

The Impact of e-WOM on Hotels Management Reputation: Exploring TripAdvisor Review Credibility With the ELM Model

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ABSTRACT In recent years, electronic word of mouth (e-WOM) has been widely used by consumers on different online platforms. The numerous studies have emphasized the growing importance of e-WOM for the consumer decision-making process, particularly in the tourist sector. There are various factors that will influence the adoption of e-WOM by the users but among all these factors, credibility is of paramount importance. Changes in the platform, new consumer trends, and possible fake information require a continuous update and analysis of the factors that can influence the e-WOM perceived credibility and e-WOM adoption on TripAdvisor and other social tourism platforms. In the present study, we analyzed the following five factors that can impact e-WOM perceived credibility and e-WOM adoption: 1) volume of e-WOM; 2) source credibility; 3) rate extremism; 4) consumer involvement, and; 5) perceived e-WOM credibility. For the analysis, the Elaboration Likelihood Model (ELM) and PLS-SEM were used. The sample consisted of a total of 221 participants who responded to the questionnaire. The results revealed that, with the exception rate extremism, the four remaining factors have a significant impact on e-WOM perceived credibility and adoption. Therefore, these factors are important drivers of the e-WOM perceived credibility resulting in the e-WOM adoption. The results of the present study provide meaningful practical implications for hotel or social tourism platforms managers in terms of possible strategies to improve their online reputation.

INDEX TERMS e-WOM, ELM, reviews, reputation management, tourism, marketing, credibility.

I. INTRODUCTION

Due to the rapidly evolving technologies and the wide spread of the Internet, traditional word-of-mouth has evolved into a new form of communication: electronic word of-mouth (e-WOM). e-WOM was defined by Goldsmith and Horowitz [1] as a communication on the Internet, which can be diffused by many Internet applications such as online platforms, blogs, review sites, and Social Networking Sites (SNS). Examples of e-WOM media are commerce websites such as Amazon, SNS like Facebook, Instagram or Twitter, as well as platforms such as TripAdvisor or Expedia. Likewise, Litvin et al., [2] proposed to define e-WOM as all informal communications directed at consumers through Internet-based technology related to the usage or characteristics of particular good and services, or their sellers.

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As a result of wide range of communication channels facilitated by Web 2.0 [3], [4], traditional face-to-face word-of-mouth has changed into e-WOM. Nowadays, consumers face richer information environments than before [5] and use online social platforms to communicate their opinions about products, services, and to exchange their purchase experiences prior to making a purchasing decision [6], [7].

According to Litvin, Goldsmith and Pan [2], these new forms of communication platforms provide a link between suppliers and consumers, making it possible to share information and opinions between businesses and consumers, as well as among consumers. Therefore, e-WOM should be considered as a form of communication that provides a mechanism to shift power from companies to consumers [8]. These comments and reviews are of a paramount importance for the success of products and services in several industries [9] and particularly in the tourism sector [10], [11] where e-WOM serves as one of the principal sources of information to make a purchase.

Of all the platforms that allow e-WOM to be made and reviewed by other users, TripAdvisor, the world's most popular community about travel, has been most extensively studied [2], [12], [13]. TripAdvisor has over 5 million registered users who visit the platform on average 30 million times per month [14].

Of all the factors that influence user behavior when adopting the opinions of other users on this platform, credibility is of a great importance [12], [15]–[17]. Credibility also influences the reputation of a tourism company, which is why it is important for the adoption of e-WOM and for the management of a company's online reputation.

Therefore, in the present study, we aim to determine the importance of credibility of e-WOM for its adoption and its impact on the adoption of e-WOM on TripAdvisor. The management of the credibility of e-WOM will influence the management of online reputation of tourism companies [18]. The novelty of our work lies in our focus on the credibility of e-WOM on the most important online platform in the tourism sector, TripAdvisor. In addition, while the method we have used to measure the credibility and adoption of e-WOM—the ELM model—has been previously used in the tourism sector, it was not yet employed to identify the credibility and adoption of e-WOM. Therefore, the present study bridges the gap in the literature.

The remainder of this paper is structured as follows. On a brief discussion of the impact of e-WOM on tourism destination choice (Section I-A) and a review of the literature, followed by the formulation of the hypotheses to be tested in the present study (Section II), we present the methodology (Section III) and the results of testing the structural model (Section IV). The paper concludes with a discussion of implications of our findings (Section V) and conclusions (Section VI).

A. THE IMPACT OF E-WOM ON TOURISM DESTINATION CHOICE

Similarly to online product reviews, consumer-generated online reviews inform and influence future travelers who consider this information when making their purchase decisions. As argued by Litvin et al. [2], there are several reasons why e-WOM is particularly important in the hospitality and tourism industry. First, hospitality and tourism services are high-risk purchases with a high level of customer involvement. Second, seasonal and perishable services lead to marketing stress on providers. Third, as the industry is still in the early stage of developing strategies for managing online interpersonal influence, the competition in this sector is intense and managing online interpersonal influence effectively may provide important competitive advantages.

Online reviews play an important role in purchasing travel services [19]. According to Google statistics, over 80% customers search for information on their future holidays online. Users visit on average 26 websites and spend over 2 hours searching for the right place and the right deal [20]. According to Anderson [21], the percentage of consumers

who consult online travel reviews before purchase is rapidly growing, and over \$10 billion in online tourist purchases are influenced by online reviews.

While online review websites are continuously growing in both impact and size [22], the effect of e-WOM and online reviews on consumer behavior has been extensively studied vis-à-vis information searching, holiday planning, and purchase decisions.

In the hospitality industry, due to the characteristics of services such as heterogeneity, intangibility, and inseparability between service production and consumption, consumers struggle to evaluate a service prior to consumption [23]. These characteristics of hospitality services, as well as the fact that their quality is often unknown before consumption, increase the perceived risk in the purchase decision process.

In this context, e-WOM has become an important source of information for consumers. However, not all information that users get on social platforms is processed and, therefore, not all information can influence their behavior. Accordingly, in the present study, we focus on credibility as a factor modification of user behavior. This information is relevant for hotel managers who want to manage online reputation of their companies. It is also useful for the companies that want to improve the online shopping behavior of their users, as e-WOM credibility predicts e-WOM adoption.

II. LITERATURE REVIEW

Numerous studies have been conducted on the impact of e-WOM in the hospitality industry [17], [24]. For instance, Xie et al. [25] reported that negative e-WOM is more powerful than positive e-WOM in influencing consumers' booking intentions. Furthermore, Ye et al. [26] showed that positive online reviews can significantly increase the number of bookings in a hotel, and that the variance in online hotel reviews can have a negative impact on the amount of online sales. Finally, Ladhari and Michaud [13] demonstrated that, although online reviews (both positive and negative) increase consumers' awareness of a hotel's existence, negative reviews tend to make consumer attitudes to that hotel more negative (see also Table 1 for other previous studies).

III. RESEARCH METHODOLOGY AND HYPOTHESES DEVELOPMENT

In the last years, the influence of user recommendations on user behavior on online platforms has been investigated using different models, such as the Model Technology Acceptance Model (TAM) proposed by Davis [30] or the ELM model proposed by Petty and Cacioppo [31]. While the e-WOM adoption process in online environments can be studied using the TAM model, taking into account the aim of the present study, it is of a particular interest to use a model that allows a research to additionally consider the way in which information is being processed. The Elaboration likelihood model (ELM) developed by Petty and Cacioppo [31] is based on the theory of human information processing and makes it possible to investigate how information processing can lead

TABLE 1. Previous studies.

Authors	Description
Wang [17]	A study of the influence of e-WOM on decision making in online travel booking
Chen and Xu [27]	A study of the impact of e-WOM on decision making in online holidays booking among TripAdvisor users
Ladhari and Michaud [13]	An analysis of the effects of e-WOM on hotel booking intentions
Mauri and Minazzi [28]	Development of the ELM model to measure the influence of e-WOM on hotel potential customers' purchasing intentions
Jalilvand and Samiei [29]	A study of the impact of e-WOM on tourism destination choice
Vermeulen and Seegers [16]	A study of the role of e-WOM perceived credibility in hotels and the impact of e-WOM on consumer consideration
Tham et al. [24]	A study of the influence of e-WOM on destination image and choice

to purchase decision outcomes [32]–[34]. Therefore, in the present study, the ELM model [31], [35], [36] will be used.

A. ELABORATION LIKELIHOOD MODEL (ELM) AND e-WOM

ELM is a model that can be adjusted to different research purposes. In previous research, the ELM model has been widely used in the tourism sector to study e-WOM [37]. For instance, Park and Kim [38] used the ELM model to measure the influence of the type of reviews and the number of reviews that have an impact on purchase intention. Furthermore, Gupta and Harris [39] analyzed customer consideration and choice, while Lee et al. [40] focused on the quality and quantity of comments necessary to predict purchase intent.

According to Yan et al. [41], ELM is a model that identifies two routes of information processing. On the one hand, there is the central route that allows the user to distinguish the key information from the less relevant information. This route is involved when an individual processes information of a great relevance. Argument quality and decisive information are considered significant central cues here. By contrast, there is a peripheral route that is engaged when the information to be processed is of a low interest to the individual, or when it is difficult for that individual to process the information. The commitment to the information received by the individual is then low.

Therefore, it is important to know the degree of relevance of the content of a message to an individual, because the greater the importance, the greater the probability that the individual will process the information, and that this information will influence this/her behavior. Peripheral cues are source credibility, information consistency, information volume and information rating.

In the present study, we focus on one of the variables that make up the ELM model—namely, the credibility of the content published on TripAdvisor. This credibility can influence behavior of users who may either decide to process the information and modify their behavior accordingly or, alternatively, decide not to process such information and, therefore, not modify their behavior on TripAdvisor.

Accordingly, the variables from the ELM model used in present study are as follows. e-WOM volume is responsible for measuring the total of the recommendations in the sample used. Source credibility is one of the elements that precede the credibility of an online review and is a key element when a user is measuring the general credibility of the information contained in online reviews. Recommendation rating measures the average quality of a company based on user ratings on the platform and is important for the management of online reputation. Consumer involvement is a variable that determines the information processed by the consumer because, if there is no involvement, it will not be possible to determine if there is credibility. Perceived e-WOM credibility, refers to the credibility of a message published online and is the central element of our research. Finally, we also consider e-WOM adoption through which users will be adopting the e-WOM and the content it contains for their decision making on TripAdvisor.

B. HYPOTHESES DEVELOPMENT

The volume of the recommendations refers to the amount of comments that a company or product has received on a social platform such as TripAdvisor [42]. According to Petty and Cacioppo [31], consumers perceive a larger quantity of online reviews as more informative.

Following Cheung and Thadani [43], the number of recommendations is one of the most studied stimulus cues in e-WOM communication. The volume of e-WOM has been demonstrated to increase the awareness about the product, as well as to increase product popularity and sales [44]–[46], even in the case of negative reviews [16], [47]. Furthermore, Fan et al. [48] found that, when a product has high volume of e-WOM, this is generally taken to mean that many people purchased the product so that, for them, the volume of e-WOM has a positive influence on perceived credibility of a product among consumers.

Based on the above, we propose the following hypothesis:

H1: e-WOM volume would positively affect perceived e-WOM credibility.

Credible information is important for building consumer trust. When consumers trust the source, they will accept the presented information [49]. Consumers search for evidence to judge the credibility of the source of the message both offline [50]–[52] and online [53]. According to Wathen and Burkell [54], source credibility is a key factor in assisting a consumer to judge online information. The credibility of the source can be conferred by the administrator of the platform or earned by an individual due to the relevance of its publications [8] presenting the source as trustworthy [55]

and influencing the credibility of e-WOM [49]. Based on the above, we propose the following hypothesis:

H2: Source credibility would positively affect perceived e-WOM credibility.

Rate extremism refers to the existence of extremely positive e-WOM comments about a product or a company on online platforms [56]. When a significant number of customers positively rate a product or a service, these comments affect decisions of other users who are evaluating the possibility of acquiring that product or service [57].

One of the most established ways of checking e-WOM value is looking at its rating by others [53]. Online customer rating is increasingly considered by potential consumers as a signal of quality [58]. Therefore, a larger number of positive ratings indicates a stronger objectivity and a more widespread familiarity with the product [59], both of which increase its perceived credibility [58].

Therefore, the following hypothesis can be formulated:

H3: Rate extremism would positively affect perceived e-WOM credibility.

According to the ELM [31], involvement in the processing of information through the central route or the peripheral route refers to personal relevance or importance of a product or service [43]. Even though in the original ELM model is considered to have a moderating effect [35], [36], [60], [61]. Based on the work developed by Schlesinger and Güngerich (2011) [60] in which they relate product involvement with the credibility of these product for sponsorship effectiveness.

We propose that those consumers that present high involvement and read carefully the content of the review are more likely to experience eWOM Credibility. By contrast, when the involvement of consumers is low, they use peripheral cues or information shortcuts, rather than the entire content, to evaluate a message so that, those who experience low consumer involvement will not read the eWOM and can ever experience credibility of the content they have not read [31], [40], [46]. When an individual has high involvement, s/he will process the content of the information through the central route, which will determine the credibility of e-WOM [36], [63].

In this sense, based on the above, we propose the following hypothesis:

H4: Consumer involvement would positively affect perceived e-WOM credibility.

Credibility was defined as an individual assessment of whether or not the presented information is reliable and trustworthy as judged by that person's own expertise and knowledge [64]. Information adoption, according to Cheung and Thadani [43], is the process of consumers' purposeful engagement in information use. McKnight et al. [65] argued that consumers will adopt the e-WOM to help them make purchase decisions only when they believe that the received information is credible. Furthermore, Sussman and Siegel [33] indicated that a consumer who perceives a review to be credible has more confidence in adopting e-WOM and using it to make purchase decisions. A consumer who

believes online information to be credible has no reason to forego adoption [49], [66]. Fan et al. [48] and Chih et al. [55] and Cheung et al. [53] proved that online information credibility positively impacts the adoption.

Therefore, the following hypothesis can be formulated:

H5: Perceived e-WOM credibility would positively affect e-WOM adoption.

Based on the hypotheses discussed above, we propose the following research model (see Figure 1).

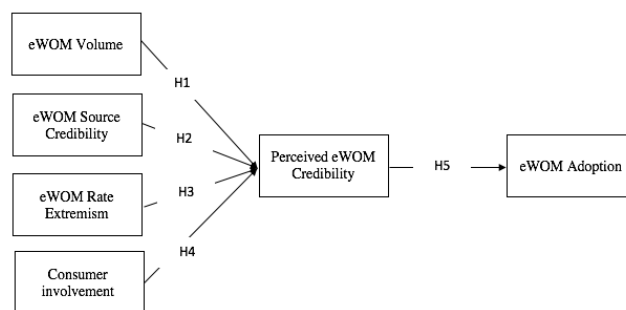


FIGURE 1. Proposed research model.

IV. METHODOLOGY AND DATA ANALYSIS

The present study aimed to investigate the main factors that positively customer purchase decisions in the tourism sector. In order to obtain a larger and a more representative sample, online surveys were conducted. The total sample consisted of 221 questionnaires completed during the month of May 2018. These questionnaires were collected through a self-administered online questionnaire, with the dissemination of the questionnaire by email to a convenience sample.

For item rating, a 5-point scale was used in the survey. This approach is the most recommended for online surveys, as it offers ease of response and helps collect information about the intensity of the feelings of the people surveyed [67]. The scale ranged from 1 = “strongly disagree” to 5 = “strongly agree”.

As can be seen in Table 2, the sample was composed mainly of women (65.2%), compared to (34.8%) of men. The predominant age profile was 18 to 24 years old (68.7%), while the proportion of the respondents aged between 45 and 54 years was only 1.4%. Regarding the level of education, participants with a bachelor's degree were most common (52.9%), while there were very few participants with a PhD degree (1%). Finally, in terms of online shopping experience, it was from 1 to 3 years (37.6%) in most participants, while 9% of the participants had online shopping experience of over 7 years.

A. DATA ANALYSIS

For data analysis and hypotheses verification, the model of structural equations originating from the variances (SEM) was used. This model makes it possible to carry out statistical analysis of the tested relationships through the prediction of

TABLE 2. Sample characteristics (n = 221).

Classification variable	Variable	Frequency	Percentage
Gender	Female	144	65.2%
	Male	77	34.8%
Age	<18	3	1.4%
	18-24	152	68.7%
	25-34	43	19.5%
	35-44	16	7.2%
	45-54	3	1.4%
	>55	4	1.8%
Education level	High School and below	84	38%
	Bachelor's Degree	117	52.9%
	Masters	18	8.1%
	Ph. D.	2	1%
Online shopping experience (years)	Less than 1	49	22.2%
	1-3	83	37.6%
	4-5	55	24.9%
	6-7	14	6.3%
	>7	20	9%

the dependent variables and allows for the quantification of direct and indirect effects of some variables on other variables [68], [69].

Among the different SEM techniques, we chose the partial least squares (PLS), which is one of the most complete SEM techniques for the analysis of factor, structural, and composite models that allows for the measurement of latent variables[70], [71].

A survey by Reinartz et al. [72] who reviewed over 30 studies on business management and marketing, it was recommended to use PLS when the sample is not large [69], [73].

In the present study, we decided to use PLS-SEM instead of AMOS because the number of observations was not particularly high (n = 221), as well as because the

TABLE 3. Measurement items.

Constructs	Items	Correlation loading	CA	CR	AVE
e-WOM volume	(Vo1) The number of hotel reviews on TripAdvisor is large.	0.76	0.70	0.84	0.73
	(Vo2) The quantity of hotel information given by consumers on TripAdvisor is large.	0.94			
e-WOM source credibility	(SC1) The writer of hotel reviews on TripAdvisor is an expert of the product.	0.80	0.79	0.88	0.71
	(SC2) The writer of hotel reviews on TripAdvisor is knowledgeable about the product.	0.85			
	(SC3) The writer of hotel reviews on TripAdvisor is trustworthy.	0.88			
e-WOM rate extremism	(RE1) The overall hotel rate given by other consumers is high.	1.00	1.00	1.00	1.00
Consumer involvement	(CI1) The product is of a concern to me.	0.79	0.78	0.87	0.70
	(CI2) The product is important for me.	0.88			
	(CI3) The product is relevant to me.	0.82			
Perceived e-WOM credibility	(PeC1) TripAdvisor online hotel review is factual.	0.87	0.82	0.88	0.74
	(PeC2) TripAdvisor online hotel review is accurate.	0.87			
	(PeC3) TripAdvisor online hotel review is credible.	0.83			
e-WOM adoption	(Ad1) I will follow the suggestions of TripAdvisor's hotel information given by consumers.	0.89	0.74	0.89	0.80
	(Ad2) TripAdvisor's hotel reviews motivate me to make a purchase decision.	0.90			

Note: CA= Alpha de Cronbach; CR= Composite Reliability; AVE= Average Variance Extracted

object was relatively new, and the theory for an online environment is not sufficiently consolidated yet following Reyes-Menendez et al. [20] and Palos-Sanchez et al. [69]. In addition, PLS-SEM is also strongly recommended when an exploratory approach is used [74]. Data analyses were performed using the SmartPLS 3 software [75].

The process of data analyses was split into two phases [70], [76]. In the first phase, we evaluated the measuring instruments (measurement scales), and, in the second phase, in order to establish whether or not the proposed relationships were consistent, the structural model was evaluated.

B. MEASUREMENT MODEL

As specified above, we first conducted analysis of the individual reliability of the items of the measurement scale. This was done by computing the loads (λ) and Cronbach's alpha. The load analysis was carried out using the criteria proposed by Carmines and Zeller [77], which involved establishing a minimum acceptance threshold to be part of the construct of 0.707, eliminating thus all items with loadings below 0.707 [78]. The minimum threshold (0.707) guarantees that all items represent at least 50% of the variance of the underlying construct [69]. Similarly, Cronbach's alpha was analyzed by the criterion initially proposed Nunnally and Bernstein [79] who set the minimum threshold of the values obtained in 0.70.

Once the different items that do not meet the minimum values for individual reliability were deleted, the reliability analysis as performed using the criterion proposed by Bagozzi and Fornell [80]. According to this criterion, the minimum threshold should be 0.61. Similarly to the analysis of the convergent validity that evaluates average variance extracted (AVE) by means of the criterion proposed Fornell and Larcker [81], this criterion fixes the minimum value of the constructs to 0.5. As can be seen in Table 3, the analyzed constructs

TABLE 4. Measurement model: Discriminant validity.

Constructs	Fornell-Larcker criterion						Heterotrait-monotrait ratio (HTMT)				
	CI	P/e-WOM/C	SC	e-WOM/A	e-WOM/V	e-WOM/RE	CI	P/e-WOM/C	SC	e-WOM/A	e-WOM/V
CI	0.834										
P/e-WOM/C	0.460	0.858					0.568				
SC	0.294	0.613	0.843				0.345	0.739			
e-WOM /A	0.424	0.659	0.440	0.893			0.550	0.847	0.549		
e-WOM /V	0.403	0.443	0.352	0.517	0.856		0.548	0.555	0.404	0.705	
e-WOM/RE	0.216	0.297	0.201	0.273	0.377	1.000	0.243	0.328	0.216	0.316	0.476

Note: CI=Consumer Involvement, P/e-WOM/C= Perceived e-WOM credibility, SC=source credibility, e-WOM/A=e-WOM adoption, e-WOM/V= e-WOM volume, e-WOM/RE= e-WOM rate extremism

were reliable, and they all explained more than 50% of the variance of their own items [70], suggesting that all constructs exceeded the minimum values of composite reliability and convergent validity.

Finally, in order to validate the measurement instruments, the discriminant validity analysis was carried out. With this analysis, we verified that each construct measured different concepts [82]. Table 4 shows the correlations between the studied constructs. As can be seen in Table 4, in line with Fornell and Larcker’s [81] criterion and this fulfilling all the conditions in all the constructs of the model, the square roots of the AVE of each construct were greater with their items than with the items of other constructs of the model. In addition, we also conducted the most current Heterotrait-monotrait analysis (HTMT; see Table 4). The results of this analysis confirmed that all constructs reached discriminant validity, and that none of the confidence intervals contained the value one, suggesting that all variables were empirically different [83].

V. STRUCTURAL MODEL ANALYSIS

In the second phase of data analysis, we evaluated the structural model. Said differently, we analyzed the predictive capacities of the model and the relationships proposed between the studied constructs (see Table 5 and Figure 2 for the results). In order to measure the predictive relevance of the

model, the analysis is carried out based on the evaluation of collinearity by means of the algebraic sign, and by the magnitude and significance of the analyzed coefficients: path coefficients (β), the R^2 values (variance explained), size of the effect f^2 , and the Q_{test}^2 (validated cross-redundancy) [84].

First, we ensured there was no multicollinearity between antecedent constructs of each of the endogenous constructs [85]. All VIF indices of the model constructs were below 5, showing that there was no multicollinearity problem in the data [70].

As for the predictive power analysis that indicates the amount of variance of a construct explained by another predictive construct (coefficient of determination R^2), based on previous studies [73], [74] that set the cutoff points at 0.75 as relevant, 0.50 as moderate, and 0.25 as weak, we ensured that the values of our constructs were within that range (perceived e-WOM credibility, $R^2 = 0.493$; e-WOM adoption, $R^2 = 0.434$).

Regarding the redundancy indexes with cross validation (Q^2), which serves to examine the predictive relevance of a theoretical / structural model [86], in our results, the Q^2 indexes were greater than zero, so it was concluded that the proposed model had satisfactory predictive relevance.

Finally, all relationships predicted by our hypotheses were supported by the results (except for the relationship e-WOM Rate extremism \rightarrow Perceived e-WOM credibility).

TABLE 5. Results of hypotheses testing.

	Path coeff (β)	Statistics t (β /STDEV)	p	f^2	Supported
e-WOM Volume \rightarrow Perceived e-WOM Credibility	0.142	2.476	0.067	0.028	Yes**
e-WOM Source credibility \rightarrow Perceived e-WOM Credibility	0.473	7.587	0.000	0.372	Yes***
e-WOM Rate extremism \rightarrow Perceived e-WOM Credibility	0.096	1.605	0.0542	0.015	n.s.
Consumer involvement \rightarrow Perceived e-WOM Credibility	0.243	4.548	0.000	0.094	Yes***
Perceived e-WOM Credibility \rightarrow e-WOM Adoption	0.659	15.478	0.000	0.767	Yes***

R^2 : Perceived e-WOM Credibility = 0.493; e-WOM Adoption = 0.434
 R^2 adjusted: Perceived e-WOM Credibility = 0.484; e-WOM Adoption = 0.432
 Q^2 : Perceived e-WOM Credibility = 0.335; e-WOM Volume = 0.331

Note: For n=5000 subsamples, for t-distribution (4999) Students in single queue * $p < 0.05$ ($t(0.05;4999) = 1.645$); ** $p < 0.01$ ($t(0.01;4999) = 2,327$); *** $p < 0.001$ ($t(0.001;499) = 3,092$), n.s.: Not significant.

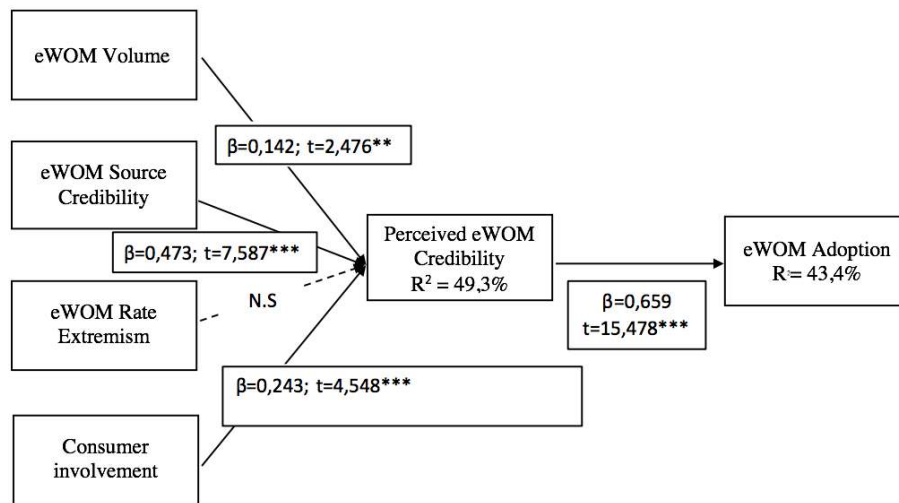


FIGURE 2. Final research model.

Therefore, H1, H2, H4 and H5 were accepted, while hypothesis H3 had to be rejected (see Figure 2).

VI. IMPLICATIONS

TripAdvisor is the most important e-WOM platform in the tourism sector. Credibility is a key element in e-WOM, particularly with regard to the amount of false news and reviews circulating on social platforms. While consumers continue to rely on reviews as a credible means of information to make their purchase decisions in the tourism sector, false news and reviews have made consumers increasingly skeptical about the services offered in the tourism sector.

Along with its impact on the adoption of the content found in the reviews, credibility of online reviews also influences the reputation of companies that have a profile on these platforms. That is why it is necessary to strategically manage the content on platforms such as TripAdvisor.

The results of the present study identify which of the factors initially proposed by Petty and Cacioppo [31] indeed have an impact on consumers and thus should be included in the final model (see Figure 2). These factors should be taken into account by any tourist company (like TripAdvisor) for an effective management of the company's online reputation.

While previous studies present a moderating effect between the variable Consumer Involvement to the variable Perceived eWOM Credibility [31], the analysis indicates that the moderator effect has no significance and its f^2 is non-existent, supporting the purposed research model where a direct and non-moderating relationship is shown.

As demonstrated in previous studies, there are two routes of information processing of products or services. Depending on the importance of a product or service for an individual, different factors will influence the customer's decision. Therefore, companies or professionals who want to enhance the credibility of their products or services on platforms such

as TripAdvisor should carefully consider these factors and be aware of how users process corresponding information.

Our results demonstrate that credibility of online platforms is a key factor that determines the adoption of online commentaries on platforms such as TripAdvisor. In the present study, we used a methodology previously used in tourism and in research on e-WOM, but not yet to specifically measure the credibility and adoption of reviews on social tourism platforms such as TripAdvisor. Therefore, we demonstrated that, in order to study e-WOM in tourism, methodologies other than the widely used TAM model can be used. In our case, we demonstrated that the ELM model can be effectively used to measure the adoption of e-WOM on TripAdvisor and that, due to its particularities, such as taking into account the route of information processing, the ELM model can serve as a particularly suitable model for identifying the credibility and adopting e-WOM on TripAdvisor.

VII. CONCLUSIONS

In recent years, e-WOM has become increasingly important in the tourism sector. While not all information in this sector is always perceived as credible by users, e-WOM remains to be an important source of information for decision making in the tourism sector. As demonstrated by our results, e-WOM determines consumer behavior on TripAdvisor.

Among five factors that we focused on in the present study, credibility proved to be the most important, since it serves as a predictor of the adoption of e-WOM. Our findings also suggest that the ELM model makes it possible to predict the adoption of e-WOM. This model is particularly suitable for measuring individual information processing. Since credibility requires processing of information included in reviews published by other users, it is necessary for consumers to be involved during the process.

The first three hypotheses addressed in the present study were supported by our results. Therefore, it can be concluded that e-WOM positively affects perceived e-WOM credibility, source credibility positively affects perceived e-WOM credibility, and consumer involvement positively affects e-WOM credibility. One of the novelties of our work is this direct relationship between Consumer Involvement and Perceived eWOM Creibility.

However, our hypothesis that rate extremism would positively affect perceived e-WOM credibility had to be rejected. This outcome can be attributed to fact that a larger number of extremely positive ratings may appear suspicious to consumers [58], [59]. In fact, extremely positive rates can be interpreted by users as not credible. Users are increasingly accustomed to receiving information present in e-WOM and, with time, they acquire the ability to discern when a comment is credible and when it is not. Considering that it is highly unlikely for all consumers to be satisfied with a product or tourist service, extremely positive ratings might be interpreted by users as incredible information. Accordingly, it is recommended that companies ensure that the feedback to them on platforms such as TripAdvisor contains only real comments and also several less positive comments, as the latter type of comments can generate greater consumer trust and credibility of an offered product or service.

Our expectation that credibility can predict the adoption of e-WOM was also confirmed by the results of the analysis. Therefore, it can be concluded that a trustworthy comment will be taken into account by a consumer, while a comment that does not generate confidence will be discarded.

The present study has several limitations, such as a rather limited data sample. In terms of directions of further research, it would be desirable to use the ELM model to investigate the credibility of e-WOM in sectors other than the tourism sector. Another interesting possibility is to apply this model to study variables other than credibility.

REFERENCES

- [1] R. E. Goldsmith and D. Horowitz, "Measuring motivations for online opinion seeking," *J. Interact. Advertising*, vol. 6, no. 2, pp. 2–14, 2006.
- [2] S. W. Litvin, R. E. Goldsmith, and B. Pan, "Electronic word-of-mouth in hospitality and tourism management," *Tourism Manage.*, vol. 29, no. 3, pp. 458–468, 2008.
- [3] Y. Y. Y. Chan and E. W. T. Ngai, "Conceptualising electronic word of mouth activity: An input-process-output perspective," *Marketing Intell. Planning*, vol. 29, no. 5, pp. 488–516, 2011.
- [4] J. R. Saura, P. Palos-Sanchez, and A. Reyes-Menendez, "Marketing a través de aplicaciones móviles de turismo (m-tourism). Un estudio exploratorio," *Int. J. World Tourism*, vol. 4, no. 8, pp. 45–56, 2017.
- [5] N. H. Lurie, "Decision making in information-rich environments: The role of information structure," *J. Consum. Res.*, vol. 30, pp. 473–486, Mar. 2004.
- [6] X. Cheng and M. Zhou, "Study on effect of eWOM: A literature review and suggestions for future research," in *Proc. Int. Conf. Manage. Service Sci.*, 2010, pp. 1–4.
- [7] T. Daugherty and E. Hoffman, "eWOM and the importance of capturing consumer attention within social media," *J. Marketing Commun.*, vol. 20, nos. 1–2, pp. 82–102, 2014.
- [8] T. Hennig-Thurau, K. P. Gwinner, G. Walsh, and D. D. Gremler, "Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet?" *J. Interact. Marketing*, vol. 18, no. 1, pp. 38–52, 2004.
- [9] T. Smith, J. R. Coyle, E. Lightfoot, and A. Scott, "Reconsidering models of influence: The relationship between consumer social networks and word-of-mouth effectiveness," *J. Advertising Res.*, vol. 47, no. 4, pp. 387–397, Dec. 2007.
- [10] Y. Yoon and M. Uysal, "An examination of the effects of motivation and satisfaction on destination loyalty: A structural model," *Tourism Manage.*, vol. 26, no. 1, pp. 45–56, 2005.
- [11] A. Papathanassis and F. Knolle, "Exploring the adoption and processing of online holiday reviews: A grounded theory approach," *Tourism Manage.*, vol. 32, no. 2, pp. 215–224, 2008.
- [12] S. Hussain, W. Ahmed, R. M. S. Jafar, A. Rabnawaz, and Y. Jianzhou, "eWOM source credibility, perceived risk and food product customer's information adoption," *Comput. Hum. Behav.*, vol. 66, pp. 96–102, Jan. 2017.
- [13] R. Ladhari and M. Michaud, "eWOM effects on hotel booking intentions, attitudes, trust, and Website perceptions," *Int. J. Hospitality Manage.*, vol. 46, pp. 36–45, Apr. 2015.
- [14] A. Y. K. Chua and S. Banerjee, "Helpfulness of user-generated reviews as a function of review sentiment, product type and information quality," *Comput. Hum. Behav.*, vol. 54, pp. 547–554, Jan. 2016.
- [15] J. Nielsen. (Jul. 7. 2009). *Global Advertising Consumers Trust Real Friends and Virtual Strangers the Most*. Accessed: Feb. 5, 2019. [Online]. Available: <https://www.nielsen.com/us/en/insights/news/2009/global-advertising-consumers-trust-real-friends-and-virtual-strangers-the-most.html>
- [16] I. E. Vermeulen and D. Seegers, "Tried and tested: The impact of online hotel reviews on consumer consideration," *Tourism Manage.*, vol. 30, no. 1, pp. 123–127, 2009.
- [17] P. Wang, "Understanding the influence of electronic word-of-mouth on outbound tourists' visit intention," in *Digital Services and Information Intelligence*, H. Li, M. Mäntymäki, and X. Zhang, Eds. Berlin, Germany: Springer, 2014.
- [18] P. Palos-Sanchez, J. R. Saura, A. Reyes-Menendez, and I. V. Esquivel, "Users acceptance of location-based marketing apps in tourism sector: An exploratory analysis," *J. Spatial Organizational Dyn.*, vol. 6, no. 3, pp. 258–270, 2018.
- [19] J. Nielsen. (Jun. 23. 2010). *Global Trends in Online Shopping—A Nielsen Report*. Accessed: Feb. 10, 2019. [Online]. Available: <https://www.nielsen.com/us/en/insights/reports/2010/Global-Trends-in-Online-Shopping-Nielsen-Consumer-Report.html>
- [20] A. Reyes-Menendez, J. R. Saura, P. R. Palos-Sanchez, and J. Alvarez-Garcia, "Understanding user behavioral intention to adopt a search engine that promotes sustainable water management," *Symmetry*, vol. 10, no. 11, p. 584, 2018.
- [21] E. W. Anderson, "Customer satisfaction and word of mouth," *J. Service Res.*, vol. 1, no. 1, pp. 5–17, 1998.
- [22] *Global Report Deloitte*, Deloitte, New York, NY, USA, 2014.
- [23] C. Grönroos, *Service Management and Marketing: A Customer Relationship Management Approach*. Hoboken, NJ, USA: Wiley, 2000.
- [24] A. Tham, G. Croy, and J. Mair, "Social media in destination choice: Distinctive electronic word-of-mouth dimensions," *J. Travel Tourism Marketing*, vol. 30, nos. 1–2, pp. 144–155, 2013.
- [25] H. Xie, L. Miao, P.-J. Kuo, and B.-Y. Lee, "Consumers' responses to ambivalent online hotel reviews: The role of perceived source credibility and pre-decisional disposition," *Int. J. Hospitality Manage.*, vol. 30, pp. 178–183, Mar. 2011.
- [26] Q. Ye, R. Law, and B. Gu, "The impact of online user reviews on hotel room sales," *Int. J. Hospitality Manage.*, vol. 28, no. 1, pp. 180–182, 2009.
- [27] Y. Chen and Y. Xu, "Exploring the determinants of influential eWOM in virtual communities: An empirical study," in *Proc. Int. Textile Apparel Assoc. (ITAA) Annu. Conf.*, 2015, pp. 1–3.
- [28] A. G. Mauri and R. Minazzi, "Web reviews influence on expectations and purchasing intentions of hotel potential customers," *Int. J. Hospitality Manage.*, vol. 34, pp. 99–107, Sep. 2013.
- [29] M. R. Jalilvand and N. Samiei, "The effect of electronic word of mouth on brand image and purchase intention: An empirical study in the automobile industry in Iran," *Marketing Intell. Planning*, vol. 30, no. 4, pp. 460–476, 2012.

- [30] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quart.*, vol. 13, no. 3, pp. 319–340, 1989.
- [31] R. E. Petty and J. T. Cacioppo, "The elaboration likelihood model of persuasion," in *Communication and Persuasion*. New York, NY, USA: Springer, 1986, pp. 1–24.
- [32] P. J. Sher and S.-H. Lee, "Consumer skepticism and online reviews: An elaboration likelihood model perspective," *Social Behav. Personality, Int. J.*, vol. 37, no. 1, pp. 137–143, 2009.
- [33] S. W. Sussman and W. S. Siegal, "Informational influence in organizations: An integrated approach to knowledge adoption," *Inf. Syst. Res.*, vol. 14, no. 1, pp. 47–56, 2003.
- [34] S. A. Watts and W. Zhang, "Capitalizing on content: Information adoption in two online communities," *J. Assoc. Inf. Syst.*, vol. 9, no. 2, 2008, Art. no. 3.
- [35] J. Boisvert and N. J. Ashill, "How brand innovativeness and quality impact attitude toward new service line extensions: The moderating role of consumer involvement," *J. Services Marketing*, vol. 25, no. 7, pp. 517–527, 2011.
- [36] C. Lin, Y. Wu, and J.-C. V. Chen, "Electronic word-of-mouth: The moderating roles of product involvement and brand image," in *Proc. Int. Conf. Technol. Innov. Ind. Manage.*, 2013, pp. 29–47.
- [37] C. M. K. Cheung and M. K. O. Lee, "What drives consumers to spread electronic word of mouth in online consumer-opinion platforms," *Decis. Support Syst.*, vol. 53, no. 1, pp. 218–225, 2012.
- [38] D.-H. Park and S. Kim, "The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews," *Electron. Commerce Res. Appl.*, vol. 7, no. 4, pp. 399–410, 2008.
- [39] P. Gupta and J. Harris, "How e-WOM recommendations influence product consideration and quality of choice: A motivation to process information perspective," *J. Bus. Res.*, vol. 63, nos. 9–10, pp. 1041–1049, 2010.
- [40] H. A. Lee, R. Law, and J. Murphy, "Helpful reviewers in TripAdvisor, an online travel community," *J. Travel Tourism Marketing*, vol. 28, no. 7, pp. 675–688, 2011.
- [41] Q. Yan, S. Wu, L. Wang, P. Wu, H. Chen, and G. Wei, "E-WOM from e-commerce websites and social media: Which will consumers adopt?" *Electron. Commerce Res. Appl.*, vol. 17, pp. 62–73, May/June 2016.
- [42] D. Godes and D. Mayzlin, "Using online conversations to study word-of-mouth communication," *Marketing Sci.*, vol. 23, no. 4, pp. 545–560, 2004.
- [43] C. M. K. Cheung and D. R. Thadani, "The impact of electronic word-of-mouth communication: A literature analysis and integrative model," *Decis. Support Syst.*, vol. 54, no. 1, pp. 461–470, 2012.
- [44] J. A. Chevalier and D. Mayzlin, "The effect of word of mouth on sales: Online book reviews," *J. Marketing Res.*, vol. 43, no. 3, pp. 345–354, 2006.
- [45] Y. Liu, "Word of mouth for movies: Its dynamics and impact on box office revenue," *J. Marketing*, vol. 70, no. 3, pp. 74–89, 2006.
- [46] W. Duan, B. Gu, and A. Whinston, "The dynamics of online word-of-mouth and product sales—An empirical investigation of the movie industry," *J. Retailing*, vol. 84, no. 2, pp. 233–242, 2011.
- [47] G. Vigliá, R. Furlan, and A. Ladrón-de-Guevara, "Please, talk about it! When hotel popularity boosts preferences," *Int. J. Hospitality Manage.*, vol. 42, pp. 155–164, Sep. 2014.
- [48] Y.-W. Fan, Y.-F. Miao, Y.-H. Fang, and R.-Y. Lin, "Establishing the adoption of electronic word-of-mouth through consumers' perceived credibility," *Int. Bus. Res.*, vol. 6, no. 3, p. 58, 2013.
- [49] M. A. A. Sallam and N. A. Wahid, "Endorser credibility effects on yemeni male consumer's attitudes towards advertising, brand attitude and purchase intention: The mediating role of attitude toward brand," *Int. Bus. Res.*, vol. 5, no. 4, p. 55, 2012.
- [50] V. S. Folkes, "Recent attribution research in consumer behavior: A review and new directions," *J. Consum. Res.*, vol. 14, no. 4, pp. 548–565, 1988.
- [51] R. W. Mizerski, L. L. Golden, and J. B. Kernan, "The attribution process in consumer decision making," *J. Consum. Res.*, vol. 6, no. 2, pp. 123–140, 1979.
- [52] E. McGinnies and C. D. Ward, "Better liked than right: Trustworthiness and expertise as factors in credibility," *Personality Social Psychol. Bull.*, vol. 6, no. 3, pp. 467–472, 1980.
- [53] M. Y. Cheung, C. Luo, C. L. Sia, and H. Chen, "Credibility of electronic word-of-mouth: Informational and normative determinants of on-line consumer recommendations," *Int. J. Electron. Commerce*, vol. 13, no. 4, pp. 9–38, 2009.
- [54] C. N. Wathen and J. Burkell, "Believe it or not: Factors influencing credibility on the Web," *J. Amer. Soc. Inf. Sci. Technol.*, vol. 53, no. 2, pp. 134–144, 2002.
- [55] W.-H. Chih, K.-Y. Wang, L.-C. Hsu, and S.-C. Huang, "Investigating electronic word-of-mouth effects on online discussion forums: The role of perceived positive electronic word-of-mouth review credibility," *Cyberpsychol., Behav., Social Netw.*, vol. 16, no. 9, pp. 658–668, 2013.
- [56] Q. Ye, R. Law, B. Gu, and W. Chen, "The influence of user-generated content on traveler behavior: An empirical investigation on the effects of e-Word-of-Mouth to hotel online bookings," *Comput. Hum. Behav.*, vol. 27, pp. 634–639, Mar. 2011.
- [57] S. S. Sundar, A. Oeldorf-Hirsch, and Q. Xu, "The bandwagon effect of collaborative filtering technology," in *Proc. Extended Abstr. Hum. Factors Comput. Syst.*, 2008, pp. 3453–3458.
- [58] H. Ö üt and B. K. O. Tas, "The influence of Internet customer reviews on the online sales and prices in hotel industry," *Service Ind. J.*, vol. 32, no. 2, pp. 197–214, 2011.
- [59] S. Hong and H. S. Park, "Computer-mediated persuasion in online reviews: Statistical versus narrative evidence," *Comput. Hum. Behav.*, vol. 28, no. 3, pp. 906–919, 2012.
- [60] E. Ismagilova, E. Slade, N. P. Rana, and Y. K. Dwivedi, "The effect of characteristics of source credibility on consumer behaviour: A meta-analysis," *J. Retailing Consum. Services*, to be published.
- [61] C. J. Clare, G. Wright, P. Sandiford, and A. P. Caceres, "Why should I believe this? Deciphering the qualities of a credible online customer review," *J. Marketing Commun.*, vol. 24, no. 8, pp. 823–842, 2018.
- [62] T. Schlesinger and M. Güngerich, "Analysing sport sponsorship effectiveness—The influence of fan identification, credibility and product-involvement," *Int. J. Sport Manage. Marketing*, vol. 9, nos. 1–2, pp. 54–74, 2011.
- [63] D.-H. Park and J. Lee, "eWOM overload and its effect on consumer behavioral intention depending on consumer involvement," *Electron. Commerce Res. Appl.*, vol. 7, no. 4, pp. 386–398, 2008.
- [64] S. Y. Rieh, "Credibility and cognitive authority of information," in *Encyclopedia of Library and Information Sciences*, M. Bates and N. Maack, Eds. New York, NY, USA: Taylor and Francis Group, 2010, pp. 1337–1344.
- [65] D. H. McKnight, V. Choudhury, and C. Kacmar, "The impact of initial consumer trust on intentions to transact with a web site: A trust building model," *J. Strategic Inf. Syst.*, vol. 11, nos. 3–4, pp. 297–323, Dec. 2002.
- [66] C. M. K. Cheung, M. K. O. Lee, and D. R. Thadani, "The impact of positive electronic word-of-mouth on consumer online purchasing decision," in *World Summit on Knowledge Society*. Berlin, Germany: Springer, 2009, pp. 501–510.
- [67] M. Matas, "Diseño del formato de escalas tipo likert: Un estado de la cuestión," *Revista Electrónica de Investigación Educativa*, vol. 20, no. 1, pp. 38–47, 2018.
- [68] R. Hallak, G. Assaker, P. O'Connor, and G. Lee, "Firm performance in the upscale restaurant sector: The effects of resilience, creative self-efficacy, innovation and industry experience," *J. Retailing Consum. Services*, vol. 40, pp. 229–240, Jan. 2018.
- [69] P. R. Palos-Sanchez, J. R. Saura, and F. Martín-Velicia, "A study of the effects of programmatic advertising on users' concerns about privacy overtime," *J. Bus. Res.*, vol. 96, pp. 61–72, Mar. 2019.
- [70] J. F. Hair, M. Sarstedt, C. M. Ringle, and S. P. Gudergan, *Advanced Issues in Partial Least Squares Structural Equation Modeling*. Thousand Oaks, CA, USA: SAGE Publishing, 2017.
- [71] A. C. R. van Riel, J. Henseler, I. Kemény, and Z. Sasovova, "Estimating hierarchical constructs using consistent partial least squares: The case of second-order composites of common factors," *Ind. Manage. Data Syst.*, vol. 117, no. 3, pp. 459–477, 2017.
- [72] W. Reinartz, M. Haenlein, and J. Henseler, "An empirical comparison of the efficacy of covariance-based and variance-based SEM," *Int. J. Res. Marketing*, vol. 26, no. 4, pp. 332–344, 2009.
- [73] J. Henseler, C. M. Ringle, and R. R. Sinkovics, "The use of partial least squares path modeling in international marketing," *Adv. Int. Marketing*, vol. 20, pp. 277–320, Mar. 2009.
- [74] J. F. Hair, C. M. Ringle, and M. Sarstedt, "PLS-SEM: Indeed a silver bullet," *J. Marketing Theory Pract.*, vol. 19, no. 2, pp. 139–152, 2011.
- [75] C. M. Ringle, S. Wende, and J. M. Becker, "SmartPLS 3, Boenningstedt SmartPLS GmbH," Tech. Rep., 2015.
- [76] J. F. Hair, G. T. M. Hult, C. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA, USA: SAGE, 2014.

- [77] E. G. Carmines and R. A. Zeller, *Reliability and Validity Assessment*. Thousand Oaks, CA, USA: SAGE Publishing, 1979.
- [78] D. Barclay, C. Higgins, and R. Thompson, "The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration," *Technol. Stud.*, vol. 2, no. 2, pp. 285–309, 1995.
- [79] J. C. Nunnally and I. H. Bernstein, *Psychometric Theory*, 3rd ed. New York, NY, USA: McGraw-Hill, 1994.
- [80] R. P. Bagozzi and C. Fornell, "Theoretical concepts, measurements, and meaning," *Second Gener. Multivariate Anal.*, vol. 2, no. 2, pp. 5–23, 1982.
- [81] C. Fornell and D. F. Larcker, "Structure equation models: LISREL and PLS applied to customer exist-voice theory," *J. Marketing Res.*, vol. 18, no. 2, pp. 39–50, 1981.
- [82] J. L. Roldán and G. Cepeda, "Modelos de ecuaciones estructurales basados en la varianza: Partial least squares (PLS) para investigadores en ciencias sociales," Univ. Seville, Seville, Spain, Tech. Rep., 2016.
- [83] J. Henseler, C. M. Ringle, and M. Sarstedt, "A new criterion for assessing discriminant validity in variance-based structural equation modeling," *J. Acad. Marketing Sci.*, vol. 43, no. 1, pp. 115–135, 2015.
- [84] J. L. Roldán and M. J. Sánchez-Franco, "Variance-based structural equation modeling: Guidelines for using partial least squares in information systems research," in *Research Methodologies, Innovations and Philosophies in Software Systems Engineering and Information Systems*, M. Mora, O. Gelman, A. Steenkamp, and M. Raisinghani, Eds. Philadelphia, PA, USA: IGI Global, 2012.
- [85] C. Cassel, P. Hackl, and A. H. Westlund, "Robustness of partial least-squares method for estimating latent variable quality structures," *J. Appl. Statist.*, vol. 26, no. 4, pp. 435–466, 1999.
- [86] W. W. Chin, "How to write up and report PLS analyses," in *Handbook of Partial Least Squares*, V. E. H. Vinzi, W. W. Chin, J. Henseler, and H. Wang, Eds. Berlin, Germany: Springer, 2010, pp. 655–690.

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