Personality Traits as Predictors of Online Customer Review Motivations

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Online customer reviews (OCRs) are becoming increasingly popular among consumers who read them to make informed decisions about products and services. This study investigates consumers' motivations for posting OCRs and the relationship between the motivations and the Big Five personality traits. The data come from an online sample of 352 online users who reported posting a review of a good or service. The results of the study indicate that individuals who post OCRs are driven primarily by interest in helping other consumers, followed by economic incentives, venting, self-efficacy, and social interaction. Using regression analyses, agreeableness was found to be positively related to interest in helping others and economic incentives, but negatively related to the venting motivation. Extraversion was found to be positively related to social interaction. Further exploration using canonical correlation analysis revealed a cluster of association between self-interested helpers (i.e., those motivated by economic incentives and the desire to help other consumers) and the Big Five personality traits of agreeableness and extraversion. Practical implications of these findings are discussed, as well as suggestions for future research.

Keywords: online customer reviews, motivation, personality, Big Five inventory, canonical correlation analysis

O nline customer reviews (OCRs) are an increasing phenomena that influence consumers' choice and purchasing behavior. The BrightLocal (2015) Consumer Review Survey shows that 92% of consumers regularly or occasionally read online reviews. Although traditional word of mouth remains the most popular method for recommending a business, 27% of consumers have recommended a local business via Facebook; this figure rises to 32% among consumers aged 16-34 (BrightLocal, 2015). According to Nielsen (2015), 66% of global consumers surveyed online indicated they trust OCRs. Only recommendations from family and friends ranked higher in trust. Moreover, a survey from Dimensional Research (2013) found that 90% of respondents who recalled reading online reviews claimed that positive

reviews influenced their decision to buy, while 86% said that negative reviews had also influenced buying decisions.

Industry-specific studies suggest that OCRs are having a considerable impact on consumer decision making and business sales. For example, (Luca, 2016) found that a one-star increase on Yelp.com rating leads to a 5-9% increase in revenue for restaurants. According to Digital Air Strike (2014), the majority of car buyers said they consider review sites as "helpful" in their decision as to where to purchase a vehicle. The same study found that 24% of consumers consider online review sites to be the "most helpful" factor, exceeding all other factors including the 15% of car buyers who consider dealership websites "most helpful." A study conducted by Software Advice (2015), a digital resource for field service technology, reported that 68% of consumers said online reviews are a "very important" factor in helping them select a residential service provider. Additionally, 86% said they would be willing to pay more for services if a given provider had positive online reviews.

In light of these developments, scholars from the social sciences, computer science, and marketing have identified OCRs as a growing opportunity (and potential threat) that is worthy of managerial consideration. Previous studies have mainly focused on how OCRs affect the purchase decision and sales (e.g., Filieri & McLeay, 2014; Luca, 2016; Ye, Law, & Gu, 2009). However, to date, little attention has been given to the factors that influence an individual's motivation to generate OCRs. The present study aims to fill this gap in the literature by examining the relationship between the Big Five personality traits and the motivations for posting OCRs.

LITERATURE REVIEW

Online Customer Reviews

OCRs are one-way asynchronous communications between one reviewer and many readers (one-to-many communication) (Litvin, Goldsmith, & Pan, 2008). Filieri (2016) defines OCRs as

> "any positive, negative, or neutral comment, rating, ranking, of a product, a
> service, a brand, or a person supposedly made by a former customer and that
> is shared with other customers in an unstructured format such as a blog post

or in a more structured format, such as customer reviews published on an independent customer review website, third-party e-commerce website, or corporate website." (p. 47)

Mudambi & Schuff (2010) have proposed that OCRs are a form of electronic word-of-mouth (eWOM) in the form of user generated content that is posted on e-vendor or third-party websites. In contrast to traditional word-of-mouth communication, OCRs are often posted anonymously. Furthermore, there is a greater abundance of OCRs than traditional offline reviews and OCRs can reach a larger audience (Lee, Park, & Han, 2008).

Scholars have dedicated much attention to OCRs, particularly the impact they have on sales and purchasing behavior. For example, studies have examined the influence OCRs have on sales (Ye et al., 2009), on how they affect consumer awareness and attitude toward service providers (Vermeulen & Seegers, 2009), consumer purchasing intentions (Filieri & McLeay, 2014; Hsu, Yu, & Chang, 2017; Sparks & Browning, 2011; Vermeulen & Seegers, 2009) and consumer assessment of trustworthiness (Filieri, 2016).

Motivations for Posting OCRs

Existing literature has suggested a number of important motivations for online content creation. The present study focuses on the five motivations listed below.

(1)   Social interaction. Posting OCRs is a way to connect with others. Social benefits compel consumers to seek out activities that are favored by important others and give them opportunities to associate with friends (Daugherty, Eastin, & Bright, 2008). Seeking social interaction consistently emerges as an eWOM motivation in most empirical studies (e.g. Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Hicks et al., 2012). Therefore, the present study identified social interaction as a motivation of posting OCRs.

(2)   Venting. When there is a strong negative consumption experience, people experience psychological tension within (Yen & Tang, 2015). In such a situation, venting negative feelings on a consumer-opinion platform can serve to reduce the frustration and anxiety associated with the event (Sundaram & Webster, 1998). A consumer's desire for catharsis is known to be a driving force behind the expression of negative personal experiences (Alicke et al.,

1992; Berkowitz, 1970). Accordingly, sharing a negative consumption experience through the publication of OCRs can help the consumer to reduce frustration and cope with his or her negative emotions.

(3)   Self-efficacy. In social cognitive theory, self-efficacy is a personal judgment of one's capability to execute actions required for designated types of performances (Cheung & Lee, 2012). Lee, Cheung, Lim, and Sia (2006) have demonstrated that knowledge self-efficacy is an important motivator for information sharing in an online environment. People who possess a high level of expertise tend to provide useful advice on computer networks (Constant, Sproull, & Kiesler, 1996). Conversely, lack of knowledge self-efficacy tends to limit information sharing in web-based discussion boards (Lee et al., 2006). As such, the present study knowledge self-efficacy is identified as a motivation for posting OCRs.

(4)   Helping others. Consumers may post OCRs in an attempt to help fellow consumers make purchase decisions. This motivation is associated with both positive OCRs (helping others to share the same positive experience) and negative OCRs (helping others to avoid the problems they encountered). Creators of OCRs may wish to help other consumers minimize risk in their decision-making, particularly with regard to the acquisition of expensive and complex products (Munar & Jacobsen, 2014). Helping others (i.e., altruism) is found to be a significant motivation for posting comments on consumer opinion sites (e.g., Bronner & De Hoog, 2011; Jeong & Jang, 2011).

(5)   Economic incentives. This includes posting OCRs for the purpose of obtaining monetary rewards and non-monetary rewards such as reward points, discounts, or free upgrades. While Hennig-Thurau et al. (2004) found economic incentives to be a significant motivation, they are not seen as an important driver for travel-related consumer generated media in Yoo and Gretzel's (2011) study. Moreover, Yen and Tang (2015) showed that economic incentives did not increase the likelihood of posting eWOM on consumer opinion sites and actually reduced the likelihood of posting on social network sites.

OCRs – Personality Considerations

There is a large body of literature on the psychological aspects of Internet use that may clarify and predict who will post OCRs. While personality types can be identified using a variety of instruments, the "Big Five Inventory" (BFI) is commonly used to identify personality type when studying variables related to technology. It is referred to as the most comprehensive and parsimonious model of personality (Costa & McCrae, 1992). The BFI identifies five personality types— *extraversion, neuroticism, openness, agreeableness, and conscientiousness.* Studies have shown that these personality traits predict the intent to share knowledge, individual differences in technology use, online social network site (SNS) applications, and other forms of online behavior.

Extraverts are optimistic, gregarious, ambitious, and seek out new opportunities and excitement (McElroy, Hindrickson, Townsend, & DeMarie, 2007), active, outgoing, and place high value on close and warm interpersonal relationships (Watson & Clark, 1997). In cybernetic terms, extraversion is associated with reward seeking and behavioral exploration (DeYoung, 2015). A study by Wang and Yang (2007) suggests that extraversion is positively related to individuals' intentions to share knowledge. In terms of online behavior, extraverts spend more time texting (Ehrenberg, Juckes, White, & Walsh, 2008) and are more likely to forward video ads (Lane & Manner, 2014). Correa, Hinsley, and Gil de Zuniga (2010) found that extraversion was correlated with the use of instant messaging on SNS. Wang, Jackson, Zhang, and Su (2012) found that extraverts are more likely to use the communicative function of SNS, including status update, comment, and adding more friends. Acar and Polonsky (2007) found that extraverts maintain bigger social networks on SNS. Using meta-analysis, Liu and Campbell (2017) demonstrated that extraversion was positively related to numerous SNS activities, including games, friends, photo posts, and interactions. The results of a 20 country study show that extraverted people tend to more frequently use social media generally, for news, and for relational goals (Gil de Zuniga, Diehl, Huber, & Liu, 2017). Wang's (2017) study of Chinese SNS use found that individuals who scored high on extraversion were more likely to engage in exhibitionist behavior on SNS, more likely to rate their own profile as attractive, posted more frequently on SNS, and were more likely to use an image of themselves as a profile picture than those who were low on extraversion. Looking specifically at Facebook,

researchers have found that extraversion is associated with greater Facebook use (Gosling, Augustine, Vazire, Holtzman, & Gaddis, 2011; Seidman, 2013; Wilson, Fornasier, & White, 2010) and more friends (Amichai-Hamburger & Vinitzky, 2010; Moore & McElroy, 2012; Ryan & Xenos, 2011). A study by Ross et al. (2009) indicated that individuals high on the trait of extraversion belong to significantly more Facebook groups. Other studies show that extraverts use Facebook to communicate with others by contacting friends (Correa et al., 2010) and commenting on friends' pages (Gosling et al., 2011).

Highly neurotic people tend to be fearful, distrustful, sad, embarrassed, and have trouble managing stress (McElroy et al., 2007). They tend to be anxious, self-conscious and paranoid (Devaraj, Easley, & Crant, 2008). In cybernetic terms, neuroticism is a defensive response to threats (DeYoung, 2015). Individuals scoring high in neuroticism spend more time texting and report stronger mobile phone addictive tendencies (Ehrenberg et al., 2008). Picazo-Vela, Chou, Melcher, and Pearson, (2010) found that neuroticism had a significantly positive effect on an individual's intention to provide an online review. With regard to neuroticism and technology use, Tuten and Bosnjak (2001) found that neuroticism was negatively related to amount of time spent on the Internet. However, other studies report that individuals high in neuroticism use the Internet more frequently to reduce loneliness (Amiai-Hamburger & Ben-Artzi, 2003) and are more likely to use it for instant messaging (Ehrenberg et al., 2008) and social media (Correa et al., 2010). Liu and Campbell's (2017) meta-analysis study demonstrated that neuroticism was significantly associated with global SNS use. Emotional stability (low neuroticism) may lead one to use less social media, because they do not need extra attention or validation from the network (Błachnio, Przepiorka, Senol-Durak, Durak, & Sherstyuk, 2017; Butt & Phillips, 2008). This notion is supported by a 20-country study which showed that the more emotionally stable people tend to be, the less time they will spend on social media and the less they will consume information and/or socialize on social media (Gil de Zuniga et al., 2017). Forest and Wood (2012) found that low self-esteem, a trait closely linked to neuroticism, was associated with the belief that Facebook provided opportunities to connect with others, and to get support and attention under circumstances they feared would burden others offline.

Individuals who score high in openness seek out new and varied experiences and value change (McCrae & Costa, 1997). In cybernetic terms, openness is associated with exploration and curiosity (DeYoung, 2015). Individuals with high scores on openness to experience are more likely to try new methods of communication (McCrae & Costa, 1997), have broad interests (Butt & Phillips, 2008), use the Internet for entertainment and product information (Tuten & Bosnjak, 2001), and play online games on SNS (Wang et al., 2012). Liu and Campbell (2017) demonstrated that openness was positively correlated to numerous SNS activities, including games, friends, photo posts, and social interactions. Manner and Lane (2017) found that individuals who are more open to new experiences are more likely to post OCRs and tend to post OCRs more often. Openness to experience has been correlated with the use of instant messaging (Correa et al., 2010), the use of a wide variety of Facebook features (Amichai-Hamburger & Vinitzky, 2010), and more frequent social media use (Gil de Zuniga et al., 2017). Those who are high on the trait of openness showed a greater tendency to be sociable through Facebook and report posting more on others' walls (Ross et al., 2009). Cabrera, Collins, and Salgado (2006) discovered that openness is a strong predictor of knowledge sharing because openness to experience reflects a person's curiosity and originality which in turn are predictors of seeking other people's insights. Therefore, it can be anticipated that open individuals develop more expertise. As Constant et al. (1996) propose, individuals with higher levels of expertise are more likely to give useful advice.

People who score high in agreeableness are good natured, sympathetic, and forgiving (McElroy et al., 2007), likable, kind, helpful and cooperative (Graziano & Eisenberg, 1997), altruistic and enthusiastic to help others, and they seek cooperation rather than competition (Liao & Chuang, 2004). A number of studies (e.g. Cabrera, Collins, & Salgado, 2006; Matzler, Renzl, Müller, Herting, & Mooradian, 2008; Wang & Yang, 2007) suggest that agreeableness is positively related to knowledge sharing intentions. Devaraj et al. (2008) found that agreeable people viewed technology as useful. Phillips, Butt, and Blaszczynski (2006) concluded that those who scored lower in agreeableness were more likely to play games on their phones. Using a meta-analysis model, Liu and Campbell (2017) discovered that agreeableness was positively related to photo posting, but negatively correlated with SNS gaming. Agreeableness has been shown

to be a positive predictor of frequent social media use, as well as using it for obtaining news and interacting with others (Gil de Zuniga et al., 2017). Landers and Lounsbury (2006) found a negative relationship between agreeableness and Internet usage among college students. They suggest that students who do not get along with other students choose to spend more time on the Internet rather than interpersonal settings. A study by Manner and Lane (2017), suggests that people who score higher in agreeableness are less likely to post negative OCRs.

Conscientious people are known for their self-control and their need for achievement and order (Costa, McCrae, & Dye, 1991). From a cybernetic perspective, conscientiousness is primarily about protecting long term goals from short term temptations (DeYoung, 2015). When framed this way, conscientiousness would be associated with lower levels of SNS use, assuming that SNS use is a distraction that interferes with longer term goals (Liu & Campbell, 2017). However, Gil de Zuniga et al. (2017) found that people who are more conscientious are more likely to use social media generally, for news, and for relational goals. Studies by Liao and Chuang (2004) and Wang and Yang (2007) suggest that conscientiousness is related to knowledge sharing intentions in both offline and online settings. Conscientious people are more likely to look for ways to use technology to be more efficient (Barrick & Mount, 1991) and they are more likely to find technology to be useful (Devaraj et al. 2008). Picazo-Vela et al. (2010) found that conscientiousness had a significant positive effect on an individual's intent to provide an online review. Similarly, Manner and Lane (2017) found that conscientious individuals were more likely to post positive OCRs. Individuals high in conscientiousness tend to use more problem-focused coping methods (Bartley & Roesch, 2011). The overarching goal for this type of coping is to reduce or remove the cause of the stressor when possible. Problem-focused coping may include employing information seeking and developing strategies to avoid (or help others avoid) the source of the stress. This suggests that conscientious people may use OCRs as a coping mechanism for dealing with a negative consumer experience.

Univariate versus Multivariate Analyses

The study of OCR motivations and personality can be improved using multivariate analyses. Such analyses often offer a richer evaluation of the relationships than univariate analysis. Multivariate analyses take into account interrelationships between not only multiple independent variables, but also among multiple dependent variables, which may yield effects not uncovered by univariate analyses (Thompson, 2000). Although analyses such as multiple regression can yield more complex relationships than zero-order correlations, analyses that evaluate multiple independent and dependent variables simultaneously have more power (Henningsgaard & Arnau, 2008).

Goals of the Present Study

In sum, OCRs provide a fast and easy way for consumers to evaluate and compare products, thus reducing potential risks associated with the purchase decision (Sparks, So, & Bradley, 2016). Despite the considerable volume of studies on OCRs and other forms of Internet activity, it is important to acknowledge that little is known about what drives individuals to generate OCRs. As such, the purpose of this study is to describe the relationships between the motivations for posting OCRs and personality. To do this, the current study evaluates the relationships between OCR motivations and the Big-Five personality traits at both the univariate and multivariate levels. Thus, this study offers the following research questions:

RQ1: What are the predominant motives for posting OCRs?

RQ2: What types of relationships are there between the Big Five personality traits and the set of identified motivations for posting OCRs?

METHOD

Sample and Procedure

An online survey (administered through Qualtrics) served to gather the data to answer the research questions. Social networking and various online techniques were used to draw participants to the survey. The sampling was done in two phases. In the first phase, 1,351 questionnaires were distributed via email to a sample of participants

recruited from workplaces, university campuses, and the general public. Of these, 740 began the survey and 683 completed the entire questionnaire. In the second phase, a link to the survey was posted on Facebook. This resulted in 45 additional responses and 29 completed surveys. There was no statistically significant difference in the Facebook respondents compared to those who were invited to participate in the first phase. Overall, the response rate was 56.2%. After elimination of 73 incomplete responses (9.3%) and exclusion of those who had never posted an OCR, the online data collection technique resulted in a final sample of 352 respondents for data analysis.

All participation was voluntary and informed consent was obtained before launching the survey. The survey was divided into three sections: (1) sociodemographic characteristics, (2) the Big Five personality factors, and (3) OCR motivations and behavior. The time needed to complete the survey was less than ten minutes. The sample consisted of 35.7% men and 64.3% women, ranging in age from 18 to 71, with an average age of 32.87 years. Approximately half (51.1%) of the participants reported family income of more than $75,000 per year. Most participants were Caucasian (91.2%), followed by African American (4.2%), Hispanic (1.4%), and Asian (1.4%). On average, participants reported posting 3.92 reviews in the previous twelve months.

Measures

Personality was measured using John, Donahue, and Kentle's (1991) Big-Five Personality Inventory. This instrument (44 items) takes only a few minutes to complete, so using it in an online survey enhances the response rate. For each item, respondents rated the applicability of short phrases (e.g., "is talkative" for Extraversion; "is depressed, blue" for Neuroticism; "is original, comes up with new ideas" for Openness; "is helpful and unselfish with others" for Agreeableness; and "does a thorough job" for Conscientiousness) on a 1-5 Likert scale. Each Big-Five trait score was calculated by summing the subject's responses. Reliability analyses on each factor were conducted. For the current sample, the internal Cronbach's alpha for Extraversion, Neuroticism, Openness, Agreeableness, and Conscientiousness were 0.86, 0.82, 0.82, 0.80, and 0.78, respectively.

The questionnaire included five different motivations for posting OCRs on websites and/or social networks. Using a seven-point Likert-type scale, from 1 (*Very Unimportant,*) to 7

(*Very Important,*) respondents who reported that they had posted OCRs were asked "how important are each of the following motives in your decision to post an online product review:" (1) Social interaction, (2) Venting, (3) You consider yourself an expert on the product (i.e., Self-efficacy), (4) Interest in helping other consumers, and (5) Economic incentives.

Gender and age were included as control variables in both the univariate and multivariate analyses. Previous studies suggest that OCR creators are more likely to be male among adult populations (eMarketer, 2009) and young (eMarketer, 2009; Lenhart, Madden, Macgill, & Smith, 2008). In the first section of the survey, respondents were asked to report their Gender (1 = female; 0 = male) and their Age (in years).

All items showed close to normal distribution considering the criteria proposed by George and Mallery (2010) of skewness and kurtosis values within ± 2. Because the study relied on self-reported data, common method variance might threaten the findings (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To assess the magnitude of this potential threat, a Harman's single factor test was conducted. A basic assumption of this technique is that if a substantial amount of common method variance is present, either a single factor will emerge from the factor analysis or one general factor will account for a majority of the covariance between the measures. The first unrotated factor accounted for only 15.15% of the variance. Thus, the results indicate the absence of substantial common method variance.

RESULTS

Motivations for posting OCRs

To answer RQ1, the means of the five OCR motivations were examined and are as follows, starting with the highest: helping others ($M = 5.55$), economic incentives ($M = 4.13$), venting ($M = 4.12$), self-efficacy ($M = 3.96$), and social interaction ($M = 3.75$). Paired t-tests determined that the helping others motive mean was significantly greater than the means of the remaining four motives: economic incentives [$t(352) = -14.71$, $p < .001$], venting [$t(352) = -11.85$, $p < .001$], self-efficacy [$t(352) = -15.56$, $p < .001$], and social interaction [$t(352) = -16.39$, $p < .001$]. As such, to answer RQ1, helping others is the strongest motive for individuals who post OCRs.

Multiple Regression Analysis

To explore the potential contribution of personality traits in explaining OCR motivations, hierarchical multiple regression analyses were performed. Specifically, participants' gender and age were entered in step 1. Next, in step 2 the Big Five personality traits were entered. The general results of the hierarchical multiple regression analyses are summarized in Table 1. No multi-collinearity problem existed since variance inflation factor values were within acceptable limits.

Table 1

Results of Hierarchical Regression Analyses with Gender, Age, and Big Five Personality Traits Predicting OCR Motivations

Variable	Standardized β				
	Social Interaction	Venting	Self-Efficacy	Helping Others	Economic Incentives
Step 1:					
Gender	0.125*	0.004	-0.034	0.156**	0.169**
Age	-0.138**	0.070	-0.075	-0.006	-0.094
	$R^2 = 0.029$	$R^2 = 0.005$	$R^2 = 0.008$	$R^2 = 0.024$	$R^2 = 0.032$
	F = 5.162**	F = 0.875	F = 1.361	F = 4.310*	F = 5.761**
Step 2:					
Gender	0.088	-0.010	-0.043	0.079	0.114*
Age	-0.104	0.108*	-0.065	-0.005	-0.120*
Extraversion	0.182**	0.005	0.047	0.045	0.030
Neuroticism	0.101	0.136*	0.021	0.148*	0.030
Openness	0.087	-0.009	0.106*	0.116*	-0.008
Agreeableness	0.055	-0.216**	0.072	0.253**	0.253**
Conscientiousness	0.106	0.141*	0.069	0.145**	0.016
	$\Delta R^2 = 0.066$	$\Delta R^2 = 0.068$	$\Delta R^2 = 0.032$	$\Delta R^2 = 0.115$	$\Delta R^2 = 0.062$
	$\Delta F = 4.950**$	$\Delta F = 5.081**$	$\Delta F = 2.257*$	$\Delta F = 9.213**$	$\Delta F = 4.685**$

Note: * $p < 0.05$; ** $p < 0.01$; N = 352

As can be seen in Table 1, the results of step 1 revealed that gender was significantly and positively a predictor of social interaction, helping others, and economic incentives. For this sample, age was significantly and negatively related only to social interaction.

Results in step 2 revealed that the Big Five traits explained a significant amount of variance in all the OCR motivations. After controlling for gender and age, the Big Five traits accounted for 6.6% of the variance in social interaction. Inspection of the standardized beta coefficients indicated that the relationship between personality and

social interaction was primarily due to a positive relationship with extraversion. The Big Five also accounted for 6.8% of the variance in venting and the relationship was primarily due to a negative association with agreeableness and a positive association with neuroticism and conscientiousness. Although the amount of variance accounted for in the self-efficacy motivation was quite small (3.2%), openness to new experiences was statistically significant. The amount of variance accounted for in helping others (11.5%) and economic incentives (6.2%) was significant. Agreeableness was the strongest predictor for helping others and economic incentives. In addition, neuroticism and conscientiousness demonstrated a positive association with helping others.

Canonical Correlation Analysis

A canonical correlation analysis (CCA) was conducted using the Big Five personality traits as predictors of the OCR motivation variables to evaluate the multivariate shared relationship between the two variable sets. CCA is advantageous when there are multiple predictor and dependent variables because it limits the possibility of Type I error. As a multivariate technique, it does not require separate analyses for each dependent variable examined, and theoretically aligns well with the reality of psychological research in examining complex human behavior where there are multiple causes and effects (Sherry & Henson, 2005). Some authors (Marasculio & Levin, 1983; Tabachnick & Fidell, 1996) state that CCA is best considered a descriptive technique or a screening procedure rather than a hypothesis-testing procedure. Given that the current study is based on general research questions, the use of CCA is appropriate.

A canonical correlation creates synthetic (also called unobserved or latent) predictor and dependent variables (i.e., variables extrapolated from direct measurement) using linear equations from the underlying variable sets. These two linear equations are created to yield the maximum possible correlation between the two synthetic variables. To aid readers in the interpretation of the results, some explanation of the statistics is warranted. First, the canonical correlation (R_c) is the correlation between the two canonical variate scores, derived from optimally-weighted combinations of the two sets of variables in the analysis. Thus, the squared canonical correlation coefficient (R_c^2) is the percentage of the variance in one variable set accounted for by the second variable set.

Standardized canonical function coefficients are analogous to beta weights in a regression analysis and represent the weight that is applied to the measured variable to derive the canonical variate score. Structure coefficients (r_s) indicate the correlations of the measured variable that is accounted for by the canonical function. Structure coefficients help to define which observed variables can be useful in creating the synthetic variable and therefore may be useful in the model (Sherry & Henson, 2005). These coefficients are analogous to those structure coefficients found in a factor analysis structure matrix. Squared canonical structure coefficients (r_s^2) are the square of the structure coefficients. This statistic is analogous to any other r^2-style effect size and represents the proportion of variance in the measured variable that is accounted for by the canonical function. Finally, the communality (h^2) represents the proportion of variance in each of the individually measured variables that is reproduced by all the canonical functions that are interpreted.

The CCA yielded five functions with squared canonical coefficients (R_c^2) of .239, .075, .054, .030, and .002 for each successive function. Collectively, the full model across all functions was statistically significant using Wilks's λ = .645 criterion, $F(35, 1424.27)$ = 4.472, $p < .001$. Because Wilks's lambda represents the variance unexplained by the model, $1 - \lambda$ yields the full model effect size in an r^2-style metric. Thus, for the set of five canonical functions, the r-squared type effect size was .355, which indicates that the full model explained a substantial portion, about 35.5%, of the variance shared between personality and OCR motivation.

The dimension reduction analysis allows the researcher to test the hierarchal arrangement of functions for statistical significance. As noted, the full model (Functions 1 to 5) was statistically significant. Functions 2 to 5 and 3 to 5 were also statistically significant, $F(24, 1183.84)$ = 2.403, p < .001, and $F(15, 938.99)$ = 2.027, p = .011, respectively. The remaining functions (4 to 5 and 5 to 5) were not significant with F values being less than 1.4 and p values being greater than .19. Given the R_c^2 effects for each function, only the first function was considered noteworthy in the context of this study (23.9% of the shared variance). Functions 2 to 5 and 3 to 5, although statistically significant, only explained 7.5% and 5.4%, respectively, of the remaining variance in the variable sets after the extraction of the prior function. Thus, only the first function was examined.

Table 2 presents the standardized canonical function coefficients and structure coefficients for the first function. The results were presented in a manner adapted from Sherry and Henson (2005). The squared structure coefficients and communality

Table 2
Values of the First Canonical Function for Gender, Age, and Big Five Personality Traits Predicting OCR Motivations

Variable	Standardized canonical function coefficient	r_s	h^2 (%)
Control Variables			
Gender	-0.238	-0.323	0.104
Age	0.340	0.234	0.055
Big Five			
Extraversion	-0.225	**-0.461**	0.212
Neuroticism	-0.063	0.162	0.026
Openness	-0.195	-0.358	0.128
Agreeableness	-0.785	**-0.848**	0.719
Conscientiousness	-0.043	-0.315	0.099
OCR Motivation			
Social Interaction	-0.401	**-0.474**	0.225
Venting	0.658	0.393	0.154
Self-Efficacy	-0.083	-0.291	0.084
Helping	-0.463	**-0.665**	0.443
Economic Incentives	-0.371	**-0.590**	0.351

Note. r_s = structure coefficient; Because only one function was noteworthy in this case, the communality coefficient is equal to the squared structure coefficient ($h^2 = r_s^2$). Structure coefficients greater than $|.45|$ are in **bold**. N = 352

coefficients (h^2) for each variable are also given. Because only one function was noteworthy in this case, the communality coefficient is equal to the squared structure coefficient ($h^2 = r_s^2$). Looking at function 1 coefficients, one sees that the relevant predictor variable was primarily agreeableness, with extraversion and openness making secondary contributions to the synthetic predictor variable. This conclusion was supported by the squared structure coefficients. These personality types also tended to have the larger canonical function coefficients. Furthermore, all of these variables' structure coefficients had the same sign, indicating that they were all positively related. Of particular interest is agreeableness, which had a communality coefficient approximately four times as high as

extraversion and openness, suggesting it is four times as useful in the model as the next most relevant predictor variable.

Regarding the criterion variable set in function 1, helping others was the primary contributor to the synthetic criterion variable, with a secondary contribution by social interaction and economic incentives. Because the structure coefficients for these variables were negative, they were positively related to all of the personality types. This function seems to capture a motive-based segment of OCR creators that Hennig-Thurau et al. (2004) referred to as "self-interested helpers."

DISCUSSION

The advance of the Internet facilitates consumers to share and exchange consumption-related advice through online OCRs. This relatively new form of communication has recently received significant managerial and academic attention. Though existing academic research has significantly advanced our understanding of OCRs, much of it is focused on how OCRs affect consumer purchasing decisions and sales of products and services. Limited attention has been devoted to why consumers are willing to spend their own time to share their purchasing experiences with other people in an online environment. As such, the purpose of this study was to explore the motivations consumers have for generating OCRs and the relationship between the motivations and the Big Five personality traits. The findings of this study provide a clearer picture of who the creators of OCRs are and stress the importance of personality traits as drivers of differences in OCR creation motivations.

Building on previous literature, we identified five key motives for posting OCRs: social interaction, venting, self-efficacy, interest in helping others, and economic incentives. The results for RQ1 indicated that helping other consumers was the most important motive for posting OCRs, followed by economic incentives, venting, self-efficacy, and social interaction. Consumers clearly feel that they are posting online reviews for altruistic reasons. These results are consistent with other research which shows that enjoyment of helping others is an important driver for online content contributors (Cheung & Lee, 2012; Yoo & Gretzel, 2011).

An interest finding of the present study is that helping others strongly outranked all other motives, including economic incentives. Similarly, in a study of the hotel industry, Yen and Tang (2015) found that economic incentives did not attract consumers to post on TripAdvisor. Taken as a whole, these findings indicate the limitations of reward programs, discounts and other economic incentives. While they may improve sales, such programs do not necessarily entice OCRs.

Most importantly, this study investigates the role of individual personality traits as drivers of OCR creation behaviors. The results for RQ2 suggest that personality is an important determinant of motivations for OCR creation. Altruistic motivation was found to be a stronger driver for those individuals who exhibit high levels of agreeableness, conscientiousness, and neuroticism. Venting drives OCR behavior for those scoring high in neuroticism and low in agreeableness and self-efficacy is positively related to openness to new experiences. Extraversion, neuroticism, and conscientiousness increase the likelihood for OCR creators to be motivated by the need for social interaction. In addition, agreeableness generally leads to a greater likelihood to create OCRs based on economic incentives. These results are largely consistent with the findings in face-to-face contexts where research has found that extraversion, conscientiousness, and agreeableness are positively related to individuals' intention to share knowledge (e.g., Cabrera et al., 2006; Matzler et al., 2008; Wang & Yang, 2007; Yoo & Gretzel, 2011).

One of the most noteworthy findings in the current study is a strong positive association between agreeableness and the prosocial motivation. Of the five personality dimensions described by the Big Five Personality Model, agreeableness is the traits most commonly associated with prosocial behavior. Agreeable individuals are altruistic, straight-forward, trusting, soft-hearted, modest, and compliant (Graziano, 1994; McCrae & Costa, 1999). There is empirical evidence of the link between agreeableness and prosocial behaviors such as volunteering (Carlo, Okun, Knight, & de Guzman, 2005; Graziano & Eisenberg, 1997). This finding is incongruent with past work by Picazo-Vela et al. (2010), which found that agreeableness was unrelated to an individual's intention to provide an online review. They suggest that self-reported agreeableness assessments may be biased, thus distorting their research findings. Furthermore, Picazo-Vela et al. (2010) argue "that to view providing an online review as cooperative behavior or as accurate

information sharing may be questionable. Specifically, because almost all online reviews are posted anonymously by buyers as an expression of personal satisfaction or dissatisfaction, individuals with high levels of agreeableness may perceive providing an online review not as a cooperative behavior or information-sharing behavior but as a behavior of expressing personal feelings" (p. 693). This notion, however, is inconsistent with the current study as well as Yoo and Gretzel's (2011) study which showed that reciprocity and altruism were strong motivations for consumer generated media creators with high levels of agreeableness.

A possible explanation for this apparent conflict in the literature is a failure to consider the impact of those who score low on the agreeableness scale (i.e., people who are disagreeable) and their motivation to vent or express anger about a negative purchase experience. If agreeable people post OCRs in order to help others and disagreeable people post OCRs for venting purposes, linear regression analyses may fail to identify a statistically significant association between agreeableness and OCR behavior. Also noteworthy is our finding that openness to new experiences relates positively to self-efficacy. As mentioned earlier, openness is a strong predictor of knowledge sharing as open individuals develop more expertise and are more likely to give useful advice (Cabrera et al., 2006). Although self-efficacy was not found to be an important OCR motivation, Manner and Lane (2017) suggest that individuals who are more open to new experiences tend to post OCRs more frequently. As such, online retailers who wish to develop more OCRs may consider updating their website regularly and develop new and unique online experiences in order to attract this personality type.

The final goal of the current study was to demonstrate how the Big Five profiles mapped onto OCR motivations at the multivariate level. Canonical correlation analysis indicated that a pattern of higher scores on the helping others, economic incentives, and social interaction motives was correlated with a pattern of higher scores on extraversion and agreeableness. This clustering of terms is consistent with a motive-based segmentation of eWOM communication providers that Hennig-Thurau et al. (2004) referred to as "self-interested helpers," as they are strongly driven by intrinsic motivations (altruism and social connections) and extrinsic motivations (economic incentives). These motivations appear to be linked simultaneously with higher reports of extraversion and

agreeableness. It may be that extraversion and agreeableness exert a joint effect on this consumer segment. That is, extraverted individuals may seek warm and positive social interaction, but these desires may facilitate OCR behavior only when combined with the altruistic orientation inherent in agreeableness.

For consumer-opinion website operators, the results of this study provide valuable insight into a variety of different motives for posting OCRs. Identifying such motives enables website operators to design their service in a more customer-oriented way by addressing the specific reasons platform users post reviews (Hennig-Thurau et al., 2004). The results show that helping other consumers is the most crucial factor that encourages consumers to share their experiences with others in the context of online consumer-opinion websites. Because of the importance of altruistic motives, online consumer-opinion website operators should provide a mechanism where members who have provided useful suggestions to other members are identified and informed that they have helped others. Connecting contributors and readers via person-to-person messaging/chat function can enable readers to show their appreciation for the reviews received. In contrast, those who are driven by a combination of intrinsic and extrinsic motivations will likely respond better to messages that explain how they may personally benefit from engaging in OCR behavior.

From a practical perspective, the findings of this study can help marketers and consumer-opinion website operators design and promote their websites and understand who their target markets are and what specific needs they have. Consumer-opinion website operators may consider encouraging their users to provide personality-related information. Yoo and Gretzel (2011) suggest that a quick personality quiz could be integrated into the user registration process. The personality information could then be used to develop strategies for encouraging and increasing OCR activity with particular segments in mind. For example, to encourage highly agreeable people to engage in more OCR behavior, a firm may want to emphasize how doing so aids other consumers, thus appealing to the altruistic motivation. Extraverted individuals will likely respond to messages and services that highlight community coherence. Hennig-Thurau et al. (2004) suggests promoting social interaction by developing discussion forums in conjunction with product-rating websites. Users could start threaded discussions on topics of interest and

build a sense of community. Furthermore, a platform provider may provide room for contributors to post personal profile information. This information would be available for other users to view and may serve to increase familiarity among the users and increase the sense of community.

CONCLUSION

In conclusion, the current study adds to a small body of research that examines the creators of OCRs. In particular, the results of this investigation demonstrate the impact of the Big Five personality traits in predicting OCR motivations. Findings of this study may be used by marketers to elicit more OCRs.

The current study has several strengths and limitations. The first major strength is that it addresses an important topic that is largely ignored in the literature. While OCRs are an influential source of consumer opinion, much of the research focuses on the receiver's perspective rather than the sender. What remains relatively unknown is why consumers are inclined to post OCRs. This study is an attempt to address this gap in the research. Moreover, the results of this study are especially relevant considering Amazon's recent announcement to ban "incentivized" reviews. Under the new guidelines, "creating, modifying, or posting content in exchange for compensation of any kind (including free or discounted products) or on behalf of anyone else" is now prohibited (Amazon, 2016). Consequently, it is important for marketers to know more about the conditions that enhance the likelihood of providing OCRs without an extrinsic inducement. Second, the current study builds on previous studies on the role of personality in providing OCRs (e.g., Picazo-Vela et al., 2010) by utilizing a larger, more age-diverse sample and utilizing a longer version of the Big-Five personality measure in order to obtain higher alphas and good factor analysis fit. Finally, this study addressed the need for an investigation into the complex relationship between personality and OCR motivation by going beyond univariate measures using a multivariate technique.

Several limitations of this study should be noted, providing opportunities for further lines of research. First, participants in this study were younger, more affluent, and less racially diverse than the general population. Consequently, the generalizability of the study is limited and further research on a broader demographic sample would be

reasonable. Second, the present study did not distinguish among the different OCR platforms and product types. The motivations for generating OCRs could vary depending on the type of platform being used. For example, the motivations for posting OCRs on websites like Yelp and TripAdvisor may have a very different personality profile than those who post on social media websites like Facebook or Instagram. Similarly, there may be significant differences according to the type of product being reviewed. These differences may be further complicated depending on whether the reviews are incentivized or not. Thus, we suggest that future research examine various platform, product types, and forms of incentivization, which would ensure the generalizability of the present findings. Third, although five motivations for posting OCRs were identified based on previous research, there may be other factors that drive consumers to generate OCRs. Qualitative research methods, such as in-depth interviews or field experiments, can provide more information about other OCR motivations. Fourth, we used single-item measures of OCR motivations. More extensive measures (i.e., multi-item scales) are likely to have greater predictive validity. Fifth, canonical correlation analysis is best considered a descriptive technique. Future research seeking to replicate and refine these findings might make use of more familiar hypothesis-driven, analytic strategies drawn from Structural Equations Modeling. Finally, a substantial proportion of the variance in OCR motivation remained unexplained. The research of OCR motivation may be enriched by the inclusion of other variables (e.g., socio-demographics). It would also be interesting to investigate the motivations behind consumers' decisions to engage in positive versus negative OCRs, as they are likely to differ. But, these are tasks for the future.

References

Acar, A. S., & Polonsky, M. (2007). Online social networks and insights into marketing communications. *Journal of Internet Commerce*, *6*(4), 55–72. http://doi.org/10.1080/15332860802086227

Alicke, M., Braun, J., Koltz, J., Magee, J., Sederholm, H., & Siegel, R. (1992). Complaining behavior in social interactions. *Personality and Social Psychology Bulletin*, *18*(3), 286–295.

Amazon. (2016). Community Guidelines. Retrieved March 3, 2017, from https://www.amazon.com/gp/help/customer/display.html?nodeId=14279631

Amichai-Hamburger, Y., & Ben-Artzi, E. (2003). Loneliness and Internet use. *Computers in Human Behavior*, *19*(1), 71–80. http://doi.org/10.1016/S0747-5632(02)00014-6

Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2010.03.018

Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*(1), 1–26. http://doi.org/10.1111/j.1744-6570.1991.tb00688.x

Bartley, C. E., & Roesch, S. C. (2011). Coping with daily stress: The role of conscientiousness. *Personality and Individual Differences*. http://doi.org/10.1016/j.paid.2010.08.027

Berkowitz, L. (1970). Experimental investigations of hostility catharsis. *Journal of Consulting and Clinical Psychology*, *35*, 1–7.

Błachnio, A., Przepiorka, A., Senol-Durak, E., Durak, M., & Sherstyuk, L. (2017). The role of personality traits in Facebook and Internet addictions: A study on Polish, Turkish, and Ukrainian samples. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2016.11.037

BrightLocal. (2015). Local Consumer Review Survey. Retrieved April 3, 2016, from https://www.brightlocal.com/learn/local-consumer-review-survey/

Bronner, F., & De Hoog, R. (2011). Vacationers and eWOM: Who posts, and why, where, and what? *Journal of Travel Research*, *50*(1), 15–26. http://doi.org/10.1177/0047287509355324

Butt, S., & Phillips, J. G. (2008). Personality and self-reported mobile phone use. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2007.01.019

Cabrera, Á., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, *17*(2), 245–264. http://doi.org/10.1080/09585190500404614

Carlo, G., Okun, M. A., Knight, G. P., & de Guzman, M. R. T. (2005). The interplay of traits and motives on volunteering: Agreeableness, extraversion and prosocial value motivation. *Personality and Individual Differences*. http://doi.org/10.1016/j.paid.2004.08.012

Cheung, C. M. K., & Lee, M. K. O. (2012). What drives consumers to spread electronic word of mouth in online consumer-opinion platforms. *Decision Support Systems*. http://doi.org/10.1016/j.dss.2012.01.015

Constant, D., Sproull, L., & Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science*, *7*(2), 119–135. Retrieved from http://www.jstor.org/stable/2634976

Correa, T., Hinsley, A. W., & de Zuniga, H. G. (2010). Who interacts on the Web? The intersection of users' personality and social media use. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2009.09.003

Costa, P., & McCrae, R. (1992). Revised NEO personality (NEOPI-R) and NEO five factor inventory (NEO-FFI) professional manual. *Odessa, FL: Psychological Assessment Resources*. Retrieved from http://www.oalib.com/references/7491296

Costa, P. T., McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of the NEO personality inventory. *Personality and Individual Differences*, *12*(9), 887–898. http://doi.org/10.1016/0191-8869(91)90177-D

Daugherty, T., Eastin, M. S., & Bright, L. (2008). Exploring Consumer Motivations for Creating User - Generated Content. http://doi.org/10.1080/15252019.2008.10722139

Devaraj, S., Easley, R. F., & Crant, J. M. (2008). Research note: How does personality matter? Relating the five-factor model to technology acceptance and use. *Information Systems Research*. Retrieved from http://pubsonline.informs.org/doi/abs/10.1287/isre.1070.0153

DeYoung, C. G. (2015). Cybernetic big five theory. *Journal of Research in Personality*, *56*, 33–58. http://doi.org/10.1016/j.jrp.2014.07.004

Digital Air Strike. (2014). Automotive Social Media and Reputation Trend Study. Retrieved April 3, 2016, from http://digitalairstrike.com/2013-automotive-social-media-trends-study/

Dimensional Research. (2013). Customer Service and Business Results: A survey of customer service from mid-size companies. Retrieved from https://d16cvnquvjw7pr.cloudfront.net/resources/whitepapers/Zendesk_WP_Customer_Service_and_Business_Results.pdf

Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *11*(6), 739–41. http://doi.org/10.1089/cpb.2008.0030

eMarketer. (2009). Can User-Generated Content Change Your World? Retrieved April 5, 2016, from http://www.emarketer.com/Article/User-Generated-Content-Change-Your-World/1006888

Filieri, R. (2016). What makes an online consumer review trustworthy? *Annals of Tourism Research*, *58*, 46–64. http://doi.org/10.1016/j.annals.2015.12.019

Filieri, R., & McLeay, F. (2014). E-WOM and accommodation: An analysis of the factors that influence travelers' adoption of information from online reviews. *Journal of Travel Research*, *53*(1), 44–57. http://doi.org/10.1177/0047287513481274

Forest, A. L., & Wood, J. V. (2012). When social networking is not working: individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook. *Psychological Science*, *23*(3), 295–302. http://doi.org/10.1177/0956797611429709

George, D., & Mallery, P. (2010). *SPSS for Windows Step by Step A Simple Guide and Reference Fourth Edition (18.0 update)*. Boston, MA: Allyn & Bacon.

Gil de Zuniga, H., Diehl, T., Huber, B., & Liu, J. (2017). Personality traits and social media use in 20 countries: How personality relates to frequency of social media use, social media news use, and social media use for social interaction. *Cyberpsychology, Behavior and Social Networking*, *20*(9), 540–552. http://doi.org/10.1089/cyber.2017.0295

Gosling, S. D., Augustine, A. A., Vazire, S., Holtzman, N., & Gaddis, S. (2011). Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information. *Cyberpsychology, Behavior and Social Networking*, *14*(9), 483–8. http://doi.org/10.1089/cyber.2010.0087

Graziano, W. (1994). The development of agreeableness as a dimension of personality. In C. Halverson, G. Kohnstamm, & R. Martin (Eds.), *The developing structure of temperment and personality from infancy to childhood* (pp. 339–354). Hillsdale, NJ: Erlbaum.

Graziano, W. G., & Eisenberg, N. (1997). *Handbook of Personality Psychology. Handbook of Personality Psychology.* Elsevier. http://doi.org/10.1016/B978-012134645-4/50031-7

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & 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, 18*(1), 38–52. http://doi.org/10.1002/dir.10073

Henningsgaard, J. M., & Arnau, R. C. (2008). Relationships between religiosity, spirituality, and personality: A multivariate analysis. *Personality and Individual Differences, 45,* 703–708. http://doi.org/10.1016/j.paid.2008.07.004

Hicks, A., Comp, S., Horovitz, J., Hovarter, M., Miki, M., & Bevan, J. L. (2012). Why people use Yelp.com: An exploration of uses and gratifications. *Computers in Human Behavior.* http://doi.org/10.1016/j.chb.2012.06.034

Hsu, C.-L., Yu, L.-C., & Chang, K.-C. (2017). Exploring the effects of online customer reviews, regulatory focus, and product type on purchase intention: Perceived justice as a moderator. *Computers in Human Behavior.* http://doi.org/10.1016/j.chb.2016.12.056

Jeong, E., & Jang, S. S. (2011). Restaurant experiences triggering positive electronic word-of-mouth (eWOM) motivations. *International Journal of Hospitality Management.* http://doi.org/10.1016/j.ijhm.2010.08.005

John, O., Donahue, E., & Kentle, R. (1991). *The big five inventory-Versions 4a and 54. Berkeley, CA: University of California.* Retrieved from http://www.scirp.org/reference/ReferencesPapers.aspx?ReferenceID=678746

Landers, R. N., & Lounsbury, J. W. (2006). An investigation of Big Five and narrow personality traits in relation to Internet usage. *Computers in Human Behavior, 22*(2), 283–293. http://doi.org/10.1016/j.chb.2004.06.001

Lane, W., & Manner, C. (2014). Who tends to forward viral advertising videos? The effect of demographics, social media use, and personality on the intent to forward viral video ads. *International Journal of Social Science Research, 4*(Fall), 18–32. Retrieved from http://mustangjournals.com/IJSSR/v4_IJSSR_2014.pdf

Lee, J., Park, D.-H., & Han, I. (2008). The effect of negative online consumer reviews on product attitude: An information processing view. *Electronic Commerce Research and Applications, 7*(3), 341–352. http://doi.org/10.1016/j.elerap.2007.05.004

Lee, M. K. O., Cheung, C. M. K., Lim, K. H., & Sia, C. L. (2006). Understanding customer knowledge sharing in web‐based discussion boards: An exploratory study. *Internet Research, 16*(3), 289–303. http://doi.org/10.1108/10662240610673709

Lenhart, A., Madden, M., Macgill, A. R., & Smith, A. (2008, January 7). Teens and social media. Pew Internet and American Life Project. Retrieved from http://apo.org.au/resource/teens-and-social-media#block-views-citation-popup-block

Liao, H., & Chuang, A. (2004). A multilevel investigation of factors influencing employee service performance and customer outcomes. *Academy of Management Journal, 47*(1), 41–58. http://doi.org/10.2307/20159559

Litvin, S. W., Goldsmith, R. E., & Pan, B. (2008). Electronic word-of-mouth in hospitality and tourism management. *Tourism Management.* http://doi.org/10.1016/j.tourman.2007.05.011

Liu, D., & Campbell, W. K. (2017). The Big Five personality traits, Big Two metatraits and social media: A meta-analysis. *Journal of Research in Personality*, *70*, 229–240. http://doi.org/10.1016/j.jrp.2017.08.004

Luca, M. (2016). Reviews, reputation, and revenue: The case of Yelp.com. *Harvard Business School*. Retrieved from http://www.hbs.edu/faculty/Publication Files/12-016_a7e4a5a2-03f9-490d-b093-8f951238dba2.pdf

Manner, C., & Lane, W. (2017). Who posts online customer reviews? The role of sociodemographics and personality traits. *The Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *30*, 23-32.

Marasculio, L. A., & Levin, J., (1983). *Multivariate statistics in the social sciences. Multivariate statistics in the social sciences*. Belmont, CA: Brooks/Cole.

Matzler, K., Renzl, B., Müller, J., Herting, S., & Mooradian, T. A. (2008). Personality traits and knowledge sharing. *Journal of Economic Psychology*, *29*(3), 301–313. http://doi.org/10.1016/j.joep.2007.06.004

McCrae, R., & Costa, P. (1999). A five-factor theory of peronality. In L. Pervin & O. Johns (Eds.), *Handbook of personality: theory and research* (2nd ed., pp. 139–153). New York: Guilford Press.

McCrae, R. R., & Costa, P. T. (1997). *Handbook of Personality Psychology. Handbook of Personality Psychology*. Elsevier. http://doi.org/10.1016/B978-012134645-4/50032-9

McElroy, J., Hindrickson, A., Townsend, A., & DeMarie, S. (2007). Dispositional factors in Internet use: Personality versus cognitive style. *MIS Quarterly*, *31*(4), 809–820.

Moore, K., & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2011.09.009

Mudambi, S. M., & Schuff, D. (2010). What makes a helpful online review? A study of customer reviews on Amazom.com 1. *MIS Quarterly*, *34*(1), 185–200. Retrieved from http://ssrn.com/abstract=2175066

Munar, A. M., & Jacobsen, J. K. S. (2014). Motivations for sharing tourism experiences through social media. *Tourism Management*, *43*, 46–54. http://doi.org/10.1016/j.tourman.2014.01.012

Nielsen. (2015). Global Trust in Advertising. Retrieved April 3, 2016, from http://www.nielsen.com/us/en/insights/reports/2015/global-trust-in-advertising-2015.html

Phillips, J. G., Butt, S., & Blaszczynski, A. (2006). Personality and self-reported use of mobile phones for games. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *9*(6), 753–8. http://doi.org/10.1089/cpb.2006.9.753

Picazo-Vela, S., Chou, S. Y., Melcher, A. J., & Pearson, J. M. (2010). Why provide an online review? An extended theory of planned behavior and the role of Big-Five personality traits. *Computers in Human Behavior*, *26*(4), 685–696. http://doi.org/10.1016/j.chb.2010.01.005

Podsakoff, P., MacKenzie, S., Lee, J.-Y., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, *25*(2), 578–586. http://doi.org/10.1016/j.chb.2008.12.024

Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior*, *27*(5), 1658–1664. http://doi.org/10.1016/j.chb.2011.02.004

Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality influences social media use and motivations. *Personality and Individual Differences*. http://doi.org/10.1016/j.paid.2012.10.009

Sherry, A., & Henson, R. K. (2005). Conducting and interpreting canonical correlation analysis in personality research: a user-friendly primer. *Journal of Personality Assessment*, *84*(1), 37–48. http://doi.org/10.1207/s15327752jpa8401_09

Software Advice. (2015). New SoftwareAdvice.com. Retrieved April 3, 2016, from http://www.greenindustrypros.com/article/12036489/new-softwareadvicecom-study-shows-importance-of-online-reviews

Sparks, B. A., & Browning, V. (2011). The impact of online reviews on hotel booking intentions and perception of trust. *Tourism Management*, *32*(6), 1310–1323. http://doi.org/10.1016/j.tourman.2010.12.011

Sparks, B. A., So, K. K. F., & Bradley, G. L. (2016). Responding to negative online reviews: The effects of hotel responses on customer inferences of trust and concern. *Tourism Management*. http://doi.org/10.1016/j.tourman.2015.09.011

Sundaram, D. S., & Webster, C. (1998). Word-of-mouth communications: A motivational analysis. *Advances in Consumer Research*, *25*, 527–531. Retrieved from http://

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: Harper-Collins.

Thompson, B. (2000). Canonical correlation analysis. In L. Grimm & P. Yarnold (Eds.), *Reading and understanding more multivariate statistics* (pp. 285–316). Washington, DC: American Psychological Association.

Tuten, T. L., & Bosnjak, M. (2001). Understanding differences in web usage: The role of need for cognition and the five-factor model of personality. *Social Behavior and Personality: An International Journal*, *29*(4), 391–398. http://doi.org/10.2224/sbp.2001.29.4.391

Vermeulen, I. E., & Seegers, D. (2009). Tried and tested: The impact of online hotel reviews on consumer consideration. *Tourism Management*, *30*(1), 123–127. http://doi.org/10.1016/j.tourman.2008.04.008

Wang, C.-C., & Yang, Y.-J. (2007). Personality and intention to share knowledge: An empirical study of scientists in an R&D laboratory. *Social Behavior and Personality: An International Journal*, *35*(10), 1427–1436. http://doi.org/10.2224/sbp.2007.35.10.1427

Wang, D. (2017). A study of the relationship between narcissism, extraversion, drive for entertainment, and narcissistic behavior on social networking sites. *Computers in Human Behavior*, *66*, 138–148. http://doi.org/10.1016/j.chb.2016.09.036

Wang, J.-L., Jackson, L. A., Zhang, D.-J., & Su, Z.-Q. (2012). The relationships among the Big Five Personality factors, self-esteem, narcissism, and sensation-seeking to

Chinese University students' uses of social networking sites (SNSs). *Computers in Human Behavior*, *28*(6), 2313–2319. http://doi.org/10.1016/j.chb.2012.07.001

Watson, D., & Clark, L. A. (1997). *Handbook of Personality Psychology. Handbook of Personality Psychology.* Elsevier. http://doi.org/10.1016/B978-012134645-4/50030-5

Wilson, K., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior and Social Networking*, *13*(2), 173–7. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20528274

Ye, Q., Law, R., & Gu, B. (2009). The impact of online user reviews on hotel room sales. *International Journal of Hospitality Management*, *28*(1), 180–182. http://doi.org/10.1016/j.ijhm.2008.06.011

Yen, C.-L. (Alan), & Tang, C.-H. (Hugo). (2015). Hotel attribute performance, eWOM motivations, and media choice. *International Journal of Hospitality Management*, *46*, 79–88. http://doi.org/10.1016/j.ijhm.2015.01.003

Yoo, K. H., & Gretzel, U. (2011). Influence of personality on travel-related consumer-generated media creation. *Computers in Human Behavior*. http://doi.org/10.1016/j.chb.2010.05.002

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