

Identifying the Factors Affecting Users' Adoption of Social Networking

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Abstract

Through the rapid expansion of information and communication technologies, social networking sites have received much more attention in the scope of internet communication. Success of a social web primarily depends on users' satisfaction. In this context, this study aims to identify the influencing factors that affect users' satisfaction towards social networking site use. A multidimensional model has been proposed based on the Information Quality, System Quality, Environmental and Affective dimensions to assess the effects of key variables – Semantic Intention, Usability, Web-Page Aesthetics, Subjective Norm and Trust- on users' satisfaction. Facebook was chosen as a focused social networking site, because of its popularity. A comprehensive survey instrument was applied to 203 Facebook users. Also, Structural Equation Modeling, particularly Partial Least Square, was conducted to analyze the proposed research model. As a result, proposed multidimensional research model predicts the factors influencing users' satisfaction towards social networking site use and relationships among these factors. The findings of this research will be valuable for literature by analyzing the influencing factors that have not been previously researched in the context of social networking satisfaction area.

Keywords: Social Networking Satisfaction, Structural Equation Modeling, Partial Least Squares

1. INTRODUCTION

Social networking concept has emerged out of the growing social needs such as establishing new social relations, finding friends with similar interests, sharing knowledge and content with other people [1]. Social networking with the expanding popularity have become among the most famous sites on the Web. The number of users might be shown as evidence for their popularity: LinkedIn has 41 million users, MySpace has 67 million users, Twitter has 98 million users and Facebook has 540 million users [2]. Although the number of users is high enough to easily accept popularity of social networking sites, the reasons behind their success are unclear [3]. According to researchers [4], users' satisfaction plays the major role for the success of web sites. In this regard, the literature needs research to identify the factors influencing users' satisfaction towards social networking sites.

In this study, Facebook is chosen as social web to identify users' satisfaction toward social networking. The major reason underlying this selection is that Facebook is the most popular social networking site in TURKEY with 22 million users; also TURKEY is among the first five countries with Facebook use [5]. Social Networking Satisfaction Model (SNSM) has been proposed to identify the factors affecting users' satisfaction towards social networking. Multidimensional perspective is considered when developing the research model; **Information Quality** – *Semantic Intention*, **System Quality** – *Usability* and *Web Page Aesthetics*, **Environmental Issue** - *Subjective Norm* and **Affective Issues** – *Trust*. The present study makes contribution to the literature for several reasons. Firstly, this study is the first attempt to examine users' satisfaction from the constructed multidimensional perspectives in the context of social networking. Secondly, effects of semantic information have never been examined before by researchers to evaluate users' satisfaction. Thirdly, usability and web-page aesthetic as a system

quality have not been employed to measure users' satisfaction in the context of social networking. In addition, there has been no other study examining the effects of other people on users' satisfaction towards social web. On the other hand, SNSM can greatly benefit system developers to better understand how users' satisfaction can be increased and how the social networking sites can be improved.

As a result, in order to increase users' satisfaction when using social networking sites, it is essential to understand the reasons behind users' rejection and identify the critical factors affecting their satisfaction. Therefore the aims of this study are as follows:

- Identifying the key factors affecting users' satisfaction of social networking site use.
- Developing a multidimensional model to reveal the main reasons behind the users' satisfaction of social networking site use.

The research question of this research is as follow;

- To what extend Semantic Intention, Usability, Web-Page Aesthetics, Subjective Norm and Trust affect Facebook users' satisfaction towards social web use.

2. LITERATURE REVIEW

2.1 Social Networking

Social networking sites enable individuals to “(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” [6, pp.211]. Most of these sites share the basic features like allowing individuals to represent themselves with creation of profiles, meeting with others, finding new jobs, receiving or providing recommendation or much more [7].

According to the Facebook press room, Facebook is the most popular and fastest growing social networking site and it has been using since 2004 and today it has more than 500 million active users. This social networking site initially considered college and universities as a target group; however, it extended this group with everyone including high schools and other organizations [8]. As a study states that [9], researchers evaluated Facebook in different aspects like trust and privacy issues [6], [7], [8], [10], [11], motivations to use [9], [12], [13], [14], [15], usage effects [16], [17], [18] and identity and self-presentation of Facebook [19], [20], [21].

Although researchers were examined Facebook from different angles, little research investigated the factors that influence social networking adoption [12]. Users' adoption and decision to continue social networking use primarily depends on users' satisfaction [9].

2.2 Satisfaction of Information System

“...satisfaction in a given situation is the sum of one's feelings or attitudes towards a variety of factors affecting that situation” [22, p. 531]. Satisfaction is suggested as a success measure in the information systems area [23], [24]. The studies show that there is a strong relation between users' satisfaction and their intention to information system use [25], [26].

Satisfaction has been considered in different theoretical frameworks in the area of information systems [27]. However, any single study has not considered information quality, system quality, environmental issues and affective factors as a theoretical framework to evaluate users' satisfaction towards social networking. Success of information systems depends on quality of information and systems [24]. Also environmental factors and affective conditions are important determinants of users' satisfaction. In the scope of this study, a research model is proposed to assess users' satisfaction in the context of social networking as taking information quality, system quality, environmental and affective issues base.

3. RESEARCH METHOD

3.1 Research Model

In this study, a multidimensional model has been proposed to reveal the critical factors affecting users' satisfaction towards use of social networking. The model is named as Social Networking Satisfaction Model (SNSM) (shown in Figure 1). This simulation increase understandability and visuality between social networking satisfaction factor and the dimensions and the related variables examined under this dimensions. When developing SNSM, it is avoided to examine users' satisfaction from one perspective. Because it is recommended that a researcher should avoid using single linear methodology when assessing the attitudes of users towards a technology [28]. The critical measurement constructs are categorized by taking the IS Success Model [24], Social Cognitive Theory [29] and affective issue as base. *Information Quality, System Quality, Environmental Issue and Affective Issue* dimensions are considered when selecting the factors influencing users' satisfaction towards social networking. Initially, the effects of critical factors on satisfaction and relations between the constructs under the same dimension are hypothesized. During the structural model evaluation the meaningful relations among the constructs are tried to be revealed.

Information Quality: This concept is dealt with the relevance, timeliness, reliability, completeness, precision and accuracy of information produced by an information system [24]. User satisfaction is affected from "Informativeness" including relevance, comprehensiveness, recentness, accuracy and credibility, "Accessibility" consisting of convenience, timeliness and interpretability and "Adaptability" [30], [31]. Information quality is critical if it is expected to produce information for decision-making from an application of information technology [24]. For example, word-processor does not actually produce information therefore information quality is not a critical factor such a system. However, it is expected from the social networking sites to produce meaningful information for users. For this reason, Semantic Intention is explored under the Information Quality dimension to examine the importance of semantic information in social networking and how users' satisfaction is affected with the availability of semantic information.

Semantic Intention (SI): With the emergence of limitations in accessing the vast information on the Web [32], semantic web concept has become popular as a solution to overcome this dilemma. Semantic web helps to create an information infrastructure by accessing data from variety of sources to achieve a task [33]. Semantic web is defined as "... an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation" [34, p.3].

Support of social networks with semantic web brings innovations to attract the intention of users. The closer interaction between semantic web and social networking will be beneficial [32]. He stated that "the creation of mashups or combination of diverse sources of data and services could greatly benefit from the shared representations and protocols proposed by the Semantic Web community". Success of the Web depends on social adaption as much as technological issues [35]. With the help of semantic web, interoperability and social adoption have become critical factors for the global scale of the Web [32]. Therefore, with the help of Semantic Intention construct, it is possible to understand how users' satisfaction is affected if social networking sites that are supported with semantic information. The hypothesis related with Semantic Intention is as below;

H1: Support of social networking with semantic information positively influences users' satisfaction towards social networking.

System quality is concerned with the consistency of user interface, ease of use, quality of documentation and system flexibility [24]. A study shows that system quality indirectly influences users' perception towards system use [36]. According to [14], system quality is a critical point should be taken into consideration, because users are reluctant to use a web site if they experience problems on access, difficulty in navigation, constantly lived delays in response and

disconnection [37]. Usability and Web Page Aesthetics factors are examined under the System Quality dimension to reveal their effects on satisfaction of the user.

Usability (U): Usability is summarized as “the capability in human functional terms to be used easily and effectively by the specified range of users, given specified training and user support, to fulfill the specified range of tasks, within the specified range of environmental scenarios” [38, p.340]. With the help of Usability construct, it is tried to measure that how users’ success rate meeting in specified aims, ease of use perception and perceived efficiency of system use affect their gratification towards system. The hypotheses related with Usability are as follows;

H2: Usability positively influences users’ satisfaction towards social networking.

Web Page Aesthetics (WPA): Aesthetic concept was neglected until the first quarter of 21th century, because of the different focus points between computer industry and design criteria of human computer interaction [39]. However, as Norman’s prescience [40], [41], the appropriation of modern design based on setting aesthetics ahead of usability. As it is seen aesthetics and usability present two orthogonal dimensions of human computer interaction; however there is a strong relation between usability and aesthetics as seen in the definition “measurement of usability defines the success or lack thereof in a GUI design” [42, p.60]. Also, recent research revealed that there is a strong relation between visual aesthetics of computer interfaces and users’ satisfaction and pleasure [43]. Therefore, it is aimed to experimentally explore users’ perception of aesthetics on their usability and satisfaction perception.

H3: Web Page Aesthetics positively influence users’ satisfaction towards social networking.

H4: Web Page Aesthetics positively influence users’ usability perception towards social networking.

Environmental Issues: Social Cognitive Theory (SCT) [29] is widely accepted and empirically validated model to evaluate an individual’s behavior [44]. The theory examined the reciprocally determined factors that are environmental influences, cognitive and other personal factors and behavior. Individuals select the environment in which they exist and influenced by those environments. In addition behavior is affected by environmental factors or situational characteristics and cognitive and other personal factors [44]. Therefore, Subjective Norm is added into the research model under Environmental Issue dimension in order to analyze the effects of social pressure over users’ satisfaction of social networking.

Subjective Norm (SN): Subjective Norm reflects the effects of social influence to perform or not to perform a behavior [45]. In other words, subjective norm concerns with normative beliefs about the expectation from other people [46]. Subjective norm is defined as “person’s perception that most people who are important to him think he should or should not perform the behavior in question” [47, p.302]. With the help of Subjective Norm construct it is aimed to measure how the others’ opinions affect users’ gratification. Thus the following hypotheses are formulated;

H5: Subjective Norm positively influences users’ satisfaction towards social networking.

Affective Issue: Affective concept states that systems have emotion and ethical dilemma, as well as a number of social and philosophical questions [48]. According to Picard [49], emotion plays a vital role between users and systems; because it underlines the process of perception, decision-making, creativity, empathic understanding, memory, as well as in social interaction [50], [51], [52], [53]. According to Lee and See [54] states that trust which is an effective response and it affects information selection, interpretation and intention to rely. In the scope of this study, the relation between trust and satisfaction is examined to reveal how users’ affective basis effects their system interaction.

Trust (T): Trust is defined as "the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people" [55, p.39]. Trust is explained as a belief that affects our attitude towards the system use [56]. Activities performed in social networking sites like creating profile (name, surname, birth date, ethnicity, etc.), sharing documents (images, text, audio and video), manifesting the status information, connecting with friends, and etc. expose privacy concerns. In this point, it can be said that trust is an important factors for successful online interaction for sharing information and building new relationships [57]. In this sense, some questions come into prominence. What role does trust play in users' satisfaction from using the system and how does it play role when users intent to use social networking sites? In order to answer these questions, the following hypothesis is presented below;

H6: Trust perception positively influences users' gratification towards social networking.

In addition to the direct relation between the proposed critical factors and satisfaction, the relations among the influencing factors will be examined during the structural model evaluation.

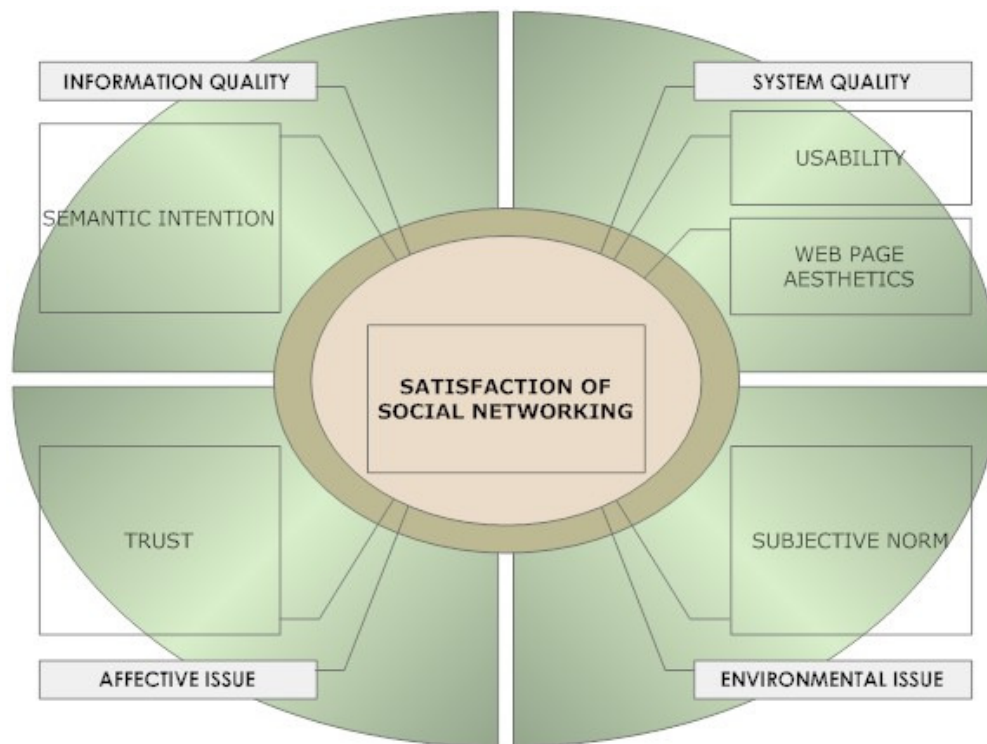


FIGURE 1: Social Networking Satisfaction Model (SNSM).

3.2 Instrument Development

After a detailed literature review, a comprehensive survey instrument was developed to empirically validate the research model. The survey instrument consisted of two parts. The first part included demographic questions and the second part included measurement items to assess Semantic Intention, Usability, Web-Page Aesthetics, Trust, Subjective Norm and Satisfaction factors. The references of the measurement items are as follows; Semantic Intention was self-developed, Usability was adopted from Nielsen's Ten Usability Heuristics [58], [59], Web-Page Aesthetics was adopted from Mullet & Sano [60], Trust was adopted from the researches Pan & Zinkhan [61] and Dwyer, Hiltz & Passerini [8], Satisfaction was adopted from Bhattacharjee [62],

[63]. Five point likert scale type was used for measurement items in which 1 stated strongly disagreement and 5 stated strongly agreement.

Content validity helps to assess whether the measurement items represent the constructs tried to measured, and cover full range of the constructs [64]. Before survey instrument applied in pilot study, content validity was checked with group including ten PhD students and expert judgments. According to their feedbacks some re-wording was done to make measurement items more understandable and comprehensive. After content validity was checked, reliability of the survey instrument assessed with pilot study, 47 measurement items were used in main research. The results of the pilot study are shown below.

3.3 Pilot Study Data Collection and Participants

The aim of the pilot sampling was to find people who use Facebook social networking site most frequently. In the pilot study, convenience sampling method was used. The sample size of the pilot study was 31 (52% female and 48% male). The participants were in 20 to 50 age range and the average age was 28.5. Most of the participants were graduate and undergraduate students. 65% percent of the participants reported more than once Facebook usage in a day. This result shows that the aimed target sample was reached. Also the actual survey instrument was prepared according to the results of reliability statistics (based on inter item consistency - Cronbach's Alpha was 0.890) and feedbacks of the participants.

3.4 Main Study Data Collection and Participants

The final survey instrument was distributed 500 Facebook users in Turkey. Snowball sampling technique was considered in data collection. A total of 269 responses were obtained in a month. The total response rate was 53.8%. The demographic profile of the participants was presented with frequency of Facebook use, gender, age, education level, occupation and used social networking sites. 67% of the participants were using Facebook more than once in a day. 49% of the participants were female and 51% of them were male. This demographic result shows that there was no big diversity in gender in terms of sample sizes. Participants were in 18 to 53 age range and the average age was 26.7. 81% of the participants were including graduate and undergraduate students, 15% of them had a PhD level and the remaining had high school graduate. 46% of the participants were working in public sectors and then private sector and students followed with 26% and 21% respectively. Also, 25%, 13%, 6%, 5% of the participants were using Twitter, LinkedIn, Xing and MySpace social networking sites respectively in addition to Facebook.

4. DATA ANALYSES AND RESULTS

4.1 Preliminary Analysis

In order to prepare the data set for further analyses, a set of preliminary data analyses that are missing value analysis, outlier detection and normality need to be conducted [65]. Firstly, missing values need to be handled by considering the missing value analyses. The cases should be removed from the data set, if the extent of missing values is greater upper than 50% [65]. Therefore the sample size dropped from 269 to 203 after the cases including missing values higher than 50%. If the missing data level is under 10% any imputation method can be used to solve the missing value problems [65]. In the data set, the missing value level was under 10% for both in all the cases and variables. Therefore, mean substitution was used for missing values. Secondly, outliers that are the cases with values well above or well below the majority of other cases should be detected and handled [66]. In order to detect problematic values as an outlier in the data set the comparison between mean and trimmed mean values were considered [67]. However there were not huge differences were detected between these values to consider outlier problem. Lastly, normality assumption is evaluated to determine the required type of structural equation modeling. If the data set is normally distributed covariance based structural equation will be performed and if the data set is not normally distributed component based structural equation modeling will be performed to determine the relation between constructs of the proposed research model [68]. Normality assumption was checked with skewness and kurtosis values and

Kolmogorov-Simirnow test [64] and it was assumed that the distribution of the data set was not normal.

4.2 Identifying the Factor Structure

The aim of exploratory factor analysis is to identify the factor structure of data set for a set of variables by determining how many factors exist [69]. A maximum likelihood was conducted on the 47 items with direct oblimin rotation because the factors were related with each other [64]. The Kaiser-Meyer-Olkin (KMO) measure equaled to .85 confirmed the sampling adequacy for the explanatory factor analysis [64]. Bartlett's test of sphericity $\chi^2(1081) = 5866.45, p < .001$, indicated that correlations between items were sufficiently large for maximum likelihood. Seven components had eigenvalues over Kaiser's criterion of 1 and combination explained 52.70% of the variance. According to Hair and his colleagues [65] factor loadings should be 0.3-0.4 to meet the minimal level for explanation of structure. Table 1 shows the factor loadings after rotation. The items had a factor loading value above 0.40 cluster on the same factor suggest that factor 1 represents Usability, factor 2 represents Aesthetics, factor 3 represents Semantic Intention, factor 4 represents Subjective Norm, factor 5 represents Trust, factor 6 represents Satisfaction. The problems with measurement items (written italic in Table 1) were as follows;

The eighth and ninth items of Usability did not cluster under the first factor as expected. The sixth item of Semantic Intention did not cluster under the Semantic Intention factor. The third, fourth and ninth items of Satisfaction did not strongly load under the same factor.

4.3 Reliability Assessment

Reliability analysis is required to measure the consistency of the survey instrument [64]. Reliability of the survey instrument can be evaluated with the inter-item consistency and that is assessed with Cronbach's Alpha [70]. Cronbach's Alpha value around 0.8 indicates a good reliability [64]. Total scale Cronbach's Alpha value was .920 and this result showed that the total scale had a high reliability. Also, reliability analyses were performed for all sub-scales and the results showed that (in Table 1) all had high reliabilities.

Construct / Item	Factor Loading	Cronbach's Alpha Coefficient	Reliability Result
Usability (U) U1: While navigating the Facebook, I know exactly where I am. U2: After visiting a page on Facebook, I generally know where I go next. U3: The words, phrases, and concepts presented on the Facebook are familiar. In other words, the Facebook speak my language. U4 : I am able to easily recover when I went to go wrong page U5: When encountering errors, Facebook provides good error messages. U6: Facebook does not require an extensive use of memory. I am able to recognize and do not need recall. U7: Facebook is flexible to use. <i>U8: Any extraneous information is not given on Facebook</i> <i>U9: Facebook is an efficient social network to use.</i>	.543 .599 .443 .705 .523 .530 .464 - -	.784	Good
Web Page Aesthetic (WPA) WPA1: The same visual language elements are used throughout the Facebook. WPA2: There are not any extraneous details either functionally or aesthetically on Facebook. WPA3: Design elements are related with main purpose of the Facebook and the expected visitors. WPA4: Interactive elements are clearly distinguishable in both form and function. WPA5: I am able to see clearly how individual parts of the	.552 .442 .573 .686 .443	.826	Good

Facebook relate to each other. WPA6: Contrasting colors are used to make it easy for users to distinguish between different areas of focus on Facebook. WPA7: Similar elements are grouped together contextually on Facebook. WPA8: Elements are ordered in a hierarchy on Facebook. WPA9: Design elements are balanced in either a symmetrical or asymmetrical layout, throughout the Facebook.	.465 .600 .634 .642		
Semantic Intention (SI) SI1: I would be glad if Facebook had an option to give me current information about my occupation SI2: I would be glad if Facebook provides personalized advertisements through taking account of my previous online shopping history SI3: I would be glad if Facebook had an option to provide me newsbreaks from my daily followed newspapers. SI4: I would be glad if Facebook had provided special offer information from my favorite shopping websites. SI5: I would be glad if Facebook had brought me information from other social networking sites about my friends of whom I am searching about. <i>SI6: I would be glad if Facebook had an option to remove the photos in my profile tagged to friends who are deleted from my friend list.</i> SI7: I would be glad if Facebook informs me of social activities in the city I live (i.e cinema, theatre, concert)by considering my areas of interest. SI8: I would be glad if Facebook became a much more semantically (personalized) social network.	.632 .696 .732 .742 .502 - .556 .630	.832	Good
Subjective Norm (SN) SN1: My friends think that I should use Facebook SN2: My family think that I should use Facebook SN3: People important to me support my use of Facebook SN4: People who influence me think that I should use Facebook SN5: People whose opinions I value prefer that I should use Facebook	-.620 -.459 -.771 -.979 -.886	.885	Good
Trust (T) T1: Facebook is a trustworthy social network T2: I can count on Facebook to protect my privacy T3: Facebook can be relied on to keep its promises T4: I can count on Facebook to protect customers' personal information from unauthorized use T5: I feel that the privacy of my personal information is protected by Facebook T6: I trust that Facebook will not use my personal information for any other purposes	-.607 -.897 -.739 -.889 -.938 -.947	.922	Good
Satisfaction (STS) STS1: I am satisfied with the performance of Facebook. STS2: I am pleased with the experience of using Facebook. <i>STS3: My decision to use Facebook was a wise one</i> <i>STS4: Overall, the information I get from Facebook is very satisfying.</i> STS5: All things considered, I am very satisfied with Facebook as a social network. STS 6: Using Facebook is pleasant. STS7: I have fun using Facebook. STS8: I find using Facebook to be enjoyable. <i>STS9: I find using Facebook to be interesting.</i> STS10 - STS6: Overall, my interaction with Facebook is very satisfying	.482 .833 - - .467 .865 .729 .868 - .476	.900	Good

TABLE 1: Factor Structure and Reliability of Data Set.

4.4 Assessment of the Proposed Research Model

The validity of the proposed research model was evaluated with component based structural equation modeling because of the non-normal data structure. SMART PLS was used to assess structural model of proposed research model. Before analyzing the structural validity of the model, the measurement model was assessed.

4.4.1 Assessment of the measurement model

Confirmatory factor analysis was used to evaluate measurement model. This analysis helped to examine which variable was load on which factor as well as the correlation among the factors. Measurement model evaluation was performed with convergent validity and discriminant validity that are the most important components of construct validity.

Convergent validity is defined as the degree to which two variables share variance due to a given concept and correlation [71]. Convergent validity is evaluated with Factor Loadings (FL), Composite Reliability (CR), and Average Variance Extracted (AVE) [65].

Factor loadings validate the correlation between each measurement items and their constructs. Factor loadings ideally should be 0.7 or higher, however 0.5 or higher is acceptable. As shown in Table 2 factor loadings of all measurement items were change between 0.420 and 0.927. U1, U2, WPA2, WPA3, SI5 measurement items had factor loadings below 0.6 and they were removed from the data set.

Composite reliability represents internal consistency that means all measurement items represent its latent constructs and this value should be minimum 0.7. In this study, composite reliability values were between 0.845 and 0.956.

Average variance extracted (AVE) value should be calculated for each latent constructs of the model. AVE value should be over 0.5 for adequate convergent validity. The AVE values of the factors in the proposed research model ranged between 0.501 and 0.788.

These results show that the measurement model provided an adequate convergent validity.

Item	Factor Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)
U1	0.494	0.845	52%
U2	0.590		
U3	0.716		
U4	0.767		
U5	0.672		
U6	0.692		
U7	0.691		
WPA1	0.665	0.868	50%
WPA2	0.420		
WPA3	0.603		
WPA4	0.744		
WPA5	0.661		
WPA6	0.640		
WPA7	0.761		
WPA8	0.680		
WPA9	0.649		
SI1	0.663	0.874	54%
SI2	0.750		
SI3	0.815		
SI4	0.785		
SI5	0.549		
SI7	0.723		
SI8	0.624		

SN1	0.701	0.918	69%
SN2	0.720		
SN3	0.892		
SN4	0.912		
SN5	0.916		
T1	0.781	0.956	78%
T2	0.922		
T3	0.855		
T4	0.913		
T5	0.919		
T6	0.927		
STS1	0.691	0.845	66%
STS2	0.877		
STS5	0.773		
STS6	0.814		
STS7	0.868		
STS8	0.867		
STS10	0.802		

TABLE 2: Convergent Validity for Measurement Model.

Discriminant Validity was proved to show each constructs of the model was adequately different from each other. In order to show differences the square root of the average variance calculated for each constructs should be greater than the correlation between a given constructs and all other constructs [72]. As shown in Table 3, the diagonal shows the square root of average variance calculated for each constructs and these values are greater than the other correlation values. Therefore, discriminant validity was also met the construct validity.

Construct	WPA	SI	SN	STS	T	U
WPA	0.697					
SI	0.095	0.735				
SN	0.196	0.237	0.833			
STS	0.360	0.252	0.528	0.815		
T	0.227	0.219	0.481	0.433	0.887	
U	0.506	0.116	0.116	0.421	0.119	0.722

TABLE 3: Discriminant Validity for Measurement Model.

4.4.2 Assessment of Structural model

Statistical significance of hypotheses was assessed by considering the path coefficient values (standardized betas). A bootstrapping procedure was applied on the data set including 203 samples to evaluate significance level of the relations between constructs. The result of analyses showed that the SNSM accounted for 45% variances of Satisfaction. Figure 2 shows the estimated path coefficients between constructs of the structural model.

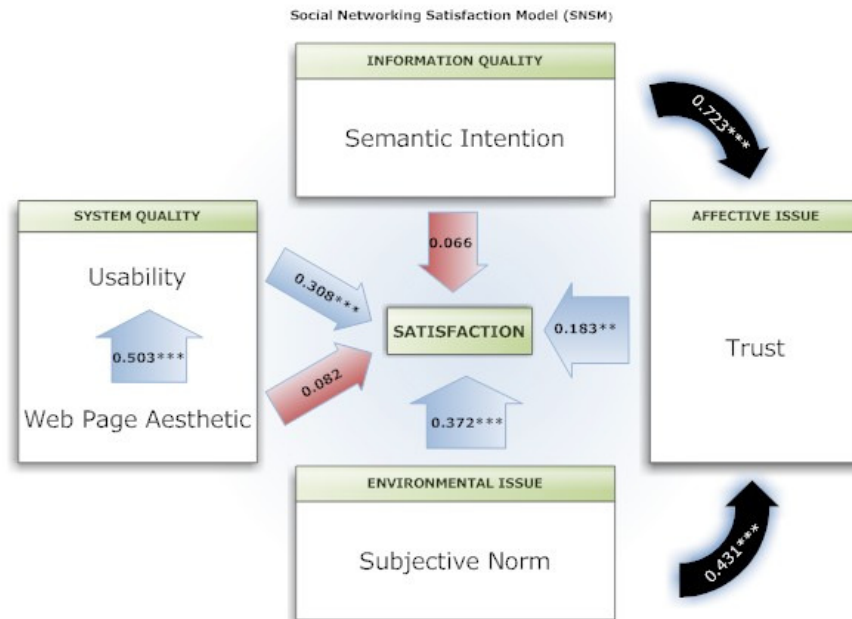


FIGURE 2: Structural Model of SNSM.

* Blue arrows show significant hypotheses, black arrows show additional relations, red arrows show rejected hypotheses

The structural evaluation of SNSM showed that Semantic Intention and Web Page Aesthetics factors did not significantly affect Satisfaction, so H1 and H3 were rejected. On the contrary, three strong positive relations were found between Satisfaction and Usability, Trust and Subjective Norm at the $p < 0.001$ level. Therefore H2, H5 and H6 were accepted. Also, Web Page Aesthetics positively affected Usability at $p < 0.001$ level, so H4 was accepted. In addition to initially hypothesized relations, additional significant relations were found during the structural model evaluation. For example, there was a strong positive relation between Semantic Intention and Trust at $p < 0.001$ level. Moreover, SN had a positive and significant relations with Trust at $p < 0.001$ level. The significance value and standardized path coefficients of the SNSM are shown in Table 4.

Relationships	H _i	T-Values	B	Decision
SI->STS	H1	1.235	0.066	Rejected
U->STS	H2	5.407	0.308***	Accepted
WPA->STS	H3	1.240	0.082	Rejected
WPA->U	H4	9.641	0.503***	Accepted
T->STS	H5	3.132	0.183**	Accepted
SN->STS	H6	6.286	0.372***	Accepted
SI->T	Additional Relation	6.723	0.202***	Accepted
SN->T	Additional Relation	6.723	0.431***	Accepted

p < 0.01; *p < 0.001

TABLE 4: Summary of Hypotheses Tests.

5. DISCUSSION

In this empirical research, a number of relations were examined to reveal the factors affecting users' satisfaction towards social networking. SNSM showed the relations among the factors examined under the Information Quality, System Quality, Environmental and Affective Issues dimensions.

The first dimension examined the effects of information quality on users' satisfaction towards social networking use. With this dimension it was expected to measure effects of information content on users' satisfaction. Diversification and usefulness of the information was examined in

the scope of semantic concept. In the proposed research model the relation between Semantic Intention and Satisfaction was analyzed. The main aim of the semantic information in social networking was to give beneficial information from multiple resources. However, statistical result showed that there was not a significant relation between Semantic Intention and Satisfaction. This result can be interpreted as semantic information gathered from different source of the web does not as effective as expected on users' satisfaction of social networking use. The reason of this insignificant relation may be reliability of data obtained from the web [32]. Also there are most prominent positive and negative aspects of social networking sites [3]. As positive experiences, enjoyment, fun/playfulness, excitement, self-expression and curiosity come into prominence. This means that social networking navigation is strongly related with his or her enjoyment. Also, as a curiosity consideration of social networking, users only wonder information about their friends [3]. Also, this insignificant relation is parallel with the study of [14]. The researcher found insignificant relation between information quality and users satisfaction. He interpreted this insignificant relation as the users do not care good information, the social web mainly focus on interaction and communication among the members. In addition, vast amount of data available in web platform like, text, audio-video, image and etc. Trust and privacy issues come into prominence with the facing this huge amount of data. While the availability of this vast amount of data helps to complement social networking with semantic information, there is privacy and trust consideration appears. With the help of SNSM, the relation between Semantic Intention and Trust was examined. This relation was an additional relation was not previously hypothesized. The statistical result showed that semantic information provided by social networking significantly related with trust. This means that people want to trust the information gathered from different sources in social web.

The second dimension tried to identify the effects of system quality on users' satisfaction towards semantic web use. Under the system quality dimension the effects of usability and web-page aesthetics on users' satisfaction were examined. The statistical analysis showed that Usability had a strong effect on users' satisfaction. This means that users found the site effective and easy to learn to accomplish tasks, adapted easily to variation in tasks and satisfied with the system use [38]. On the contrary, there was a non-significant relation was found between web page aesthetics and satisfaction of users. This result shows that users did not care the aesthetics of the social networking site. Dramatically, the users' expectation of interface quality towards Facebook fairly poor and satisfaction of users can be achieved without good interface quality because their main expectations are interaction and communication [14]. According to the study of Butler [42], "aesthetics is referred as non-quantifiable, subjective, and affect based experience of system use; however usability is commonly measured by relatively objective means and sets efficiency as its foremost criterion" [39]. One may well assert that the different effects that usability and Web-Page aesthetics have on satisfaction may be explained by the fact that aesthetic is a subjective concept, while usability is objective. In addition there was a significant relation was found between web page aesthetics and usability factors. The finding refers that the users who interacted with an aesthetic social networking site perceived the system as more usable than users who interacted with less aesthetic social networking site. This result is parallel with the other studies existing in the literature [39], [73], [74]. The previous researchers considered different applications while assessing the relation between aesthetics and usability. For example, the effects of aesthetics on usefulness by considering ATM machines were examined [39], [73] and DeAngeli, Sutcliffe & Hartmann used web-sites to evaluate the relation between these two factors and the researcher found a strong relation between aesthetics and usability perception of users [75].

The third dimension identified the effect of environmental issue examining effects of subjective norm on users' satisfaction. There was a positive and significant relation was observed between subjective norm and satisfaction of users. This significant relation refers that users' gratification increase when the other people around the users give concrete support towards their use of social networking site. In other words, people pleased with other people's encouragement of using information systems. According to the information obtained so far, several studies prove the effects of subjective norm on users' continuance intention and system use in information system

contexts [46], [76], [77]; however any study has not examined the relation between subjective norm and satisfaction. Moreover, a significant relation was found between subjective norm and trust during the analyses. This relation shows that the trust perception of users strongly affected from opinion of other peoples. The strong relation between subjective norm and trust is supported with the statement of Wu and Chen [78]. They stress that “whatever types of trust are with direct and indirect influences on subjective norm, they are all the important antecedents of subjective norm in on-line service”.

The last dimension affective issue identified the effects of trust over satisfaction. The structural model showed that there was a positive and direct relation between trust and satisfaction. This relation emphasize that the users who feel more confidence towards social networking site have more pleasure with social web interaction.

6. CONCLUSION

This study was conducted to propose social networking satisfaction model titled as SNSM from the perspective of Facebook users. The concept of satisfaction is not adequate to consider the human factors for usability [79]. Therefore the model composed of four dimensions – Information Quality, System Quality, Environmental and Affective Issues. The proposed multidimensional model was evaluated structurally to examine the effects of following variables of corresponding dimensions on satisfaction of social networking site users; (1) Information Quality – Semantic Intention, (2) System Quality – Usability and Web-Page Aesthetics, (3) Environmental Issue – Subjective Norm, (4) Affective Issue – Trust. The structural model explained a significant amount of variance of satisfaction towards social networking site use. In addition, the findings contribute the literature by revealing the factors that influence users’ satisfaction of social web. The findings guide the system developers for continuous improvement of the system.

When we look at the literature, it is seen that the number of studies examining the user satisfaction on Facebook usage is not satisfactory. In the literature, the researchers examined the relation between Facebook use and students’ life satisfaction, social trust, civic engagement, and political participation [80]. However, any single study in the literature has not considered effects of variables examined in the scope of this research on users’ satisfaction.

As a guide for further researchers, this multidimensional model can be extended with external dimensions in order to provide different perspectives. There may be different influencing factors affecting users’ satisfaction like privacy, perceived ease of use, perceived usefulness, organizational support and so on. Web-applications are different from traditional software systems and maintenance process becomes a cumbersome process [81]. How the maintenance of the systems will affect the users’ satisfaction can also be examined by the future researchers. Another future research would be performed to validate SNSM on different social networking sites. In addition, the effects of Semantic Intention and Web-Page Aesthetics should be examined in new research in the scope of social networking site satisfaction.

7. REFERENCES

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