The impact of electronic word of mouth (e-WOM) on the online purchase intention of consumers in the Islamic countries – a case of (UAE)

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Abstract

Purpose – The purpose of this paper is to contribute to the marketing literature regarding Islamic countries, in particular the United Arab Emirates (UAE), by assessing the impact of electronic word of mouth (e-WOM) on brand image and on the online purchase intentions of consumers.

Design/methodology/approach – Using a descriptive research approach, this study used quantitative data to assess how the online purchase intentions of consumers in the UAE are influenced by e-WOM and brand image.

Findings – E-WOM has a significant impact on online purchase intentions and brand image among consumers. Brand image significantly influences the online purchase intentions of consumers.

Research limitations/implications – The conclusions may not be generalizable because not all areas of the UAE were represented in this study. In future studies, a larger and more inclusive sample would help to overcome this limitation.

Practical implications – This study will help marketers to understand the power of e-WOM, an important marketing tool, and to use resources more strategically to attract new customers.

Originality/value – E-WOM is the most commonly used and most effective medium of sharing opinions and reviews pertaining to various products and services in the market. Understanding how it influences the purchase intentions of consumers is imperative and has strong implications for marketers.

Keywords Brand image, Electronic word of mouth, GCC countries, Online purchase intention

Paper type Research paper

Introduction

Traditional word of mouth (WOM) was one of the earliest modes of communication (Mayzlin and Chevalier, 2003; Chevalier and Mayzlin, 2006). Over the years, researchers have explained this term in a variety of ways (Dellarocas, 2003; Xia and Bechwati, 2008; Huete-Alcocer, 2017). Katz and Lazarsfeld provided the earliest explanation in the late 1960s, describing it as an important means of exchanging product-related information among consumers (Katz and Lazarsfeld, 1966). They and Trusov *et al.* (2009) were of the view that WOM is a very influential tool for marketing, as it holds the potential to form and influence the behavior of consumers toward a product or service.

With advances in information technology, the use of the internet and social media have become extremely widespread; they have greatly influenced the modes of communication used and preferred by people (Chan and Ngai, 2011). Electronic word of mouth (e-WOM) has

become the most commonly used medium to share opinions and reviews about various products and services available in the market (Cheung and Thadani, 2012).

Because of its effectiveness and the various beneficial outcomes that can be achieved with the use of e-WOM, people in both the professional and the academic communities have become keenly interested in studying it (Cheung and Thadani, 2012). Other relevant aspects of marketing such as the purchase intentions of consumers (Almana and Mirza, 2013), brand image (Jalilvand and Samiei, 2012), brand awareness (Jansen, *et al.*, 2009), brand equity (Severi *et al.*, 2014), message source credibility (Wu and Wang, 2011) and trust in the opinions posted online versus those presented in the traditional media (Zhang *et al.*, 2010) are being studied to gain clearer insight.

Research has shown that people have developed high levels of trust in anonymous people who post their reviews online, while they have low levels of trust for reviews on TV, radio, newspapers, or magazines (Lee *et al.*, 2009; Zhang *et al.*, 2010). According to Nieto *et al.* (2014), consumers trust the reviews presented by other consumers much more than the claims put forward by the producers or sellers of the product; this trust likely results in online reviews having a greater impact on consumers' purchase intentions and buying decisions (Lee and Youn, 2009; Tham *et al.*, 2013).

Litvin *et al.* (2008) stressed that e-WOM is primarily based on the informal communication among consumers using the various online media to discuss the positive or negative characteristics of any goods or services, or even the producers or sellers. E-WOM is generally considered advantageous because it is easily available and accessible to anyone who can use the Internet (Evans and Erkan, 2014). In addition, the internet provides a perfect blend of user demographics, which enables consumers to read a mix of opinions that help them form their own opinions about a product or service (Hennig-Thurau *et al.*, 2004).

Marketing research has shown that, over time, consumer reviews posted online and the sharing of information or personal opinions have become extremely powerful means of communication. E-WOM has taken the industry by storm and has completely taken over the internet, primarily the various social media (Facebook, Instagram and Snapchat) (Doh and Hwang, 2009; Lee *et al.*, 2011; Jalilvand and Samiei, 2012; Huete-Alcocer, 2017). Hence, it is important to gain a strong understanding of e-WOM and how it can influence the purchase intentions of consumers, which in turn greatly influences the sales ratios and profitability of companies (Chevalier and Mayzlin, 2006; Liu, 2006).

The present research study aimed to assess the impact of e-WOM on the online purchase intentions of consumers living in the Gulf region of the UAE. The findings will help marketers to understand the power of this important marketing tool.

The contents of this paper have been organized in the following order: conceptual framework and research hypotheses; methods; results; discussion; conclusions; and practical implications for the field of marketing.

Conceptual framework

The conceptual framework for this research is illustrated in Figure 1.

E-WOM is now believed to be the most commonly used and favored source of information by consumers (Zhu and Zhang, 2010). Hennig-Thurau *et al.* (2004) explained the term 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 the people and institutes via the Internet.

Before purchasing any product or service, consumers cannot know about the actual product experience and after-sale services; however, by accessing other consumers' reviews online, a perceived opinion about the quality, performance and after-sales service can be formed, which ultimately influences other factors such as brand image and the purchase intentions of consumers (Jalilvand and Samiei, 2012; Almana and Mirza, 2013; Tham *et al.*, 2013; Charo *et al.*, 2015; Sallam and Wahid, 2015).

Purchase intention refers to the process of making a purchasing decision, during which the consumer considers various conditions and rationales (Shah *et al.*, 2012; Morinez *et al.*, 2007). Assessing the purchase intention of an individual is a complex process (Cheung and Thadani, 2012) that is directly associated with the perceptions, behaviors and attitudes of the consumer toward the product or service itself or even the seller (Huete-Alcocer, 2017).

The opinions of others about a product or service or the seller strongly influence a person's purchase intention (Almana and Mirza, 2013; Cantallops and Salvi, 2014; Daugherty and Hoffman, 2014; Md Husin *et al.*, 2016; Huete-Alcocer, 2017). The transmission of opinions is therefore considered extremely powerful in the field of marketing (Almana and Mirza, 2013). E-WOM is currently very relevant, considering the massive use of the Internet and the various social media platforms (Cheung and Thadani, 2012). Information about price, perceived quality and consumer value obtained through these media have been found to influence the purchase decisions of consumers (Kudeshia and Kumar, 2017).

Brand image also greatly influences the quality of life of a product or service (Jalilvand and Samiei, 2012). Brand image is defined in terms of the current associations, subjective perceptions, and the set of beliefs about a particular brand that is held in the minds of the consumers (Keller, 1993; Cretu and Brodie, 2007). Beyond the mental image, brand image also conveys an emotional value, which is why appropriate brand positioning is significant (Martinez and De Chernatony, 2004; Sallam and Wahid, 2015). A brand's image should be managed in such a way that it ultimately portrays the mission and vision of the entire company (Nandan, 2005). Although a unique logo representing the brand forms the prime element of a positive brand image, the slogans and all other brand identifiers that distinguish one brand from another are also important (Cretu and Brodie, 2007).

Research has shown that e-WOM influences the purchase behavior of consumers, especially online shopping behaviors (Chevalier and Mayzlin, 2006). According to Bambauer-Sachse, and Mangold (2011), e-WOM is an essential element for any brand's online marketing mix, primarily because of its immense contribution to brand image as well as its power to influence the purchase intentions of consumers. Other researchers have also proven the impact of interpersonal influences on brand image, which eventually influence the purchase behaviors of consumers (Nandan, 2005; Wang, 2006; Cretu and Brodie, 2007; Jalilvand and Samiei 2012; Sallam and Wahid, 2015). Sallam (2014) stated that positive WOM can even make consumers pay a premium price for luxury brands.
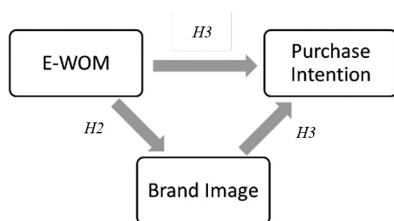
Figure 1.
Conceptual
framework

To test the influence of e-WOM on brand image and the purchase intentions of consumers, the following hypotheses were proposed:

H1. E-WOM has a positive impact on the online purchase intentions of consumers.

H2. E-WOM has a significant impact on brand image among consumers.

H3. Brand image has a significant impact on the online purchase intentions of consumers.

Methods

This study used an online survey approach to data collection to more easily collect data from a large sample in a relatively short span of time. A total of 405 people were selected through convenience sampling. To obtain a wide range of responses, data were collected from people living in different regions of the UAE, such as Abu Dhabi, Dubai, Al Ain and Sharjah.

The five-item scale developed by Bambauer-Sachse and Mangold (2011) was used to assess the construct of e-WOM. To assess the construct of brand image, the three-item scales developed by Davis *et al.* (2009) were adopted. The five-point Likert scale developed by Shukla (2011) was adapted to measure purchase intentions among study participants (response options ranged from 1 = Strongly Disagree to 5 = Strongly Agree). All three constructs were included in the overall questionnaire as separate sections. The first section of the questionnaire collected basic demographic information about the study respondents.

Descriptive statistics (means and standard deviation) were obtained for all three constructs (e-WOM, brand image and purchase intentions). The mean values were compared to the *t*-test value of 3, where 3 represents a neutral response and a value of greater than 3 represents a positive response. Pearson's coefficient of correlation was also calculated to determine the linear relationship between pairs of constructs. A coefficient value greater than 0.7 indicates a strong positive association between two variables (Hammett, 2005). Linear regression analysis was used to test the three hypotheses. The level of significance chosen for all statistical tests was 0.05.

The reliability of the study constructs was assessed using Cronbach's alpha, which was found to be greater than 0.70, the cut-off point for this purpose (Nunnally and Bernstein, 1994). The computed values are shown in Table I.

Results

Of the 405 respondents, the responses of 378 participants were considered (the others were not considered because of missing values). Approximately three-fifths (61.4 per cent, $n = 232$) of the remaining participants were male and 38.6 per cent ($n = 164$) were female. A majority of respondents were between 21 and 40 years old (42.6 per cent [$n = 161$] were between 21 and 30 years of age, while 36 per cent [$n = 136$] were between 31 and 40 years of

Construct	Cronbach's alpha	No. of items
E-WOM	0.813	6
Brand image	0.851	3
Purchase intention	0.848	4
Overall reliability of the scale	0.843	13

Table I.
Reliability of study constructs

age). Just under half (45.8 per cent, $n = 173$) had completed their bachelor's degree, whereas only a few had completed a masters or postgraduate program (18 per cent, [$n = 68$] and 1.9 per cent [$n = 7$], respectively). Approximately one-third of respondents (32.3 per cent, $n = 122$) earned a monthly income of 10,000 AED to 14,000 AED.

The results of the correlation analysis are presented in Table II. All pairs of variables have a weakly positive, but statistically significant, association with one other.

The total means and standard deviations obtained for each construct are shown in Table III. The total average mean values for the variables of e-WOM, brand image and purchase intention are 4.04, 3.89 and 3.78, respectively. All of these values are higher than the cut-off value of 3, which signifies a positive response for all three variables. The standard deviations were 0.727, 0.753 and 0.825, respectively, for the variables of e-WOM, brand image and purchase intention. All values were less than 1, indicating that there was no spread in the responses.

Linear regression analysis was used to test each of the three hypotheses individually. The results of these analyses are shown in Tables IV-VI.

Table IV shows an R^2 value of 0.358, suggesting that a positive impact of about 36 per cent can be explained by e-WOM. The values for the t-test (7.440) and the F test (55.353) were statistically significant.

Variable	Test	E-WOM	Brand image	Purchase intention
E-WOM	Pearson correlation	1.000	0.399	0.358
	p value (two-tailed)		0.000	0.000
Brand image	Pearson correlation	0.399	1.000	0.231
	p value (two-tailed)	0.000		0.000
Purchase intention	Pearson correlation	0.358	0.231	1.000
	p value (two-tailed)	0.000	0.000	

Table II.
Results of correlation analysis

Construct	N	Standard deviation	Mean
E-WOM	378	0.727	4.04
Brand image	378	0.753	3.89
Purchase intention	378	0.825	3.78

Table III.
Summary of descriptive statistics

Variable	B	Standard error	t	p value
Constant	2.140	0.224	9.549	0.000
e-WOM	0.406	0.055	7.440	0.000

Dependent variable: purchase intention
R^2 — 0.358
F (p value) — 55.353 (0.000)

Table IV.
Results of hypothesis testing for *H1*

As seen in the Table V shows R^2 value of 0.399, indicating that a positive impact of about 40 per cent can be explained by e-WOM. The values for t-test (8.448) and the F test (71.374) were statistically significant.

Table VI shows an R^2 value of 0.231, indicating that a positive impact of about 23 per cent can be explained by e-WOM. The values for the t-test (4.612) and the F test (21.275) were statistically significant.

Discussion

H1

H1 is supported by the study results, suggesting that e-WOM has a significant impact on the purchase intentions of consumers in the UAE. This finding supports those of research done by Kudeshia and Kumar (2017), who highlighted the impact of online opinions of other people on the willingness of consumers to purchase products or services. Other researchers too, have concluded a similar impact on purchase intentions (Almana and Mirza, 2013; Cantallops and Salvi, 2014; Daugherty and Hoffman, 2014; Md Husin et al., 2016; Huete-Alcocer, 2017).

H2

H2 is supported by the study results, suggesting that e-WOM has a significant impact on brand image among consumers in the UAE. This finding supports those of the research done by Bambauer-Sachse and Mangold (2011), in which they highlighted how online reviews by other consumers can influence other people's opinions about a brand and its perceived value. Other researchers have also highlighted the impact of these interpersonal influences on brand image among consumers (Nandan, 2005; Wang, 2006; Cretu and Brodie, 2007).

H3

H3 is supported by the study results, suggesting that brand image has a significant impact on the purchase intentions of consumers in the UAE. This finding supports the research by Sallam (2014), who concluded that when consumers form a positive perception about a brand, they become willing to purchase that brand and are even willing to pay premium

Variable	B	Standard error	t	p value
Constant	2.225	0.201	11.083	0.000
e-WOM	0.413	0.049	8.448	0.000
Dependent variable: brand image				
R^2			0.399	
F (p value)			71.374 (0.000)	

Table V.
Results of hypothesis testing for H2

Variable	B	SE	t	p value
Constant	2.793	0.218	12.806	0.000
Brand image	0.254	0.055	4.612	0.000
Dependent variable: purchase intention				
R^2			0.231	
F (p value)			21.275 (0.000)	

Table VI.
Results of hypothesis testing for H3

prices for luxury brands. Jalilvand and Samiei (2012) and Sallam and Wahid (2015) reached similar conclusions through their research.

Practical implications

With the advancement of technology and the use of the internet by people of all ages, e-WOM has become extremely relevant in the marketing context. People tend to turn to anonymous reviews and opinions about products posted online as opposed to the claims and information about the products or service as advertised by the sellers themselves.

The findings of this study will be valuable to the managing authorities of brands, as they spend large amounts of time and monetary resources to enhance awareness of their brand in order to attract and retain customers. These efforts are more likely to be successful when they are accompanied by proper communication through the appropriate channels. This would result in a good brand image and awareness among consumers, which in turn strongly affect their purchase intentions.

Conclusions

The purpose of this study was to contribute to the marketing literature regarding Islamic countries (UAE in particular) by assessing the impact of e-WOM on brand image and the online purchase intentions of consumers. The results validated all three hypotheses. It is thus concluded that e-WOM has a significant impact on brand image and on the online purchase intentions of consumers, and that brand image significantly influences the online purchase intentions of consumers. These findings highlight the importance of e-WOM and the various advantages that can be achieved by designing and implementing the optimal marketing strategies.

Limitations and recommendations for future studies

The study sample included participants from only a few areas of one country. Sampling could be expanded to cover more areas of the chosen country to ensure that the sample is more representative of the overall population. Sampling could be further expanded to include people from other countries as well, which would help in understanding cultural differences.

References

Almana, A.M. and Mirza, A.A. (2013), "The impact of electronic word of mouth on consumers' purchasing decisions", *International Journal of Computer Applications*, Vol. 82 No. 9, pp. 23-31.

Bambauer-Sachse, S. and Mangold, S. (2011), "Brand equity dilution through negative online word-of-mouth communication", *Journal of Retailing and Consumer Services*, Vol. 18 No. 1, pp. 38-45.

Cantallops, A.S. and Salvi, F. (2014), "New consumer behavior: a review of research on e-WOM and hotels", *International Journal of Hospitality Management*, Vol. 36, pp. 41-51.

Chan, Y.Y. and Ngai, E.W. (2011), "Conceptualising electronic word of mouth activity: an input-process-output perspective", *Marketing Intelligence and Planning*, Vol. 29 No. 5, pp. 488-516.

Charo, N., Sharma, P., Shaikh, S., Haseeb, A. and Sufya, M. (2015), "Determining the impact of e-WOM on brand image and purchase intention through adoption of online opinions", *International Journal of Humanities and Management Sciences (IJHMS)*, Vol. 3 No. 1, pp. 41-46.

Cheung, C.M. and Thadani, D.R. (2012), "The impact of electronic word-of-mouth communication: a literature analysis and integrative model", *Decision Support Systems*, Vol. 54 No. 1, pp. 461-470.

Chevalier, J.A. and Mayzlin, D. (2006), "The effect of word of mouth on sales: online book reviews", *Journal of Marketing Research*, Vol. 43 No. 3, pp. 345-354.

Cretu, A.E. and Brodie, R.J. (2007), "The influence of brand image and company reputation where manufacturers market to small firms: a customer value perspective", *Industrial Marketing Management*, Vol. 36 No. 2, pp. 230-240.

Daugherty, T. and Hoffman, E. (2014), "eWOM and the importance of capturing consumer attention within social media", *Journal of Marketing Communications*, Vol. 20 Nos 1/2, pp. 82-102.

Davis, D.F., Golicic, S.L. and Marquardt, A. (2009), "Measuring brand equity for logistics services", *The International Journal of Logistics Management*, Vol. 20 No. 2, pp. 201-212.

Dellarocas, C. (2003), "The digitization of word of mouth: promise and challenges of online feedback mechanisms", *Management Science*, Vol. 49 No. 10, pp. 1407-1424.

Doh, S.J. and Hwang, J.S. (2009), "How consumers evaluate eWOM (electronic word-of-mouth) messages", *CyberPsychology and Behavior*, Vol. 12 No. 2, pp. 193-197.

Evans, C. and Erkan, I. (2014), *The Impacts of Electronic Word of Mouth in Social Media on Consumers Purchase Intentions*, The International Institute of Knowledge Management (TIIKM), Colombo, pp. 9-14, available at: http://tiikm.com/publication/ICODM-2014Online-Proceeding-Book.pdf (accessed 12 February 2018).

Hammett, P. (2005), Introduction to Basic Statistics, Paper, University of Michigan, Ann Arbor.

Hennig-Thurau, T., Gwinner, K.P., Walsh, G. and Gremler, D.D. (2004), "Electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?", *Journal of Interactive Marketing*, Vol. 18 No. 1, pp. 38-52.

Huete-Alcocer, N. (2017), "A literature review of word of mouth and electronic word of mouth: implications for consumer behavior", *Frontiers in Psychology*, Vol. 8, p. 1256.

Jalilvand, M.R. and Samiei, N. (2012), "The effect of electronic word of mouth on brand image and purchase intention: an empirical study in the automobile industry in Iran", *Marketing Intelligence and Planning*, Vol. 30 No. 4, pp. 460-476.

Jansen, B.J., Zhang, M., Sobel, K. and Chowdury, A. (2009), "Twitter power: tweets as electronic word of mouth", *Journal of the American Society for Information Science and Technology*, Vol. 60 No. 11, pp. 2169-2188.

Katz, E. and Lazarsfeld, P.F. (1966), *Personal Influence: The Part Played by People in the Flow of Mass Communications*, Transaction Publishers, Piscataway, NJ.

Keller, K.L. (1993), "Conceptualizing, measuring, and managing customer-based brand equity", *Journal of Marketing*, Vol. 57 No. 1, pp. 1-22.

Kudeshia, C. and Kumar, A. (2017), "Social eWOM: does it affect the brand attitude and purchase intention of brands?", *Management Research Review*, Vol. 40 No. 3, pp. 310-330.

Lee, M. and Youn, S. (2009), "Electronic word of mouth (eWOM) how eWOM platforms influence consumer product judgment", *International Journal of Advertising*, Vol. 28 No. 3, pp. 473-499.

Lee, J., Park, D.H. and Han, I. (2011), "The different effects of online consumer reviews on consumers' purchase intentions depending on trust in online shopping malls: an advertising perspective", *Internet Research*, Vol. 21 No. 2, pp. 187-206.

Litvin, S.W., Goldsmith, R.E. and Pan, B. (2008), "Electronic word-of-mouth in hospitality and tourism management", *Tourism Management*, Vol. 29 No. 3, pp. 458-468.

Liu, Y. (2006), "Word of mouth for movies: its dynamics and impact on box office revenue", *Journal of Marketing*, Vol. 70 No. 3, pp. 74-89.

Martinez, E. and De Chernatony, L. (2004), "The effect of brand extension strategies upon brand image", *Journal of Consumer Marketing*, Vol. 21 No. 1, pp. 39-50.

Mayzlin, D. and Chevalier, J.A. (2003), The effect of word of mouth on sales: online book reviews (No. ysm413), Yale School of Management.

Md Husin, M., Ismail, N. and Ab Rahman, A. (2016), "The roles of mass media, word of mouth and subjective norm in family takaful purchase intention", *Journal of Islamic Marketing*, Vol. 7 No. 1, pp. 59-73.

Nandan, S. (2005), "An exploration of the brand identity–brand image linkage: a communications perspective", *Journal of Brand Management*, Vol. 12 No. 4, pp. 264-278.

Nieto, J., Hernandez-Maestro, R.M. and Munoz-Gallego, P.A. (2014), "Marketing decisions, customer reviews, and business performance: the use of the Toprural website by Spanish rural lodging establishments", *Tourism Management*, Vol. 45, pp. 115-123.

Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, 3rd ed., McGraw-Hill, New York, NY. Owen, L. and Othman, A. (2001), "Developing an instrument to measure customer service quality (SQ) in Islamic banking", *International Journal of Islamic Financial Services*, Vol. 3 No. 1, pp. 1-26.

Sallam, M.A. (2014), "The effects of brand image and brand identification on brand love and purchase decision making: the role of WOM", *International Business Research*, Vol. 7 No. 10, p. 187.

Sallam, M.A. and Wahid, N.A. (2015), "The effects of satisfaction and brand identification on brand love and brand equity outcome: the role of brand loyalty", *European Journal of Business and Social Sciences*, Vol. 4 No. 9, pp. 42-55.

Severi, E., Ling, K.C. and Nasermoadeli, A. (2014), "The impacts of electronic word of mouth on brand equity in the context of social media", *International Journal of Business and Management*, Vol. 9 No. 8, p. 84.

Shah, S.S.H., Aziz, J., Jaffari, A.R., Waris, S., Ejaz, W., Fatima, M. and Sherazi, S.K. (2012), "The impact of brands on consumer purchase intentions", *Asian Journal of Business Management*, Vol. 4 No. 2, pp. 105-110.

Shukla, P. (2011), "Impact of interpersonal influences, brand origin and brand image on luxury purchase intentions: measuring interfunctional interactions and a cross-national comparison", *Journal of World Business*, Vol. 46 No. 2, pp. 242-252.

Tham, A., Croy, G. and Mair, J. (2013), "Social media in destination choice: distinctive electronic word-of-mouth dimensions", *Journal of Travel and Tourism Marketing*, Vol. 30 Nos 1/2, pp. 144-155.

Trusov, M., Bucklin, R.E. and Pauwels, K. (2009), "Effects of word-of-mouth versus traditional marketing: findings from an internet social networking site", *Journal of Marketing*, Vol. 73 No. 5, pp. 90-102.

Wu, P.C. and Wang, Y.C. (2011), "The influences of electronic word-of-mouth message appeal and message source credibility on brand attitude", *Asia Pacific Journal of Marketing and Logistics*, Vol. 23 No. 4, pp. 448-472.

Xia, L. and Bechwati, N.N. (2008), "Word of mouth: the role of cognitive personalization in online consumer reviews", *Journal of Interactive Advertising*, Vol. 9 No. 1, pp. 3-13.

Zhang, J.Q., Craciun, G. and Shin, D. (2010), "When does electronic word-of-mouth matter? A study of consumer product reviews", *Journal of Business Research*, Vol. 63 No. 12, pp. 1336-1341. Bambauer-Sachse, S. and Mangold, S. (2011), Brand equity dilution through negative online word-of-mouth communication, Journal of Retailing and Consumer Services, Vol. 18 No. (1), pp. 38-45.

Zhu, F. and Zhang, X. (2010), "Impact of online consumer reviews on sales: the moderating role of product and consumer characteristics", *Journal of Marketing*, Vol. 74 No. 2, pp. 133-148.

Further reading

Lee, P.A. (2013), Independent-Samples T Test and Dependent-Samples *t* Test, Paper, SAN José State University, San Jose, CA.

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