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Determining Uses and Gratifications for Indian Internet Users

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Uses and gratification theory aids in the assessment of how audiences use a particular medium and the gratifications they derive from that use. In this paper this theory has been applied to derive Internet uses and gratifications for Indian Internet users. This study proceeds in four stages. First, six first-order gratifications namely self development, wide exposure, user friendliness, relaxation, career opportunities, and global exchange were identified using an exploratory factor analysis. Then the first order gratifications were subjected to first-order confirmatory factor analysis. Third, using second-order confirmatory factor analysis three types of second-order gratifications were obtained, namely process gratifications, content gratifications and social gratifications. Finally, with the use of t-tests the study has shown that males and females differ significantly on the gratification factors "self development", "user friendliness", "wide exposure" and "relaxation." The intended audience consists of masters' level students and doctoral students who want to learn exploratory factor analysis and confirmatory factor analysis. This case study can also be used to teach the basics of structural equation modeling using the software AMOS.

Keywords: *Internet uses and gratifications; Exploratory factor analysis; Confirmatory factor analysis; Structural equation modeling.*

Introduction

Over the past decade or so the Internet has become impossible to ignore. Even people who do not own computers are increasingly using the new medium. With more than one billion people estimated to be communicating on the Internet, communication researchers now consider this network as a mass medium. [1] Stafford et al. (2004) states that mass communications researchers tend to overlook the Internet and the entire phenomenon of computer-mediated communication, staying with the traditional broadcast and print media.

Uses and gratifications (U&G) is a time-honored media use theory, helpful for understanding consumer motivations for media use, and has been applied to scenarios ranging from radio to television, cable TV, TV remote controls, and now the Internet. The Internet provides a wide range of networked telecommunications and media content delivery capabilities. The utility of the Internet as a powerful telecommunications medium is compelling, and the Internet is far more than just a conglomeration of web sites selling goods. Yet, given the

[1] http://www.internetworldstats.com/stats.htm (accessed 1st February, 2008)

necessity of attracting online buyers to support online market offerings, understanding why consumers choose to use the Internet has great relevance in the commercial model of online business.

Most of the studies done on the U&G in the Internet are situated in American and European contexts. This paper considers the uses and gratifications structure of Internet users in the Indian context. The gratifications identified in this study can guide management practitioners and scholars to understanding why users are attracted to the Internet, as well as what they do on the Internet. An understanding of individual motivations may help media researchers better understand media effects. This study contributes to identifying the gratification structure of Internet users in the Indian context and to understanding the various uses of Internet in this particular research setting. The U&G theory has been successfully applied in order to understand Internet uses and gratifications in the USA and in the European context (Stafford et al. 2004; Kargaonkar and Wolin, 1999). This study is an attempt to apply the same theory in order to understand the gratification structure of Internet users in an Asian context, and to provide an interesting illustration of the method of exploratory and confirmatory factor analysis.

Theoretical Background and Research Questions

Uses and Gratifications Research

Chambers' dictionary defines the word gratification as "feeling of satisfaction." Uses and Gratifications Theory (U&G) is one of the influential theories in media research. It is also referred to as "Needs and Gratifications Theory." The U&G theory is concerned with the way people use media. At the outset media research focused on the influence and effect that the media had on the audience. It did not concentrate on the motives behind media use. The theory has come a long way since its inception in early 1940s (Ruggiero, 2000). The theory considers not only the pleasure people search for in a media but also the attitudes of the audience towards the medium and its contents (Fagerlind et al. 2000). Severin and Tankard (1997) state that the uses and gratifications theory is a psychological communication perspective that focuses on individual use and choice by asserting that different people can use the same mass medium for very different purposes. The emphasis of this theory is on the audience and not on the effects of the media on the mass (Windahl 1981). The focus of the uses and gratifications theory is on "the social and psychological origins of needs, which generate expectations of mass media and other sources, which lead to differential patterns of media exposure which result in need gratification and other consequences" (Katz et al. 1974). This theory has contributed in the understanding of the mass communication process (Hanjun, 2000); this author further states that studies related to this theory have examined the psychological processes of audiences from exposure to various types of mass media. But the basic question still remains of why different people are involved in different types of mediated communications and what gratifications they seek from these media. The key concept of the U&G perspective is that the choices people make when consuming media are motivated by their desire to gratify a range of needs.

Katz et al. (1974) have put forward the basic assumptions of the uses and gratifications approach. First the audience is active and thus use of mass media is goal directed. Second, the audience makes motivated choices, based on previous experience with the media. Third, media selection and use are purposive and motivated and people take the initiative in selecting and using communication vehicles to satisfy felt needs and desires. Fourth, the media compete with other sources of need satisfaction. Finally, "value judgments about the cultural significance of mass communication should be suspended while audience orientations are explored on their own terms."

Based on the above discussion and the assumptions mentioned, the primary objective of the uses and gratifications theory is to explain and understand the psychological needs which shape peoples' reason for using the media and the reasons which motivate them to engage in certain media use behaviors for gratifications that fulfill their inherent needs (Rubin 1994). Other objectives are to explain how individuals use mass communication to gratify their needs and identification of the positive and negative consequences of individual media use (Lin, 1999). Further, Lin (1999) states that the central concepts of uses and gratifications theory are uses, gratifications, motivations and active audience. The concept of gratification is concerned with the types and degree of gratifications obtained from media exposure which fulfills the original needs initiating from the whole process of media use. On the other hand the concept of motivation deals with the type of perceived incentives or rewards which motivates an individual to take action and engage themselves in a particular media use.

To summarize, Katz et al. (1974) proposed three basic tenets in the U&G theory:

1. Media users are goal directed in their behavior.
2. They are active media users.
3. They are aware of their needs and select the media to gratify their needs.

Researchers have applied this theory to different media of mass communication such as newspapers, radio, television, cable television, VCR, watching television soaps and Internet. A brief snapshot of uses and gratifications studies is presented in Table-1:

Table 1. Uses and Gratifications Studies[2]

Authors & Years	Gratifications Obtained
McQuail, Blumler, and Brown (1972) [TV quiz programs]	Diversion, personal identity, personal relationships, educational, excitement
Greenberg (1972) [Children watching television]	Learning, habit, relaxation, arousal, pass time, championship
James Lull (1990) [Social uses of television]	Environmental, regulative, communication facilitation, social learning, affiliation/ avoidance, dominance/competence
Mukherji, Mukherji, and Nicivich (1998) [Internet]	Entertainment, interpersonal utility, social interactions, and surveillance
Lin (1993) [Television]	Informational guidance, interpersonal communications, entertainment, diversion
Shaver (1983) [Cable television]	Variety and control over viewing
Rubin (1983) [Television]	Relaxation, habit, entertainment, information, escape
Korgaonkar and Wolin (1999) [Web usage]	Social Escapism, transaction, privacy, information, interaction, socialization, economic motivations
Stafford, Stafford and Schkade (2004) [Internet]	Process, content, social
Svennevig, (2000) [Internet]	Diversion, personal relationships, social relationships, personal identity, surveillance, imagination, stimulation, and mood changing

Classification of Gratifications

Stafford et al. (2004) suggested that broadly there are three types of gratifications as perceived by the audience namely:

1. **Content gratifications**: This is the content carried by the medium (e.g., entertainment, information, etc.). Content gratifications are concerned with the messages carried by the medium.
2. **Process gratifications**: This is the experience of the media usage process (e.g., Internet surfing, experiencing a new technology, etc.). Process gratifications are concerned with the actual use of the medium itself.
3. **Social gratifications:** According to some authors interpersonal communication and social networking are social gratifications sought by the audience (Armstrong and Hagel, (1996); Eighmey (1997); Eighmey and McCord (1998)). These studies have emphasized the existence of the social gratification in using the Internet.

Criticisms of the U&G Theory

Ruggiero (2000) has posited the following criticisms of the uses and gratifications theory:

1. Media users may not know the reasons why they chose to use what they are using and may not be able to explain it clearly.
2. The theory lacks internal consistency and theoretical justification. The theory also has weak predictive capabilities.
3. And, it is difficult to measure the gratification structure with self-reported data, i.e., asking the respondents why they use a certain medium. However, Rubin (1994) has reported studies which have supported the consistency and accuracy of self-reported data by validating scales and by using experimental methods.

Uses and Gratifications for the Internet

Researchers have tried to identify the psychological and behavioral aspect of the Internet users to identify the underlying motivations for Internet usage. Kaye and Johnson (2001) state that Internet users are more actively involved and engaged in using the Internet because of its interactivity. Since one of the major strengths of the Internet is its interactivity and since an active audience is the core concept of the uses and gratifications theory, gratifications theory is regarded as the most effective theoretical basis for studying this medium (Hanjun, 2002). The immense opportunities for social interaction set the Internet apart from conventional mass media; this has been well captured in studies on Internet uses and gratifications (Song et al. 2004). Researchers have applied the U&G theory to the case of Internet usage in order to understand the common underlying psychological and behavioral dimensions of Internet usage (Lin 1999; Larose et al. 2001).

Rafaeli (1986) applied the U&G perspective to study the satisfactions derived out of using university computer bulletin boards. The study identified three gratifications, namely recreation, entertainment and diversion. Further Eighemy (1997) and Eighemy & McCord (1998) studied users of commercial websites and profiled the users on the basis of the motivations obtained. They obtained personal relevance, information involvement and entertainment value as three major motivations for browsing through

[2] Terms in the parentheses [] in Table-1 are the communication media

commercial websites. Kargaonkar and Wolin (1999) applied the U&G theory to improve the understanding of web usage by exploring web users' motivations and concerns. They used a 41-item scale to identify the motivations for Internet use. Their survey also collected information on respondents' views on advertising on the web and the type of website they visited. Authors obtained seven factors: social escapism, transactional security and privacy, information, interactive control, socialization (non-transactional), privacy, and economic motivation. The study also looked into the relationship between the seven motivational factors and the three usage contexts, namely total time spent on the Internet, time spent on the Internet for business and personal factors and time spent for purchase from a website.

Papacharissi and Rubin (2000) used their Internet usage scale and identified five primary motivations for using the Internet, namely interpersonal utility, pass time, information seeking, convenience and entertainment. Lin's (1999) study tried to link the Internet usage motivations and the likelihood of online-service adoption. This author identified surveillance as one of the motivations which had the strongest effects on visiting the websites. Ferguson and Perse (2000) studied whether Internet usage motivations predicted certain types of website visit. Their results showed that the search engine sites were strongly related to the information motivation and the interactive sites were related to the entertainment motivation.

Luo (2002) further extended the Internet uses and gratifications studies and explored the effects of Internet usage motivations on attitudes towards a website and satisfaction. Stafford et al. (2004) empirically derived the dimensions of consumer Internet U&G among customers of a prominent Internet Service Provider (ISP). The study identified three key dimensions related to consumers' use of Internet: process gratifications, content gratifications and social gratifications. The authors used a 45-item scale to identify these gratifications through a factor analytic approach. Finally, the three constructs and their indicators were subjected to confirmation using the software LISREL 8.12. The important contribution of this paper was the identification of the social gratification construct. The identification of these three constructs provides opportunities for the advancement of Internet access services.

Parker and Plank (2000) identified three factors, namely companionship and social needs, need for learning, and excitement and relaxation needs. By calculating the means of all the individual indicators significant gender differences were obtained for two statements, "because it relaxes me" and "because it allows me to unwind," which loaded on the first factor. However, the authors did not show any gender difference in Internet usage motivation at the factor level. Choi et al. (2004) studied cross-cultural differences in the pattern of motives and the associations among three countries—the US, the Netherlands, and South Korea—based on examination and revision of the uses and gratification approach toward Internet users. The 36-item scale reflected motives for information seeking (pragmatic and surveillance), economic incentives, self-improvement, companionship (offline and online), diversion, escapism, self-expression, amusement, establishing status, and peer pressure. Findings from factor analysis revealed that information seeking and self-improvement were the dominant and common reasons for using the Internet across the three countries but also that in terms of the composition of the factor items the three countries showed considerable differences.

Song et al. (2004) uncovered seven gratification factors specific to the Internet: virtual community, information seeking, aesthetic experience, monetary compensation, diversion, personal status, and relationship maintenance. Virtual community was a new gratification. Further they discussed the relationship between Internet addiction and gratifications in terms of the formation of media habits and the distinction between content and process gratifications. Hanjun (2000) applied this theory to investigate Internet users' motivations and their relationship with attitudes towards the Internet as well as types of websites visited by users. The author identified four motivation factors: social escapism, pass time, interactive control, and information. Five types of websites were also identified: personal identity, entertainment, information, interests and education, and science fiction. The study also suggested that the motives were strong predictors of positive attitudes towards the Internet and that there existed an association between certain motivational factors and the types of websites visited.

Despite the application of U&G perspective to the case of the interactive medium Internet, most of the studies seem to be conducted either in the context of the US or the UK. To the best of our knowledge there is no study yet which has identified the Internet usage motivations of Asian Internet users. This paper thus tries to address this gap by the identification of the Internet usage motivations for users of the Internet in the Indian context and ask the following:

Research Question 1: What are the gratifications of Internet use in this research setting?

Gender and Uses and Gratifications of Internet

The issue of Internet "uses and gratifications" and gender has not been prevalent to a great extent in the literature. There are a few studies in the context of gender differences in the use of computers and attitudes towards computers (Qureshi and Hoppel, 1995; Harrison and Rainer, 1992). In case of Internet use Teo and Lim (1997) identified gender differences in terms of perceived ease of use, perceived usefulness and perceived enjoyment. On all three dimensions males reported significantly higher mean scores than females. Farfaglia et al. (2005) in their cross cultural study in the USA, Netherlands and South Korea determined that there exist differences among men and women regarding Internet uses and gratifications. Men and women differed on their motivations towards Internet use, namely social gratifications, information motives and self efficacy. Ono (2003) found that women were significantly less likely than men to use the Internet at home. Weiser's (2000) study identified the existence of several gender differences in preferences for specific Internet applications. His results showed that males use the Internet primarily for two reasons, namely entertainment and leisure, whereas women use it mainly for interpersonal communication and educational assistance. The results also showed that several gender differences were mediated by differences in age and Internet experience. On the basis of the above studies the following research questions are put forward:

Research Question 2a: What are the Internet gratifications on which males and females differ?

Research Question2b: How do males and females differ based on the uses of the Internet?

Methodology

Our analysis proceeded in four stages. First a list of items characterizing U&G of Internet use was developed. The second stage involved the use of exploratory factor analysis to derive specific Internet gratifications. The third stage was to perform a confirmatory factor analysis to refine the identification of Internet gratifications. And finally, the study looked into how do males and females differ on their Internet uses.

Sample and Data Collection

Data for the study has been provided by CREED (Center for Research and Education, India). The sample consisted of households having an Internet connection at home in the state of Madhya Pradesh. Data were collected through a questionnaire survey. The survey instrument consisted of twenty six items (shown in Table 2). These are the items which reflect the reasons for using the Internet as obtained from a qualitative study (focus group discussions) conducted by the CREED. Each survey item was measured on a five-point scale from (1) "strongly disagree" to (5) "strongly agree." Respondents were also asked whether they used the Internet for the reasons mentioned in Table 3 on a dichotomous scale containing "yes (1)" and "no (0)".

Out of the 6400 questionnaires sent, only 4512 were usable for the analysis. That means the response rate is 70.5% which is reasonable for survey research (Malhotra, 2007, pp.198-199). The sample consisted of 67% men and 33% women, 30.5% in the age group of 30-50 years, 44.7% in the age group of 25-30, and 24.8% were 25 years or below. Only 29.5% of the sample has been using Internet for about three years or more. About 55% of the sample had total monthly household income greater than Rs.15000 (approx. $375).

Table 2. Motivations for Using the Internet

X1: Helps share views with people globally
X2: Helps get answers to queries
X3: Do not want to waste time dealing with people
X4: Chat with anyone globally
X5: Introduces me to peer group
X6: Provides access to job opportunities
X7: Prepares me for globally economy/workplace
X8: Can search for a good job
X9: Helps me relax
X10:Provides me leisure
X11: Prefer spending time indoors
X12: Relieves stress thru entertainment
X13: Provides wider range of exposure
X14: Broadens outlook
X15: Provides greater integration with world
X16: Gives me ideas
X17: Best way to know the world
X18: Easy to download information
X19: Is user-friendly
X20: Helps work faster
X21: Inspires me to excel
X22: Gives freedom to express opinions
X23:Charges me to do something new
X24: Is fillip to creativity
X25: Gives me feeling of being in control of things
X26: Gives me edge over others

Data Analysis

The first step in the analysis was to identify the underlying gratifications for Internet use. For this an initial factor analysis was performed using SPSS 15.0, utilizing the common factor model and keeping in mind the developmental purpose of the study, as is consistent

with Anderson and Gerbing (1988). Principal component analysis with varimax rotation was used to identify the underlying gratifications. Six factors were obtained with eigenvalues greater than one. Second, to confirm the factor structure identified in the exploratory factor analysis, a confirmatory factor analysis (both first order and second order) was performed using AMOS 7.0. Third, to understand gender differences in gratifications from Internet use, independent samples t-tests were performed (Teo and Lim, 1997; 2000).

Table 3. Perceived Uses of the Internet

1.	Games
2.	Chatting
3.	E-mail
4.	Obtaining business information
5.	For news
6.	Further education related information
7.	Job search
8.	For shopping
9.	For buying tickets (airplane, trains, movies etc.)
10.	For research
11.	Downloading software
12.	Financial transactions

Results: Initial Factor Analysis

The results of the factor analysis were as follows. The null hypothesis that the correlation matrix was an identity matrix was rejected by Bartlett's test. The approximate Chi-square statistic was 23855.11 with 325 degrees of freedom, which was significant at the 0.05 significance level, and the value of the KMO statistic was 0.880, which was large (greater than 0.5). This indicated that the twenty-six variables in Table 2 are correlated enough to lend themselves well to a factor analysis (Hair et al. 2006). All variables were retained in the factor analysis. Factor loadings greater than or equal to 0.35 were used for each of the variables. The first six factors together accounted for 55.20% of the total variance.

The results of the factor analysis are shown in Table 4. The factor loadings of each of the variables on their respective items are shown in the table. The largest factor loadings were considered for each of the items. Factor loadings overlapped only once: the item "gives me ideas" loaded on both factor-1 (with factor loading 0.396) and factor-2 (with factor loading 0.449). The item was finally used with factor-2 because of the higher factor loading. Twenty three of twenty six variables loaded on the factors obtained. Variables "helps get answers to queries", "do not want to waste time dealing with people" and "prefer spending time indoors" did not load on any of the factors.

Table 4. Rotated Factor Matrix

Factors	Items	Factor loadings	Reliability (Internal consistency)
Factor 1	Inspires me to excel	0.684	0.821
	Gives freedom to express opinion	0.578	
	Charges to do something new	0.775	
	Gives edge over others	0.644	
	Gives me feeling of being in control of things	0.728	
	Is fillip to creativity	0.693	
Factor 2	Provides wider range of exposure	0.754	0.730
	Broadens outlook	0.800	
	Provides greater integration with world	0.674	
	Gives me ideas	0.449	
Factor 3	Best way to know the world	0.449	0.658
	Easy to download information	0.786	
	Is user-friendly	0.779	
	Helps work faster	0.635	
Factor 4	Helps me relax	0.811	0.718
	Provides me leisure	0.798	
	Relieves stress thru entertainment	0.714	
Factor 5	Provides access to job opportunities	0.787	0.642
	Prepares me for globally economy/workplace	0.571	
	Can search for a good job	0.801	
Factor 6	Helps share views with people globally	0.659	0.621
	Chat with anyone globally	0.703	
	Introduces me to peer group	0.680	

Factor Labeling and Interpretation

The factors (gratifications) as obtained from the analysis were labeled by the author under the following headings:

1. Self Development (SD)
2. Wide Exposure (WE)
3. User Friendly (UF)
4. Relaxation (RE)
5. Career Opportunities (CO)
6. Global Exchange (GE)

The major independent sets of gratifications as obtained from using the Internet among the respondents are explained in brief:

Self Development

This factor deals with respondents self growth and development. The items related to this factor expressed a feeling of getting an edge over others and of being in control of things because of Internet. The items also indicate a perception of being able to express opinions freely and a sense that the Internet acts as a fillip to their creativity. The reliability of this factor, as measured by its Cronbach Alpha (a measure of the level of correlation among the items which load on the factor, which would equal one if all correlations among any two items were one), was 0.821.

Wide Exposure

The items in this factor were related to the expansion of one's horizons through the Internet. This factor expresses the opinion that browsing the Internet provides a wide range of exposure and broadens one's outlook. Its reliability (Cronbach alpha) was 0.73.

User friendly

The items under this factor express an opinion that the Internet is user friendly and it makes it easy to know the world. It also expresses a perception of ease to download information. This factor's Cronbach alpha was 0.658.

Relaxation

This factor deals with relaxation and leisure provided by the Internet. It expresses the view that one browses the Internet because it provides one with many hours of leisure and helps one relax. The Cronbach alpha of this factor was 0.718.

Career Opportunities

The emphasis in this factor is on the ease of seeking career and job opportunities because of the Internet. This factor's Cronbach alpha was 0.642.

Global Exchange

Another factor that emerged was the use of the Internet as a means of introduction to peer groups, sharing views and chatting with others on the net. Its reliability was 0.621.

First-Order Confirmatory Factor Analysis

The six constructs obtained from the initial factor analysis and their indicators were subjected to confirmation through a measurement model in AMOS 7.0. The measurement model is shown in Figure-1.

Model Fit

The output of the AMOS yielded a chi-square value of 2523.362, with 214 degrees of freedom and a probability of less than 0.0001 ($p = 0.000$), thereby suggesting that the fit of the data to the hypothesized model is not entirely adequate. However, according to Bagozzi and Yi (1988) and Mulaik et al. (1989), the chi-square statistics is not always the best indication of model fit. The literature on model fit indices reports various other indices which reflect model fit. For the measurement model in Figure 1 the other model fit indices are the following:

> CFI (comparative fit index) = 0.910; GFI (goodness-of-fit index) = 0.953; AGFI (adjusted GFI) = 0.939; PGFI (parsimonious GFI) = 0.739; RMR (root mean square residual) = 0. 021; TLI (Tucker & Lewis index) = 0.893; NFI (normed fit index) = 0.903; RFI (relative fit index) = 0.885; RMSEA (root mean square error of approximation) = 0.049; BIC (Bayesian information criterion) = 3045.06.

The values of the fit indices mentioned above indicate a reasonable fit of the measurement model with data (Byrne, 2001; pp. 79-86).

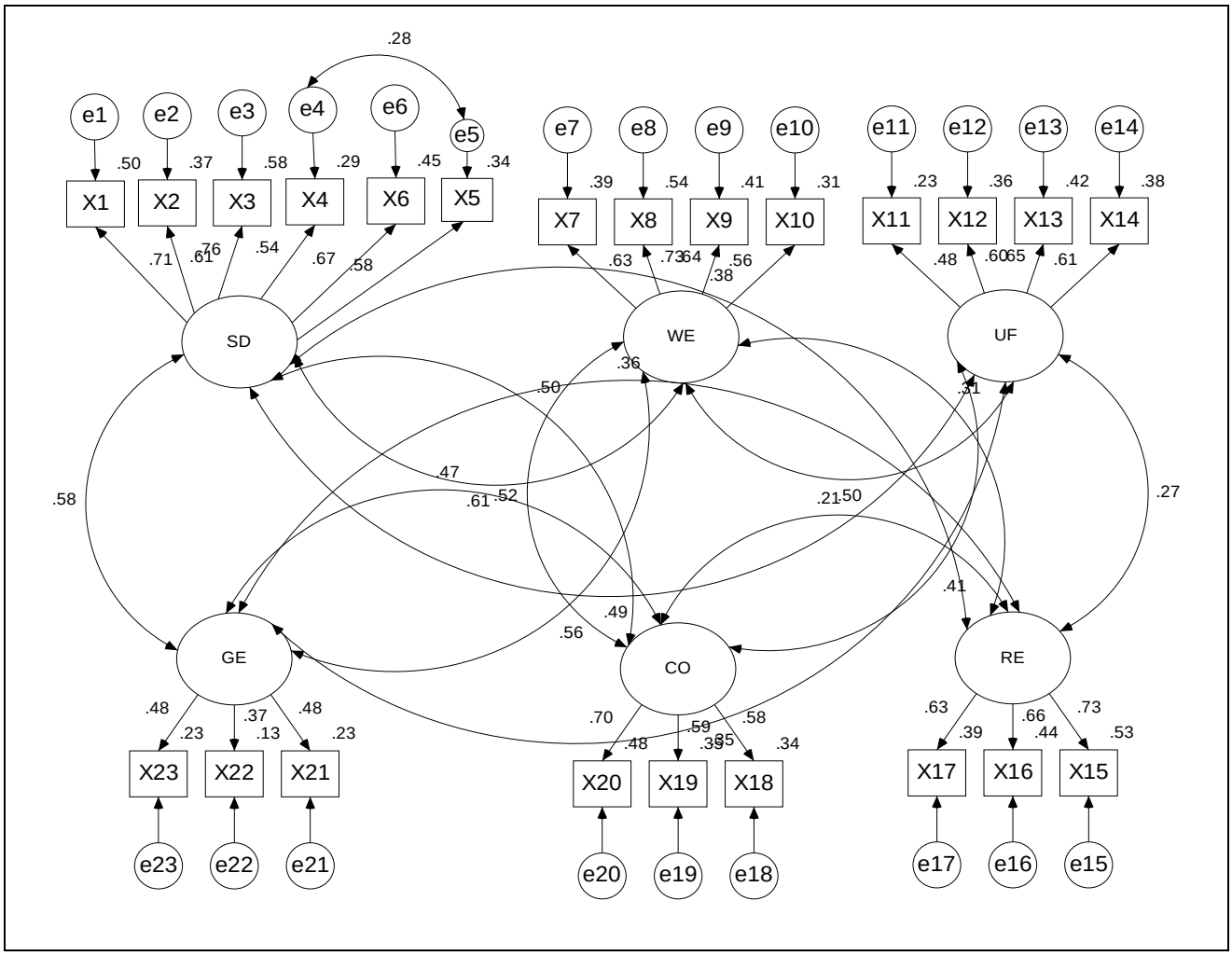

Figure 1. Measurement Model (with standardized coefficients)

Convergent Validity

Anderson and Gerbing (1988) state that the convergent validity of a model can be accessed by determining whether the path estimates between the measurement items and their respective latent constructs are significant or not. In case of the AMOS output the standardized estimates of all the measurement items were significant as shown in table-4A Each variable exhibits significant loadings which supports the convergent validity.

Discriminant Validity

As proposed by Fornell and Larcker (1981) discriminant validity can be assessed by comparing the average-variance (AVE) in indicators explained by the constructs (Table 5) and the corresponding inter-construct squared correlation estimates (Table 5A). For example, Self-development explains 47.10% of the total variability in the indicators X_1-X_6. The tables show that the AVE's are greater than the inter-construct squared correlation estimates which supports discriminant validity.

Table 5. Average Variance Explained

Factors	Average Variance Explained (AVE) (%)
Self Development	47.10
Wide Exposure	46.60
User Friendly	45.70
Relaxation	60.14
Career Opportunities	52.90
Global Exchange	46.36

Table 4A. Regression Weights

			Estimate	S.E.	C.R.	P
X1	<---	Self-development	1.000			
X2	<---	Self-development	.831	.023	36.435	***
X3	<---	Self-development	1.076	.024	44.300	***
X4	<---	Self-development	.845	.026	32.500	***
X6	<---	Self-development	.917	.023	39.890	***
X7	<---	wide exposure	1.000			
X8	<---	wide exposure	1.284	.037	35.126	***
X9	<---	wide exposure	1.128	.035	32.638	***
X10	<---	wide exposure	1.015	.034	29.537	***
X11	<---	user friendly	1.000			
X12	<---	user friendly	1.047	.044	23.679	***
X13	<---	user friendly	1.003	.041	24.429	***
X14	<---	user friendly	1.193	.050	23.949	***
X15	<---	relaxation	1.000			
X16	<---	relaxation	.984	.032	30.827	***
X17	<---	relaxation	.822	.027	30.308	***
X18	<---	career opportunities	1.000			
X19	<---	career opportunities	1.461	.056	26.162	***
X20	<---	career opportunities	1.614	.059	27.391	***
X21	<---	global exchange	1.000			
X22	<---	global exchange	.740	.049	14.967	***
X23	<---	global exchange	1.112	.065	17.235	***
X5	<---	Self-development	.911	.026	34.860	***

Notes: S.E. = standard error of regression weight; C.R. = critical ratio for regression weights. ***Significant at p<0.001

Table 5A. Inter-Construct Correlations

			Estimate	**Squared Correlation Estimates**
self-development	<-->	global exchange	0.576	0.33
career opportunities	<-->	global exchange	0.475	0.22
relaxation	<-->	career opportunities	0.207	0.04
user friendly	<-->	relaxation	0.266	0.05
wide exposure	<-->	user friendly	0.500	0.25
self-development	<-->	wide exposure	0.615	0.38
self-development	<-->	user friendly	0.493	0.24
relaxation	<-->	global exchange	0.358	0.13
self-development	<-->	relaxation	0.380	0.14
wide exposure	<-->	career opportunities	0.517	0.27
self-development	<-->	career opportunities	0.498	0.24
wide exposure	<-->	relaxation	0.310	0.09
wide exposure	<-->	global exchange	0.564	0.32
user friendly	<-->	career opportunities	0.415	0.17
user friendly	<-->	global exchange	0.353	0.124

Construct Reliability

The most widely used measure to assess the internal consistency of constructs is Cronbach's alpha (Cronbach and Meehl, 1955; Nunnally and Bernstein, 1994). The generally agreed upon value of Cronbach's alpha is 0.70, although it may decrease to 0.60 in case of exploratory research (Hair et al. 2006; pp.137). In this research the reliability measure for the whole scale is 0.848 which is acceptable. Again the reliability for all the constructs is shown in Table 4; the values for all the constructs range between 0.6 and 0.85, which is acceptable. Hence, construct reliability in this research is satisfactory.

Second-Order Confirmatory Factor Analysis

Higher order factor analysis is a theory-driven procedure in which the researcher imposes a more parsimonious structure to account for the interrelationships among the factors established by the lower order confirmatory factor analysis (Brown, 2006; pp.320). A goal of a higher order factor analysis (second-order in this research) is to provide a more parsimonious account for the correlations among the lower-order factors. Higher-order factors account for the correlations among the lower order factors and the number of higher order factors and higher order factor loadings is less than the number of factor

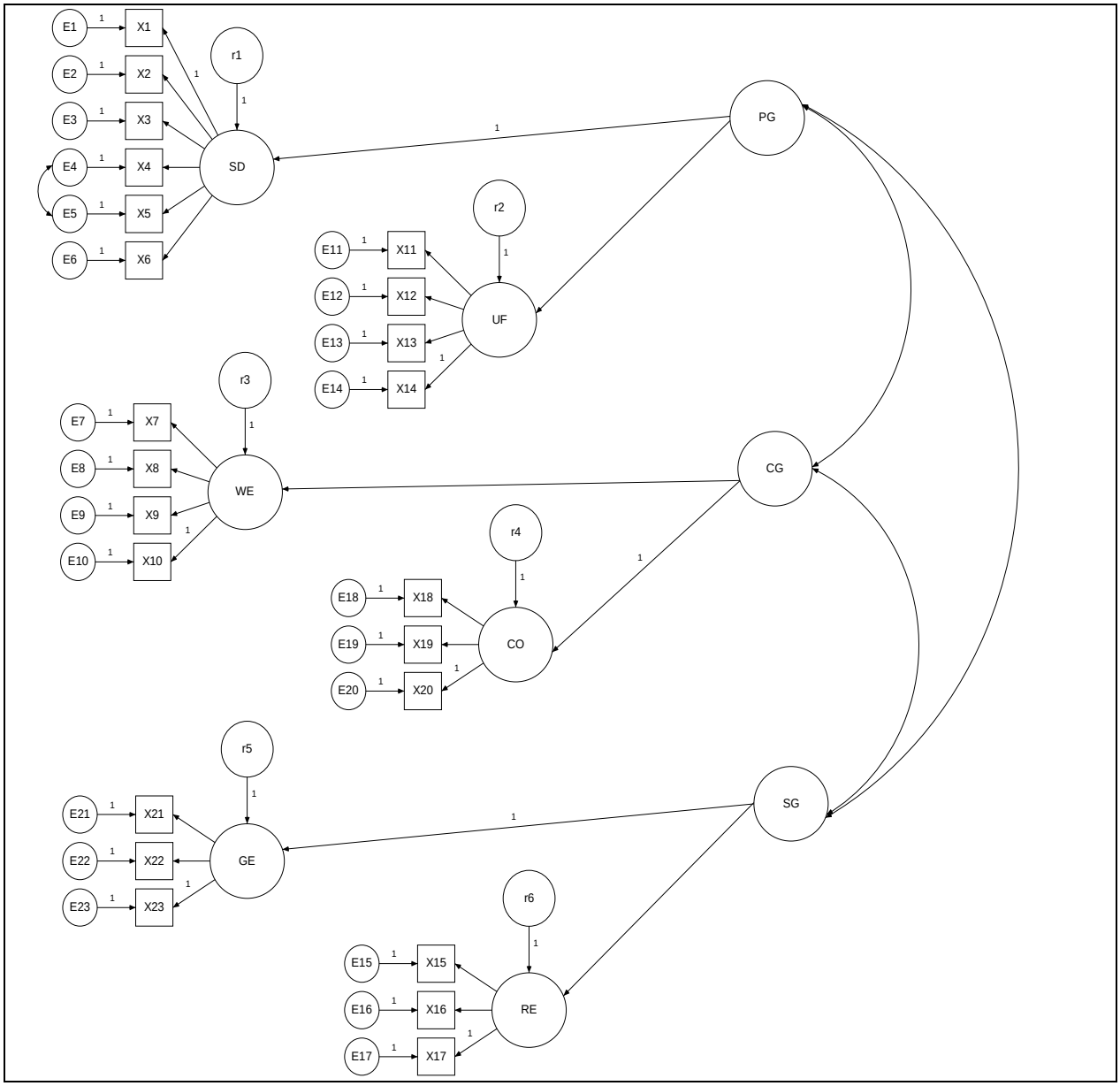

Figure 2. Hypothesized Second-order Factor Model

correlations. The number of higher order factors that can be specified is dictated by the number of lower order factors. Unlike first-order CFA, higher-order CFA tests a theory-based account for the patterns of relationships among the first-order factors. These specifications assert that higher-order factors have direct effects on lower-order factors; these direct effects and the correlations among higher-order factors are responsible for the co-variation of the lower-order factors (Brown, 2006; pp.321). The literature review on "uses and gratifications" research indicates that there exist three broad types of gratifications namely, "process gratifications", "content gratification" and "social gratification" (Stafford et al. 2004). Based on the definitions of these types of gratifications provided in the literature review section and the first order-factors obtained in the first-order CFA, the following second-order factor model has been hypothesized:

Process Gratifications (PG), Content Gratifications (CG) and Social Gratifications (SG) are referred to as the second-order factors (i.e. a second level of factors that account for the correlations among the first-order factors). Results from the first-order CFA provide the correlations among the factors. Table 5A shows that all the factors are significantly interrelated (estimated correlations ranging from 0.21 to 0.62). It is of importance that the pattern of correlations speaks to the validity of the posited second-order model. Next the hypothesized model in Figure 2 was estimated using AMOS 7.0.

Model Fit

The output of the AMOS analysis yielded a chi-square value of 2572.11, with 220 degrees of freedom and a probability of less than 0.0001 ($p = 0.000$), thereby suggesting that the fit of the data to the hypothesized model is not entirely adequate. The other fit indices for the hypothesized model in Figure 2 are the following:

CFI = 0.908; GFI = 0.952; AGFI = 0.940; PGFI = 0.759;
RMR = 0. 022; TLI = 0.894; NFI = 0.903; RFI = 0.885; RMSEA = 0.049; BIC = 3043.32

The values of the fit indices mentioned above indicate a reasonable fit of the measurement model with data (Byrne, 2001; pp. 79-86). The second-order solution is found to be equally (compared to the first order solution) good fitting, since the difference between the two chi-square statistics is 2572.11 minus 2523.362 = 48.746, for a number of degrees of freedom equal to 6 (220-214). The gain of six degrees of freedom in this particular model is caused by the model attempting to account for the correlations among the first-order factors.

Brown (2006) states that in addition to goodness-of-fit, the acceptability of the higher-order model must be evaluated with regard to the magnitude of the higher-order parameters; i.e. the size of the higher-order factor loadings and higher-order factor correlations. Each of the first-order factors loads strongly onto the second-order factors (Table 6). Using the estimates in Table 6 the variance explained by each of the second-order factors in the first-order factors has been calculated; it ranges from 40%-53%.

Table 6. Standardized Regression Weights

			Estimates	Variance Explained (%)
self development	<---	process gratification	0.800	50.9
user friendly	<---	process gratification	0.615	
wide exposure	<---	content gratifications	0.799	52.7
career opportunities	<---	content gratifications	0.646	
global exchange	<---	social gratifications	0.765	40.1
relaxation	<---	social gratifications	0.466	

The correlation between the higher-order factors varied between 0.30 – 0.45. Since, the higher-order solution did not result in a significant decrease in the model fit, it can be concluded that the hypothesized second-order model provided a good account for the correlations among the first-order factors.

Gender and the Internet

Table 7A presents the results of the independent samples t-tests carried out to determine gender differences in terms of the gratifications obtained in the study. Table 7A indicates that males and females differ significantly on the gratifications "self development", "user friendly", "wide exposure", and "relaxation."

Table 7B presents the results of the t-tests carried out to determine gender differences in terms of the perceived uses of the Internet. This table demonstrates that males and females differ in their perceived uses of the Internet. In particular they appear to differ significantly on uses such as games, chatting, obtaining business information, news, education related information, job search, shopping, downloading software and financial

transactions. On the other hand they do not differ significantly on uses such as email and buying. The results are consistent with Teo and Lim (1997, 2000). The table also suggests that females are more likely to use the Internet for chatting, for further education related information and for research.

Table 7A.

	Independent sample t-test	
	Sig.	**t-value**
Self Development	0.003*	2.983
Wide Exposure	0.013*	-2.489
User Friendly	0.000*	5.187
Relaxation	0.028*	-2.192
Career Opportunities	0.266	-1.112
Global Exchange	0.505	0.666

*Significant at $p<0.05$

Discussion and Conclusion

This paper through an exploratory study has identified the motivations behind Internet use in the Indian context. The gratifications for Internet use as obtained from the study are self development, wide exposure, relaxation, user friendly, career opportunities and global exposure. One factor that has been dominant throughout the Internet uses and gratifications theory and also in this study was the factor "relaxation." The findings of this study enhanced our understanding of why and how people use the Internet in the Indian context. The study has also highlighted the existence of second-order gratification in the case of Indian Internet users. The second-order gratifications obtained are process gratifications, content gratifications, and social gratifications, which is consistent with the results of Stafford et al. (2004).

Again it has been shown that the Internet usage of males and females differ based on the gratification factors "self development", "user friendliness", "wide exposure" and "relaxation." The identification of the gratification factors among Internet users can help provide opportunities for the advancement of the business of Internet service providers in India. Also a better understanding of the U&G from Internet use can guide ISP managers to make their offerings more consumers friendly. For example, the factor "career opportunities" could be used by ISP managers to design their offerings to make the Internet more user friendly for students to access educational and career related information. Consider technology oriented sites such as CNET.com and download.com. The managers of such Internet sites could be guided by the importance of the second-order factor "process gratifications" (actual use of the medium) by designing the interfaces and search utilities so as to enhance quick and effective searches for technological resources.

Table 7B. Perceived Uses of the Internet

	Gender	**Mean**	**S.D.**	**Sig.**	**t-value**
Games	Male	0.12	0.320	0.038*	1.931
	Female	0.10	0.296		
Chatting	Male	0.51	0.500	0.001*	-1.864
	Female	0.54	0.498		
E-mail	Male	0.99	0.121	0.373	0.445
	Female	0.99	0.114		
Obtain business information	Male	0.13	0.342	0.000*	6.849
	Female	0.07	0.253		
For news	Male	0.51	0.500	0.000*	5.874
	Female	0.42	0.493		
Further education related information	Male	0.82	0.383	0.000*	-5.802
	Female	0.89	0.317		
Job search	Male	0.33	0.471	0.000*	7.834
	Female	0.22	0.415		
For Shopping	Male	0.09	0.283	0.000*	2.754
	Female	0.06	0.246		
Buying tickets	Male	0.09	0.284	0.914	-0.054
	Female	0.09	0.285		
For research	Male	0.27	0.443	0.000*	-6.541
	Female	o.36	0.481		
Downloading software	Male	0.46	0.498	0.000*	5.096
	Female	0.38	0.485		
Financial transactions	Male	0.03	0.160	0.000*	3.225
	Female	0.01	0.109		

*Significant at $p<0.001$

The Internet "content motivations" in this study primarily involved exposure and information. In U&G studies of other media, content was typically represented by entertainment and diversion, whereas the media content here was often information. It appears, on the basis of this analysis, that much Internet content served the purpose of looking for opportunities and wide exposure goals. In spite of the presence of all other types of reasons for using the Internet such as online games, music, and other pure entertainment content, the content gratification developed here seemed to highlight the informational content. So, Internet businesses should attend to user requirements for rich information to support learning and knowledge goals. Another important aspect that came out from the study was that people often used the Internet to widen their exposure and integrate themselves with the rest of the world (as captured by another second-order factor "social gratifications"). This was one of the key benefits which users look for while using the Internet. Chatting and interacting with people on the Internet seemed to characterize this usage dimension, so site operators as well as Internet service providers could enhance this experience for users. The motivations derived in the study could help to better understand online consumer behavior.

This study has contributed to the evolving body of literature on Internet U&G, particularly in developing countries like India. The study could be extended to include the type of websites visited to understand how respondents used the Internet and to identify the factors which affected the duration of a visit to a website. Also an interesting aspect to investigate would be to verify whether Internet usage affects reading newspapers, listening to the radio and watching television.

This paper has demonstrated how to use exploratory and confirmatory factor analysis to derive and refine dimensions which underlie perceptions expressed in survey responses, and has shown what the implications of such an analysis are to web site designers and IS providers.

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