level of involvement with the product should be measured. It should be underlined that more expensive products are not necessarily more involving [34]. Zaichkowsky found that breakfast cereals, 35mm cameras and red wine were perceived as either low or high involvement by students. It has been proposed that consumers, in the pre-purchase stage, do not evaluate every choice alternative not only when they purchase major items, but also on first purchase [35]. Moreover, a consumer has to make a lot of decisions every day, many of which may be of low importance. Thus, consumers do not process all the provided information actively. Based on this notion theorists developed a two-fold dichotomy consumer behavior: low involvement and high involvement consumer behavior [28].

### Hypotheses Formulation

There is already a large body of literature supporting the view that increased levels of interactivity have a positive impact on online advertising effectiveness. On the contrary, another line of research brings in question the positive impacts of interactivity on a website. In particular, it is proposed that enhanced levels of interactivity have a negative impact on the consumers' attitude formation towards the website and the advertised brand, at the same time with the debated notion of increased interactivity (regarding the effectiveness of the increased levels of interactivity); researchers provide insights into the ineffectiveness of the low level of interactivity as applied in the Internet marketing context.

A growing body of empirical research considers that increased levels of interactivity on a website have the potential to generate an effective communication outcome [11,18,2,36,4,19]. It is proposed that highly interactive websites lead to more information processing [4,5]. Interactive websites also provide consumers with the ability to organize the information in such a way that the cognitive process is facilitated. Consumers are able to select and organize the presentation of the information [6,37]. Interactive information needs to be structured and this process activates an extensive cognitive effort [38]. Therefore, a number of researchers provide a valuable framework, supporting the view that increased interactivity reinforces and facilitates individuals to process the provided information regarding the website and the product.

Conversely, another line of researchers underline the negative effects of increased interactivity on information process. It is argued that increased levels of interactivity in the web environment interrupt the persuasion process, particularly when the advertising message is visually complicated [6] and erode the quality of visitors' decision [7]. Interactivity may be considered as a construct that impairs and interrupts any cognitive effort in most people.

What is more, a number of researchers have highlighted the low effectiveness of the non interactive websites [4]. In particular, empirical evidence reinforces the notion that non interactive websites lead consumers to process the provided information to a lesser extent when compared to interactive ones [4].

Recent studies indicate that there are factors which moderate the effect of enhanced levels of interactivity on the advertising effectiveness (e.g. "expected interactivity" proposed by Sohn et al., [7]; "usage experience" and "task involvement" proposed by Liu and Shrum, [8]). In particular, Sohn, et al. [7, p. 116] conclude that "*prior experience with websites dealing the products*" moderates the effects of interactive websites. Moreover, Liu and Shrum [8] report that under high involvement conditions interactivity produces more positive communication outcomes for experienced users but less positive for inexperienced ones.

Another factor that is considered to determine or moderate the directions and shapes of the relationship between interactivity and advertising effectiveness is the "product involvement" [7, p. 117]. Product involvement, as a factor affecting surfing behavior, was examined in recent Internet application studies [39]. It is argued that product involvement has a positive impact on the extent of interactive behavior [40].

As mentioned above, product involvement is considered as a variable that reflects the level of personal relevance with an issue [23]. Personal relevance is defined as the extent to which consumers perceive the object to be self-related or in some ways crucial to achieve their personal goals and values [41]. According to Petty and Cacciopo, [42], product involvement influences consumer's decision making process as well as the type of information that he looks for.

Celsi and Olson [41] accept that individuals exposed to advertising messages that promote a product of high involvement tend to devote some time and effort to looking for and processing information about the product. On the contrary, individuals exposed to advertisements of low-involvement products are not willing to spend time and effort to process the provided information.

In the web environment, interactivity works in a different manner under conditions of low involvement than it does under high involvement. In particular, low-involvement consumers do not tend to be engaged in extensive interaction and the interactivity is serving as a positive peripheral cue that can have a direct impact on persuasion process regardless of individuals' ability [8]. Petty and Cacioppo [42] indicated that individual's attitude under a low-involvement condition is formulated based on the assessment of peripheral cues. Therefore it is expected that:

**Hypothesis 1:** When the level of website interactivity is high, consumers tend (a) *to formulate more positive attitudes* as compared to those exposed to a website with (i) medium or (ii) low interactive level when the product depicted on the website is of low involvement.

The attitude toward advertising is defined as a "*predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus in a particular exposure situation*" [43]. It is proposed that the attitude toward advertising represents not only a strong indicator of advertising effectiveness [44], but also the best single effectiveness index [45]. Moreover, it is argued that it influences brand attitudes and purchase intentions [43]. By analogy, it is assumed

that the attitude toward the website will be equally a useful indicator of site value. Chen and Wells [46, p.28] defined attitude toward the website as the "*web surfers' predisposition to respond favourably to web content in natural exposure situations*". It should be highlighted that many researchers referred to attitude toward the website as an indicator of website effectiveness [47]. What is more, a number of researchers have assumed that consumers' attitude toward the website (Ast) will affect their attitude toward the advertised brand [46].

The hierarchy of effects model [48] proposes that beliefs affect the attitude formulation, and the attitude is an antecedent to subsequent behaviour. Many studies in the marketing context suggest a positive relationship between attitudes toward advertising and predisposition for advertising as well as subsequent behaviour [49].

In the web environment, Wolin et al. [50] indicated that there is a linkage between attitudes toward web advertising and web advertising behaviour. It is expected that individual's intention to revisit the website and pre-purchase behaviour will be consistent with their attitude formation. Extending the previous hypothesis it is proposed:

**Hypothesis 2:** When the level of website interactivity is high, consumers tend to (b) have *greater intention to revisit the website* and (b) generate *more positive pre-purchase behaviour* as compared to those exposed to a website with (i) medium or (ii) low interactive level when the product depicted on the website is of low involvement.

## Materials & Method

A number of pre-tests indicated that the refreshment drink represent a product of low involvement for consumers aged 19-23. A fictitious brand for a refreshment drink (low involvement product) was designed in order to avoid the confusing effect or the pre-attitudinal effects.

For the needs of the experiment there were designed three interactive versions (low, medium, high) of a webpage for the fictitious refreshment brand. The amount of provided information remained constant in all three versions of the website [4]. The interactive features employed in every level followed recommendation of relevant literature. Consistent with previous researches, the level of actual interactivity was operationalized by varying the presence or absence of interactive elements. However, a central premise of the interactivity literature is the distinction between actual vs. perceived [16]. Actual interactivity can only provide the potential to allow interaction. However, if, for whatever reason, individuals are not using interactive features, perceived interactivity can be low. Perception of low interactivity may occur even when the structures necessary for interactivity seem to be present [47]. Perceived interactivity is often identified as the psychological sense experienced by the site-visitor throughout the process of interaction [15]. In order to obtain a comprehensive picture of interactivity there were measured both actual (Pretest 1) and perceived (Pretest 2) interactivity levels.

Two experienced web-designers served as judges to verify the actual level of interactivity on each website (Pretest 1). They both confirmed that the versions of the websites with high, medium and low interactivity had the respective number of interactive elements. In pretest 2 the Measures of Perceived Interactivity (MPI) proposed by McMillan and Hwang (2002) was employed to assess the perceived level of interactivity by 60 students. Students recruited from the school of Economics ( $n=60$ ) were exposed to web pages and answered

the 18-items structured questionnaire. This conceptualization is important because the consumer's perception is the key to creating successful advertising communications. It is important to consider that there may be a difference between what web designers consider interactive and what consumers actually do [14]. The results confirm that each webpage provides the appropriate level of interactivity. Otherwise, the websites would be re-designed according to remarks obtained by web-designers and students.

The experiment was conducted in the University lab. 132 students participated in the study. They were separated into three groups randomly. Each group was exposed to only one version of the website. They were asked to relax and navigate to each website (according to their treatment conditions). Once the navigation process was completed, the participants were invited to log out and fill in the questionnaires (attitude towards the website, intention to revisit the website and pre-purchase behavior). 120 questionnaires were considered usable.

Participants' attitude towards the website was measured with the 6-items questionnaire proposed by Chen and Wells [46] (Likert scale 1-5) while their intention to revisit the website was measured by the scale proposed by Kim and Biocca [51]. Their pre-purchase behavior was measured by three seven-point, bipolar semantic differential items which have been used in several studies [52,53].

### Data Analysis

The hypothesis 1 proposes that high level of interactivity on a website leads consumers to (a) formulate a more positive attitude toward the website A (st). Hypothesis 2 proposes that high level of interactivity on a website (b) depict greater intention to revisit the website and (c) generate more positive pre-purchase behavior as compared to medium and low levels of interactivity when the website exposes a product of low involvement.

Forty participants were exposed to the highly interactive website, forty to the medium and forty to the low one. Every website presented the same amount of information for a low involvement product but it was performed with three different levels of interactivity.

To examine the effects of interactivity, a MANOVA analysis was conducted with interactivity as the fixed factor and the attitude toward the website, the intention to revisit the website and the pre-purchase behavior as the dependent variables.

Univariate homogeneity of variance tests (Bartlett-Box) was significant for the attitude (F=5.49741, P= .004), non-significant for the intention to revisit the website (F= 1.01948, P= .361) and significant for the pre-purchase behavior (F= 6.35571, P= .002) (Table 1).

Bartlett-Box		
Dependent variables	F	P
Attitude toward the website	5.49741	.004
Intention to revisit the website	1.01948	.361
Pre-purchase behavior	6.35571	.002

Table 1: Bartlett - Box.

Multivariate test for homogeneity of dispersion matrices (Boxes M) was significant since the P value was less than .05 (F= 2.73610, P= .001). Multivariate test of significance (Hotellings) reveals the significance level lower than .05 (F= 7.84811, Sig. = .000) (Table 2).

Table 3 presents the results of ANOVA for these three dependent variables. Analysis of variance indicated that the level of interactivity affects the attitude toward the website (F= 17.237, Sig. = .000), the intention to revisit the website (F= 12.679, Sig. = .000) and the pre-purchase behavior (F= 14.389, Sig. = .000). It seems that the level of interactivity on a website of a low involvement product has a direct effect on three variables; attitude toward the website, intention to revisit the website and pre-purchase behavior (Table 3).

Table 4 indicates that individuals exposed to the medium interactive website formulated more positive attitudes (Means: Medium= 3.5625, Low= 2.6958 and High= 2.9542), expressed a higher intention to revisit the website (Means: Medium= 4.39750, Low= 3.3250 and High= 4.0417) and generated more positive pre-purchase behavior (Means: Medium= 5.9750, Low= 4.3250 and High= 4.9333) as compared to those exposed to highly and low interactive versions.

Multivariate Tests <sup>c</sup>						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.967	1111.046 <sup>a</sup>	3.000	115.000	.000
	Wilks' Lambda	.033	1111.046 <sup>a</sup>	3.000	115.000	.000
	Hotelling's Trace	28.984	1111.046 <sup>a</sup>	3.000	115.000	.000
	Roy's Largest Root	28.984	1111.046 <sup>a</sup>	3.000	115.000	.000
Interactivity	Pillai's Trace	.297	6.750	6.000	232.000	.000
	Wilks' Lambda	.706	7.300 <sup>a</sup>	6.000	230.000	.000
	<b>Hotelling's Trace</b>	.413	<b>7.848</b>	6.000	228.000	.000
	Roy's Largest Root	.403	15.578 <sup>b</sup>	3.000	116.000	.000
a: Exact statistic						
b: The statistic is an upper bound on F that yields a lower bound on the significance level.						
c: Design: Intercept + interactivity						

Table 2: Multivariate tests (attitude, revisit, pre-purchase) (low involvement product).

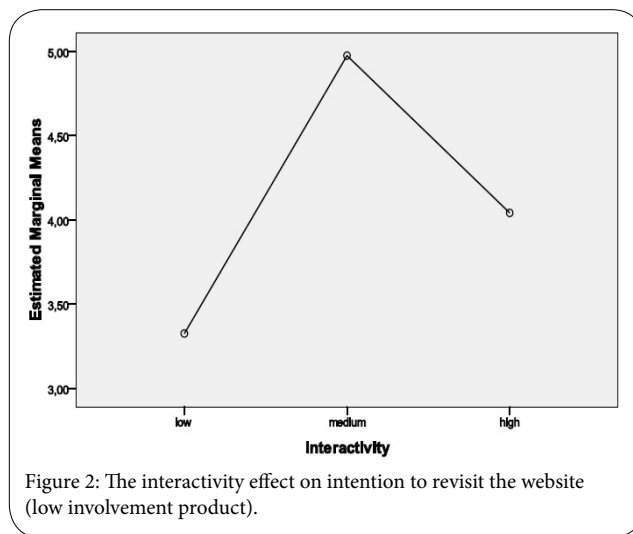
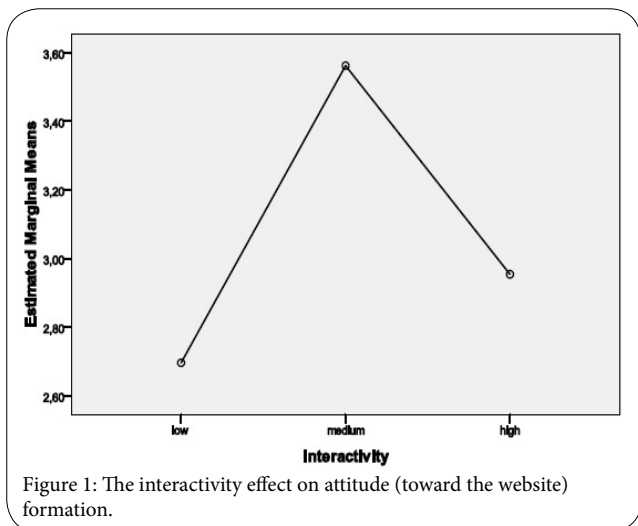
ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Attitude	Between Groups	15.839	2	7.919	<b>17.237</b>	<b>.000</b>
	Within Groups	53.753	117	.459		
	Total	69.592	119			
Revisit	Between Groups	54.763	2	27.381	<b>12.679</b>	<b>.000</b>
	Within Groups	252.681	117	2.160		
	Total	307.444	119			
Pre-purchase	Between Groups	55.702	2	27.851	<b>14.389</b>	<b>.000</b>
	Within Groups	226.461	117	1.936		
	Total	282.163	119			

Table 3: ANOVA for attitude toward the website, intention to revisit the website and pre-purchase behavior. Descriptive Statistics for attitude toward the website, intention to revisit the website and pre-purchase behavior

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Attitude	Low	40	2.6958	.77154	.12199	2.4491	2.9426	1.83	4.50
	Medium	40	3.5625	.46484	.07350	3.4138	3.7112	2.17	4.33
	High	40	2.9542	.75295	.11905	2.7134	3.1950	1.83	4.67
	Total	120	3.0708	.76473	.06981	2.9326	3.2091	1.83	4.67
Revisit	Low	40	3.3250	1.52190	.24063	2.8383	3.8117	1.00	6.00
	Medium	40	4.9750	1.27520	.20163	4.5672	5.3828	1.67	6.67
	High	40	4.0417	1.59270	.25183	3.5323	4.5510	1.33	6.67
	Total	120	4.1139	1.60735	.14673	3.8233	4.4044	1.00	6.67
Pre-purchase	Low	40	4.3250	1.80453	.28532	3.7479	4.9021	1.00	7.00
	Medium	40	5.9750	1.05784	.16726	5.6367	6.3133	3.33	7.00
	High	40	4.9333	1.19639	.18917	4.5507	5.3160	2.00	7.00
	Total	120	5.0778	1.53984	.14057	4.7994	5.3561	1.00	7.00

Table 4: Descriptive Statistics for attitude toward the website, intention to revisit the website and pre-purchase behavior.

These findings are visually depicted in Figures 1, 2 and 3.



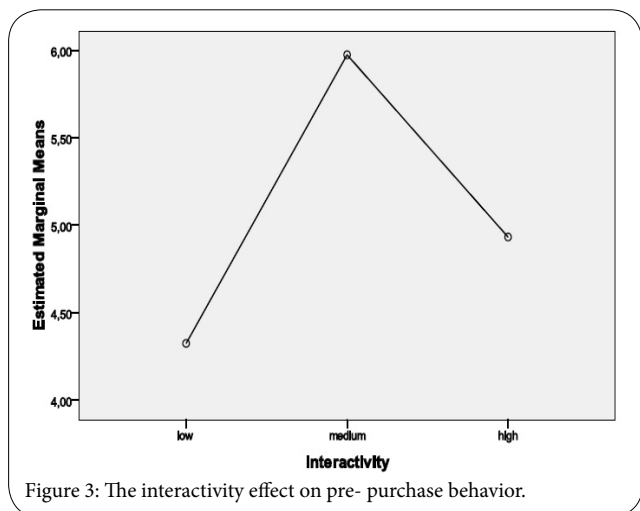


Figure 3: The interactivity effect on pre-purchase behavior.

MANOVA analysis for attitude toward the website, intention to revisit the website and pre-purchase behavior

It is used the MANOVA procedure and Post Hoc Tukey's are used to test the hypothesis that (1) the formulated attitudes toward the websites, (2) the intention to revisit the website and (3) the pre-purchase behavior are significantly different based on the interactivity level (low, medium and high), when the website exposes a low involvement product [H1 (1) (2) (3) b].

Table 5 presents the findings of Tukey analysis. Participants exposed to the medium interactive websites formulated significantly more positive attitudes as compared to those exposed to low and highly interactive versions (Medium - Low: .8667, Sig.: .000, Medium - High: .6083, Sig.: .000). Participants exposed to highly interactive websites do not statistically differ in average performance from those exposed to low versions (High - Low: .2583, Sig.: .208).

Individuals exposed to the medium interactive websites generated a significantly higher intention to revisit the website as compared to those exposed to low and highly interactive versions (Medium - Low: 1.6500, Sig.: .000, Medium - High: .9333, Sig.: .015). Participants exposed to highly interactive websites do not statistically differ in average performance from those exposed to low versions (High - Low: .7167, Sig.: .079).

Concerning the pre-purchase behavior, it is depicted from the table 5, that the most positive outcomes released from the medium interactive website as well (Medium - Low: 1.6500, Sig.: .000, Medium - High: 1.0417, Sig.: .003). Participants exposed to highly interactive websites do not statistically differ in average performance from those exposed to low versions (High - Low: .6083, Sig.: .128).

Table 6 presents the means for homogenous subsets for the formulated attitude, confirming that the most positive attitude was formulated by individuals exposed to the medium interactive website. Moreover, it appears that the formulated attitudes resulting from the low and highly interactive versions do not differ to a significant level.

Multiple Comparisons							
Tukey HSD							
Dependent Variable	(I) interactivity	(J) interactivity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Attitude	Low	Medium	-.8667*	.15156	.000	-1.2265	-.5069
		High	-.2583	.15156	.208	-.6181	.1015
	Medium	Low	.8667*	.15156	.000	.5069	1.2265
		High	.6083*	.15156	.000	.2485	.9681
	High	Low	.2583	.15156	.208	-.1015	.6181
		Medium	-.6083*	.15156	.000	-.9681	-.2485
Revisit	Low	Medium	-1.6500*	.32861	.000	-2.4301	-.8699
		High	-.7167	.32861	.079	-1.4968	.0634
	Medium	Low	1.6500*	.32861	.000	.8699	2.4301
		High	.9333*	.32861	.015	.1532	1.7134
	High	Low	.7167	.32861	.079	-.0634	1.4968
		Medium	-.9333*	.32861	.015	-1.7134	-.1532
Pre-purchase	Low	Medium	-1.6500*	.31109	.000	-2.3885	-.9115
		High	-.6083	.31109	.128	-1.3468	.1302
	Medium	Low	1.6500*	.31109	.000	.9115	2.3885
		High	1.0417*	.31109	.003	.3032	1.7802
	High	Low	.6083	.31109	.128	-.1302	1.3468
		Medium	-1.0417*	.31109	.003	-1.7802	-.3032

Based on observed means.  
 The error term is Mean Square (Error) = 1.936.  
 \*. The mean difference is significant at the .05 level.

Table 5: Multiple comparisons for attitude toward the website, intention to revisit the website and pre-purchase behavior.

Table 7 indicates that individuals exposed to the medium interactive website expressed the highest intention to revisit the website.

Table 8 confirms that individuals exposed to the medium interactive website expressed the highest pre-purchase behavior. It should be underlined that individuals exposed to low and highly interactive website versions do not differ in average performance.

Attitude toward the website			
Tukey HSD <sup>a, b, c</sup>			
		Subset	
Interactivity	N	1	2
Low	40	2.6958	
High	40	2.9542	
Medium	40		3.5625
Sig.		.208	1.000
Means for groups in homogeneous subsets are displayed. Based on observed means. The error term is Mean Square (Error) = .459.			
a: Uses Harmonic Mean Sample Size = 40.000.			
b: The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.			
c. Alpha = .05.			

Table 6: Homogenous subsets (attitude).

Intention to revisit to the website			
Tukey HSD <sup>a, b, c</sup>			
		Subset	
Interactivity	N	1	2
Low	40	3.3250	
High	40	4.0417	
Medium	40		4.9750
Sig.		.079	1.000
Means for groups in homogeneous subsets are displayed. Based on observed means. The error term is Mean Square (Error) = 2.160.			
a: Uses Harmonic Mean Sample Size = 40.000.			
b: The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.			
c. Alpha = .05.			

Table 7: Homogenous subsets (revisit).

Pre- purchase behavior			
Tukey HSD <sup>a, b, c</sup>			
		Subset	
Interactivity	N	1	2
Low	40	4.3250	
High	40	4.9333	
Medium	40		5.9750
Sig.		.128	1.000
Means for groups in homogeneous subsets are displayed. Based on observed means. The error term is Mean Square (Error) = 1.936.			
a: Uses Harmonic Mean Sample Size = 40.000.			
b: The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.			
c. Alpha = .05.			

Table 8: Homogenous subsets (pre-purchase).

## Conclusions

### Attitude

Previous study suggests that high levels of interactivity do not lead to stronger attitudes toward the website [54]. In the present study this finding is verified. When the product under consideration is of low involvement the most positive attitudes are formulated for the medium interactive website.

### Intention to revisit

The intention to revisit the website was measured as an index of website effectiveness. Individuals expressed the greatest intention to revisit the website of a low involvement product when the medium interactive level was employed. These findings underline that every level of interactivity yields different outcomes.

### Pre-purchase Behavior

The pre-purchase behavior was also assessed as a measure of website effectiveness. Individuals expressed the highest pre-purchase behavior when the medium interactivity level was employed. Overall, the results demonstrate that the direction of the interactivity effects can drastically change with certain product categories, which implies that increasing level of interactivity may not always yield positive communication outcomes [7].

### Implications

The purpose of this study was to synthesize the emerging literature of the Internet and marketing related studies in an effort to understand the way interactivity impacts on the advertising effectiveness. The present study also assesses the following question: Which level of interactivity on a website is the most appropriate when assessing the advertising effectiveness in terms of (a) (formulated) attitude toward the website (b) intention to revisit the website and (c) pre-purchase behavior?

Today many companies reallocate resources from conventional media to the digital ones. The number of new websites grows rapidly and the online marketing strategies are employed in order to gain traffic in the corporate website. The increasing importance of the Internet has reinforced companies to concern themselves with the question of how to design attractive websites. Because of increased competition considerable amounts of resources are used in an effort to design superior websites that attract customers [55]. Both academics and participants accept that the design of an effective website is an important and hard issue. Content on the web includes pictures, text, graphics, layout, sound, motion and someday even smell, making the right web and therefore, content decisions are vital to effective web design [56]. Previous studies underline the relationship between interactivity and involvement [57]. The present study provides a number of useful insights concerning the development of an effective interactive website of a low involvement product.

It should also be underlined that web designers should take into account the main objective of the advertising stimuli. A medium interactive website concerning a low involvement product will lead individuals to formulate more positive attitudes toward the website, increase their intention to revisit the website as well as it will formulate a more positive pre-purchase behavior.

Overall, the results demonstrate that the direction of the interactivity effects can drastically change with certain product categories, which implies that increasing level of interactivity may not always yield positive communication outcomes [7]. The analysis of the present study reinforce [8] suggestion that the rush to employ interactive elements into the marketing context should be mediated or tempered by fully understanding both; what interactivity can do well and most importantly what it cannot do. They also add that before adopting the latest technological trend they should first take into consideration both its advantages and limitations.

The current research suggests that when designing an online marketing strategy, online marketers should consider two key questions. The first question involves the level of product involvement that will be presented on the website whereas the second question involves the main objectives of the advertising strategy. The results of the present research can help business to select the appropriate interactivity level and design effective interactive web pages and therefore, increase their marketing edge. More effective plans may include ones that facilitate consumers' elaboration of the provided information and encourage them to revisit the website and purchase both online and offline.

### Limitations & Future Research

Several limitations of this study, encompassing the nature of the sample, data collection procedures, the product involvement and the identification of the factors loaded to the attitude toward the website should be taken into consideration when interpreting the study's results and developing future research to extend and expand its scope.

Another limitation of the present study is the measurement of the product involvement. The product involvement was a variable that was pretested to subjects with analogous characteristics to those participating in the main experiment, concluding on two products one of high and one of low involvement. A manipulation check would ensure the manipulation of this variable.

The questionnaire that measured the attitude toward the website was tested for unidimensionality, and loaded on two factors. A plausible explanation for the two loaded factors may be attributed to the fact that the questionnaire was developed in Minnesota and used in Greece. The differences in respondent's background regarding Internet issues may be able to explain the dimensionality of the scale. It should be underlined that people in different countries perceive the use of Internet and websites differently. Though it appears to be a reliable and robust scale that measures the attitude toward the website, it may be considered a relatively new research tool since it was introduced in 1999 and re-tested in 2002 by Chen et al.. However, in the absence of a scale that measures the attitude toward the websites it is considered more appropriate by comparison with the tool that measures the attitude toward the traditional forms of advertising. For the purpose of the present study it was crucial to measure the attitude toward the website as one component and therefore number one (1) was selected as the "fixed number of factors".

Though this study underlies a number of interested findings additional research would provide remarkable findings in the debated literature of interactivity and website effectiveness. Future research in other forms of advertising messages and other types of products would shed more light in the website design. Additional research that examines individual differences such as locus of control would



help the consumer online behavior model to be synthesized. The measurement of the online branding would help academics and practitioners to build effective online advertising strategies. Finally further investigation in the accessibility of the attitude and online pre-purchase behavior would provide insights into the cognitive psychology in the online environment.

## Competing Interests

The authors declare that they have no competing interest.

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