

SMS ADVERTISING IN INDIA: IS TAM A ROBUST MODEL FOR EXPLAINING INTENTION?

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Abstract. *This study examined mobile users' intentions to receive SMS advertising in India using Technology Acceptance Model (TAM) as a research framework. 242 respondents completed a structured questionnaire, measuring their responses to the TAM's five constructs. Using Structural Equation Modeling (SEM) both measurement model and structural model testing was done to analyze the data. The findings suggested that specified TAM model contributed to 81.8% of variance in the intention to receive SMS advertising and was a valid model in explaining the intention to receive SMS advertising. The study indicated that perceived utility was a much better predictor of attitude towards SMS advertising than perceived ease of use and perceived trust. The study suggested that in order to increase acceptance of SMS advertising marketers should focus more on increasing utility of SMS ads, so that users would develop positive attitudes towards SMS advertising.*

Key Words: *intention; mobile; Structural Equation Modeling.*

Introduction

Marketers seem to gradually shift away from traditional marketing medium to innovative, interactive and more personalized mediums (Roozen et al., 2008; Mirbagheri, 2010). One such concept is electronic marketing which refers to the achievement of marketing objectives through use of electronic communication technology (Chaffey, 2004). SMS advertising is a subset of electronic-marketing (Dickinger et al., 2005) and could be defined as marketing activities that deliver advertisements to mobile devices using wireless network based Short Message Service (SMS) to promote the sales of goods and services, or build brand awareness (Gao, 2008). SMS or text messages were introduced in 1992 and are usually sent by mobile phones, but can also be computer-generated

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(Rettie, 2004). In India SMS usage is already substantial as an average Indian mobile user spends 1/3 of total mobile usage time, i.e., 14 minutes per day on messaging, and handles 8.4 SMSes daily (Informate, 2009). This trend is further expected to grow rapidly with increasing penetration of mobile phones and declining tariffs.

SMS is touted to be very effective communication medium for marketers (Roozen et al., 2008). Communication mediums available to marketers are usually rated on three factors, viz., Reach, Cost and Retention. On these factors SMS scores higher than conventional channels, even better than e-mail does on at least two factors - reach and retention (SMS Marketing Guide, 2003). As far as India is concerned, SMS advertising is catching eyeballs. With a growing number of mobile subscribers SMS advertising is set to grow rapidly in the future and is expected to touch \$84.5 million in terms of advertising spending by 2012 in India (eMarketer, 2010).

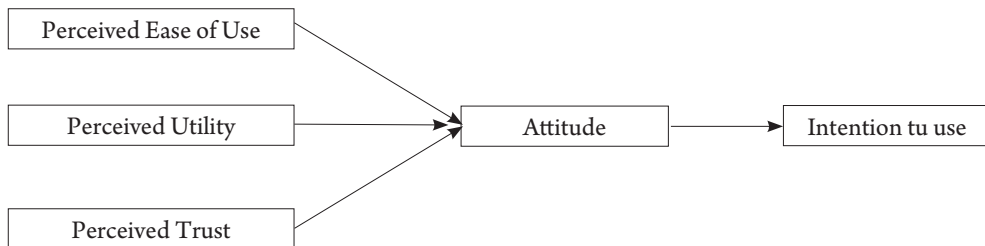
1. SMS Advantage

Literature suggests that SMS advertising has advantages over conventional channels and e-mail, some of which are due to inherited technology of SMS and some are due to habits of mobile users. Mobile users have tendency to carry their mobile with them everywhere (Bamba et al., 2006) thus SMS advertising ensures anytime, anywhere reach to consumers (Luxton, 2009; Dickinger et al., 2005). Mobile users have a habit of reading SMS, and, further, mobile phones have no Spam filters as in e-mails, due to this SMS ads claim definite edge over e-mail ads (Bauer et al., 2005; Leppaniemi, 2005; Mirbagheri, 2010). Against conventional mediums SMS is highly interactive; users can have real time interaction with advertisers and other users engaged in SMS advertising (Bauer et al., 2005; Barnes, 2003) and is very suitable for both pull as well as push promotions (Katzstone, 2001). In addition, the mobile phone lends itself to enlarging a campaign's reach through viral effects (Yaniv, 2008; Bauer et al., 2005). A viral effect develops if recipients of advertising messages forward these to further recipients who do not belong to the initial target group of the campaign and such forwarded messages are expected to have a greater effect on the receiver than a message directly from the advertiser (Kroeber et al., 2003). At last, complemented with traditional media, SMS advertising could allow marketers to maximize campaign effectiveness and reduce overall promotional cost (Frolick, 2004).

2. Technology Acceptance Model & SMS Advertising

The Technology Acceptance Model (TAM) explains the determinants of user acceptance of a wide range of end-user technologies (Davis, 1989). TAM points out that perceived ease of use and perceived usefulness affect attitude towards technologies and in turn affect the intention to use. Davis (1989) defines perceived ease of use as *"the degree to which a person believes that using and dealing with a particular system would be free from effort"* and perceived usefulness as *"the degree to which a person believes that using a particular system*

would enhance his or her job performance”. Perceived ease of use also affects the perceived usefulness. Later Technology Acceptance Model was extended (Figure 1) by including perceived trust which affects attitude thus intention to use (Bauer et al., 2005; Kaasinen, 2005). MacKenzie and Lutz (1989) define perceived trust as “consumers’ perception of the truthfulness and reliability of advertising and advertisers in general”.



Source: Kaasinen (2005)

FIGURE 1. Extended Technology Acceptance Model

Technology Acceptance Model (TAM) has gained wide spread attention because of its robustness across geographical boundaries and times (Cheung et al., 2005; Teo, 2009a; Teo, 2009b; Drennan et al., 2005). TAM was originally developed for studying technology at work. Later it has been used as original or modified to study user acceptance of consumer services and applications such as Internet services, e-commerce, mobile services etc. (Kaasinen, 2005). SMS advertising has a great potential as an innovative and efficient channel, and could get competitive advantage over traditional channels very soon (eMarketer, 2010). Yet detailed nature of this channel and attitude of consumers towards this channel are little known, especially in Indian context. This may put SMS advertising in the line of email advertising, another very potential medium wasted due to marketers’ lack of knowledge of consumers’ attitude and behavior (Sugai, 2005). Various authors have studied attitude towards SMS advertising. However, marketers are not merely interested in identifying the core factors that influence SMS advertising acceptance among mobile users and intention to receive SMS ads. Rather they are also more interested in demystifying complex interactions among such factors, as if its remaining mysterious could lead SMS advertising to the same path as that of e-mail advertising. The study of such complex interaction of factors affecting acceptance of SMS advertising was missing in previous researches. Solution to this problem could be found through application of extended TAM (Figure 1) potentially explaining acceptance of technology and technology enhanced consumer services, in this case SMS advertising. In India, mobile phone as a medium for advertising seems to have advantage as mobile phone penetration has already reached 63.3% in India (ITU, 2010). So SMS advertising has huge potential in the country, provided marketers know which factors would affect mobile users’ acceptance of SMS advertising and relative importance of such factors. Here, this study aims to explore acceptance of SMS advertising among Indian mobile users in a much comprehensive manner.

3. Model Development

On the basis of related literature review and using Technology Acceptance Model as the base theory a model was specified (Figure 2), depicting that intention to receive SMS advertising is a function of four other variables, viz.: attitude, perceived ease of use, perceived utility and perceived trust.

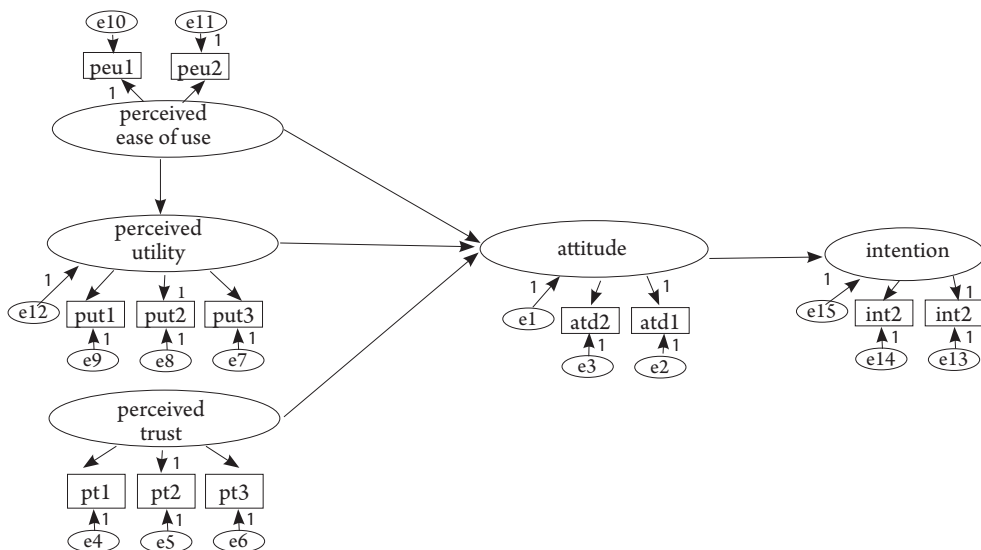


FIGURE 2. Specified Model

Keeping the principle of Structural Equation Modeling in mind, it was hypothesized that in the above model each exogenous variable (viz., perceived ease of use and perceived trust) may have direct or indirect effect on respective endogenous variable (viz., perceived utility, attitude, intention).

4. Research objectives

1. To study the extent to which the TAM is a valid model to explain the intention to receive SMS advertising.
2. To study the influence of each construct in the TAM on the intention to receive SMS advertising.

5. Methodology

Overall aim of this study was to explore acceptance of SMS advertising among Indian mobile users. For this a Structural Equation Modeling (SEM) approach was adopted and data was analyzed empirically. Thus the study is descriptive in nature.

5.1. Model Identifiability

In SEM, for model indentifiability no. of distinct sample moments $n*(n+1)/2$ (where n = total observed variables) should be either equal to no. of distinct free parameters to be estimated (a just identified model) or greater than it (an overidentified model) (Kline, 2005). The specified model has 12 observed variables, thus 78 distinct sample moments. Further in the specified model total 29 free parameters are to be estimated. As no. of distinct sample moments is greater than no. of free parameters so the specified model is overidentified.

5.2. Measure Selection

Latent variables or constructs in the model cannot be directly measured so there is a need of observed variables for their estimation. It is recommended that there should be at least two observed variables for every latent variable (Joreskog, 1993). For this pre-validated measures were adopted from the previous studies with a five-point Likert scale (Table 1).

TABLE 1. List of constructs and their items

| Latent Variables/ Constructs | Observed Variables/ Items | |
|--|---------------------------|---|
| Perceived Utility (Adopted from Bauer et al., 2005) | PUt1 | Through SMS ads one could receive useful promotional offers. |
| | PUt2 | Through SMS ads one could receive up-to-date information. |
| | PUt3 | I believe one could benefit from SMS ads. |
| Perceived Trust (Adopted from Tusang et al., 2004) | PTs1 | I believe a marketer would use my personal data only for the purpose I approve. |
| | PTs2 | I trust SMS advertising. |
| | PTs3 | There is a risk of misuse of my personal data given to SMS advertiser. |
| Perceived Ease of Use (Adopted from Tanakinjal et al., 2010) | PEU1 | If I were to adopt SMS advertising services, it would be quite easy for me. |
| | PEU2 | I find opt in & opt out concepts complicated. |
| Attitude (Adopted from Tusang et al., 2004) | ATD1 | I find it positive to receive SMS ads on my mobile. |
| | ATD2 | I like SMS advertising. |
| Behavioral Intention (Adopted from Shimp et al., 1984; Merisavo et al., 2007) | INT1 | My general intention to use SMS advertising services is very high. |
| | INT2 | I am willing to receive SMS ads. |

5.3. Sampling and Data Cleaning

SEM is a large sample size technique and a ratio of 20 cases per observed variable is desirable, with minimum ratio being 10 (Kline, 2005; Hoyle, 1995). Thus for the study, data from 242 mobile users (through convenience sampling) was collected using a structured questionnaire.

Data thus collected was first subject to cleaning, i.e., missing value analysis & outlier detection. In 5 cases missing values were found. Casewise deletion led to 237 usable cases (available case method for missing values). To find outliers, standard scores (z scores) of observed variables were calculated using SPSS 15.0. No score was more than 3 standard deviations beyond the mean ($|z| > 3$ indicating outliers; Kline, 2005).

5.4. Checking statistical assumptions

Data was first tested for the SEM assumptions, viz.: univariate normality, multivariate normality, reliability and validity. Univariate normality was ensured using skewness and kurtosis indices. Skew and kurtosis indices should not exceed an absolute value of 3 and 10 respectively (Kline, 2005). Here data was regarded as univariate normal as the skew index ranged from -0.62 to 0.75 and kurtosis index ranged from -0.76 to 0.51.

SEM assumes multivariate normality for estimation (Hoyle, 1995) and the Mardia coefficient is a measure of multivariate normality where critical ratio of coefficient 1.96 or less indicates multivariate normality (Gao et al., 2007). Critical ratio of Mardia coefficient calculated using AMOS 18.0 was 1.53, suggesting multivariate normality.

Cronbach's α of overall scale was found to be 0.814, suggesting internal consistency and reliability ($\alpha > \text{or} = 0.7$ acceptable; de Vaus, 2002). Further, Cronbach's α for each construct was estimated using SPSS17.

In multivariate analysis, ensuring convergent validity is very important (Abramson et al., 2005) and it exists when measures that purport to measure the same construct have moderate to high correlations (Kline, 2005). Scanning of correlation matrix of observed variables confirms convergent validity as significant correlation was present between observed variables measuring same construct.

TABLE 2. Reliability Analysis

| Constructs | Cronbach's α |
|-----------------------|---------------------|
| Perceived Utility | 0.789 |
| Perceived Trust | 0.840 |
| Perceived Ease of Use | 0.698 |
| Attitude | 0.703 |
| Behavioral Intention | 0.726 |

5.5 Model Estimation & Analysis

Generalized Least Squares (GLS) estimation method was used to test whether specified SEM model fit the data. AMOS 18.0 took 7 iterations to produce initial results and minimization was achieved. Model evaluation in SEM has 2 sub-steps: Measurement model testing and Structural model testing.

5.5.1. Measurement Model testing

For measurement model test no single index is perfect, instead it is suggested to use multiple indices from various categories (Hair et al., 2006). Table 3 summarizes various indicators used, and recommended values along with the estimated values.

TABLE 3. Model Fit Indices

| Index | Estimated value | Recommended value | Remark |
|---|-----------------------|--|--|
| Chi squared df P | 60.275 49 0.201 | > or = 0.05 (Klem, 2000; Kline, 2005) | Model fit |
| Normed Chi squared (x^2/df) | 1.23 | < or = 3 (Kline, 2005) | Model fit |
| Goodness of Fit (GIF) | 0.921 | > or = 9 (McDonald et al., 2002; Klem, 2000) | Model fit |
| Root Mean Square Error of Approximation (RMSEA) P | 0.048 0.598 | 0 < RMSEA < 0.08 > or = 0.05 (Arbuckle et al., 1999; Kline, 2005) | Model fit |
| Incremental Fit Index (IFI) | 0.913 | > or = 9 (McDonald et al., 2002; Klem, 2000) | Sig. Model fit in comparison to null model |
| Tucker-Lewis Index (TLI) | 0.869 | > or = 9 (McDonald et al., 2002; Klem, 2000) | No significant fit in comparison to null model |

In SEM, Kline (2005) suggested reporting a number of fit indices, with the greater the number of indices supporting the model fit, the greater the confidence with the model. So the specified model is accepted as all indices except one index, TFI supported that the specified model fits the observed data well.

Scanning of residual covariance matrix further confirms that model respecification is not required as all values in the matrix were less than 2.58 (Kline, 2005; Abramson et al., 2005), so structural model could be tested now.

5.5.2. Structural Model testing

Figure 3 depicts unstandardized estimates, i.e., unstandardized regression coefficients for the direct effects on endogenous variables, variances for exogenous variables and error terms.

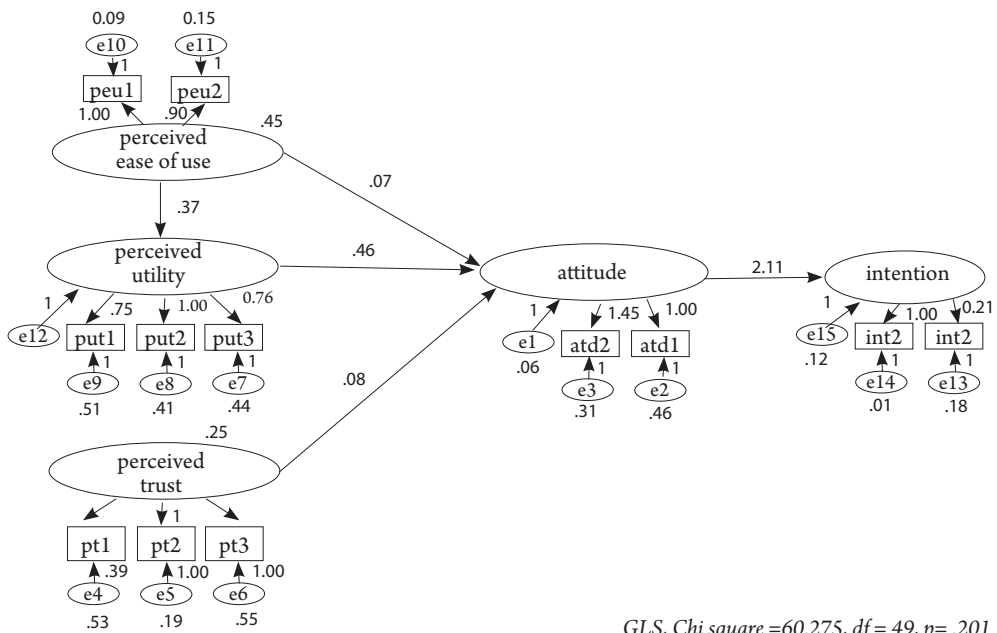


FIGURE 3. Unstandardized estimates

On the basis of unstandardized estimates (regression weights) the total effect by combining direct and indirect effect on intention to receive SMS advertising for each construct was estimated (Table 4). The total effect was found to be the largest in the case of attitude, i.e., 2.111, which suggests that when attitude goes up by 1, intention to receive SMS advertising goes up by 2.111.

TABLE 4. Total Effect Estimation

| Construct | Total Effect on Intention |
|-----------------------|---------------------------|
| Attitude | 2.111 |
| Perceived Utility | 0.974 |
| Perceived Ease of Use | 0.513 |
| Perceived Trust | 0.173 |

Table 5 shows standardized regression beta weights. These imply that in SMS advertising effect of perceived ease of use on perceived utility, of perceived utility on attitude and of attitude on intention was found to be large (effect size > 0.5; Kline, 2005), whereas effect of perceived ease of use on attitude and of perceived trust on attitude was found to be moderate (0.5 > effect size > 0.1; Kline, 2005). Further, standardized regression beta weights were used to evaluate relative effect of perceived ease of use, perceived utility and perceived trust on attitude towards SMS advertising. Perceived utility was found up to 4.6 times better predictor of attitude towards SMS advertising than perceived ease of use and 5.5 times better than perceived trust.

Table 6 shows squared multiple correlations of the variables. The specified model explains 26.1 % of variance in perceived utility and 52.8% of variance in attitude towards SMS advertising (Table 6). A further model was able to explain 81.8% of variance in intention thus leaving only 18.2% variance unexplained, suggesting robustness of TAM in explaining intention to receive SMS advertising.

TABLE 5. Standardized Regression Beta Weights

| Path | | Standardized Weights | Effect size |
|-----------------------|------------------------|----------------------|-------------|
| Perceived Ease of Use | ---> Perceived Utility | 0.511 | Large |
| Perceived Utility | ---> Attitude | 0.638 | Large |
| Perceived Ease of Use | ---> Attitude | 0.137 | Moderate |
| Perceived Trust | ---> Attitude | 0.116 | Moderate |
| Attitude | ---> Intention | 0.905 | Large |

TABLE 6. Squared Multiple Correlations

| Latent variables | Predictors | SMC |
|-------------------|---|-------|
| Perceived utility | Perceived ease of use | 0.261 |
| Attitude | Perceived ease of use, Perceived utility, Perceived trust | 0.528 |
| Intention | Attitude | 0.818 |

Conclusions

This study examines the extent to which the TAM is a valid model to explain the intention to receive SMS advertising and the influence of each construct in the TAM on the intention to receive SMS advertising among mobile users. Both measurement model testing and structural model testing suggested that constructs in the TAM, i.e., perceived utility, perceived ease of use and attitude towards SMS advertising were instrumental in determining the intention to receive SMS advertising as the model contributed to 81.8% of the variance in the intention to receive SMS advertising. Thus TAM was a valid model in explaining the intention to receive SMS advertising.

Teo (2009a; 2009b) suggested that attitude is a significant predictor of the intention to use technology when users have complete freedom to make a choice regarding use. Obviously, mobile users in this study were free to decide whether to receive or not SMS ads on their mobile phones as Do Not Disturb (DND) and Do Not Call (DNC) norms are strict in India. Thus findings of the study are consistent with past findings, as standardized estimate of the path from attitude to intention (.093) was substantially greater than other paths.

Among the constructs affecting the attitude towards SMS advertising, perceived utility was found to be a stronger predictor than perceived ease of use and perceived trust. Davis (1989), Taylor (1995) stated that perceived usefulness evolves as stronger predictor of attitude than perceived ease of use, as users become more experienced and familiar with the technology. In India mobile phones have been with common men more than a decade and average mobile user in India handles 8.4 SMSes daily (Informate, 2009). So Indian mobile users seem to be very much familiar with mobile phone technology, SMS in particular. Hence, it could be implied that respondents would have not perceived issues pertaining to opt-in/ opt-out, interacting with SMS

ads, specifying time slots for receiving SMS ads etc. important, which reflects perceived ease of use as a weaker predictor of attitude towards SMS advertising.

Perceived trust was another weaker predictor of attitude towards SMS advertising in comparison to perceived utility. One explanation of this could be that in India Do Not Disturb (DND) & Do Not Call (DNC) norms and third party privacy policies are clearly stated and strict. Because of these Indian mobile users take it for granted that telecom operators/ marketers would not send unsolicited SMS ads and would not misuse their personal information.

Implications

The above findings suggest some important implications for marketers. To increase acceptance of SMS advertising among mobile users, marketers should work on increasing perceived utility of SMS advertising so that the targeted mobile users would develop positive attitudes towards SMS advertising, which in turn would reinforce their intention to receive SMS advertising and act on it over the time. Perceived utility of SMS advertising is a better predictor of attitude towards SMS advertising than perceived trust and perceived ease of use. Marketers could increase perceived utility by offering incentives (Tsang et al., 2004; Bamoriya et al., 2011), informative content (Merisavo et al., 2007; Demarneffe, 2008), personalized messages (Scharl et al., 2005; Robins, 2003), by making SMS ad time targeted (say a lunch's SMS ad sent in the afternoon, Mirbagheri, 2010; Kavassalis et al., 2003) and by geo-targeting using Cell of Origin (COO) and Global Positioning System (Sultan & Rohm, 2005; Bauer et al., 2005).

Limitations & future research

This study also has certain limitations. Firstly, it is recommended that the final model to be tested on a second sample, i.e., model replication (Kline, 2005), but due to sample size consideration model replication was not exercised in the study. Indeed, in this case it is worthwhile replicating the study across geographies, gender and age. Secondly, the study only dealt with the prediction of behavior, i.e., intention rather than actual behavior in context of SMS advertising. In this study the use of intention as a measure for actual behavior may have led to loss of explanatory power of the model. Third, there could be other factors possibly contributing in predicting intention to receive SMS ads like social norms (Karjaluo et al., 2008), attitude towards advertising in general (Singh & Vij, 2008). The study lacks the accounting of such additional constructs' interaction with constructs in TAM. The fourth limitation is concerned with permission marketing aspect in SMS advertising as the study does not reveal exactly how consumers prefer to provide permission and profile information. Here limitations indentified, especially the last two, provide some good implications for the future research in the area of SMS advertising.

References

- Abramson, R., Rahman, Sheikh & Buckley, P. (2005). *Tricks and Traps in Structural Equation Modelling: a GEM Australia Example Using AMOS Graphics*. www.swin.edu.au/hed/test/gem/reports/Abramson_SEM_paper.pdf (accessed April 15, 2010).
- Al-alak, A. & Basheer, M. (2010). *Mobile Marketing: Examining the Impact of Trust, Privacy Concern and Consumers' Attitudes on Intention to Purchase*. <http://www.ccsenet.org/journal/index.php/ijbm/article/download/4643/4419> (accessed on Sept. 23, 2010).
- Arbuckle, J. L. (2009). *Amos 18 User's Guide*. Amos Development Corporation- SPSS Inc. FL.
- Bamba, Fatima & Barnes, Stuart (2006). *Evaluating Consumer Permission in SMS Advertising*. <http://sprouts.aisnet.org/6-41> (accessed March 12, 2010).
- Bamoriya, Hemant & Singh, Rajendra (2011). Incentives in Permission Based SMS Advertising: Does it (always) Work – A Special Case of mGginger. *SS International Journal of Economics and Management*, 1 (2), 77–96.
- Barnes, S. J. (2003). Wireless Digital Advertising: Nature and Implications. *International Journal of Advertising*, 21 (3), 399–420.
- Bauer, H. H., Reichardt, T., Barnes, S. J. & Neumann, M. M. (2005). *Driving Consumer Acceptance of Mobile Marketing: A Theoretical Framework and Empirical Study*. www.citeseer.ist.psu.edu/viewdoc/summary?doi=10.1.1.137.2625 (accessed on July 17, 2009).
- Chaffey, D. (2003). *E-Business and E-Commerce Management*. London: Prentice Hall Pub.
- Cheung, W. & Huang W. (2005). Proposing a Framework to Assess Internet Usage in University Education: An empirical investigation from a student's perspective. *British Journal of Educational Technology*, 36(2), 237–253.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 319–339.
- De Vaus, D. A. (2004). *Analyzing Social Science Data*. Re-prt, India: SAGE Pub.
- Demarneffe, H. (2008). *How Telcos can Dominate the Advertising Industry*. Mobile Advertising White Paper, Mechelen: The House of Marketing.
- Dickinger, A., Murphy, J. & Scharl, A., (2005). *Diffusion and Success Factors of Mobile Marketing*. <http://www.ecoresearch.net/download/publications/05-ecra.pdf> (accessed on April 15, 2010).
- Drennan, J., Kennedy, J. & Pisarksi, A. (2005). Factors Affecting Student Attitudes toward Flexible Online Learning in Management Education. *The Journal of Educational Research*, 98(6), 331–340.
- eMarketer (2010). Issue Feb'10, <http://www.emarketer.com/> (accessed March 21, 2010).
- Frolick, M. N. & Chen, L. D. (2004). Assessing m-Commerce Opportunities. *Information Systems Management*, 21 (2), 53–61.
- Gao, J. (2008). *Smart Mobile-AD: An Intelligent Mobile Advertising System*. http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4539342 (accessed on February 7, 2010).
- Gao, S., Mokhtarian, P. & Johnston, R. (2007). *Non-normality of Data in Structural Equation Models*. <http://www.uctc.net/papers/839.pdf> (accessed May 12, 2010).
- Haghirian, P. & Madlberger, M. (2005). *Consumer Attitude toward Advertising via Mobile Devices – An Empirical Investigation among Austrian Users*. <http://is2.lse.ac.uk/asp/aspectis/20050038.pdf> (accessed on July 23, 2010).
- Hair, J. F. Jr., Black, W. C., Babin, B. J., Anderson, R. & Tatham, R. (2006). *Multivariate Data Analysis* (6th Ed.), Prentice-Hall International.
- Hoyle, Rick (1995). *Structural Equation Modelling: Concepts, Issues and Applications*. New Delhi: SAGE Publications.

- ITU Report, (2010). *International Telecommunication Union*. Available online: <http://www.itu.int/en/pages/default.aspx> (accessed on Oct 12, 2010).
- Joreskog, K. G. (1993). Testing Structural Equation Models. In K. A. Bollen and J. S. Long (Eds.), *Testing Structural Equation Models*. Newbury Park: SAGE Publications.
- Kaasinen, E. (2005). *User Acceptance of Mobile Services – Value, Ease of use, Trust and Ease of adoption*. <http://www.vtt.fi/inf/pdf/publications/2005/P566.pdf> (accessed May 13, 2010).
- Karjaluoto, Heikki (2008). *Customers' Intention to Engage in Permission based Mobile Marketing Communications*. www.econ.jyu.fi/ (accessed on March 22, 2010).
- Katzstone, A. (2001). *Wireless Revenue: Ads can Work*. <http://www.wirelessauthority.com.au/r/article/jsp/sid/445080> (accessed April 12, 2010).
- Kavassalis, P., Spyropoulou, N., Drossos, D., Mitrokostas, E., Gikas, G. & Hatzistamatiou, A., (2003). Mobile Permission Marketing: Framing the Market Inquiry. *International Journal of Electronic Commerce*, 8, 55–79.
- Klem, L. (2000). Structural Equation Modelling, In L. G. Grimm and P. R. Yarnold (Eds.), *Reading and Understanding Multivariate Statistics*. Washington: APA.
- Kline, Rex B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd Ed.), New York: Guilford Press.
- Kroeber, W. & Weinberg, P. (2003). The Dual Credibility Model: The Influence of Corporate and Endorser Credibility on Attitudes and Purchase Intentions. *Journal of Marketing Theory and Practice*, 10(3), 1–12.
- Leppaniemi, Matti & Karjaluoto, H. (2005). Factors Influencing Consumers' Willingness to Accept Mobile Advertising: A conceptual model. *International Journal of Mobile Communications*, 3 (3), 197–213.
- Luxton, S. & Mahmood, U. (2009). *Mobile Phone Marketing: Challenges and Perceived Attitudes*. www.duplication.net.au/ANZMAC09/papers/ANZMAC2009-315.pdf (accessed June 30, 2010).
- MacKenzie, S. B. & Lutz, R. (1989). An Empirical Examination of the Structural Antecedents of Attitude toward the Ad in an Advertising Pretesting Context. *Journal of Marketing*, 53, 48–65.
- McDonald, R. P. & Ho, M. (2002). Principles and Practice in Reporting Structural Equation Analyses. *Psychological Methods*, 7(1), 64–82.
- Merisavo, M., Sami, Kajalo, Karjaluoto, H., Virtanen, V., Salmenkivi, S., Raulas M. & Leppäniemi, M. (2007). *An Empirical Study of the Drivers of Consumer Acceptance of Mobile Advertising*. www.jiad.org/article92 (accessed on March 11, 2010).
- Mirbagheri, S. (2010). *SMS Advertising Business Model: Toward Finding Vital Elements of its Value Model*. www.cluteinstitute.com/proceedings/2010_Dublin.../Article%20543.pdf (accessed on June 29, 2010).
- Mobile Usage in India (2009). Informate Intelligence, Ind.
- Radder, L., Pietersen, J., Hui, Wang & Han, Xiliang (2010). *Antecedents of South African High School Pupils' Acceptance of Universities' SMS Advertising*. <http://journals.cluteonline.com/index.php/IBER/article/viewFile/551/538> (accessed on Jan 05, 2011).
- Ratihayu, Anabelle Paramita, Agustina, L., Baihaqi, M.F. and Andreas, Raharso (2008). *An Empirical Study of the Drivers of Consumer Acceptance of Mobile Advertising (Short Message Services) in Indonesia*. <http://bbs.binus.edu/journal/RndData/Journal/Data/20110923093600.pdf>(accessed on Oct 28, 2010).
- Rettie, R., Grandcolas, U. & Deakins, B. (2004). *Text Message Advertising: Dramatic Effect on Purchase Intentions*. <http://www.eprints.kingston.ac.uk/2099/> (accessed on March 21, 2010).
- Robins, F. (2003). The Marketing of 3G. *Marketing Intelligence & Planning*, 21(6), 370–378.

Roozen, I. & Genin, E. (2008). *Can we Compare SMS marketing to Traditional Marketing Communications?*. <http://lirias.hubruessel.be/bitstream/123456789/2268/1/08HRP50.pdf> (accessed on June 29, 2010).

Shimp, T. A. & Kavas, A. (1984). The Theory of Reasoned Action Applied to Coupon Usage. *Journal of Consumer Research*, 11, 795–809.

Singh, Raghbir & Vij, Sandeep (2008). Public Attitude toward Advertising: An Empirical Study of Northern India. *ICFAI Journal of Marketing Management*, 7(1), 49–66.

SMS Marketing Guide (2003). www.palowireless.com/sms/docs/SMS_market_Guide_mar03.pdf (accessed on March 21, 2010).

Sugai, P., (2005). Mapping the Mind of the Mobile Consumer Access Borders. *International Marketing Review*, 22 (6), 641–657.

Sultan, F. & Rohm, A., (2005). The Coming Era of Brand in the Hand Marketing. *MIT Management Review*, 47(1), 83–90.

Tanakinjal, G. H., Deans, K, & Gray, B. J. (2010). Third Screen Communication and the Adoption of Mobile Marketing: A Malaysia Perspective. *International Journal of Marketing Studies*, 2(1), 36–47.

Taylor, S. & Todd, P. (1995). *Assessing IT Usage: The Role of Prior experience*. www.eclass.no-ip.org/web/admr/references/ph/tod-role-of-prior-experience.pdf (accessed on June 28, 2010).

Teo, T. (2009a). *Evaluating the Intention to use Technology among Student Teachers: A Structural Equation Modeling Approach*. www.sicet.org/journals/ijttl/issue0902/2_teo.pdf (accessed on July 9, 2010).

Teo, T. (2009b). Modelling Technology Acceptance in Education: A study of Pre-service Teachers. *Computers & Education*, 52(2), 302–312.

Tsang, Melody M., Ho, Shu-Chun and Liang, Ting-Peng (2004). *Consumer Attitudes toward Mobile Advertising: An Empirical Study*. [http://www.ecrc.nsysu.edu.tw/liang/paper/17-mobile%20advertising%20\(ijec%202004\).pdf](http://www.ecrc.nsysu.edu.tw/liang/paper/17-mobile%20advertising%20(ijec%202004).pdf) (accessed on Aug 27, 2009).

Yaniv, G. (2008). Sold on Mobile Marketing: Effective Wireless Carrier Mobile Advertising and How to Make it Even More So. *International Journal of Mobile Marketing*, 3(2), 86–97.