

Consumer Perceptions towards Unsolicited Advertisements on Social Media

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Abstract: The practice of unsolicited advertisements on social media has grown prevalent. This data article presents 837 US-based social media users' consumer perceptions of such advertisements. Understanding how consumers perceive unsolicited advertising is vital to developing effective digital marketing strategies. Data collection was via an online survey adopting multi-measurement items from extant studies for reliability and validity. The data showed high internal consistency with Cronbach's alpha testing, and confirmatory factor analysis (CFA) found the measurement model valid. Goodness-of-fit indices showed a good fit with the data. Finally, convergent and discriminant validity was confirmed using the composite reliability, average variance extracted (AVE), and correlations among constructs. Further research may utilise the data using inferential analysis techniques to add to our understanding of consumer perceptions of unsolicited advertising on social media.

Dataset: 10.17632/zcp5httpw5c.1.**Dataset License:** CC BY 4.0**Keywords:** marketing; social media advertisement; consumer perception; intrusiveness; privacy concern; social media ad avoidance behaviour

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1. Summary

As digital technology has rapidly developed, social media has become one of the most popular ways for firms to reach a large number of target consumers with their advertisements. However, the practice of unsolicited social media advertisements has grown prevalent with technological innovations. Therefore, understanding how consumers perceive unsolicited advertising is vital for firms to develop effective digital marketing strategies. In this regard, data in this article provides information on how individuals in the US perceive unsolicited social media advertisements based on the constructs such as ad avoidance behaviour, feelings of intrusiveness, perceived ad benefits, and privacy concern. An online survey was distributed to US-based social media users for data collection, and as a result, a total of 837 samples were compiled. All the multi-measurement items for the main constructs were adopted from the extant studies, to support their reliability and validity. A descriptive analysis of the main constructs was provided to understand the data better. In addition, the dataset was rigorously tested for validity and reliability for the re-use in further scientific and scholarly research. Cronbach's alpha analysis showed that the multi-measurement items for each construct have high internal consistency. Then, confirmatory factor analysis (CFA) was conducted to test the validity of the measurement model. Goodness-of-fit indices showed that the measurement model demonstrated a good fit with the data. Additionally, our data's convergent and discriminant validity were confirmed using the composite reliability, average variance extracted (AVE), and correlations among constructs. Thus, future researchers may employ

inferential analysis techniques utilising the data to provide a deeper understanding of consumer perceptions towards unsolicited advertisement on social media.

2. Data Description

An online survey was distributed to US-based social media users, and as a result, a total of 837 respondents participated in the survey. Table 1 shows detailed demographic information of the respondents on gender (Male: 55.2%, Female: 44.8%) and age ($M = 37.79$, $S.D. = 11.97$). Table 2 shows the frequency of social media use of the participants. Overall, 78.1% of the respondents answered that they use social media every day, and 16.4% of the respondents use social media a few days a week. Only 4.5% and 1% of respondents use social media a few days a month and once a month or less, respectively.

Table 1. Demographic profile of participants ($n = 837$).

Demographic	<i>n</i>	%
Gender		
Male	462	55.2
Female	375	44.8
Age		
19	4	.5
20s	178	21.3
30s	316	37.8
40s	177	21.1
50s	97	11.6
60s	60	7.2
70s	4	0.5
80	1	0.1
Mean		37.79
Std. Deviation		11.97
Median		35
Range		61

Table 2. Frequency of social media use ($n = 837$).

Use of Social Media	<i>n</i>	%
Everyday	654	78.1
Few days in a week	137	16.4
Few days in a month	38	4.5
Once a month or less	8	1.0

Table 3 shows detailed measurement items for all the constructs in the data with Cronbach's alpha coefficients. All the constructs in the data were measured with multiple measurement items to better capture the subjective properties of the constructs. Avoidance behaviour and perceived benefits for social media advertisements have four measurement items each. Privacy concern and feelings of intrusiveness have six measurement items each. As shown in the table, all Cronbach's alpha coefficients are greater than 0.80, suggesting high internal consistency of the measurement items for each construct.

Table 3. Measurement items and Cronbach's alpha for constructs.

Constructs	Measurement Items	Cronbach's Alpha
Ad Avoidance Behaviour	I intentionally ignore any advertising on social media.	0.900
	I hate any advertising on social media.	
	It would be better if there were no advertising on social media.	
	I discard advertising on social media immediately without reading it.	
Perceived Ad Benefits	The advertisements I receive on my social media improved my performance in searching for information I needed as they were targeted at my interests.	0.948
	The advertisements I receive on my social media enabled me to search for information I needed faster.	
	The advertisements I receive on my social media made it easier for me to search for product(s)/service(s) that I was interested in.	
	The advertisements on my social media increased my effectiveness in the search for information on products or services.	
Privacy Concerns	When I receive personalized advertising on social media, I feel uncomfortable because information is shared without permission.	0.921
	When I receive personalized advertising on social media, I am concerned about misuse of personal information.	
	When I receive personalized advertising on social media, it bothers me to receive too much advertising material of no interest.	
	When I receive personalized advertising on social media, I feel fear that information may not be safe while stored.	
	When I receive personalized advertising on social media, I believe that personal information is often misused.	
Intrusiveness	When I receive personalized advertising on social media, I think companies share information without permission.	0.906
	I consider advertisements that are based on my previous online activities invasive.	
	I think advertisements that are based on my previous online activities are intrusive.	
	I think advertisements that are based on my previous online activities are interfering.	
	I think advertisements that are based on my previous online activities are disturbing.	
	I think advertisements that are based on my previous online activities are distracting.	
	I think advertisements that are based on my previous online activities are forced.	

The descriptive statistics for all the constructs in the data are presented in Table 4. It shows the abbreviated form of all the measurement items in the dataset, the minimum and maximum value, and the mean and standard deviation of the measurement items.

Table 4. Descriptive statistics of constructs.

Constructs	Items	<i>n</i>	Min	Max	Mean	S.D.
Ad Avoidance Behaviour	AAB1	837	1	7	4.93	1.57
	AAB2	837	1	7	4.79	1.67
	AAB3	837	1	7	5.00	1.58
	AAB4	837	1	7	4.75	1.71
Perceived Ad Benefits	PAB1	837	1	7	4.83	1.58
	PAB2	837	1	7	4.77	1.69
	PAB3	837	1	7	4.86	1.65
	PAB4	837	1	7	4.87	1.68
Privacy Concern	PC1	837	1	7	5.14	1.43
	PC2	837	1	7	5.27	1.42
	PC3	837	1	7	5.24	1.39

Intrusiveness	PC4	837	1	7	5.31	1.37
	PC5	837	1	7	5.25	1.36
	PC6	837	1	7	5.48	1.33
	INT1	837	1	7	5.43	1.25
	INT2	837	1	7	5.40	1.33
	INT3	837	1	7	5.35	1.31
	INT4	837	1	7	5.14	1.46
	INT5	837	1	7	5.17	1.37
	INT6	837	1	7	5.28	1.38

Confirming the reliability and validity of data is critical to conduct further inferential analysis and make the best use of the data. Firstly, the validity of the measurement model was assessed with confirmatory factor analysis (CFA) using AMOS. The results of goodness-of-fit indices ($\chi^2/df = 3.760$, $p < 0.01$, IFI = 0.966, NFI = 0.954, CFI = 0.966, and RMSEA = 0.057) showed that the measurement model demonstrated a good fit with the data [1,2]. Secondly, the convergent validity of the data was tested based on the criteria recommended by Fornell and Larcker [3]. The test results showed that the factor loadings of all measurement items of each construct were greater than 0.70, and they were all significant ($p < 0.001$), as shown in Table 5. In addition, as shown in Table 6, the composite reliability of each construct exceeded 0.80, and the average variance extracted (AVE) for each construct exceeded 0.50. These results suggested that all the conditions for the convergent validity of the data were met. Lastly, the discriminant validity was tested by using AVE and the correlations between constructs. As shown in Table 6, the lowest value of the square root of AVE (0.788) exceeded the highest bivariate correlation (0.760). This result confirmed the discriminant validity of our data [3]. In sum, all the results of the reliability and validity tests confirmed the adequacy of our data for further inferential analysis.

Table 5. Standardized factor loadings of measurement items.

Constructs	Measurement Items	Standardized Factor Loading *
Ad Avoidance Behaviour	AAB1	0.830
	AAB2	0.848
	AAB3	0.812
	AAB4	0.840
Perceived Ad Benefits	PAB1	0.885
	PAB2	0.907
	PAB3	0.908
	PAB4	0.924
Privacy Concerns	PC1	0.787
	PC2	0.856
	PC3	0.772
	PC4	0.836
	PC5	0.824
	PC6	0.808
Intrusiveness	INT1	0.766
	INT2	0.732
	INT3	0.811
	INT4	0.799
	INT5	0.809
	INT6	0.810

* All the standardized factor loadings are significant at the 0.01 level.

Table 6. Correlations with composite reliability and AVE.

Constructs	1	2	3	4	Composite Reliability	AVE
1. Privacy Concern	0.814				0.922	0.663
2. Ad Avoidance Behaviour	0.679 **	0.833			0.900	0.693
3. Perceived Ad Benefits	−0.042	−0.570	0.906		0.948	0.821
4. Intrusiveness	0.760 **	0.631 **	−0.045	0.788	0.908	0.622

Note. Values on the diagonal are the square root of the average variance extracted (AVE). Values below the diagonal are the correlations between constructs. ** $p < 0.01$.

3. Methods

The data were collected using an online survey method in December 2021 as part of a research project on understanding consumer perceptions towards unsolicited advertisements on social media. The respondents were first asked two screening questions—‘Do you currently use or have you used any social media?’ and ‘Have you come across any unsolicited advertisements when you use social media?’—which aimed to ensure that all the respondents were social media users and that they understood what unsolicited social media advertisements were. The screening questions were followed by a question on their social media use frequency. The respondents were then asked the extent of their agreement to the main constructs on a seven-point Likert scale anchored from strongly disagree to strongly agree.

All the measurement items for the main constructs were adopted from extant studies, to support their reliability and validity. The measurement items for advertisement avoidance behaviour were adopted and modified from Cho and Cheon [4] to qualify in the context of social media advertisement. The measurement items for perceived advertisement benefits were adopted from Bleier and Eisenbeiss [5]. Privacy concern and feelings of intrusiveness were measured using measurement items modified from Dolnicar and Jordaan [6] and Edwards et al. [7], respectively.

The online questionnaire was developed using Qualtrics and distributed to US-based consumers through MTurk. MTurk is a crowdsourcing marketplace that offers researchers access to a diverse, on-demand survey panel. Researchers can access a large number of registered panels by offering small monetary incentives. Since MTurk has often been used for data collection, previous studies attempted to confirm the credibility of MTurk as a data source for academic research purposes. In this regard, Buhrmester et al. [8] and Holden et al. [9] found that data collected through MTurk are reliable and have strong test-retest reliability.

A total of 837 data samples were compiled from the online survey. The final dataset was coded in SPSS so that we could conduct the initial descriptive analysis. Subsequently, both SPSS and AMOS were used to assess the reliability and validity of our data.

4. User Notes

The information collected measures perceptions on unsolicited social media advertisements, privacy concern, a feeling of intrusiveness, and ad benefits. Numerous researchers are recognising the importance of the topic, and as such, the data provide a valuable reference for future research to produce further insights into the subject. The dataset is rich, with a sampled population of 837 social media users based in the US. Researchers and industry practitioners can benefit from inferential analysis of the collected data, which can be utilised with confidence in the information’s integrity as the dataset was rigorously tested for its validity and reliability. For example, structural equation modelling and regression analysis could be adopted to analyse the dataset, to understand the relationships between constructs with specific directions of influences. In addition, ANOVA and a *t*-test could be adopted to compare the perceptions towards unsolicited social media ads across different gender and age groups. The results of the inferential analysis on the

dataset will be helpful in conceptualising, designing, testing, and executing more effective social media advertisement campaigns. However, the dataset is not without limitations for users. These cross-sectional data were collected by using a survey method, which makes it difficult for data users to conclude a causal relationship between the constructs. In addition, the dataset was collected in the US alone; additional data and analysis might be required to generalize the results for consumers with different cultural backgrounds.

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References

1. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94.
2. Hu, L.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model.* **1999**, *6*, 1–55.
3. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50.
4. Cho, C.; Cheon, H. Why do people avoid advertising on the Internet? *J. Advert.* **2004**, *33*, 89–97.
5. Bleier, A.; Eisenbeiss, M. The importance of trust for personalized online advertising. *J. Retail.* **2015**, *91*, 390–409.
6. Dolnicar, S.; Jordaan, Y. A market-oriented approach to responsibly managing information privacy concerns in direct marketing. *J. Advert.* **2007**, *36*, 123–149.
7. Edwards, S.M.; Li, H.; Lee, J.H. Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *J. Advert.* **2002**, *31*, 83–95.
8. Buhrmester, M.; Kwang, T.; Gosling, S.D. Amazon's mechanical Turk: A new source of inexpensive, yet high-quality data? In *Methodological Issues and Strategies in Clinical Research*; Kazdin, A.E., Ed.; American Psychological Association: Worcester, MA, USA, 2016; pp. 133–139.
9. Holden, C.J.; Dennis, T.; Hicks, A.D. Assessing the reliability of the M5-120 on amazon's mechanical Turk. *Comput. Hum. Behav.* **2013**, *29*, 1749–1754.