

What Drives Consumers to Pass Along Marketer-Generated eWOM in Social Network Games? Social and Game Factors in Play

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Abstract

Social network games (SNGs) are part of the highly evolving marketing and e-commerce channel of social network sites (SNSs). Marketers in SNGs offer economic incentives of game currency or virtual goods in exchange for consumer interactions with ads, often encouraging consumers to forward marketer-generated messages broadly to social networks. This study investigates factors that lead consumers to engage in these marketer-generated electronic word of mouth (eWOM) behaviors. Social factors, and game factors with intrinsic and extrinsic benefits, are studied within extensions of the Technology Acceptance Model (TAM). Survey data from 158 participants who play games on Facebook were analyzed using structural equation modeling. Normative influence positively impacted eWOM behaviors of opinion passing, or forwarding the message, and opinion giving, which is a persuasion attempt. Game enjoyment negatively influenced opinion passing, and economic incentive positively impacted both eWOM behaviors. Opinion passing significantly enhanced attitudes toward advertising, which in turn, positively influenced brand attitudes. Outcomes suggest marketers may increase brand awareness among eWOM senders through campaigns in SNGs, resulting from enhanced positive attitudes toward SNG advertising. However, applicable to SNGs and other games with advertising, marketers must balance appeal of economic incentives with low disruption to play experiences.

Keywords: Social network games, eWOM, Marketing, Social network sites, Technology acceptance model

1 Introduction

Social network games (SNGs), played on social network sites (SNSs) like Facebook, engage millions of global consumers on computer desktops and mobile devices. In 2010, 53 million Americans or 24% of the U.S. online population played SNGs [77]. National advertisers like 7-Eleven, General Mills, and Kia Motors America [25], [62] aid the SNG free-to-play revenue model for consumers, who also commonly purchase SNG currency and virtual goods to advance in play.

SNGs have evolved in the gaming and SNS arenas, providing a unique media platform for advertisers who are projected to spend \$672.2 million to reach SNG consumers by 2014 [2]. Unlike traditional online games, SNGs are played within a consumer's broader social network. SNGs may include built-in status updates for consumers to inform networks about game activities, and rewards for inviting friends to join. Advertiser campaigns for Best Buy, McDonalds, and Bing integrate engagement ads into play and advancement, rewarding consumers with SNG currency or virtual goods after taking a survey, watching a video, or engaging in another activity [38]. Following the engagement ad, a consumer may be encouraged to pass along an advertiser's message as a status update to his or her broader social network. Built-in methods for consumers to share such updates are a form of marketer-generated electronic word-of-mouth (eWOM) or "exogenous WOM" [33] p. 723.

This study, via a survey of consumers who play Facebook games, explores what drives consumers to engage in these forms of marketer-generated eWOM and resulting implications for attitudes toward advertisements and brands. About 65% of online adults use SNSs [55], with Facebook drawing 73% of adult SNS use [49]. The popular Farmville is among hundreds of SNGs, like Mafia Wars and Cityville, for which new titles are released regularly and vary in popularity. Facebook SNGs are highly played and include marketer-generated eWOM mechanisms that allow easy and immediate communication with a consumer's social network.

This study is theoretically significant as one of the first attempts to investigate the role of eWOM in SNGs, where advertisements encourage consumers to spread marketer-generated messages to broader social networks with a simple click. For example, in observational SNG play for this study, a researcher interacted with an ATT engagement ad – to watch and rate marketing videos in exchange for game currency – and then was asked to post an ATT-crafted message to her Facebook wall. Unlike other eWOM studies, which consider general SNS use [18] or defined communities based on interests or products [33], [37], [42], [72]-[73], [80], this work investigates the underpinnings of how consumers pass along or give opinions about marketer-generated messages where play and social networks intersect. Findings show social and game factors that impact eWOM in this online environment, where marketer-generated messages are easy to transfer yet largely uninvestigated in terms of consumers' psychological mechanisms [50]. Insights extend eWOM research with these factors within the benefits of the technology acceptance model (TAM), to see impact on attitudes toward advertising and brands. The study's practical significance lies in learning how marketers may leverage SNG platforms and mechanism to encourage eWOM, and in turn, their impacts on consumer attitudes toward ads and brands as SNGs exist and evolve.

2 Literature Review

The exploration of consumer engagement to send eWOM in the SNG context starts with a review of the eWOM literature, with emphasis on its sub-dimensions of opinion passing and opinion giving. Intrinsic and extrinsic benefits within the Technology Acceptance Model help frame consumer motivations. Social factors about how consumers feel about their social networks are explored, including social ties, homophily, trust, and normative influence. Game factors of enjoyment and economic incentives related to play experiences are considered. Attitudes toward advertising connected to eWOM outcomes also are explored.

2.1 Electronic Word of Mouth

The term eWOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" [37] p. 39. This online communication extends from traditional WOM, such as face-to-face conversation, in which consumers exchange product-related information that then may influence consumer attitudes and behaviors toward products and services [44]. eWOM studies have considered consumer motivations and outcomes related to engagement with others in sharing their opinions and ideas via email [64] to online exchanges in consumer communities [37], [42], [72]-[73], political blogs [74], and SNS venues [18], [43], [80].

The trustworthy nature of peer or consumer-to-consumer information makes WOM a credible source for consumer decision-making [26]. As eWOM evolved with the Internet, one-to-one communication has extended as one-to-many [23] through online exchanges. Most eWOM studies focus on this credible, organic word-of-mouth generated by consumers about their own individual feedback and experiences on products or services that are posted online for others to see. Meanwhile, other streams of research investigate how consumers react to marketer-generated messages. Marketer-generated messages or exogenous WOM are those designed by firms and provided for

consumers to share with others about a product or service [33] and are increasingly prevalent with social media [50]. This study examines antecedents and outcomes of eWOM related to messages that marketers create for consumers to pass along.

2.2 eWOM: Opinion Passing and Opinion Giving

Broadly, consumer-to-consumer influence in decision-making about products, services, and ideas, may impact attitudes and behaviors [44]. This concept in eWOM is seen in consumers making statements while engaging in particular behaviors. The two key sub-dimensions of eWOM in past studies are opinion leading, when people influence others, and opinion seeking, in which “people seek and then follow the advice of opinion leaders” [27] p. 138. People act as opinion leaders to share information with others online as described in [73] noting [45].

In [73], eWOM was conceptualized as opinion leadership and opinion giving, which produced opinion forwarding as a behavioral outcome, also noted in [64]. In the study of SNSs, eWOM behaviors have been conceptualized as opinion seeking, opinion giving, and opinion passing [18]. Adding opinion passing, similar to opinion forwarding, operationalized SNS behaviors given the ease of passing along information and messages.

A consumer decides whether to share a marketer-generated message from SNG play with his or her network. This decision, in the SNS context, makes two eWOM behaviors relevant: opinion passing, or forwarding the message; and opinion giving, as a persuasion attempt. Opinion passing is a less persuasive behavior. Reflective of mechanisms of the online environment, marketer messages are easy for a consumer to forward without an opinion or intent to persuade [73]. However, opinion giving refers to an intentional behavior to influence or persuade others' purchase behaviors [27]. Consumers, in turn, seeking advice about a particular product, would potentially follow the opinions of leaders. This pass-along nature embedded in SNG advertising and ease of SNS opinion sharing leads to conceptualization of eWOM as opinion passing and opinion giving.

2.3 Technology Acceptance Model

eWOM behavior in this study happens as consumers access and use SNS and SNG technologies. Consumers choose to engage in eWOM behavior by clicking on marketer-generated messages to forward information to others during SNG play. Conceptually, this use connects with the Technology Acceptance Model [22]. Based on the theory of reasoned action (TRA), the TAM aims to show how human beliefs and intentions cause behavior [28]. Early TAM studies parsimoniously showed variables of perceived usefulness and ease of use causing behaviors, which evolved with ongoing research to incorporate other theoretical models, additional variables, and a variety of technology environments [48]. Broadly, TAM extensions have considered perceptions that impact user attitudes and behaviors related to technology use. Among these extensions relevant to SNGs is inclusion of social factors, via elements of TRA [28], for subjective norms [76]. As well, intrinsic and extrinsic benefits extended TAM, showing impact on user behaviors [21], [48], [75]. One's motivations to perform an activity may be extrinsic, referring to achieving an outcome or goal, or intrinsic, which means finding interest or enjoyment based on the process of performing it [69]. These motivations relevant to SNGs can be seen in TAM extensions, such as with enjoyment [21].

In past studies, TAM extensions helped show how social factors like normative influence, and game factors, such as enjoyment – as seen in [41] and [47] – impact online game behaviors. Among players of online games, in [41], perceived enjoyment, social norms, and positive feelings toward the game influenced loyalty. Similarly, player attitudes, subjective norms, perceived enjoyment, and interactive features influenced player intentions to continue playing an online game [47]. Feelings of convenience surpassed enjoyment or fun in predicting attitudes toward mobile forms of gaming [61]. Related to Internet use, TAM showed how ease of use, usefulness, and playfulness impact attitudes of use, with behavioral intentions related to attitude, perceived playfulness, and perceived usefulness [57].

In SNS research, several studies have employed TAM, or its intrinsic or extrinsic benefits, to show causal relationships with use [46], [51]. Enjoyment highly influenced continued SNS use, followed by usefulness and peer connections [51]. SNS use may be influenced by intentions to use and perceived playfulness, as well as normative pressure, critical mass, trust, usefulness, and ease of use [71].

TAM and its extensions have applied to limited study of SNGs. These games intersect with SNSs unlike traditional online games. In [70] playfulness, security, and usefulness impacted SNG player attitudes, which along with flow, influenced intentions and play behaviors. As a feature of SNSs, games encourage SNS use [51]. The SNG player may engage with advertisements in game play that encourage behaviors of opinion giving or opinion passing of marketer-generated messages. TAM helps frame behaviors and benefits regarding this newer form of advertising and eWOM in this innovative context. Pertinent to SNGs, social factors that impact information exchange and game factors related to play are considered.

2.4 Social Factors

Marketer-generated eWOM related to SNGs occurs in an SNS context, in which gaming is a popular activity. However, social factors related to how consumers feel about their networks and relationships with other people on SNSs may impact eWOM behaviors during SNG play. SNS use is a daily habit for about 43% of Americans, who make SNS updates [51] about activities, ideas or interests, often sharing pictures, articles, links, and other information. The average Facebook user has 318 friends if 18 to 34 years old; 197 friends if 35 to 46 years old; 155 friends if 47 to 56 years old; and 78 friends if 66 to 74 years old [34], potentially including family, close friends, and social acquaintances, without geographical or physical limitations.

Gaming activity may integrate into SNS updates and relationships. For example, Facebook users may see games played by SNS friends. Mechanisms in Facebook SNGs encourage consumers to provide updates on games played and new levels achieved. SNGs help players interact with SNS friends related to the game, such as inviting others to play or encouraging virtual gift-giving. On the other hand, game activities within a social network may threaten "friends in play" through play aggression, obligation, proximity, and privacy [54]. These different aspects of social factors related to SNSs and SNGs are considered.

2.4.1 Social Ties

In SNSs, social ties that people share may impact eWOM behaviors. Those connections to people that are not as tight as the strong ties of close family and friends are considered weak ties, as outlined in Granovetter's impactful theory [35]. The power of weak ties, referring to connections with less-contacted acquaintances, lies in connecting individuals to information, influence of others, and opportunities within a network [35].

In [7], social ties applied to WOM referrals showed that weak ties helped transmit information among subgroups in a social system though strong ties aided referral information and were more influential, particularly for related products. In some cases, weak ties in online environments may be more impactful because of access to wider information that people can tap from networks of loosely related people [33], [72]. However, strong ties may enhance resource exchange between individuals [31]. In SNSs, stronger ties aided opinion seeking and opinion passing [18].

Extensions of social influence in TAM research found both types of ties influencing perceived usefulness and attitude toward engaging in a virtual community, with strong ties of higher influence toward behavioral intention and actual use [40]. Just as strong ties aid resource exchange and engagement in prior work, they may influence eWOM in SNGs. Consumers may decide to pass along a marketer message or persuade friends based on strength of ties felt toward networks – operationalized as feeling a close connection with members of their Facebook social networks. The first hypotheses consider:

H1a: Higher levels of tie strength positively impact opinion passing in SNGs.

H1b: Higher levels of tie strength positively impact opinion giving in SNGs.

2.4.2 Homophily

Homophily offers another pertinent view to the ways social networks function. It refers to "the degree to which two or more individuals who interact are similar in certain attributes, such as beliefs, education, social status, and the like" [68] pp. 18-19. Strong ties may link to homophily or similarity among individuals [35]. In [8], social ties that were strong and homophilous increased WOM. Homophily is a distinct concept from the strength of ties among individuals, which may relate to similarity but is a different social motivator [8]. Socio-economic status was among demographic and homophilous group qualities that influenced technology attitudes and Internet usage in related TAM research [66].

In the study of eWOM on SNSs, feelings of similarity toward network "friends" was of negative influence on opinion giving, perhaps limiting sharing of diverse information because consumers hesitated to send information that may not appeal to all network members [18]. Yet homophilous sources were preferred in eWOM opinion seeking for online professor recommendations [72]. Given the prevalence of homophily positively impacting WOM research and TAM, the hypotheses suggest the similarity that consumers share with their social networks will enhance eWOM behaviors.

H2a: Higher levels of homophily positively impact opinion passing in SNGs.

H2b: Higher levels of homophily positively impact opinion giving in SNGs.

2.4.3 Trust

Trust in online interpersonal relationships can enhance information exchange in virtual communities [67], [79]. A domain in the [17] framework of trust in electronic environments, interpersonal trust centers on how relationships are based, such as in seeking information, friendship or entertainment. While these relationships vary, virtual communities generally are structured with members sharing control of information exchange, as in SNSs like Facebook. A person feels trust of others based on these relationships but also must rely on others amid the uncertainty of virtual spaces where he or she lacks control regarding others' actions [58].

Therefore, trust of others is a critical component for information exchange, such as eWOM, on SNSs. Feelings of trust toward members of a social network can motivate eWOM behaviors [18]. In TAM findings, trust serves as a key factor in attitudes toward online environments [32]. Trust of others significantly enhanced attitudes and participation in virtual communities [53]. In a recent meta-analysis of trust in the TAM literature, [79] found trust enhances perceived usefulness and attitudes in commercial and non-commercial online communities. In the SNG context for eWOM, trust of others in one's social network forms a third set of hypotheses:

H3a: Higher levels of trust of social network positively impact opinion passing in SNGs.

H3b: Higher levels of trust of social network positively impact opinion giving in SNGs.

2.4.4 Normative Influence

Social conformity is defined as "alignment of people's thinking or behavior with a societal or group norm" [20] p. 77, and reflects how a person's behavior or opinions may result from real or imagined pressure from others. Group membership can increase conformity because a person strongly wants to belong to a desired group. Consequently, people comply to group norms out of motivation for a desired reward or punishment avoidance.

In extended TAM studies with TRA, social conformity is reflected in subjective norms that influence behaviors [76]. Also in the literature, subjective norms may impact how a consumer engages in online communities. How a user perceives that others approve of his or her participation significantly influenced loyalty to traditional online game communities [41], [47]. Such user perceptions influenced use of SNSs [15], [71], though have been found to not impact some virtual communities [53]. Coinciding with these TAM studies, [63] found social norms significantly impacted SNS use among 17- to 24-year-olds. Also, normative influence contributing to eWOM in SNSs, significantly enhanced opinion seeking, giving, and passing [18]. As such, normative influence, or feeling expected to follow the thinking and behaviors of others, is predicted to exert positive impact.

H4a: Higher levels of normative influence positively impact opinion passing in SNGs.

H4b: Higher levels of normative influence positively impact opinion giving in SNGs.

2.5 Game Factors

SNGs offer an intersection of social relationships and play experiences, which makes game factors potentially of impact in eWOM outcomes. During play, micro-transactions are encouraged as part of the SNG business model. As such, literature pertaining to game factors of enjoyment and economic incentives that may encourage eWOM behaviors is considered.

2.5.1 Enjoyment

Based on games literature, overall feelings of enjoyment can impact the play experience and behaviors. Consumers play games for enjoyment and fun, which may relate to attitudes and behaviors that develop regarding eWOM connected to game experiences. Enjoyment is an intrinsic benefit that can influence online user intentions and behavior [21], [57]. Specific to online games, feelings of enjoyment toward the game may cause a consumer to continue play [41], [47]. As well, enjoyment may influence whether a person uses an SNS [51]. Enjoyment of the online experience, as it tends to positively influence SNS use and online gaming, may carry over to SNGs related to eWOM behaviors. Our hypotheses related to the level of enjoyment consumers feel toward SNGs follow.

H5a: Higher levels of enjoyment positively impact opinion passing in SNGs.

H5b: Higher levels of enjoyment positively impact opinion giving in SNGs.

2.5.2 Economic Incentive

SNGs generally are free to play but designed so that consumers are encouraged to purchase virtual currency and items to advance. The free-to-play model supports micro-transactions by millions of players to make the games profitable [14]. This model means a shift from traditional game fun through play to more of a consumption environment because the consumer often make purchases in game to affect game outcomes [52]. The popularity of both SNSs and SNGs has drawn marketers' interest and success in persuading consumers via messages from peer networks [77].

Interaction with advertisements leads the SNG consumer to get an extrinsic monetary benefit from an advertiser in exchange for completing a task like watching a video, taking a survey or making user-generated content. A marketer-generated eWOM message may result, and the consumer must decide whether to share it with his or her network. In [37], economic rewards in a consumer opinion-sharing website influenced how consumers would decide to engage in eWOM. In SNGs, the consumer may receive an economic incentive from the advertiser, which may impact whether the consumer informs his or her social network with marketer-generated eWOM.

H6a: Higher levels of economic incentive positively impact opinion passing in SNGs.

H6b: Higher levels of economic incentive positively impact opinion giving in SNGs.

2.6 Attitudes and eWOM

Attitudes, key to intention in TAM and the study of advertising experiences, provide insight about eWOM outcomes regarding marketer-generated communication. As in [42], eWOM in online consumer communities can elicit reflexivity in how consumers think about their consumption and brand choices. Attitude toward advertising in SNGs may be viewed as “an affective construct and mediating influence on brand attitudes and purchase intentions,” [39] p. 78. In terms of brands, attitude toward the brand may be defined as an “individual’s internal evaluation of the brand” [56] p. 318. Consumers receive marketer-generated messages in SNGs, and then must consider sharing them as eWOM with their social networks. eWOM behaviors may impact attitudes toward advertising (Aad) and brands (Abrand) experienced in the game.

H7a: Higher levels of opinion passing positively impact attitude toward advertising.

H7b: Higher levels of opinion giving positively impact attitude toward advertising.

H8: Higher levels of Aad positively impact attitude toward brands.

3 Method

The method for exploring eWOM behaviors and attitudes was an online survey developed from the literature and SNG observational play. Survey participants were people who had played one or more SNGs. Measures for independent and dependent variables were operationalized based on the literature and previous scales. Findings were analyzed using Structural Equation Modeling (SEM) related to the hypotheses.

3.1 Survey, Sample and Data Collection

An online survey of people who play Facebook games was conducted in Fall 2011. Facebook was chosen as a platform for study because of its high user base, prevalence of many free SNGs, avid SNG promotion, and high number of SNG players [2]. Prior to survey development, qualitative study was conducted. The researchers engaged in individual play on popular Facebook games to observe how advertising was presented in different formats in SNGs. This observational data, captured in notes and screenshots, documented types of engagement advertisements primarily in four Facebook games: FarmVille, CityVille, Petville, and Café World. Marketers incentivized consumers to complete activities to earn virtual currency, such as purchasing a gift card, signing up for a service or credit card, watching or making a video, or taking a survey. Observations noted some ads encouraged sending marketer-generated messages, as eWOM, to consumers’ Facebook friends.

The survey was developed based on the qualitative findings and literature review, relying primarily on existing measures from prior studies. Following Institutional Review Board approval, a group of Facebook users was asked to check survey wording to improve validity. Based on their feedback, minimal wording changes were made. The convenience sample resulted in 158 usable participant surveys during a four-week period. Participants were sought via email requests at a Midwestern university, messages on SNSs, and as a voluntary extra-credit opportunity in media courses. Participants followed online survey procedures to aid proper responses during study. The sample was 32% male and 68% female, and 96% white, 2% Asian, and 1% African-American. About 90% were ages 18-25 years, 4% were 26-35, 3% were 36-45, and 4% were 46-55. The sample’s gender and age align with recent Pew data that shows significantly higher percentages of females and people aged 18-29 using social network sites [7]. Further, the Pew results showed generally equal use among whites, blacks and hispanics in the U.S. An estimated two in five social network users regularly play SNGs, with 43% at ages 12-17, and 36% at ages 25-44 [30]. Only participants who played SNGs were included in the sample. Incomplete responses were screened out prior to data analysis, as were inconsistent responses among reverse coded items in order to increase reliability of the composite index. After these procedures, the final sample was 158 SNG players.

3.2 Measures

Items used to operationalize variables were taken from studies noted in the literature and adapted for SNGs. Items were measured using seven-point scales that varied for each construct.

3.2.1 Operations of Independent Variables–Factors

Six groups of independent variables were studied for tie strength, homophily, trust, normative influence, game enjoyment, and economic incentive. Tie strength and homophily, based on [18] and adjusted for one SNS, were each composed of three variables on a seven-point semantic differential scale. Tie strength questions were “Approximately how frequently do you communicate with your Facebook friends?” (1=never; 7=frequently); “Overall, how important are your Facebook friends to you?” (1=not at all important; 7=very important); “Overall, how close do you feel to your Facebook friends” (1=not at all close; 7=very close) (Cronbach’s $\alpha = .86$). Homophily statements were “In general, my Facebook friends” (1=don’t think like me; 7=think like me / 1=don’t behave like me; 7=behave like me), and “In general, my Facebook friends are” (1=not like me; 7=like me).

Trust and normative influence, based on [18] and adjusted for one SNS, were measured on a seven-point Likert scale (1=strongly disagree; 7=strongly agree). For trust, variables were responses to "I trust most of my Facebook friends," "I have confidence in my Facebook friends," "I can believe in my Facebook friends." For normative influence, respondents replied to "When buying products, I generally purchase those brands that I think others will approve of," "If other people can see me using a product, I often purchase the brand they expect me to buy," and "I achieve a sense of belonging by purchasing the same products and brands that others purchase."

The measure for game enjoyment [70] was three variables on a seven-point Likert scale (1=strongly disagree; 7=strongly agree) to statements of "I enjoy playing," "I do not enjoy activities in game," and "I find the game enjoyable and fascinating." The second statement was reverse coded. The variables for economic incentive, based on [37] and adjusted for the games, were measured on a seven-point Likert scale (1=strongly disagree; 7=strongly agree) to which respondents rated their response to the question "I pass along advertiser messages to my Facebook friends because..." to statements of "I receive incentives," "I receive a reward," and "I receive free virtual currency."

3.2.2 Operations of Dependent Variables–eWOM and Attitudes

Four dependent variables were studied: eWOM beliefs for opinion passing and opinion giving, and Aad and Abrand in the game. Seven-point Likert scales (1=strongly disagree; 7=strongly agree) were used for eWOM measures based on [18] and adjusted for SNGs. For opinion passing, respondents were asked their feelings about the statements "When I receive product-related information from an advertiser while playing a game, I pass it along to my Facebook friends" and "While playing a game, if an advertiser asks me to post a message about a product to my wall, I'm likely to do it." For opinion giving, respondents noted feelings about the statements "I often persuade my Facebook friends to buy products that I like," "My Facebook friends pick their products based on what I have told them," and "I often influence my Facebook friends' opinions about products."

Seven-point semantic differential scales measured attitudes based on [39] and adjusted for SNGs. The measure for Aad asked how respondents felt about advertisements in SNGs on scales of "negative/positive," "unfavorable/favorable," and "uninteresting/interesting." For Abrand, respondents were asked how they felt about brands in SNGs on scales of "dislike/like," "unfavorable/favorable," and "bad/good."

4 Results

Exploratory and confirmatory factor analyses were conducted, with accompanying reliability and validity assessments. The hypotheses were tested using SEM. Outcomes show some support for the proposed hypotheses regarding eWOM behaviors.

4.1 Measurement Development and Reliability Assessment

Prior to conducting a series of exploratory factor analyses to identify underlying eWOM factors, assumption tests checked its appropriateness for 30 items as a full model with the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. KMO results showed sufficient items predicted by each factor (KMO = .73), with measures higher than 0.5 as a rule of thumb for factor analysis to proceed. Bartlett's test results demonstrated the variables were significantly correlated to provide reasonable basis for factor analysis (Bartlett's test of sphericity: $\chi^2 = 2704.69$, $df = 351$, $p < .000$).

Using principal component factor analyses with oblimin rotation, all 30 items were initially entered. Though all items are based on previously validated measures and regarded as reliable, three items were removed for not meeting the retaining criterion of high factor loadings ($\pm .6$ or higher) on one factor and low factor loadings ($\pm .4$ or lower) on the others. A clear categorization with ten extracted factors emerged with 16 motivational items, five eWOM items, and six items for Aad and Abrand. Eigenvalues ranged from 1.010 to 6.035, accounting for 85.527% of total variance, which is satisfactory because it exceeds 60% [36]. Most items indicated high loadings (over .70) on one of the ten factors and low loadings (below .20) on others. The ten extracted factors, listed with average loadings, were: Aad (0.94), Trust (0.91), Opinion Giving (0.87), Enjoyment (0.90), Normative Influence (0.87), Tie Strength (0.83), Economic Incentive (-.86), Opinion Passing (0.87), Abrand (-.95), and Homophily (-.82). The internal-consistency reliability of the ten constructs was calculated with Cronbach's alpha [59] for which values greater than .70 are considered acceptable [60]. The resulting reliability coefficients were high, with magnitude ranging from 0.79 to 0.96, noted in Table 1.

4.2 Analysis of Measurement Model: Confirmatory Factor Analysis

Though exploratory factor analysis helps determine dimensionality of a scale, it does not provide a goodness of fit statistic to evaluate validity. Thus, confirmatory factor analysis using the maximum likelihood method (with AMOS version 18 package) was used. AMOS was chosen because it is a user-friendly program that enables researchers to draw and test a model graphically. According to [19], the outcomes of AMOS and LISREL are quite similar based on an analysis of one data set with two SEM programs to examine the difference of results. It was found that albeit not completely identical, path analysis results are extremely similar regardless of the SEM software program chosen. It should be noted that the differences made in two SEM software programs are based on researchers' decisions

rather than the software program choice.

The factor analysis looked at whether the 10 factors as a full model indeed provide the best description of the data. Multiple fit indexes aid reporting-model fit because different types of indexes measure different aspects [6]. Several goodness-of-fit indicators were used such as the ratio of χ^2 to degrees-of-freedom (df), goodness-of-fit index (GFI), incremental fit index (IFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA).

When interpreting the model fit indices, a good fit is apparent regarding each of the measures. The chi-square test showed that χ^2 of 367.124 (degree of freedom = 281) is significant at $p < .000$ and χ^2/df was 1.31, which is less than 2 [13]. Though the chi-square test rejected a perfect absolute fit between the data and model ($\chi^2 = 367.124$, $df = 281$, $p < .000$), it is widely known that the test is sensitive to the influence of sample size [36]. Other indices of model fit, such as incremental fit index (IFI) and comparative fit index (CFI), were over .90 (i.e., IFI=.97; CFI=.97), indicating a good fit of the CFA model [4]-[5], [10], though GFI did not exceed 0.90. However, [11] demonstrated that the CFI and IFI are more appropriate when the sample size is small. The estimate of the RMSEA was .050, indicating a reasonable degree of fit [9], [12]. Overall, the results of the CFA demonstrated that all of the 10 constructs were well specified, as noted in Table 1.

Table 1: Measurement model loadings

Factors	Items	Factor Loading	Composite Reliability *	Average Variance Extracted
Aad	v19_1	Negative/positive	.91	.88
	v19_3	Uninteresting/interesting		
	v19_2	Unfavorable/favorable		
Trust	v11_2	I have confidence in my FB friends.	.93	.82
	v11_3	I can believe in my FB friends.		
	v11_1	I trust most of my FB friends.		
Opinion Giving	v16_5	I often influence my FB friends' opinions about products.	.88	.78
	v16_3	I often persuade my FB friends to buy products I like.		
	v16_4	My FB friends pick their products based on what I have told them.		
Enjoyment	v4_6	I enjoy playing.	.85	.61
	v4_4	I find the game enjoyable and fascinating.		
Normative Influence	v12_2	If other people can see me using a product, I often purchase the brand they expect me to buy.	.95	.68
	v12_3	I achieve a sense of belonging by purchasing the same products and brands that others purchase.		
	v12_1	When buying products, I generally purchase those brands that I think others will approve of.		
Tie Strength	v6	Overall, how important are your FB friends to you?	.85	.65
	v7	Overall, how close do you feel to your FB friends?		
	v5	How frequently do you communicate with your FB friends?		
Economic Incentive	v17_1	I receive incentives.	.99	.74
	v17_2	I receive a reward.		
	v17_3	I receive free virtual currency.		
Opinion Passing	v16_2	While playing a game, if an advertisers asks me to post a message to my wall, I'm likely to do it.	.98	.80
	v16_1	When I receive product-related information from an advertiser while playing a game, I pass it along to my FB friends.		
Abrand	v20_3	Bad/good	.96	.89
	v20_2	Unfavorable/favorable		
	v20_1	Dislike/like		
Homophily	v10	My FB friends are not like me/like me	.84	.73
	v8	My FB friends don't think like me/think like me		

* Composite Reliability: (square of the summation of the factor loadings)/ {(square of the summation of the factor loadings) + (summation of error variances)}.

4.2.1 Convergent Validity

With the CFA as a full model established, convergent validity was assessed based on the significance of the factor loadings. Assuming all individual item factor loadings are significant, the indicators are converging to measure the same latent construct [1], [29]. Also, as suggested in [29], Average Variance Extracted (AVE) by each construct should exceed the variance due to the measurement error for that construct and should be higher than the cut-off point of 0.5 [70].

Table 1 shows the factor loadings for all indicators in the constructs are large and significant to provide strong evidence of convergent validity. Standardized factor loadings in the measurement model were significant ($p < .001$). Since the CFA model demonstrated good fit, each of the constructs is uni-dimensional. AVEs of all factors were greater than 0.5. Composite reliability estimates for each dimension ranged from .84 to .99, acceptable levels above 0.7 [36]. In sum, the 10 constructs obtained earlier were confirmed, and therefore could be used as the measurement model in the hypothesized model.

4.2.2 Discriminant Validity

Discriminant validity is important because it determines that two or more constructs are distinct from one another, establishing a causal relationship in the model. As in [70], discriminant validity among latent variables can be assessed by constraining the correlation between the pairs of construct to 1, then re-estimating the modified model. In other words, this procedure converts a two-construct model into a single-construct model. If the difference of the chi-square statistics between the standard model and constrained mode is significant (1 d.f.), the condition of discriminant validity is met [1].

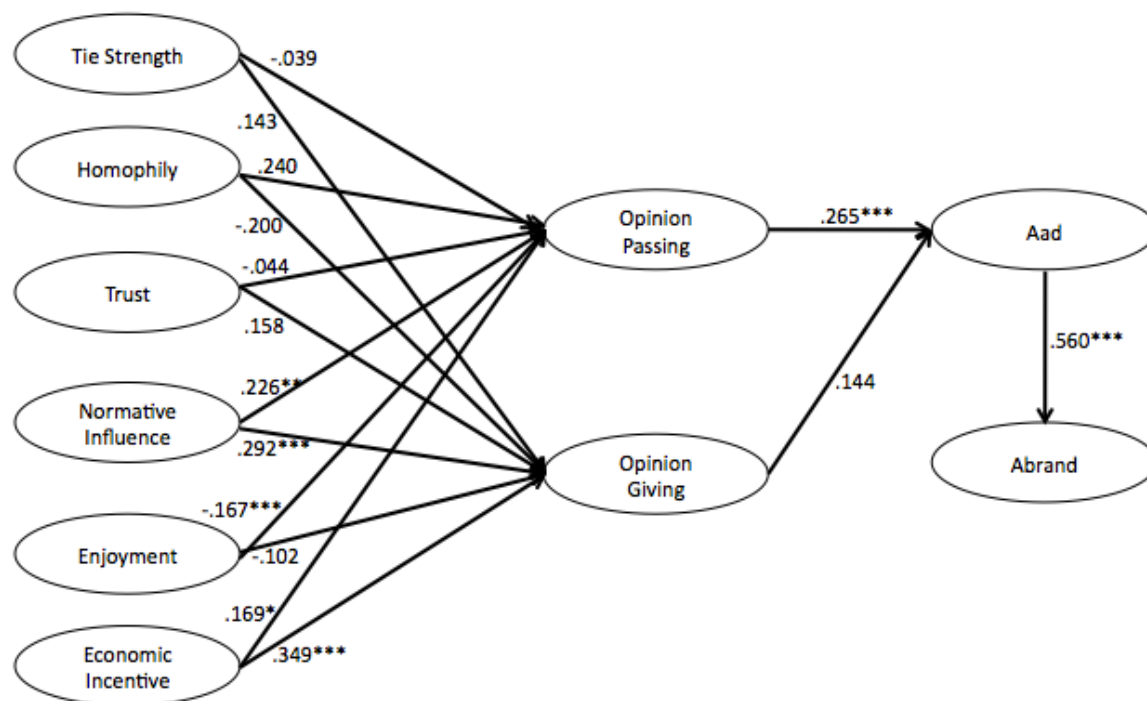
Following this procedure, two pairs of constructs were assessed in a series of two-factor models and each model was run twice per the procedure. Chi-square values were significantly reduced for the unconstrained models. As such, it can be concluded that discriminant validity exists among the social and game factors comprising tie strength, homophily, trust, normative influence, enjoyment, and economic incentive ($p < .05$), except between trust and homophily (χ^2 difference = .724, $df = 1$, $p = n.s.$). Also, it was found that opinion giving and opinion passing were two distinct constructs (χ^2 difference = 10.663, $df = 1$, $p < .000$).

An alternative measure to examine discriminant validity between homophily and trust used [29] criteria: the square roots of the AVE for trust and homophily should be greater than the correlations between these two constructs. It was found that this correlation ($r = .58$) was less than the square roots of the AVE for trust (.91) and homophily (.85), indicating two distinct constructs. Further distinction is confirmed in that the correlation between each pair of the constructs is less than the square root of each AVE of constructs.

4.3 Hypotheses Testing

The Structural Equation Model (SEM) assesses predictive validity, specifies the direct and indirect effects among the latent constructs, and describes the amount of explained and unexplained variances in the model [11]. In SEM, there is no single test of significance that can indicate a perfectly correct model given the sample data. Many indices have been established to assess an acceptable model. Therefore, presenting a number of indices to support the proposed model fit is generally accepted [3]. Prior to testing the hypotheses, the model's overall fit should be established [6]. The SEM was based on research constructs and the Maximum Likelihood Estimation (MLE) was used for fit.

The hypotheses were tested using SEM. Estimates of path coefficients such as critical ratio (CR) and probability (p-value) tested the hypothesized relationship among five motivational and other constructs. The hypothesized causal path allows examination of direct effects of social and game factors on opinion passing and giving behavior. As well, it helped identify effects of these behaviors on Aad and Abrand. All measures are presented in standardized forms. Figure 1 summarizes the hypotheses testing results.



Notes: * $p < .10$, ** $p < .05$, *** $p < .001$; all other coefficients are not significant, $p > .1$

Figure 1: Results of structural model

Findings reject the first three hypotheses for social factors impacting eWOM behaviors. For tie strength, in hypotheses 1a and 1b, the relationship between tie strength with opinion passing and giving behavior shows, respectively, a CR of -.310 and 1.134, and p-value of .757 and .257. Hypotheses 2a and 2b also are not supported. Homophily, related to opinion passing and giving, respectively, has a CR of 1.618 and -1.348, and p-value of .106 and .178. Hypotheses 3a and 3b do not impact eWOM behaviors, as trust relates to opinion passing and giving, respectively, with a CR of -.398 and 1.42, and p-value of .691 and .155.

The fourth social factor, normative influence, significantly impacted both opinion passing and opinion giving in a positive direction, supporting hypotheses 4a and 4b. Its relationship with opinion passing had a CR of 2.369, and p-value of .018 (support at $p < .05$). With opinion giving, the CR was 2.996, with p-value of .003 (support at $p < .00$).

Both game factors were of some impact. Hypotheses 5a and 5b were not supported as positively impacting eWOM behaviors. The relationships showed enjoyment with opinion passing and opinion giving, respectively, with the CR at -1.833 and -.138, with a p-value of .067 and .890. However, enjoyment had a significant negative influence on opinion passing. Economic incentive positively impacted both eWOM behaviors significantly, supporting hypotheses 6a and 6b. Its relationship to opinion passing and giving, respectively, showed a CR of 1.875 and 3.566, with a p-value of .061 and .000 (support at $p < .00$).

Aad was impacted by opinion passing, supporting hypothesis 7a with a CR of 2.646, and p-value of .008 (support at $p < .00$). Hypothesis 7b was not supported. Opinion giving did not influence Aad, with a CR of 1.555 and p-value of .120. Hypothesis 8, predicting positive impact of Aad on Abrand, was supported at a CR of 7.011, and p-value of .000 (support at $p < .00$).

5 Discussion

Advertisers and marketers may use SNGs to encourage consumers to send a product- or brand-related message to their social networks. Passing along eWOM may relate to intrinsic and extrinsic benefits seen in TAM. The final model shows eWOM opinion passing and giving significantly impacted positively by normative influence as a social factor. Importantly, significant impact lies in the intrinsic benefit of enjoyment negatively impacting opinion passing, while the extrinsic benefit of economic incentive impacts opinion passing and giving. eWOM behaviors positively influence Aad, which enhances Abrand. Potentially, ad experiences and the spreading of ad information – as a pass-along message or persuasively with opinion – aid attitude formation. These findings align with experiences of normative influence or reflexivity with advertising [42]. Several theoretical and practical implications emerge.

5.1 Theoretical Implications

Theoretical implications for social and game factors provide insights related to the literature and previous studies. These factors show different levels of influence on behaviors and attitudes. Together, the factors aid understanding of consumer experiences at the intersection of social networking and social gaming.

5.1.1 Social Factors

Results show tie strength, homophily, and trust related to one's social network as inconsequential to marketer-generated eWOM behaviors in SNGs. It seems that factors related to how consumers feel about people in their social networks may not be applicable to passing along or persuading others regarding a marketer-generated message from SNG play. In other words, the consumer's relationship with a social network appears to lack influence on eWOM behaviors in SNG play, making SNGs distinct compared to findings in other SNS studies.

These results contrast [18], which found tie strength positively impacting opinion passing and giving in general SNS use. The results align somewhat with the [73] virtual community study, where social connections did not significantly enhance opinion giving but impacted other eWOM variables. In a related way, homophily offered similar distinction. Contrary to the SNG findings, homophily negatively impacted general SNS opinion passing and did not influence the more persuasive opinion giving [18]. Yet historically, WOM increases with higher tie strength and homophily [8]. Similar findings resulted for trust, which was the third social factor of no influence on eWOM behaviors. Trust motivated general SNS eWOM [18], supporting the idea that trust of others in virtual communities increases information exchange through shared control [58].

Potentially at work in this discrepancy related to social factors are two issues. The first issue relates to topics shared in a SNS. Consumers see an ad encouraging eWOM in SNG play, which they then may pass along to SNS members unrelated to SNGs or another unified interest. Most eWOM studies focus on an interest, product, or otherwise defined topic that connects individuals who exchange information. As well, [18] looked at general eWOM behaviors for different SNSs not related to interactions in SNGs. In this eWOM context, study focuses on Facebook specifically, and the popular activity of SNGs on Facebook. SNGs may be a shared interest among some Facebook friends but not necessarily of appeal to all members of a consumer's social network. At the time of the study, SNG messages could only be sent broadly to a consumer's network. Further, senders may not think of all Facebook friends as relating to the pass-along content of an SNG ad message.

Relating to all social factors may be attributes of Facebook as an SNS. With higher use and larger numbers of friends in Facebook social networks [34], a user has to balance multiple presentations of self related to different social circles, such as friends, family, co-workers, acquaintances, and others [24]. With the average number of Facebook friends numbering in the hundreds [34], levels of tie strength, homophily, and trust may be diluted. For example, different types of interpersonal relationships [17] lead to different levels of interpersonal trust and potentially diluted overall trust of a larger social network.

A second issue focuses on how SNGs operate distinctly as an SNS feature, and perhaps akin to a separate area of the SNS. eWOM mechanisms direct the consumer to send the marketer-generated message out of the SNG and into the broader SNS. A consumer's SNS may not be top of mind, and potentially viewed as a distinct or distant online area, when in play. This disconnect may contribute to tie strength, homophily, and trust not factoring into consumer eWOM decisions. This result aligns with [33], which found that less loyal customers can more effectively spread marketer-generated eWOM to impact sales. Less loyal customers may pass along messages, without persuasion necessarily, to increase awareness in larger social networks not affiliated with a particular brand or product community. However, lacking presence of community did not impact eWOM behaviors in these results. Also, it could be speculated that less loyal consumers are more likely to be loosely tied, dissimilar, and less trustful in connections to friends in an SNS.

One social factor, normative influence, positively impacted opinion passing and giving. This variable, which does not relate specifically to a consumer's social network, refers to interactions offline and online. Its influence suggests that consumers bring predispositions about products and brands associated with identity in terms of how they feel others will view them. Display of preferred brands and products can happen via in-person encounters or virtual environments. Facebook friends may see wall messages or pictures with these displays. With higher normative influence, the more likely the consumer will engage in SNG eWOM and post a marketer-generated message on Facebook. This finding aligns with [18], in which normative influence positively impacts eWOM on SNSs, and supports studies showing normative influence impacting SNS use [15], [47].

5.1.2 Game Factors

Both game factors, enjoyment as an intrinsic benefit and economic incentive as an extrinsic benefit, influenced eWOM and further distinguish SNGs from other online games and SNSs. Enjoyment was expected to positively impact eWOM – similar to its positive influence on play of traditional online games [41], [47], and uses of SNSs [51].

However, enjoyment was of significant negative influence on opinion passing and of no influence on opinion giving. This finding coincides somewhat with SNG discovery in [70] – enjoyment did not impact attitudes toward play.

In [70], the TAM framework focused on play factors and acknowledged potential limitations in the enjoyment measure. In contrast, this study looked at eWOM factors related to advertiser messages. In these results, the enjoyment measure works differently. Consumers feeling enjoyment as an intrinsic benefit of play – playing the game to have fun – may feel enjoyment is disrupted by an eWOM message, and are therefore less likely to pass it along to their social networks. The marketer-generated eWOM presence in an SNG or the eWOM mechanism may distract the consumer during SNG play so that it impedes enjoyment. However, unlike [70], the feeling of immersion in the game or flow, which influenced play intention, was not studied. Insights on flow could further examine game disruption through these forms of marketer-generated eWOM.

Importantly, traditional online games are characterized by richer, more developed graphics and functions than the free-to-play SNGs, with plentiful titles from which consumers may easily try and switch [70]. In traditional online games, design and functions, such as goals, 3-D characters and backgrounds, feedback during play, and social interaction enhanced player loyalty [16]. In this sense, SNGs are a different type of game. SNGs may be seen as a fad and consumers may start new games, which are continually released, without loyalty to past titles. These games are inexpensive to produce in 2-D quality and make readily available. The SNG business model, aided by advertising, is impacting the broader gaming industry. Consumers can play for free, and easily from a social network. More so, SNG players often make purchases to aid game outcomes, which diminishes the traditional player-game relationships for skill and community [52]. These aspects, distinct for SNGs, may lessen influence of enjoyment on eWOM.

Economic incentive, as an outcome or goal of eWOM, significantly influenced both opinion giving and opinion passing. Clearly, when an advertiser provides an incentive in the game, the consumer is more likely to share a marketer-generated message with his or her network. The TAM helps visualize how the consumer receives an extrinsic benefit or outcome for sharing eWOM. In exchange for the benefit, the consumer rewards the advertiser. However, not all information passed along or given is required for the consumer to receive a benefit as seen in [37], providing an interesting dimension for future study. If economic incentives are powerful and increasingly used by consumers, they may influence game practices and SNS norms. In turn, eWOM activity may fluctuate with SNS trends.

The game factors display two types of motivations – an intrinsic benefit is self-motivated, whereas extrinsic benefits stem from goals and vary in self-determination on the part of the consumer [69]. An extrinsic benefit, like economic incentive, is less self-determined and results from choices presented in the SNG for sending a marketer-generated message either persuasively or as a pass-along action. The intrinsic benefit of enjoyment stems from the consumer, negatively influencing pass-along action. With more enjoyment comes less likelihood of passing along a marketer-generated message by detracting from play. The eWOM mechanisms for economic incentive may get in the way of game play for enjoyment, putting an extrinsic benefit at odds with an intrinsic benefit.

5.2 Practical Implications

Practitioners benefit from these findings in a few ways. First, results show some of the first data about social and game factors that encourage SNG consumers to pass along marketer-generated messages to social networks. SNS relationships appear to be less influential in these consumer decisions to pass along eWOM. This finding supports the strategy of inserting engagement ads with eWOM mechanisms intended to reach a broad SNS group without defined shared interests or product preferences, as seen in product or brand communities. Findings in [33] support this notion as less loyal customers spreading marketer-created eWOM, as a pass along behavior, may exert more impact on social networks than influential or persuasive opinion leaders [27].

Secondly, another benefit to the SNG eWOM strategy is that consumers passing along marketer-generated eWOM develop positive Aad and Abrand. Not only may consumers help spread marketer-generated eWOM broadly via online mechanisms, these behaviors contribute to consumers forming positive attitudes. Therefore, advertisers and marketers should continue to use the SNG platform to increase brand awareness and embrace less loyal consumers.

Third, practitioners can see game factors in conflict. A consumer plays an SNG for enjoyment with ease on an SNS. However, the mechanism to engage in marketer-generated eWOM disrupts the play experience. The consumer seeks economic incentives to enhance play, particularly virtual currency in a free-to-play model. SNG advertisers have different intents – for a consumer to take a survey, watch a video or pass along eWOM. Many of these activities take the consumer out of SNG play, which lessens SNG enjoyment and the likelihood of the consumer passing along eWOM. If advertisers could maintain economic incentives, yet limit impact on SNG enjoyment, consumers would be more likely to pass along eWOM.

6 Conclusion, Limitations and Future Research

This research provides new insights for eWOM with several limitations. More perspective about the consumer who engages in information seeking, another eWOM dimension, would aid understanding about behaviors of consumers who receive marketer-generated messages. Feelings of credibility and related concepts that consumers feel following this type of eWOM would be helpful. Factors were limited to concepts pertinent to games and SNSs, which could be broadened to include other aspects of consumer theory. For example, trust of organizations providing marketer-generated messages, Facebook, or SNGs, could add to views of eWOM behaviors in this context. Mediating roles of opinion passing and opinion giving also could be explored. Interactivity related to an SNG ad, type of marketer-generated message, ad features, different economic incentives, and types of products would be insightful. Ideally a future study would include a larger sample size and broader age demographic.

Another limitation is the presence of common method biases. As independent and dependent variables are measured at the same point in time, the variance created by measurement method might result in misleading conclusions [65]. Also, this study did not completely control method biases caused by locations, item priming effects, and context-induced mood [78]. As the data was collected via an online setting, participants joined the survey in different settings and therefore, their levels of involvement with the survey and mood state could have confounded the results. Although participants were not allowed to return to previous pages to modify their answers, items on a questionnaire might affect subsequent questions, particularly if they are related to each other. Research conducted in lab settings can better control common method biases.

Future studies should further examine the role of product, brand knowledge, and product involvement because these constructs may affect eWOM behavior. Some brands have established reputations in consumers' minds. Loyal consumers may be attached to a brand and their levels of product and brand knowledge may be different from those who are less loyal, which could affect eWOM behaviors. If product categories in Facebook ads tended toward low involvement products, consumers may be less likely to pass them along or give to their individual network since the impact might be inconsequential. However, if consumers are highly involved with a product, they may be more likely to pass along information.

Overall, these findings should be considered as a point in time for SNGs and SNSs. These platforms will continue to evolve. And implications for functionality, privacy, and interactions with advertisers will change with new media's evolutions.

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