



The Mediating Role of Advertisement in the Relationship Between Social Media and Online Risk and its Effect on Online Shopping Habits

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Abstract

The invention of web 2.0 and the advancement of information and communication technology have provided consumers and businesses with the opportunity to utilise online transactions. The Internet is an essential tool for doing online shopping. Despite the importance and popularity of online shopping, most Nigerian consumers largely depend on conventional shopping rather than online shopping due to their resistance to online shopping habits. In Nigeria, few studies have examined the effect of advertising, social media and online risk on online shopping habit. Thus, this study aimed to investigate the mediating role of advertising in the relationship between social media and online risk and its effect on online shopping habits in Nigeria. A self-administered questionnaire was used to collect data from 375 respondents using a purposive sampling technique. Structural equation modelling was used to analyse and evaluate the hypotheses (SEM-AMOS). The results show that online risk and advertising had an insignificant direct effect on online shopping habits. Moreover, the study result showed that social media has a statistically significant and direct effect on online shopping. While advertising partially mediates the relationship between online risk and online shopping habits, it fully mediates the relationship between social media and online shopping habits. The findings of this research can contribute to the existing literature. Practically, results obtained from this research can help Nigerian online firms and consumers to understand the effect of advertising, social media and online risk on online shopping habits.

Keywords: advertising, online risk, online shopping, shopping habit, social media.

Introduction

The Internet is an essential global communication tool (Haseeb et al., 2019) that is used for different purposes (Paul & Jeyaraj, 2019). The use of the Internet has been extended to social networking and online shopping (Zhang et al., 2017). Lăzăroiu et al. (2020) state that the Internet offers a platform for its users, including online retailers and buyers, to perform online transactions. Different websites are used for online marketing all over the world. The most prominent online stores are Amazon, eBay, AliExpress, Lazada and Alibaba. Online shopping is common in developed countries like the United Kingdom, the United States and the West, but its penetration is low in developing countries such as Nigeria. Thus, there is a need to investigate the potential development of online shopping in developing nations like Nigeria.

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Online shopping is gaining ground, especially among countries with well-developed infrastructure for marketing activities via the Internet (Bowen & Ozuem, 2019; Myovella et al., 2020). Consumers' online shopping habits are influenced by a variety of factors, including social media (Dabbous & Barakat, 2020). How social media platforms bring value, effectiveness and advantage to consumers may influence their decision to shop online (Ansari et al., 2019; Maria et al., 2019). In some cases, friends and celebrity endorsement on social media on a product influence consumers' shopping decision.

On the other hand, online risk is one of the most significant concerns to consumers' online shopping habits. This is because building trust between retailers and consumers in an online transaction is more complex than in a conventional setting. According to Grosso et al. (2020), the core issue in sustaining and establishing online customer relationships has been how an online company wins confidence from shoppers in the absence of physical contact. The main point is the reputation of an online store, as customers can be suspicious if their sensitive information is used for other purposes (Lee & Charles, 2021). This concern is intense among Nigerian consumers who are afraid of scam, fraud and other online risks.

In today's competitive markets, advertising has been recognized as a crucial instrument of persuading consumers to purchase a product (Abayi & Khoshtinat, 2016). In particular, research shows that proper advertising strategies, with support from technology, gradually change the purchase behaviour of consumers to rethink of the products they purchase (Abayi & Khoshtinat, 2016; Azmi et al., 2021). However, the success of advertising and online shopping was found to be significantly influenced by several factors, including the risk involved (Abayi & Khoshtinat, 2016; Iriani & Andjarwati, 2020). In this regard, perceived risk was found to have a negative impact on consumers' online shopping decision (Ha, 2020; Iriani & Andjarwati, 2020). Thus, reducing the risk of online shopping and increasing its benefits can have a positive influence on online shopping behaviour (Bhatti & Rehman, 2020).

Additionally, perceived risk is a significant factor considered by consumers while making decisions to shop online (Iriani & Andjarwati, 2020). Therefore, despite popularity and benefits of online shopping, most Nigerian consumers largely depend on conventional shopping and resist online shopping, perhaps due to the risk involved. According to Bhatti and Rehman (2020), "different factors affect online shopping behavior and these factors include perceived risks" (p. 34). Although previous studies in Nigeria have determined the impact of effective marketing on consumer's shopping habits, its mediating role in the relationship between social media and online risk that might affect online shopping behaviour still remains an ambiguous issue.

Considering the aforementioned background, this research aims to investigate the mediating role of advertising on the relationship between social media and online risk and its effect on online shopping habits among online shoppers of prominent online stores in Nigeria. To increase the online shopping rates in Nigeria, understanding online shopping habits and their drivers are crucial, particularly to online retailers and consumers (Ogbuji & Udom, 2018). Such drivers are critical to understanding the complexity of online shopping, which could help retailers to implement effective marketing strategies that can persuade Nigerian consumers to shop online.

Literature Review

Social Media and Online Shopping Habit

Social media is an immersive, online, mediated technology that enables people to exchange knowledge, thoughts, topics of interest and other modes of expression through virtual

communities and networks (Appel et al., 2020; Cao & Ali, 2018). A wide variety of multimedia events are found in social media (Nielsen, 2017; Rashid & Rahman, 2014) such as blogs, forums, chat rooms and social networking sites (Balan & Rege, 2017). An acceleration of Internet -based messages is being exchanged via social media today (Eleuteri et al., 2017; Musa et al., 2015). As such, social media has become one of the factors that affect consumers' online shopping habit.

According to Duarte et al. (2018), online shopping habit could be pronounced as the degree to which consumers are willing to shop online. Based on the consumer's daily interaction with social media, people develop habitual behaviour towards the platforms and products posted or advertised on social media (Palalic et al., 2020). This may change the consumers' online shopping habit. Consequently, it is argued that users who see social media advertisements daily are more likely to be affected and have a favourable response (Lou & Yuan, 2019). Thus, researchers (Alaimo & Kallinikos, 2017; Lou & Yuan, 2019; Nasidi et al., 2021; Rahman et al., 2018) have established a significant relationship between social media and online shopping habit.

Online Risk-Taking and Online Shopping Habits

Online shopping makes shopping more accessible and convenient (Duarte et al., 2018), as consumers can shop from their comfort zone without setting foot outside the house or office (Alhaimer, 2021). It is also easy for perpetrators to carry out their cheating antics (Kawugana & Faruna, 2018). Many fraudsters and scammers operate in the digital world to lure users and obtain confidential and sensitive information (Azhar et al., 2020; Chigada & Madzinga, 2021). On the other site, fake online shops and pages abound on the Internet, luring customers into making purchases (Cassiman, 2019). When consumers purchase such fake online shops, they do not get the product and cannot retrieve their money back. Moreover, consumers find it difficult to assess product quality because they depend solely on the presentation and details provided on the website (Fileri et al., 2018). These online risks and many more prevent Nigerian consumers from patronising online shops.

Several kinds of research have shown the nexus between online risk and online shopping habit (Al-Adwan et al., 2020; Bonnin, 2020; Wu et al., 2021; Yokotani & Takano, 2021; Zolait et al., 2018). Consumers may be concerned about the safety of using their credit cards and sharing personal details online (Anic et al., 2019). Consumers prepare alternative payment methods, such as cash on delivery, even though they can buy items from an online store. According to previous studies, one of the most common issues when shopping online is credit card theft (Burnes et al., 2020; Levi, 2017; Tripathi et al., 2018). Accordingly, advertising helps create awareness to differentiate between fake and actual online stores; online stores are trying to build confidence in the minds of consumers through different means of advertising.

The Mediating Role of Advertisement

Based on Baron and Kenny (1986) recommendations, three prerequisite steps must be met to constitute mediation. In the first stage, the independent variable (IV) must link with the dependent variable (DV). In the second stage, IV must link to the mediating variable (MV). Finally, in the third stage, the mediating variable (MV) must connect with the (DV). According to Hayes (2009), the direct relationship between IV to DV should not be considered sufficient in evaluating mediation, because mediation can be significant in the absence of a direct connection. Moreover, Rucker et al. (2011) states that a non-significant

direct result could not be considered a preventing procedure in the mediation test cycle. Thus, this paper sustains the recommendations of Hayes (2009) and Rucker et al. (2011) while testing mediation. We choose advertisement as a mediator because it tends to be a strong motivating force for online shopping habit. Researches have established that advertising has a significant influence on social media, online risk and online shopping habit (Dankwa, 2021; Kim, 2018; Knoll, 2016; Lee et al., 2016; Luo et al., 2020; Okiyi et al., 2020; Winter et al., 2021; Yildiz et al., 2021). Advertising is expected to mediate the interaction between social media and online purchasing habits and the relationship between online risk and online shopping habits, according to previous research.

Research Framework

The following research framework was developed after a thorough review of the literature on advertising (ADV), social media (SMD), online risk (ORTK), and online shopping habit (ONSH).

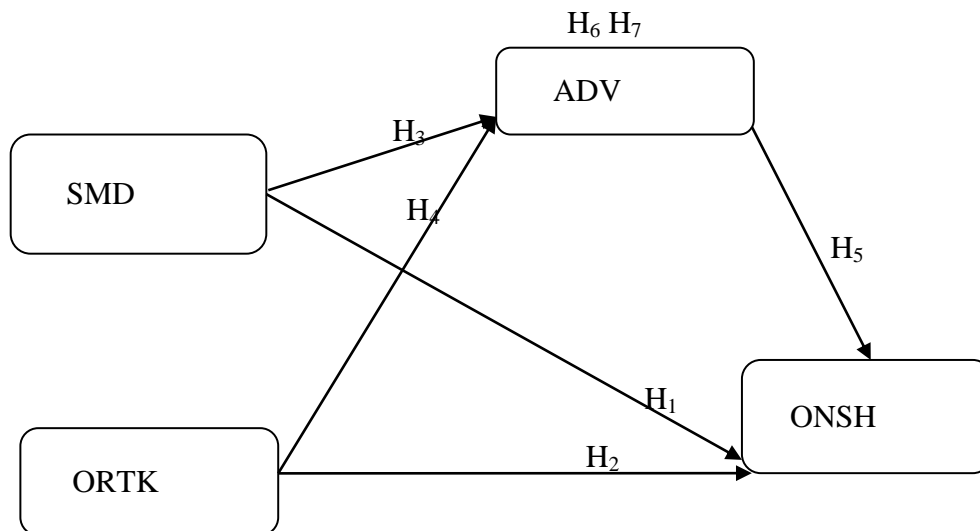


Figure 1. Research Framework

Based on the evidence from literature review regarding the connection between ADV, SMD, ORTK, and ONSH, the following hypotheses were developed.

H₁: Advertising has a statistically significant direct effect on online shopping habits.

H₂: Online risk has a statistically significant direct effect on online shopping habits.

H₃: Social media has a statistically significant direct effect on online shopping habits.

H₄: Advertising has a significant mediating effect on the relationship between online risk and online shopping habits.

H₅: Advertising has a significant mediating effect on the relationship between social media and online shopping habits.

Methodology

To evaluate the research hypotheses and verify the study's conceptual model, this research employed the quantitative approach, with a questionnaire serving as the data collection tool. The items on the questionnaire were graded on a ten-point Likert scale, with responses

ranging from strongly disagree to strongly agree. The questionnaire content was adapted from the previous studies (Cyr et al., 2009; Sen et al., 2006; Torkzadeh & Dhillon, 2002). The sample consists of online shoppers with previous experience of shopping for products or services from prominent Nigerian online stores. An online sample size calculator was utilised to determine the sample size whereby a total of 375 consumers of online stores was obtained from the study population using a purposive sampling technique. The data were collected using a self-administered questionnaire. The sample size was increased to 450 to avoid response bias and reduce sample error. Thus, 450 questionnaires were distributed to respondents. The data were analysed using structural equation modelling (SEM).

Measurement Items

The items used to measure the intended research constructs were adapted from previous studies in the field of online shopping habits. Advertising was measured using seven items derived from Yang (2012). Online risk-taking was measured using seven items adapted from Chen and Barnes (2007). Social media were measured using eight items adapted from Yang (2012) and online shopping habit were measured using four items adapted from (Rita et al., 2019). A 10-point Likert scale was used in the questionnaire design since it has been regarded as the appropriate measurement scale (Taherdoost, 2019). The items of questionnaire are presented in the appendix.

Validity and Reliability

Each construct's validity and reliability were evaluated, and the Cronbach's alpha results for the overall measurement and convergent validity are shown in Table 1. Table 1 reveals that the model's AVE value for all second-order structures was much greater than 0.5, which is the cut-off AVE value suggested by Hair Jr et al. (2020). Furthermore, the composite reliability values for both structures were higher than the recommended value of 0.700, as indicated by Sarstedt et al. (2019). The composite values ranged from 0.885 to 0.937. Lastly, Cronbach's alpha values ranged from 0.809 to 0.918, all of which satisfied the cut-off point of 0.700 (Hair Jr et al., 2020).

Table 1. Composite Reliability (C.R.), Average Variance Extracted (AVE) and Cronbach's Alpha

	CR	AVE	CA
Social media	0.937	0.651	0.860
Advertising	0.908	0.588	0.908
Online risk-taking	0.919	0.619	0.918
Online shopping habit	0.885	0.660	0.809

Discriminant Validity

The discriminant validity of the total model was assessed. The excellent value for discriminant validity is 0.850 or smaller, because multicollinearity can be implied by a value greater than 0.850 (Hair Jr et al., 2020; Sarstedt et al., 2020). The outcome of the model's overall discriminant validity was less than 0.850, which is an acceptable value (Manley et al., 2020). Table 2 summarises the results of the discriminant validity test for the overall model. The square root of AVEs on diagonals appears to be greater than the correlations between constructs, which suggest how the constructs correlate with their indicators, as seen in Table 2. It is a substantial benefit of discriminant validity. According to Shau (2017), at a value smaller than 0.85, the exogenous constructs are correlated. All constructions are as fulfilling

as the validity of discriminants. The Fornell-Larcker criterion has been questioned since it cannot specifically assess the absence of discriminating validity in regular study circumstances.

Table 2. Discriminant Validity

	Social media	Advertising	Online risk-taking	Online shopping habit
Social media	0.807			
Advertising	0.603	0.767		
Online risk-taking	0.619	0.611	0.787	
Online shopping habit	0.686	0.601	0.649	0.812

Common Method Bias (CMB)

The effect of CMB was tested using both Harman's single-factor analysis and the common latent factor (CLF) in this study. Harman's single factor test results, as seen in Table 3, revealed the CMB problem. Below the 50% threshold, the first component explained 47.258 percent of the overall variance.

Table 3. The Assessment for CMB in Dataset – Harman's One Factor Solution

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	13.232	47.258	47.258	13.232	47.258	47.258
2	2.886	10.306	57.565	2.886	10.306	57.565
3	1.501	5.359	62.924	1.501	5.359	62.924
4	1.266	4.522	67.446	1.266	4.522	67.446

Extraction method: Principal Component Analysis

Assessment of Normality for All Constructs

Before modelling the structural model and performing SEM, the researchers tested the normal distribution of all items measuring the construct. Since SEM employs the parametric statistical approach of modelling, it was necessary to determine the normal distribution of all items measuring their respective constructs. According to Rahi and Abd Ghani (2018), skewness and kurtosis values should be within the range of -1.5 to 1.5 and should not differ from normality. The results of our examinations confirmed that the data distribution met the requirement of normal distribution needed for employing the parametric statistical analysis after completing the CFA and satisfying the need for validity, reliability, and normality distribution. Subsequently, the researchers proceeded to developing the structural model.

Structural Model and Hypotheses Testing

The constructs are organised from far left to far right, with exogenous constructs on the far left, mediator constructs in the centre, and endogenous constructs on the far right (Sarstedt et al., 2019). The researcher then uses the single-headed arrow to connect the exogenous construct to its respective endogenous construct based on the path of hypotheses. Finally, the double-headed indicator is used to link all exogenous constructs, as seen in Figure 2.

As Figure 2 illustrates, the fitness indices of the model follows the threshold values, and the factor loading for all the items meet the minimum threshold of 0.6 (Baistaman et al., 2020; Hadie & Yusoff, 2016). No evidence of multicollinearity was found to be greater than 0.85. The full fit category (RMSEA) was 0.078, meeting the threshold of less than 0.08, while the incremental fit category (CFI) was 0.919, exceeding the 0.90 threshold. The parsimonious fit

group (ratio of Chisq/df) was 3.465, which fell below the 5.0 mark. Overall, the measurement model for all latent constructs observed in Figure 2 met the construct validity criterion (Awang et al., 2015; Mathieu et al., 2020; Rochefort et al., 2018).

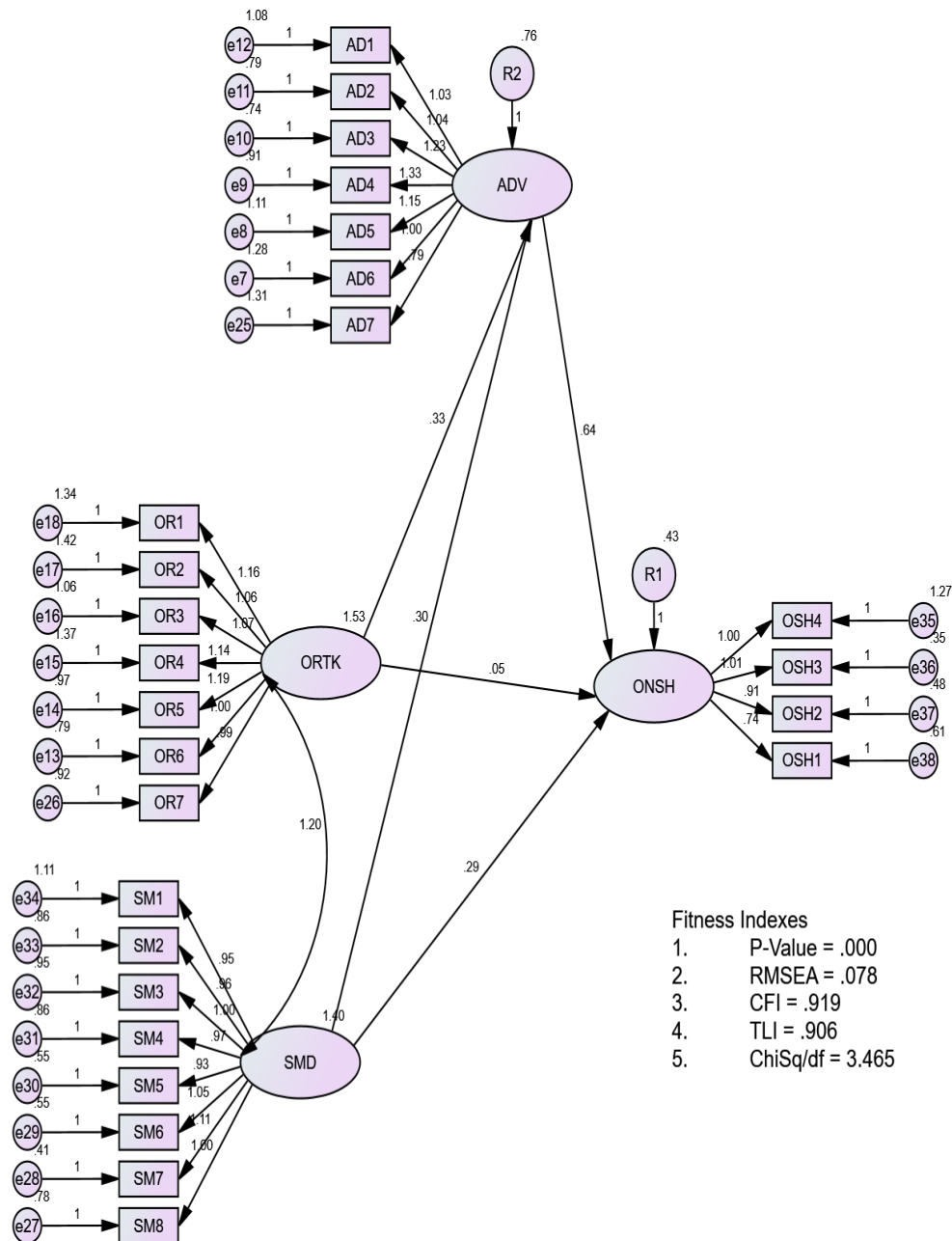


Figure 2. Unstandardized Result

Results

Table 4 presents the regression path coefficient (Beta) for the influence of each exogenous construct on the dependent construct. The result shows that SMD had a positive statistical influence on ONSH with a path coefficient of (Beta) = 0.29, $p = 0.000$. The result is consistent with the proposed alternate hypothesis. Thus, hypothesis 1 is supported.

Similarly, the result of the analysis shows that ORTK had a positively and statistically insignificant direct effect on ONSH with a path coefficient (Beta)= 0.06, $p = 0.274$ and

critical ratios (z-values) = 1.093. This result was not consistent with the hypothesis model and not supported Hypothesis 2, which states that “ORTK has significant effects on ONSH”. This outcome indicated that ORTK has an insignificant direct effect on ONSH among Nigerian online consumers.

Furthermore, the effect of SMD on ADV was also explored, and the result was statistically significant, with path coefficient (Beta) = 0.30, $p = 0.000$, and critical ratios (z-values) = 5.191. This means that SMD in online consumer shopping is a significant predictor of ADV. Therefore, Hypothesis 3, “SMD has a significant effect on ADV”, was supported.

Another important relationship between variables in the model is that of the effect of ORTK on ADV. Table 4 reveals that the results were significantly positive ($P > 0.05$), with a path coefficient (Beta) = 0.33, $p = 0.000$, and critical ratios (z-values) = 5.805. This result means that the ORTK among online shoppers is a significant predictor of ADV. Thus, Hypothesis 4 was supported.

Lastly, ADV has a significant and positive direct effect on ONSH ($P < .000$). The study result showed that the path coefficient value (Beta) weight obtained was 0.644, $p = 0.000$ and critical ratio (z) = 14.137. This result means that for every unit increase in ADV, there would be a 0.64 corresponding increase in ONSH. Thus, the study supported hypothesis 5, and it could be concluded that ADV has a significant direct effect on ONSH among Nigerian online shoppers.

Table 4. Path Coefficients

Hypothesis		Estimate	S.E.	C.R.	P	Decision
H ₁	SMD <--- ONSH	.29	.047	1.093	.000	Supported
H ₂	ORTK <--- ONSH	.06	.049	5.888	.274	Not supported
H ₃	SMD <--- ADV	.30	.056	5.805	.000	Supported
H ₄	ORTK <--- ADV	.33	.058	5.191	.000	Supported
H ₅	ADV <--- ONSH	.64	.046	14.137	.000	Supported

To examine the latent variables' variance, the squared multiple correlation (R^2) coefficient for latent variables was examined. Table 5 shows the result of squared multiple correlations (R^2), which implies that the hypothesised model explained a statistically significant variance for the endogenous variables. The R^2 value obtained for the relationship between SMD and ORT was 0.76, signifying that the exogenous variables (SMD and ORTK) jointly explained 76% of the variance in the endogenous variable (ADV). Other predictors not used in the model may explain the remaining 24% of variation in the dependent variable. Moreover, for the relationship between SMD, ORTK and ADV with ONSH, the R^2 value obtained was = 0.43. This value suggested that the SMD, ORTK and ADV contributed to 43 % of ONSH; other exogenous variables not captured in the model could account for the remaining 57%.

Table 5. R^2 and Its Implication for This Research

Endogenous construct	R2	Conclusion
ADV	0.76	The ORT and SMD, as perceived by the respondents, contribute to 32 percent of ADV.
ONSH	0.43	The ORT, SMD and ADV contribute to 43 percent of ONSH.

Table 6. Hypothesis Testing for Mediation Effects

H6: ADV mediates the relationship between ORTK and ONSH
H7: ADV mediates the relationship between SMD and ONSH

The study used a technique to assess the mediation results in the model proposed by Hoque et al. (2017). Figures 3 and 4 show the steps involved in testing the mediator. Figure 4 shows the advertisement results as a mediator in the relationship between social media, online risk and online shopping habit.

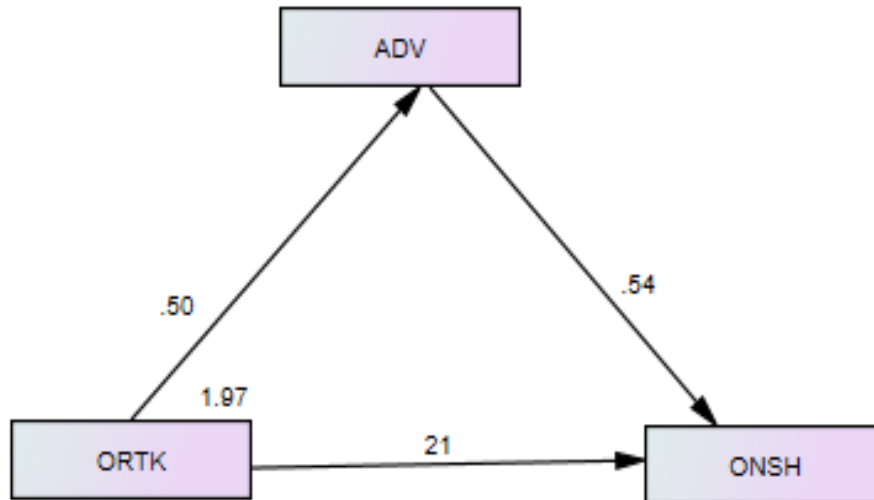


Figure 3. Hypothesis Testing for Mediation Effects Between ADV, ORT and ONSH

The indirect effect $a = 0.50$ (statistically significant), and the indirect effect $b = 0.54$ (statistically significant) with p -values of 0.000 are shown in Table 7 (Bootstrapping). However, the direct effect $c = 0.21$ (statistically insignificant), and since both a and b are significant, the mediation exists. Since the direct effect c is not statistically important, the method of mediation is partial mediation.

Validation of Mediation Test Using Bootstrapping

If the hypothesis for mediation has been tested and the mediation effect has been confirmed as partial or full mediation, the researcher must validate the test findings using bootstrapping (Tan et al., 2020). The study used 5000 bootstrap samples, a 95 percent bootstrap confidence interval, and a 95 percent bias-corrected confidence interval with maximum likelihood estimator (MLE) bootstrapping. Table 7 shows the results of a study that examined advertising as a mediator in the relationship between social media and online shopping habits.

Table 7. Bootstrapping Result for Testing Advertising as a Mediator

	Indirect effect (a*b)	Direct (c)	
Bootstrapping value	0.27	0.21	
Probability value	0.000	0.000	
Results on mediation	Significant	Significant	
	Mediation exists since indirect effects are significant		
Type of mediation	Partial mediation since the direct effect is also insignificant		
	Hypothesis statement	Result	Type of mediation
	H6: ADV mediates the relationship between ORT and ONSH	Significant (mediation occurs)	Partial Mediation

The testing of ADV as a mediator in the relationship between SMD and ONSH is presented in Figure 5.

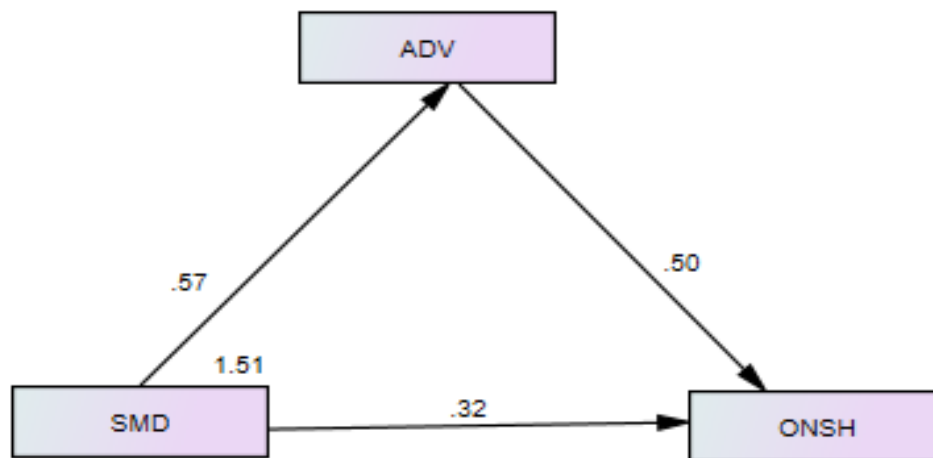


Figure 4. Hypothesis Testing for Mediation Effects Between ADV, SMD and ONSH

The indirect effect $a = 0.57$ (statistically significant), the indirect effect $b = 0.50$ (statistically significant) with p -values of 0.000 as shown in Table 8. The direct effect $c = 0.32$ (statistically significant); thus, the **mediation occurs** since both a and b are significant, and the type of mediation is **partial mediation** since the direct effect c is also significant.

Table 8. Results of a Bootstrapping Analysis for Advertising as a Mediator

	Indirect effect (axb)	Direct (c)
Bootstrapping value	0.29	0.32
Probability value	0.000	0.000
Results on mediation	Significant	Significant
	Since indirect results are significant, mediation occurs.	
Type of mediation	partial mediation since the direct effect is also significant	

Hypothesis statement	Result	Type of mediation
H7: ADV mediates the relationship between SMD and ONSH	Significant (mediation occurs)	Partial Mediation

Conclusion and Implication

This study examined the mediating role of advertising in the relationship between social media and online risk and its effect on online shopping habits among online shoppers of prominent online stores in Nigeria. According to the findings, online risk and advertising have an insignificant direct effect on online shopping habits, while social media has a statistically significant direct effect on online shopping. Additionally, advertising moderately mediates the relationship between online risk and online shopping habits. However, advertising fully mediates the relationship between social media and online shopping habits. These outcomes could advance our understanding of how advertising mediates the relationship between online risk and online shopping habits on the one hand and social media and online shopping habits on the other hand.

Currently, there is inadequate research into the mediating role of advertising on the relationship between social media and online risk and its effect on online shopping habits,

particularly in Nigeria. Therefore, the findings of this study are expected to help Nigerian online firms in the process of developing their marketing strategies to attract more online customers and maximize profits. Another contribution of this study lies in its collection of empirical evidence regarding the relationship between social media, online risk, and online shopping habits by incorporating advertising as a mediating variable. However, this study is limited to a quantitative analysis of these variables within the Nigerian context. Thus, further research may adopt a qualitative approach to provide a more in-depth analysis of these research variables. Other research gaps include the mediating effect of online risk or social media on the relationship between advertising and online shopping habits.

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Appendix Questionnaire Items

Advertising

- AD1 I don't care about any advertising messages concerning online retail shops.
- AD2 Testimonial advertising about online vendors influences my shopping decision.
- AD3 I skipped any advertising messages concerning virtual shopping.
- AD4 I click on advertising messages to seek information about new products or brands.
- AD5 I Only read advert on product or brand that I'm familiar with.
- AD6 I Only read advert on product or brand that I'm not familiar with.
- AD7 I subscribe advert based on a friend's recommendation.

Online Risk

- OR1 I feel that my credit card details may be compromised and misused if I shop online.
- OR2 I might get overcharged if I shop online as the retailer has my card details.
- OR3 I feel that my personal information given to the online vendors may be compromised to the third party.
- OR4 I feel that shopping from an online shop will not cause any financial risk.
- OR5 I am worried about receiving the wrong product after I made online payment.
- OR6 I am worried about who will have access to my card number.
- OR7 Payment online is safe and secure.

Social Media

- SM1 Social media messages change my shopping decision process.
- SM2 I often make a decision based on the messages popping up in my social media platforms.
- SM3 When I intend to buy an expensive product, I check social media to read reviews about the product.
- SM4 I buy only expensive products advertised on social media.
- SM5 Social media have changed my perception of online shops.
- SM6 I shop online because most of my social media friends are doing it.
- SM7 The information on social media sites is useful for buying the product or services from online retail shops.
- SM8 Recommendations and testimonies from my social media friends encourage me to shop online.

Online shopping Habit

- OSH1 I shop online when I get expert reviews on products or services.
- OSH2 I shop online as there is no embarrassment if I do not buy.
- OSH3 I shop online as I can take as much time as I want to decide.
- OSH4 I use online shopping for buying products that are not available in traditional stores (offline store).