International Journal of Business and Social Research
Issue 04, Volume 09, 2014

A Structural Equation Modeling Approach to Investigate Negative Word of Mouth Impact on Customer-Based Brand Equity: Does Attribution Matter?

Ahmed Y. Ebeid[1], **Hesham F. Gadelrab**[2]

ABSTRACT

There is a shortage in the research which addresses the relationship between negative word of mouth (WOM) communication and customer-based brand equity dilution. This research utilizes attribution theory to demonstrate the negative word-of-mouth impact on the customer-based brand equity. Structural equation modeling was used to investigate the proposed effect of negative WOM on brand equity. The study sample consists of 71 post-graduate students, the object of negative WOM was laptops which considered a highly involvement product. Experimental investigation results reveal that customer exposure to negative word-of-mouth increases the brand equity dilution. Results were discussed in the light of casual attribution theory, and practical implications were provided.

Keywords: Attribution Theory, Brand Equity, Word-of-Mouth, Structural Equation Modeling

JEL Codes: C51; C52; M31; M37; M10

1 Associate professor, Business Administration Department, Faculty of Commerce, Mansoura University, and Head of Business Administration Department, Faculty of Business Administration, Delta University for Science and Technology.
2 Associate professor, Educational Psychology Department, Mansoura University, and Psychology Department, Faculty of Social Sciences, Kuwait University.

1. Introduction

Customer-generated media takes the attention of marketing practitioners (Dwyer, 2007). Word of mouth (WOM) would be seen as a source for pre-purchase information (Adjei, Noble, & Noble, 2010), and has a role in terms of helping the consumer to evaluate the product (Herr, Kardes, & Kim, 1991), provides a remarkable contribution in constituting consumer attitude and behavioral intentions (Bambauer-Sachse & Mangold, 2011), retaining experienced and novice customers (Adjei, Noble, & Noble, 2010), considering that individuals vary in their responses regarding social influence (Bearden, Richard, & Teel, 1989). WOM is considered a message that delivered by one consumer to another, therefore it has a significant impact on the latter's brand evaluation than the message delivered commercially (Laczniak, DeCarlo, & Ramaswami, 2001). As consumers` evaluations have a high level of perceived credibility (Bambauer-Sachse & Mangold, 2011), the process of collecting the consumers' experiences about product is being a business for some firms (Chatterjee, 2001). (Bickart & Schindler, 2001) found that using Internet within online brand communities (OBC) provide an alternative vehicle to get unbiased brand information based on customer-to-customer (C2C) model, unlike business-to-customer model (Adjei, Noble, & Noble, 2010). The use of Internet to express complaints or recommendations has been acknowledged (Chatterjee, 2001), as (Bambauer-Sachse and Mangold 2011) revealed that many consumers forming their purchase intentions in the light of the online product reviews. (Adjei, Noble, and Noble, 2010) stated that (OBC) have an effective impact on sales. Furthermore, Intent has changed the original basis of WOM (i.e., the traditional WOM), as it decreases the person-to-person communication between consumers regarding a specific product, and replaced it with online WOM, that becomes more accessible than the former type, that is probably because C2C online exchangeable information would be more relevant to consumers (Bickart & Schindler, 2001). Although, (Herr, Kardes, and Kim, 1991) found that face-to-face information is more accessible than less vivid manner, in terms of the role of WOM communication in constituting the product evaluation. Online WOM would support the organization in terms of understanding its customers (Adjei, Noble, & Noble, 2010). In the light of interpersonal influence theory, (Bearden, Richard, and Teel 1989) stated "susceptibility to interpersonal influence is a general trait that varies across persons and that a person's relative influenceability in one situation tends to have a significant positive relationship to his or her influenceability in a range of other social situations" (p.473). Therefore, product reviews stated on the Internet by consumers is considered the most important form of online WOM (Bambauer-Sachse & Mangold, 2011).

2. Theoretical Background

2.1 Negative WOM

Dissatisfied customer tells more regarding their experience about specific product than satisfied customer does, and generates more information more than the latter does. Accordingly, it is not surprising that (Laczniak, DeCarlo, and Ramaswami, 2001) concluded the issue that negative MOW is more powerful variable than positive WOM, in terms of impacting customers brand evaluation. (Chatterjee, 2001) referred that, when a person generates information regarding a specific product; product negative information would be more trustful and generalizable than product positive information. Therefore, it is more important to determine the impact of negative WOM on the consumer response with regard to brand. At this point, authors focus on a specific path, that is, the expected relationship between negative WOM and the brand equity dilution. (Bambauer-Sachse and Mangold, 2011) have found a negative impact of online product reviews on customer-based brand equity, including the brands which are known from the consumers, and independently of a person-specific variable (e.g., susceptibility to online product

reviews). Moreover, (Laczniak, DeCarlo, and Ramaswami, 2001) argued that the focal brand strength would affect the consumer response when s/he exposed to negative WOM.

2.2 Brand Equity

Brand equity is a vital marketing topic (Buil, De Chernatony & Martínez, 2013; Washburn, Till, & Priluck, 2004), and has been addressed widely in research (Ailawadi, Lehmann, & Neslin, 2003; Baldauf, Cravens, Diamantopoulos & Zeugner-Roth, 2009, Keller, 1993; Kim & Hyun, 2011), as brand equity pertains to benefits for firms and consumers (Bambauer-Sachse & Mangold, 2011). The attractiveness of the brand equity issue for academia and practice has been started since the late of 1980s (Srinivasan, Park, & Chang, 2005). Brand equity has been defined as the incremental utility of a branded product compared to its nonbranded counterpart (Keller, 1993, 2003). Brand equity is also seen as a power a brand has (Chahal & Bala, 2012), or a value generated from the brand to the product (Chattopadhyay, Dutta & Sivani, 2010; Keller, 1993; Park & Srinivasan, 1994; Simon & Sullivan, 1993; Srinivasan, Park, & Chang, 2005; Yoo & Donthu, 2001; Yoo, Donthu & Lee, 2000). (Kim & Hyun, 2011) stated that "brand equity is a basis for sellers' cultivating relationships with buyers" (p.425). Brand equity would be addressed as "a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to the firm's customers" (Erdem, et al., 1999, p.302). From the cognitive psychology (Erdem, et al., 1999; Keller, 1993) relies on customer basis, defined brand equity as the differential effect of brand knowledge on consumer response to the marketing of the brand. There is a divergent in research regarding the factors that affect brand equity (Ailawadi, Lehmann, & Neslin, 2003). Consensus regarding the best brand equity measures does not exist, that may be resulted from the different perspective in terms of addressing brand equity (Buil, De Chernatony, & Martinez, 2013).

(Ailawadi, et al. 2003) defined brand equity as "the marketing effects or outcomes that accrue to a product with its brand name compared with those that would accrue if the same product did not have the brand name" (p.1). How can a specific brand be differentiated from its competitors, is the issue brand equity measures relate to (Aaker, 1996). From the consumer perspective, brand equity taps attitudes, awareness, image, and knowledge; that are not belonging to product attributes, unlike the firm-based brand equity that pertains to incremental cash flow that the brand generates (Ailawadi, Lehmann, & Neslin, 2003). Brand evaluation is influenced by different variables. At this point, authors argue that negative WOM as a context factor may affect customer valuation. That is consistent with the previous research (e.g., Bambauer-Sachse & Mangold, 2011; Buchanan, Simmons & Bickart, 1999). Therefore, authors chose dilution of customer-based brand equity to reflect the customers` evaluative response when they faced with negative WOM. (Bambauer-Sachse & Mangold, 2011) addressed brand equity dilution as "a revision of consumer-based brand evaluations through the weakening of important brand value perceptions that differ depending on different levels of brand knowledge" (p.40-41).

2.3 Causal Attribution Theory

Attribution theory explains how the average person tries to make sense of his environment. According to the theory, there is a strong motivation in individuals to understand surrounding events by attributing them to stable characteristics of the

environment (Weiner, 1995). It examines what information is gathered and how it is combined to form a causal judgment (Fiske & Taylor, 1991).

This approach has made countless contributions to the literature, shedding light on achievement motivation, responsibility judgments, helplessness, sleeplessness, obesity, depression, emotion, and well-being research (Malle, 2003).

When someone makes attributions s/he analyzes the event by making inferences (going beyond the information given) about the dispositions of others and himself/herself as well as inferences about the environment and how it may be causing a person to behave. This process of making attributions is done usually without any awareness of the potential biases that might lead to inferences. Negative WOM involves negative information about a specific brand; therefore the main issue is how the receiver of such information explains negative information about a brand (i.e., to the communicator misunderstanding, bias, and cognitive distortion about the brand or to the brand itself). According to (Kelley, 1967) there are two basic kinds of attributes: internal and external. An attribution is internal when an aspect of the self is perceived to be causing an event (i.e., people infer that an event or a person's behavior is due to personal factors and external when something or someone in the environment or context is perceived to be causing it), in another words, people infer that a person's behavior is due to situational factors. In the context of negative WOM, when a person receives a negative WOM, s/he may attribute the negativity to the communicator (internal attributions) especially when the brand is favorable from the receiver's point of view. On the other hand, If the person tends to external attributions, s/he might attribute the negativity to the brand itself even though the brand previously was highly evaluated. In this study, we assume that the individual processing of negative WOM involves causal attributions. For the current study, causal attribution is defined as the cognition a receiver generates to infer the cause of a communicator's generation of negative information (Calder & Burnkrant, 1977; Laczniak, DeCarlo, & Ramaswami, 2001).

The aim of the current research is to experimentally investigate the linkage between negative WOM and the dilution of customer-based brand equity, in a unique culture (i.e., Egypt). The current research attempts to use causal attribution as a framework for explaining the presumed relationship between negative WOM and brand equity. (Crosno, Freling, & Skinner, 2009) introduced the concept of brand social power drawing from research on social influence and perceived power. Current research may relate to their work in terms of their view of brand social power from the "power as an attribution" standpoint, wherein the power of a brand is based on consumers' perceptions of the brand's power (and not absolute power). So, although a brand does not possess actual power, consumers who know and use a brand may attribute authority, control, influence, and other characteristics to it based on their consumer–brand relationship and past usage experiences (Crosno, Freling, & Skinner, 2009, p.94).

3. Study's Main Hypothesis

As cognitive mechanism considered in several studies in terms of explaining relationship between negative WOM and brand evaluation (Laczniak, DeCarlo, & Ramaswami, 2001), our investigation experimentally examines the proposed relationship between negative WOM and customer-based brand dilution. Therefore, the study hypnotizes that customer-based brand equity is negatively influenced by exposure to negative WOM.

4. Method

4.1 Participants

A total of 92 male and female graduate students were recruited from marketing and strategic management classes at a public university in Egypt. All participants were recruited at the pretest of brand equity (before exposure to negative WOM), however only 71 participants male and female were recruited again at the posttest (i.e., 21 participants were dropped between pretest and posttest). We made sure that missing data are at random by comparing responses of participants with complete data (at both pretest and posttest) with responses of participants with incomplete data (at pretest only). No significant differences were found at 0.05 level.

4.2 Procedures

Participants were assigned randomly to three groups to respond to items related to brand equity with respect to one of three laptop brands (Mac, Dell, HP). 17 participants were assessed Mac brand equity, 26 participants for Dell and 28 for Hp. We argue that the chosen product fulfils three different conditions; familiar to the respondent; covered by a stream of customer comments; high-involvement product, as (Bambauer-Sachse & Mangold, 2011) argued that "only in the case of high involvement, consumers are willing to deal with detailed product-related information and thus are motivated to both write and look up online product reviews" (p.41). Authors argue that the selected brands are recognized by the Egyptian customer at different levels of awareness. After recruited at the pretest, participants within each brand were assigned to either experimental or control group. We used participant responses at the pretest to assign each participant within each brand group to either experimental or control group. This matching procedure is important for equivalence of the experimental and control group participants. Before asking participants to respond to brand equity item at pretest, we made sure that each participant is familiar with the brand he would assess its brand equity. Depending on study the of Yoo, Donthu, and Lee (2000), the following items were used to assessing brand equity, and read loudly (after being translated in Arabic) to all participants and their questions with regard to items were answered: (1- It makes sense to buy brand X , instead of any other brand, even they are the same; 2- Even if another brand has same features as brand X, I would prefer to buy brand X; 3- If there is another brand as good as brand X, I prefer to buy brand X; 4- If another brand is not different from brand X in any way, it seems smarter to purchase brand X). As authors are keen to get respondents exposed to just negative WOM (i.e., the research concern) and not to recognize positive WOM, nor to be exposed to comments belong to the brand manufacturers Websites regarding a specific products, the research depends on a mixture of the negative online and face-to-face WOM. Authors argue that this approach would eliminate the customer confusion, relative to the case in which consumer would have been exposed to a collection of positive and negative WOM. Furthermore, the majority of this collection of comments would have been positive, unlike the study concerns. In addition, this procedure was used to increase participants' involvement with the conversation that is likely to occur in face-to-face style.

Only the experimental group participants were exposed to exactly four negative WOM pieces of information with regard to their brand group. We selected the most frequent disadvantage with regard to each brand after searching the online consumer reviews. The negative WOM information is introduced to each brand group separately after informing the participants that this information were collected from online sources. We made sure that participants were listening carefully to negative WOM information. Questions regarding negative WOM were then allowed and answered. Then both control and experimental group participants were asked to respond to the same four items with

regard to brand equity. Time between pretest and posttest was at least three weeks and at most four weeks.

4.3 Brand Equity Measure

We used four items to assess brand equity with 5-points likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Exploratory factor analysis results showed that all the four items belong to only one factor with high loading ranged from (0.73) to (0.85). This factor which can be called brand equity explained a significant amount of items' variance (65.28%). Inter-item correlations ranged from 0.42 to 0.65. Overall Alpha index for score reliability was 0.82 and 0.88 for experimental group and 0.72 for control group. In general, results of validity and reliability of brand equity indicate that it is a satisfactory measure.

4.4 Data Analysis

Data were analyzed using SPSS for windows 21.0 (IBM Crop., 2012) and AMOS for windows 21.0 (Arbuckle, 2012). We specified a model (Figure 1) to test the effect of negative WOM on brand equity. Maximum likelihood parameter estimation method was used. Assessment of overall goodness of fit of the model to the data was based on multiple criteria using both absolute and relative fit indices (Gadelrab, 2004; Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993) was used with values less than 0.07 indicating acceptable fit and less than 0.05 indicating good fit. Relative and noncentrality-based goodness-of-fit indices were used in evaluating model fit as well; the Comparative Fit Index (CFI; Bentler, 1990), the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973), and Incremental Fit index (IFI; Bollen, 1989a) with values of 0.90 and greater were indicative of good fit. In addition, Standardized Root Mean-squared Residuals (SRMR) was used, with values of less than 0.08 indicating relatively good fit between the hypothesized model and the observed data (Hu & Bentler, 1999). Values greater than 0.08 might indicate an area of local misfit (Raykov & Marcoulides, 2000). To assess local misfit standardized covariance residuals are consulted to locate the discrepancy between the observed and model-implied covariances.

4.5 Structural Equation Modeling (SEM)

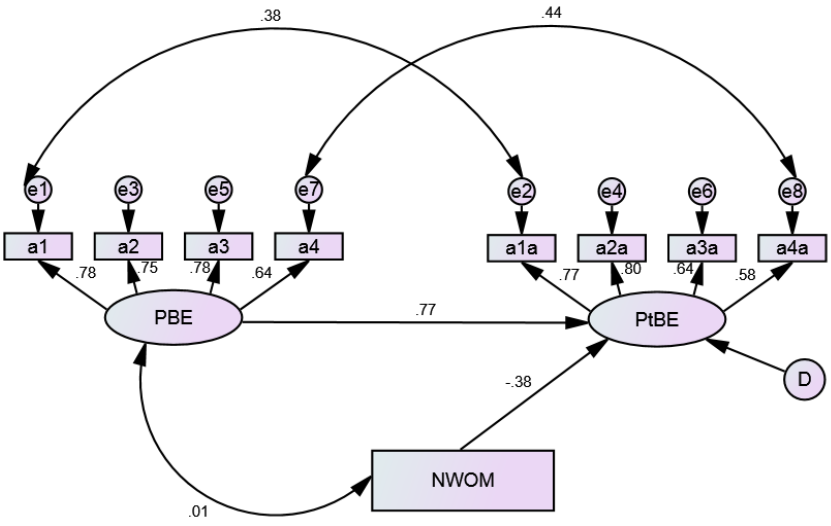
Structural equation modeling (SEM) has been increasingly recognized as a useful quantitative method in specifying, estimating, and testing hypothesized theoretical models which describe relationships among variables that are substantively meaningful in the real world (Fan & Wang, 1998). SEM is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables (Byrne, 2009; Hoyle, 1995). It represents a broad class of models that allows simultaneous estimation of relations between observed and latent variables and among latent variables themselves (Bollen, 1989). A structural equation model is comprised of a measurement model, which specifies how latent variables or theoretical constructs are measured in terms of observed variables, and a structural model, which specifies the direct and indirect relationships among latent variables (Schumacker & Lomax, 1996).

SEM application in substantive research includes model specification, model identification, model estimation, and model evaluation. Model specification involves the explicit statement of the hypothesized relationships among the variables; both observed and latent in the model. The model is specified on the basis of a specific theoretical framework. A model is identified if model parameters that need to be estimated can be computed. This refers to the possibility of finding unique values of the parameters of the

specified model (Lei & Wu, 2007). Model estimation involves the calculation of model parameters that need to be estimated, so that the estimated parameters could reproduce the sample covariance matrix. A number of different methods are commonly used to fit structural equation models to data. Some of more popular methods are maximum likelihood (ML), generalized least square (GLS), and weighted least squares (WLS). Model evaluation assesses overall model adequacy by showing to what extent a specified model fits the empirical sample data (Savalei & Kolenikov, 2008). If the model did not fit well, it could be improved through model respecification. Although each step in applying SEMs has been the subject of considerable discussion, the most heated controversies surround testing model fit and respecification (Bollen & Long, 1993).

5. Results

As shown in Figure, items that measure brand equity are modeled as imperfect manifest variables of the unobserved variable of brand equity (i.e. brand equity is configured as a latent variable). The model is specified so that the pre measure of brand equity (PEB) is accounting for brand equity at the time of the posttest (PtBE). Because past response is always a good predicator of future response, we used pretest of brand equity as a covariate. However, our primary interest lies in the negative WOM as predictor of post measure of brand equity. This variable is a dichotomous indicator; coded as 0 for control group and 1 for experimental group. It is plausible that some variables other than brand equity are measured on both administrations of brand equity questionnaire before and after exposure of negative WOM. Therefore, it is expected to find positive correlation between errors of the same items when measured at the two times of administration. When checking the correlation matrix of the four items that represented brand equity before and after exposure of negative WOM, we found a high and significant correlations for item 1 (a1 and a1a) and item 4 (a4 and a4a). Therefore, we modeled these information by specifying correlations between e1 and e2 and between e7 and e8 as appeared in Figure1. For the sake of model simplicity (Bollen, 1989), we did not specify any other correlations between error terms.



Note: PBE= Pre Measure of Brand Equity, PtBE= Post Measure of Brand Equity, a1 through a4 = Items measured at pretest, a1a to a4a = items measured at posttest, NWOW= Negative Word of Mouth

ANCOVA Latent Variables' Model Specification with Parameter Standardized Estimates

Table 1 presents the model data fit. Values of fit indices indicate that the model fit is good. Chi square value was not significant at 0.01 significance level. Chi-square divided by degrees of freedom was less than the expected value of 2 which indicates acceptable fit. Values of incremental fit index (IFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) were better than the acceptable goodness-of-fit cut-off score of 0.90. Moreover, value of root mean square error of approximation (RMSEA) was less than the expected value of acceptable fit (0.07). SRMR value were smaller than 0.08 and indicative of satisfactory local fit. Therefore, the model is considered acceptable in terms of fit.

Table1 : Structural Model Goodness of Fit Summary

Fit Measure	Value (DF)	Acceptable Threshold Value
Chi Square	36.58 (23) (p=0.036)	Not Significant
Chi Square / df	1.591	Less than 2
IFI	0.950	0.90 or more
TLI	0.918	0.90 or more
CFI	0.947	0.90 or more
RMSEA	0.052	0.07 or less
SRMR	0.062	0.08 or less

Table 2 presents the standardized regression weights, correlations, and variances estimated from the model in addition to their statistical significance. As expected, the regression weight from negative WOM to post measure of brand equity was negative (-0.38) and significant. This indicates that exposure of negative WOM negatively and significantly affects the brand equity. Compared to control group, being in the experimental group decreasing the post measure of brand equity, after controlling for pre measure of brand equity.

Table2: Parameter Estimates of regression weights, correlations, and variances

Parameter			Estimate	P
PtBE	<---	PBE	.770	< 0.001
PtBE	<---	NWOM	-.383	< 0.001
a1	<---	PBE	.782	< 0.001
a2	<---	PBE	.753	< 0.001
a3	<---	PBE	.779	< 0.001
a4	<---	PBE	.641	< 0.001
a1a	<---	PtBE	.772	< 0.001
a2a	<---	PtBE	.803	< 0.001
a3a	<---	PtBE	.642	< 0.001
a4a	<---	PtBE	.578	< 0.001
PBE	<-->	NWOM	.009	0.944
e7	<-->	e8	.437	0.002
e1	<-->	e2	.383	0.024
PBE			.816	< 0.001
NWOM			.248	< 0.001
D			.251	0.011
e1			.519	< 0.001
e3			.655	< 0.001

Parameter	Estimate	P
e5	.571	< 0.001
e2	.642	< 0.001
e4	.437	< 0.001
e6	.750	< 0.001
e7	1.067	< 0.001
e8	.931	< 0.001

The significance and importance of this regression path of interest from negative WOM to posttest of brand equity would appear if we realize a significance loss of model fit once fixing the regression weight of such path to 0. Results of model-data fit for this fixed model is presented in Table 3. A dramatic drop of fit was resulted just by fixing the path to 0. Chi square value was significant at 0.01 significance level. Chi-square divided by degrees of freedom was greater than the expected value of 2 which indicates acceptable fit. Values of incremental fit index (IFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) were lower than the acceptable goodness-of-fit cut-off score of 0.90. Moreover, value of root mean square error of approximation (RMSEA) was higher than the expected value of acceptable fit (0.07). SRMR value was 0.092 indicating local misfit. Compared to previous model fit results (Table 1), the fixed model is considered unacceptable in terms of fit. Significant loss of fit resulted from moving from freeing the effect of negative WOM parameter to fixing it to zero. For example, the Chi square statistics increased by 16.7 (53.28-36.58), while the number of degrees of freedom increased by 1 (24 -23). This increase in Chi square statistics is significant ($p < 0.001$) and indicating the significant loss of fit by fixing the effect of negative WOM to 0. These results reveal the importance and significance of negative WOM on brand equity.

Table3: Fixed Model Goodness of Fit Summary

Fit Measure	Value (DF)	Acceptable Threshold Value
Chi Square	53.28 (24) (p=0.001)	Not Significant
Chi Square / df	2.220	Less than 2
IFI	0.892	0.90 or more
TLI	0.830	0.90 or more
CFI	0.887	0.90 or more
RMSEA	0.132	0.07 or less
SRMR	0.092	0.08 or less

6. Discussion and Implications

Current study confirms the importance and significance of negative WOM in influencing brand equity. This result may be interpreted in terms of attribution theory. The concept of attribution would be seen in terms of how people make sense of their surroundings on the basis of what they consider as a cause and what they perceive as an effect of a specific event. According to attribution theory it suggests that people keep eyes on their own behavior, try to find what caused it, and on the basis of their own conclusion, they form their future behavior accordingly. Based on attribution theory, Laczniak, DeCarlo, and Ramaswami (2001) argued that if the negativity of WOM communication is attributed to the brand, consumers brand evaluations will be weakened, however, if the negativity is attributed to the communicator, consumers brand will be strengthen. Authors argue that reaching the aim of the study entails manipulation of attribution theory. That is consistent with the notion "receivers' cognitive processing of negative WOM communication involves causal attributional

reasoning" (Laczniak, DeCarlo, & Ramaswami, 2001, p. 58). Current study results showed that on average, people attribute the negativity of WOM to brands more than their attribution to communicator. Consumers are always referred to as end-user, therefore they always susceptible to many intermediate factors that may intervene the path between the product and the end-user. In the current context, factors such as personal characteristics of both the communicator and recipients and the message content itself may explain the attribution of negative WOM to brands rather than communicator. Our sample was graduate students and the communicator was their instructor and the negative message introduced was built on real online comments of users of the brands chosen in the current study. Therefore, it might not be surprising to see the significant effect of the negative WOM on consumers' evaluations of brand equity which may suggest that students attribute the negative information to the brand. They trust the communicator information more than their own previous evaluations about the brand; even though the brand is highly trusted. Current results may have many implications in terms of how the oral message may have a strong effect on people's attributions of the content of delivered message. Managing brands entails analyzing customers' reviews by manufacturers and retailers. If a significant segment of customers attribute the negativity to the brand, manufacturers and retailers need to develop the brand in the light of customers` reviews and conducting marketing communication to change their perception by using the same means (i.e., Internet). Finally, given the risks of negative WOM communication on brand equity, our results suggest that the brand manufacturer should keep an eye on customer comments about their brand, and plan to develop their product after consulting these comments; especially the negative ones.

7. Limitations and Future Research

Our results may be limited due to the following issues. We considered only negative WOM regarding only laptop product. Although it considered a highly-involvement product, and thus purposely chosen, results may not be generalized to other product categories. Therefore, authors recommend more products to be included in the further research. Our sample consisted of 72 respondents, although this sample may be regarded as small size, it may be adequate for experimental research. This study only dealt with students, so we recommend further research to include more varied respondents in nature. The communicator who delivered the negative WOM reviews was the respondents` instructor which may increase the confidence in such reviews, and would affect the strength of the relationship between negative WOM and customer-brand equity dilution. In this study, brand name strength was not manipulated; we believe that all of our brands included in the current were highly trusted in the Egyptian market. Including such a variable in investigating the effect of negative WOM is recommended in the further research.

References

Aaker, A., & David (1996). Measuring brand equity across products and markets. California Management Review, 38(3), 102-120.

Adjei, M.T., Noble, S.M., & Noble, C.H. (2010). The influence of C2C communications in online brand communities on customer purchase behavior. Academy of Marketing Science, 38, 634–653.

Ailawadi, K. L., Lehmann, D. R., & Neslin, S. A. (2003). Revenue premium as an outcome measure of brand equity. Journal of Marketing, 67(4), 1-17.

Arbuckle, J. L. (2012). Amos (Version 21.0) [Computer Program]. Chicago: SPSS.

Arndt, J. (1967). Role of Product-Related Conversations in the diffusion of a new product. Journal of Marketing Research, 4(3), 291-295.

Baldauf, A., Cravens, K. K., Diamantopoulos, A., & Zeugner-Roth, K. P. (2009). The impact of product–country image and marketing efforts on retailer-perceived brand equity: an empirical analysis. Journal of Retailing, 85, 437–52.

Bambauer-Sachse, S., & Mangold, S. (2011). Brand equity dilution through negative online word-of-mouth communication. Journal of Retailing and Consumer Services, 18, 38-45.

Bearden, W.O., Richard, G.N., & Teel, J.E (1989). Measurement of consumer susceptibility to interpersonal influence. Journal of Consumer Research, 15(4), 473-481.

Bentler, P.M. (1990). Comparative fit indexes in structural models, Psychological Bulletin, 107 (2), 238-46.

Bollen, K. A. (1989). Structural equations with latent variables. New York: Wiley.

Bollen, K.A., & Long, J. S. (1993). Introduction. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 1-9). Newbury Park, CA: Sage.

Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In: Bollen, K. A. & Long, J. S. (Eds.) Testing structural equation models. pp. 136–162. Beverly Hills, CA: Sage.

Buchanan, L., Simmons, C.J., & Bickart, B.A. (1999). Brand equity dilution: retailer display and context brand effects. Journal of Marketing Research, 36(3), 345-355.

Buil, I., De Chernatony, L., & Martinez, E. (2013). Examining the role of advertising and sales promotions in brand equity creation. Journal of Business Research, 66, 115-122.

Byrne, B.M. (2009). Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.). New York, NY: Routledge/Taylor & Francis.

Calder, B. J. & Burnkrant, R.E. (1977). Interpersonal influence on consumer behavior: an attribution theory approach, Journal of Consumer Research, 4, 29-38.

Chahal, H. & Bala, M. (2012). Significant components of service brand equity in healthcare sector. International Journal of Health Care, 25(4), 343-362.

Chatterjee, P. (2001), Online Reviews – Do Consumers Use Them? In: M. C. Gilly & J. Myers-Levy (Eds.) ACR 2001 Proceedings. pp. 129-134. UT: Association for Consumer Research.

Chattopadhyay, T., Dutta, R. N., & Sivani, S. (2010). Media mix elements affecting brand equity: A study of the Indian passenger car market. Management Review, 22, 173-185.

Crosno, J. L. , Freling, T. H. & Skinner, S. J. (2009). Does brand social power mean market might? Exploring the influence of brand social power on brand evaluations. Psychology & Marketing, 26, 91-121.

Dwyer, P. (2007). Measuring the value of electronic word of mouth and its impact in consumer communities. Journal of interactive marketing, 21(2), 63-79.

Erdem, T., Swait, J., Broniarczyk, S., Chakravarti, D., Kapferer, J., Keane, M., Roberts, J., Steenkamp, E.J., & Zettelmeyer, F. (1999). Brand equity, consumer learning and choice. Marketing Letters, 10, 301-318.

Fan, X., Wang, L. (1998). Effects of potential confounding factor on fit indices and parameter estimates for true and misspecified SEM models. Educational and Psychological Measurement, 58, 701-735.

Fiske, S.T., & Taylor, S.E. (1991). Social cognition (2nd ed.). New York: McGraw-Hill.

Gadelrab, H.F. (2004). The effect of model misspecification on overall goodness-of- fit indices for structural equation modeling. (Unpublished doctoral Dissertation). Wayne State University, USA.

Herr, P.M., Kardes, R. & Frank, J.K. (1991). Effects of word-of-mouth and product-attribute information on persuasion: an accessibility-diagnosticity perspective. Journal of Consumer Research, 17 (4), 454-462.

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), Structural equation modeling: Issues, concepts, and applications (pp. 158-176). Newbury Park, CA: Sage.

Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6, 1–55.

IBM Corp. (Released 2012). IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.

Keller, K. L. (1993). Conceptualization, measuring and managing customer-based brand equity. Journal of marketing, 57, 1-22.

Keller, K. L. (2003). Managing brand equity. Upper Saddle River, New Jersey: Prentice Hall.

Kelley, H. H. (1967). Attribution theory in social psychology. In: D. Levine (ed.), Nebraska Symposium on Motivation (Volume 15, pp. 192-238). Lincoln: University of Nebraska Press.

Kim, J., & Hyun, Y.J. (2011). A model to investigate the influence of marketing-mix efforts and corporate image on brand equity in the IT software sector. Industrial Marketing Management, 40, 424-438.

Laczniak, R.N., DeCarlo, E.T. & Ramaswami, N.S. (2001). Consumers' responses to negative word-of-mouth communication: an attribution theory perspective. Journal of consumer Psychology, 11(1), 57-73.

Lei, P-W, & Wu, Q. (2007). Introduction to structural equation modeling: Issues and practical considerations. Educational Measurement: Issues and Practice. 26, 33-43.

Malle, B.F. (2003). Attributions as behavior explanations: toward a new theory. Unpublished manuscript, University of Oregon.

Marsh, H.W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. Structural Equation Modeling, 11, 320–341.

Park, C.S., & Srinivasan, V. (1994). A survey-based method for measuring and understanding brand equity and its extendibility. Journal of Marketing Research, 31, 271-288.

Raykov, T., & Marcoulides, G. A. (2000). A method for comparing completely standardized solutions in multiple groups. Structural Equation Modeling, 7, 292-308.

Savalei, V. & Kolenikov, S. (2008). Constrained versus unconstrained estimation in structural equation modeling. Psychological Methods. 13, 150-170.

Schumaker, R.E., & Lomax, R.G. (1996). A beginner's guide to structural equation modeling. Mahwah, NJ: Erlbaum.

Simon, C.J., & Sullivan, M.W. (1993). The measurement and determinants of brand equity: a financial approach. Marketing Science, 12, 28-52.

Srinivasan, V., Park, C.S., & Chang, D.R. (2005). An approach to the measurement, analysis, and prediction of brand equity and its sources. Management Science, 9, 1433-1448.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. Psychometrika,38, 1–10.

Washburn, J.H., Till, B.D., & Priluck, R. (2004). Brand alliance and customer-based brand-equity effects. Psychology and Marketing, 21, 387-508.

Weiner, B. (1995). Judgments of responsibility: A foundation for a theory of social conduct. New York: The Guilford Press.

Yoo, B., & Donthu, N. (2001). Developing and validating multidimensional consumer-based brand equity scale. Journal of Business Research, 52, 1-14.

Yoo, B., Donthu, N., & Lee, S. (2000). An examination of selected marketing mix elements and brand equity. Journal of the Academy of Marketing Science, 28,195-211.