Empirical Study of Factors Influencing Attitude toward Advertisement: Case Study of Ubiquitous Street Project Media Pole in Seoul, Korea

Keywords:
Media Pole, New Advertisement Medium, Ubiquitous Street, Ducoffe Model, Attitude toward Advertisement.

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Abstract

Information and Communication Technology – ICT – has dramatically changed advertising and has substantially impacted advertising creativity. In similar fashion, future advertising will be altered via – and apace of – the emergence of new technologies.

New advertisement tools loaded with the convergence of art, media and ICT, and styled as Media Pole in Seoul, Korea is a good example of a new advertising medium in ubiquitous network societies. Media Pole is street advertisement architecture providing a variety of information and services on the streets of Gangnam, one of the busiest districts in metropolitan Seoul.

This study examines factors impacting attitude toward the new advertisement medium called Media Pole. This study is based on Ducoffe’s (1996) Advertising Attitude and Value Model and Ajzen & Fishbein’s (1975 & 1980) Theory of Reasoned Action. This research proposes a new theoretical model to examine attitude towards this new advertisement medium. It also provides valuable case study results for governments, organizations and industries regarding the current status of new technology and value-added public advertisement facilities, marketability, and suggested future directions. This study recommends that focus should be on users’ viewpoints and on trying to provide user-centric services in future development.
1. Introduction

Information and Communication Technology – ICT - has changed modern societal life. The ICT evolution opened a new environment called Ubiquitous Network Environment-UNT. That UNT means we are connected by invisible media, anytime, anywhere. It changes our lifestyles in all directions and demands changes in all areas including the advertising market. This new market will use new, uniquely processed methods to approach consumers about entertainment, personal interests and new technology. This new area of advertisement will provide consumers with various platforms surpassing limits of expression.

A well-known French advertiser, Robert Gue'rin, described the advertisement thus: “Air that we are breathing is nitrogen and oxygen and advertisement. We swim through advertisement. All forms of advertisements follow us all day and don’t leave us.” His exuberant phrasing suggests we live in an age of ubiquitous advertisement evolution. Historically, advertisements in one form or another existed from early human society, and developed along with evolution of that society. New inventions of advertisement media arrived as industry and technology developed. Latterly, ICT has brought dramatic changes in advertisements and substantially has affected advertisement creativity and this evolutionary process will continue apace of new technology development.

This new advertisement medium, at the convergence of art, media and ICT, called Media Pole in Seoul, Korea is a good example of that medium in our ubiquitous network society.

Media Pole comprises street advertisement posts providing various information and services on the street of Gangnam, one of the busiest districts in the Seoul metropolis. According to Korean Statistical Information Service (KOSIS), Korea’s population is some 47 million of whom, at the most recent count, Seoul has some 9.75 million (i.e., in 2005 [www.kosis.kr]). These use a mixture of private and public transportation daily for various purposes. According to Seoul Metro (the public subway company), daily passenger traffic rate is 3.98 million throughout subway stations in Seoul. Gangnam Station has a daily passenger traffic rate of 129, 285 which ranks it as the busiest subway station in Korea (as of September 2009). Media Pole is installed with commercials, artworks and technologies to provide information and services on this, Seoul’s busiest street, as part of the Seoul Metropolitan City’s “Design Seoul Project.”

According to Economic Review, (July 28, 2009; www.ermmedia.net), since the start of 2009, Gangnam Ward Office installed 22 Media Poles in the 760 meters from Gangnam Station to Kyobo Tower Intersection, at an average separation of 30 meters each. These 12-meter tall Media Pole shapes are vertical columns with rectangular viewing fascia, loaded with new ICT, street lighting.
CCTV providing public contents such as local area information, area map, movie information, media art, advertisements, latest news, photo service and game service through LED and LCD touch screens. People can enjoy games, take pictures and send e-mails by photo mail service. Currently, the poles are managed by Gangnam Ward Office, Korea Telecom and Che-II Worldwide, Korea’s largest advertisement marketing company.

To be successfully recognized as a new advertisement medium, empirical consumer research should follow to discern consumer needs, wants and interests relating to this new advertisement medium.

Much precedent research exists on attitudes towards advertisements via traditional media (Alwit & Prabhaker, 1992; Shavitt, Lowrey, & Haefner, 1998), via online media (Brackett & Carr Jr., 2001; Ducoffe, 1996) and mobile media (Okazaki, 2004; Tsang, Ho, & Liang, 2004; Yang, 2005). But research lacks on technology and value added street advertisements. Hereafter, seeing that new advertisement media will be introduced continuously due to the emergence of new technology and research will increase on such new media.

Based on Ducoffe’s (1996) Advertising Attitude and Value Model and Ajzen & Fishbein’s (1975 & 1980) Theory of Reasoned Action, this study aims to examine how factors impact attitudes toward Media Pole, and propose a new theoretical model to examine attitudes toward that new advertisement medium. It also expects to provide a case study to governments, organizations and industries to show the efficacy of this new advertisement medium, its marketability, and its suggested future direction.

2. Literature Review and Hypothesis

The concept of attitude has appealed to social scientists primarily because of the belief that attitudes influence behaviors (Allport, 1935). The Theory of Reasoned Action (TRA) proposed by Ajzen & Fishbein (1975 & 1980) was an attempt to measure the concept of attitude. TRA components have three general variables: Behavioral Intention (BI), Attitude (A), and Subjective Norm (SN). TRA explains that attitude toward behavior and subjective norm impact behavioral intention (BI = A + SN). When people intend to behave in certain way, it is likely that they will. Behavioral intention measures people’s degree of intention to perform certain behavior. Attitude consists of beliefs and valuation of certain objects. Subjective norm is treated as expectations from others, along with intentions to comply with these expectations, hence one’s perception that most people who are important to one think that one should or should not perform the behavior in question (Azjen and Fishbein, 1975).

The Traditional consumer behavior model explains that cognitive factors influence emotional factors and emotional factors influences behavior factors, based on Fishbein & Ajzen’s (1975) Unidimensional Model. Based on this, the proposed Media Effect Model by Lutz et al. (1983) explains the impact process of advertisement stimulation and intention to buy. It can be explained

![Figure 2. Theory of Reasoned Action](image-url)
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via displacement hypothesis that cognition factor for stimulation as an independent variable can measure attitude toward advertisement, brand name and intention to buy (Mitchell & Olson, 1981).

New perceptions and sophisticated models were proposed that not only between stimulation and response – as Unidimensional Model, but also involvement – as a new variable, will impact consumption of information (Petty & Cacioppo, 1986). These sophisticated models indicated that high involvement will take information along a central route, low involvement along a peripheral route. This means that value of advertising is individual-specific. Some consumers may find what they need from the advertisement and perceive it high in value, while others may find it low in value because of lack of the information they seek.

These consumer behavior models were developed along with the development of website advertisement and were based on Mackenzie & Lutz (1989). Ducoffe (1996) proposed the Advertising Attitude and Value Model which uses variables of informativeness, entertainment, irritation and advertisement value to explain consumer attitudes.

This means that informativeness, entertainment, and irritation variables impact advertisement value and that this impacts attitude toward advertisement. Also, entertainment variables assume direct impact on attitude toward advertisement. Furthermore, mobile advertisements have become vitalized and researchers have applied Ducoffe’s Advertising Value and Attitude Model to analyze mobile advertisements (Yang, 2005; Tsang & Liang, 2004; Okazaki, 2004; Oh & Xu, 2003). These researches have used similar variables – informativeness, entertainment, irritation – to measure impact on mobile advertisement’s value and attitude. And it is noted that website advertisement and mobile advertisement have much in common (Tsang & Liang, 2004).

Ducoffe (1995 & 1996) found a significant positive. 65 correlation between informativeness and advertising value in traditional media and a. 73 correlation in Web advertising, plus a significant positive. 48 correlation between entertainment and advertising value in traditional media and. 76 correlation in Web advertising. Chen and Wells (1999) found a positive correlation of. 68 between informativeness and attitude toward a site, and a positive. 51 correlation between entertainment and attitude toward a site. Ducoffe (1995 & 1996) found a significant and negative correlation of -.52 between irritation and advertising value in traditional media and-.57 in Web advertising.

Based on these precedent results, this research adopted Ducoffe’s (1996) website Advertising Attitude and Value Model and modified it so that informativeness, entertainment and irritation directly impact attitude toward advertisement, to examine attitude toward Media Pole as a new advertisement medium. Media Pole seems an advertisement medium similar to website and mobile advertisements, but might have different characteristics of irritation. Media Pole is a public facility in a public place so it does not have the same irritation variable as measured in Ducoffe’s (1996) website Advertisement Attitude and Value

![Figure 3. Advertising Attitude and Value Model](image-url)
Model. But it might irritate differently, possibly causing annoyance in public places. Media Pole is located on the street of Gangnam Station which is the busiest district in downtown Seoul. People might feel uncomfortable to use services provided by Media Pole because of their potential to interrupt pedestrian traffic flow, even cause pedestrian traffic congestion. People might feel uncomfortable in playing games, taking and/or e-sending photos, creating User Created Contents (UCC) in such a busy street in Seoul. Alternatively, their discomfort might be because in using such facilities they have a lesser degree of privacy. These considerations might lead to lower usage. By this mean, these different characteristics of irritation on attitudes toward Media Pole usage could be measured via the subjective norm variable from Ajzen & Fishbein's (1975 & 1980) Theory of Reasoned Action (TRA).

\[ SN \propto \Sigma \eta_i m_i \]

Based on these precedent research results, this research combined Ducoffe's (1996) Advertising Attitude and Value Model and Ajzen & Fishbein's (1975 & 1980) Theory of Reasoned Action, to propose a new research model. Research hypotheses and research model are thus:

H1: Informativeness will have POSITIVE (+) affect on attitude toward Media Pole advertisement.

H2: Entertainment will have POSITIVE (+) affect on attitude toward Media Pole advertisement.

H3: Subjective Norm will have NEGATIVE (-) affect on attitude toward Media Pole advertisement.

3. Research Method and Analysis

Quantitative survey research has been conducted to identify factors affecting attitude toward Media Pole. College students were selected as a subject of study because that particular group have distinctive characteristic of media usage and are recognized as intensive users of media. Their focus is on self discipline, searching for role models, forming human relationships, desiring new information and using media to satisfy their desires (Vincent & Basil, 1997). Thus media chosen by college students will impact future media usage patterns. Also, the college student groups are experienced ICT goods and services user group and a main target of advertising (Park & Yang, 2004).

A pre-survey was conducted from August 24 to 28, 2009 to modify wordings and mistakes. An actual survey conducted from September 2 to 16, 2009 in Seoul, Korea. A total of 250 survey questionnaires were distributed to university students in Seoul and 214 valid survey questionnaires were used to analyze data; 36 invalid survey responses were excluded.

Construction and components of survey questionnaires adopted were based on literature review and precedent research. Students were asked to rate four sections via a 1-5 Likert scale including attitude toward Media Pole, informativeness, entertainment, subjective norm. Demographic questions, questions regarding knowledge about Media Pole, and questions about
the experience of using Media Pole, were included. Definition and full features of Media Pole services were fully explained before the distribution of survey questionnaires.

Three analysis methods were used for this survey and SPSSWIN 14.0 was used to analyze data. First, frequency analysis method was used to analyze demographic questions, knowledge about Media Pole and experience of using Media Pole. Second, Cronbach’s α coefficient method was used for reliability test and factor analysis method was used for factor validity test. Third, multivariate regression analysis method was used for correlation analysis.

4. Research Results.

4.1 Demographic Analysis.

Demographic results showed that respondents comprised 111 males (51.9%), 103 females (48.1%), average age 22 (Std. Deviation 2.2), youngest 19, oldest 29. Of 214 respondents, 92 (43.0%) had knowledge of Media Pole before the survey and 46 (21.5%) had experience of using Media Pole. These facts suggest that Seoul, organizations and industries should focus on promoting Media Pole to attract more attention to, and increase demand diffusion of, Media Pole.

4.2 Reliability Test.

Reliability test of measurement variables have been performed. Cronbach’s α coefficient was used to test internal consistency reliability. Results, shown in Table 2, are that each variable scored over 0.7, which is acceptable. Generally, reliability measurement acceptability rate is 0.6 or higher, so this survey obtained an acceptable score.

4.3. Validity Test.

For the validity test, this study used principal component analysis and varimax rotation to test construct validity for variables used. Results, as shown in Table 3, indicate that all questions properly loaded in 3 variables and that these factors explain 64% of all variables. Generally, rates over 0.5 load in applicable factors and rates lower than 0.4 load in other factors are considered as proper measurement questions (Hinkin, 1998). Therefore, survey results as Table 3 verified that all questions used in this survey satisfied these requirements.

4.4. Hypothesis Verification and Results

This study established hypothesis variables as informativeness, entertainment and subjective norm. Results of correlation analysis between these variables and attitude toward advertisement are shown in Table 4.

Multiple linear regression analysis performed on attitude towards advertisement (dependent variable), informativeness (independent variable), entertainment (independent variable), subjective norm (independent variable) indicate that these variables explain 64% of the value predicted by the regression model are related to the observed value of the dependent variable. Adjusted R square between independent variables and dependent variable is. 397. Thus these three independent variables explain about 40% of the proportion of variance in the dependent variable. Tolerance Limit – TOL – was over 0.1. Variance Inflation Factor – VIF – was lower than 10 which means that
### Table 2. Reliability Test

<table>
<thead>
<tr>
<th>Attitude toward Media Pole</th>
<th>Measurement Index of Attitude Toward Media Pole</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. I have a good feeling toward Media Pole.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. I have positive feeling towards Media Pole as new advertisement medium</td>
<td></td>
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<tr>
<td></td>
<td>3. I like the interactive advertisement medium as Media Pole.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. I have a positive view toward Media Pole.</td>
<td>.756</td>
</tr>
<tr>
<td></td>
<td>5. I feel satisfied about multi-language services provided by Media Pole.</td>
<td></td>
</tr>
<tr>
<td>Informativeness</td>
<td>1. Informations provided by Media Pole are useful.</td>
<td>.775</td>
</tr>
<tr>
<td></td>
<td>2. Informations provided by Media Pole are convenient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Informations provided by Media Pole will be beneficial to our life style.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Informations provided by Media Pole will be good source of timeliness news.</td>
<td></td>
</tr>
<tr>
<td>Entertainment</td>
<td>1. Services provided by Media Pole are entertaining.</td>
<td>.777</td>
</tr>
<tr>
<td></td>
<td>2. Services provided by Media Pole are exciting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Services provided by Media Pole are interesting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Services provided by Media Pole are pleasant and fun.</td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>1. I feel uncomfortable to use Media Pole services in a congested area which might cause annoyances and inconveniences to pedestrians</td>
<td>.785</td>
</tr>
<tr>
<td></td>
<td>2. I feel uncomfortable to use Media Pole services because it might cause obstruct traffic in a congested area.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. I feel uncomfortable to use Media Pole services such as game, photo, videos and UCC services in a busiest street of Seoul with public facility.</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Factor Analysis

<table>
<thead>
<tr>
<th></th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Informativeness</td>
</tr>
<tr>
<td>Inf2</td>
<td>.872</td>
</tr>
<tr>
<td>Inf1</td>
<td>.803</td>
</tr>
<tr>
<td>Inf3</td>
<td>.747</td>
</tr>
<tr>
<td>Inf6</td>
<td>.596</td>
</tr>
<tr>
<td>ent2</td>
<td>.149</td>
</tr>
<tr>
<td>ent3</td>
<td>.159</td>
</tr>
<tr>
<td>ent1</td>
<td>.077</td>
</tr>
<tr>
<td>ent4</td>
<td>.345</td>
</tr>
<tr>
<td>Sn2</td>
<td>-.030</td>
</tr>
<tr>
<td>Sn1</td>
<td>-.024</td>
</tr>
<tr>
<td>Sn3</td>
<td>-.043</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>3.486</td>
</tr>
<tr>
<td>Cumulative %</td>
<td>31.694</td>
</tr>
</tbody>
</table>

- Extraction Method: Principal Axis Factoring
- Rotation Method: Varimax with Kaiser Normalization
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KIM

Table 4. Results of Multiple Linear Regression Analysis

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>B</th>
<th>T</th>
<th>Sig.</th>
<th>Multi-Collinearity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.963</td>
<td>.261</td>
<td>3.692</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informativeness</td>
<td>.429</td>
<td>.059</td>
<td>.427</td>
<td>7.228</td>
<td>.000</td>
<td>.810 1.234</td>
</tr>
<tr>
<td>Entertainment</td>
<td>.296</td>
<td>.054</td>
<td>.323</td>
<td>5.447</td>
<td>.000</td>
<td>.804 1.243</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>.019</td>
<td>.041</td>
<td>.024</td>
<td>.454</td>
<td>.650</td>
<td>.991 1.009</td>
</tr>
</tbody>
</table>

\[ R = .637, R^2 = .405, R^2_{adj} = .397, F = 47.226, P = .000 \]

\[ \text{VIF: Variance Inflation Factor} \]
\[ \text{TOL: Tolerance Limit} \]

there were no problems in Multi-Collinearity. This indicates that independent variables were mutually independent.

Result of regression model significance test showed that this model was suitable (F= 47.226, p=.000). Among three independent variables, informativeness (t=7.228, p<.001) and entertainment (t=5.447, p<.001) were significant but subjective norm (t=4.54, p>.05) was not significant regarding attitude towards advertisement. Looking at \( \beta \) coefficient value, informativeness is .427, entertainment is .323. This means that attitude toward Media Pole advertisement increases at a pace of increase of informativeness and entertainment.

This also means that informativeness influences more than does entertainment, and does not influence subjective norm. Therefore hypotheses 1 and 2 were accepted and hypothesis 3 was rejected. Figure 5 shows results of Hypothesis Test Model.

H1: Informativeness will have POSITIVE (+) affect on attitude toward Media Pole advertisement. (ACCEPTED)
H2: Entertainment will have POSITIVE (+) affect on attitude toward Media Pole advertisement. (ACCEPTED)
H3: Subjective Norm will have NEGATIVE (-) affect on attitude toward Media Pole advertisement. (REJECTED)

5. Conclusion

Purpose of this study was to examine factors impacting attitude toward the new advertisement medium called Media Pole. Ascertain the present status of Media Pole, field research has been done. The author had the opportunity to explore all features that Media Pole offers to Seoul. Literature has been reviewed and precedent research has been studied to develop research hypotheses and a research model. Ducoffe’s (1996) Advertising Value and Attitude Model and Ajzen & Fishbein’s (1975 & 1980) Theory of Reasoned Action (TRA) were examined to analyze factors impacting attitude towards the new public facility advertisement medium called Media Pole.

![Figure 5. Hypothesis Test Model](image-url)
Survey research was conducted. Results indicated that informativeness and entertainment variables impact attitude towards *Media Pole*. Findings indicated that the model originally developed by Ducoffe (1996) and extended by Brackett and Carr (2001) is valid in a case study of *Media Pole*. These results are similar to those regarding attitude toward web or mobile advertisement. Among these two variables, informativeness had higher impact on attitude toward *Media Pole*. Another variable, subjective norm was the challenge in consumer attitude toward *Media Pole* acceptance in a busiest public area. Survey results indicated that subjective norm did not significantly affect attitude towards *Media Pole*. This indicates that, if services satisfy their needs, wants and interests, people intend and are willing to use *Media Pole* without concern about subjective norm.

At the end of the survey, the author asked respondents for future recommendations about what is expected from *Media Pole* services in the future. Many respondents answered about local area information; most-wished information centered on restaurants, bars, clubs near Gangnam subway station; additionally-wished information centered on cultural events at theatres, movies etcetera. In short, the public mostly want information about what can be enjoyed in and proximate to Gangnam.

Recommendationstogovernment, organizations, and industry are that more focus is needed on promoting *Media Pole* to residents of Seoul. Survey results showed that 43.0% of respondents know about *Media Pole* yet only 21.5% of respondents have experience of using *Media Pole*. Gangnam ward office and affiliated companies should add more local area information including restaurants, bars, clubs and theatres near Gangnam area. This study’s author also recommends that more focus is needed on users’ viewpoints and on user-centric services.

This study’s limitation of this study was that it surveyed college students only. Although such students are high consumers of ICT, they are not representative of the whole population. In future study, the survey needs extension to a wider range of respondents more completely representing the combined populace, or at least a metropolis cross-section norm in a culturally and commercially busy modern city. Pertinent research should develop similarly themed and investigative case studies in other metropolises, for cross cultural comparison and to develop a wider database.

References


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21-35.


