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## Do Demographic Factors of Internet Users Influence their Accessibility to Online Advertisements? A Perception Study

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### Abstract

In the digital era, online advertisement has become a powerful tool for marketers to engage consumers. However, its effectiveness depends significantly on accessibility and users' perception. This study aims to analyze how different demographic factors influence the perceived accessibility of online advertisements. Primarily data were collected from 929 interest users across various age groups using a structured questionnaire, employing convenience sampling technique. Both online and offline modes were used to gather responses. The data were analysed using SPSS software, employing descriptive statistics, One-Way ANOVA, Z Tests, Post-Hoc Tukey's HSD tests to examine differences among demographic groups. The findings revels that the gender, age, and occupation significantly influence the perceived accessibility of online advertisements. These insights have practical implications for advertisers and digital marketers, helping them to design inclusive and targeted advertising strategies that carter to diverse user segments.

Keywords: Online Advertising, Perceived Accessibility and Demographic Factors.

### Introduction

In this digitalized world, everyone is having a digital device in their hands so that they can view pictures, videos and any information in an easy way. This digital media supported by internet technology is not only used for communal activities but also for marketing activities. In the present scenario online platform is considered as easy and flexible media for advertisement because of its 24×7 accessibility and interactivity. Consumers are widely spread according to their demographic groups and their buying behaviours differ from one to another. The rapid growth of internet technology has also attempted to change the behaviour of consumers by communicating differently through newly emerging digital channels of advertisements. This enables the consumers not only to obtain more information of the product with instant accessibility but also to have more purchasing options. The buying decision processes of the consumers are influenced by cognitive factors, physical factors and emotional factors. Moreover, the perception factors of the consumers such as sensibility, potentiality, interactivity and accessibility towards online advertisements are also determinant factors for their purchase decision process. These conventional factors of consumers decision making process is overcome by the



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exponential growth of internet with latest applications of voice, graphics and interactive data exchange networks. This is because of the fact that internet in recent days, emerging as a fifth major media for advertisements due to its wide accessibility and coverage than other traditional media Hoffman and Novak (1996).

In the recent days, the manufacturers and advertisers are having the option of online advertising as an emerging medium to promote their products and services and hence it plays a significant role Adam (2003), Baltas (2003), Kumar (2008), Yoo *et al.*, (2004), Taylor *et al.*, (2008). Wise *et al.*, (2008). Online advertising serves as a new and digital platform to create attention and awareness among consumers because of high speed of internet, user friendliness, low cost and wide accessibility, Rowley (2001). According to the studies conducted by Burke and Edell (1989); Escalas and Rutgers (2003), it is found that the purchase intension of the consumers is highly influenced by three attributes of online advertising such as multimedia, pictures and content of advertisements.

As stated by Danehar and Mullarkey (2003), the online advertisement has high level of influence for the buying behaviour of consumers due to its more duration of page viewing, webpage text and background style of banner advertisements. Shau of A *et al.*, (2016) have pointed out that the purchase intension of consumers is directly influenced by internet advertising because of its wide accessibility and high reachability. Further, the visual effect with animation features plays a crucial role in influencing purchase intension. Stephen Andrew T (2016) have opined that social media advertising is becoming more popular now and consumers purchase decisions are much influenced by advertisements.

### **Objectives of the Study**

- To analyse the mode of accessibility of online advertisements.
- To examine the influence of demographic factors on users' perception of online advertisements accessibility.
- To evaluate effectiveness of different modes of online advertisements accessibility.

### **Research Methodology**

The study is based on analytical research using primary data collected through structed questionnaire. A total of 929 internet users selected using convenience sampling. The questionnaire captured demographic details and perceptions regarding the accessibility of online advertisements. Data were collected both through online and offline modes analyzed using SPSS. Descriptive statistics summarized the data, while One-Way ANOVA and Z Tests tested the significance of differences in perception among demographic groups. Post-Hoc Tukey's HSD was applied where necessary to identify specific group differences.

### **Data Analysis and Interpretation**

The data collected for the present study from the respondents through questionnaire were tabulated and analysed using appropriate statistical techniques mentioned in the research methodology. The results from the statistical analysis and corresponding interpretations of the demographic characteristic of the respondents are presented in this study.



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### 1. Analyses on the Perception of Mode of Accessibility of Online Advertisements

Table 1.1

S No	Mode of Accessibility	Responses		
5. 110.		Ν	Percentage	Percentage of Cases
1	Broadband	120	12.9%	12.9%
2	Wi-Fi	60	6.5%	6.5%
3	Mobile data	291	31.3%	31.3%
4	Internet Cafe	9	1.0%	1.0%
5	<b>Broadband and Wi-Fi</b>	86	9.3%	9.3%
6	Broadband and Mobile data	181	19.5%	19.5%
7	<b>Broadband and Internet Cafe</b>	25	2.7%	2.7%
8	Wi-Fi and Mobile data	66	7.1%	7.1%
9	Wi-Fi and Internet Cafe	26	2.8%	2.8%
10	Mobile data and Internet Cafe	65	7.0%	7.0%
Total		929	100.0%	100.0%

### Multiple Response Analysis on Mode of Accessibility of Online Advertisements

a. Dichotomy group tabulated at value 1.

The frequency Table 1.1 for multiple responses set has revealed that 291 respondents (31.3%) are using mobile data as their mode of accessibility for online advertisements, 181 respondents (19.5%) are opting both broadband and mobile data as their mode of accessibility for online advertisements, 120 respondents (12.9%) are preferring broadband as their mode of accessibility for online advertisements. Only 9 respondents are (1%) visiting internet cafe for accessing online advertisements.

# 2. Relationship Between Demographic Factors and Respondents' Perception on Accessibility of Online Advertisements - Results of One-Way Anova And Z-Test

The overall score of general perception on accessibility of online advertisements was included as dependent variable and all the categories of demographic factors were assumed as independent variables. Post-Hoc Tukey's HSD test is used to test the significant difference between the groups based on mean difference.

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S. No.	Age-group	Number of Respondents	Mean Score	<b>Standard Deviation</b>
1	Below 24 years	680	3.1947	1.85463
2	25-32 years	144	3.0888	1.25591
3	33-39 years	54	3.2222	2.35257
4	40-46 years	45	3.1022	2.37048
5	Above 46 years	6	3.2000	1.09545
Total		929		

 Table 2.1

 Significance of Difference in Perception Among Different Age Group of Respondents

From the Table 2.1 it is interpreted that the mean score of the respondents with the age category 33-39 years is the maximum i.e., 3.222. This is followed by the respondents with the age category above 46



years with the mean score 3.2000, then the respondents with the age category Below 24 years with the mean score 3.1947, next the respondents with the age category 40-46 years with the mean score 3.1022 and at the last with the age category 25-32 years with the mean score of 3.0888. The analysis of variance is applied to test the significance of difference between the mean scores of these categories of the respondents classified according to age with the following null hypothesis:

# H<sub>01</sub>: There is no Significant Difference Between Different Age Categories of the Respondents and their Perception on Accessibility of Online Advertisements

Table 2.2

### Significance of Difference in Perception Between Different Age Categories of the Respondents

S. No.	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
1	Between groups	42.354	4	10.588	3.148	0.0140
2	Within groups	3107.657	924	3.363		

From the Table 2.2 it is found that p-value is 0.014 lesser than the value of 0.05 at 5% level of significance. So, the null hypothesis is rejected. Hence, it is concluded that there exists a significant difference between the five age groups of the respondents and accessibility of online advertisement.

 Table 2.3

 Significance of Difference in Perception Between the Categories Based on Age Groups

<b>Categories Compared</b>	Mean Difference	Sig.
Below 24 years and 25-32 years	0.52908*	0.015

\*The mean difference is significant at the 0.05 level.

Post-Hoc Tukey's HSD test is used to test the significant difference between the groups based on mean difference. The age categories Below 24 years and 25-32 years show more favourable perception than the respondents with other age categories at 5% level of significance.

The respondents are also surveyed based on their gender to state their perception towards online advertisements and the results are presented in the following table:

 Table 2.4

 Gender wise Classification of the Respondents for their Perception on Accessibility of Online

 Advertisements

S. No.	Gender	Number of Respondents	Mean Score	Standard Deviation
1	Male	445	3.2710	1.42049
2	Female	484	3.0876	2.06476

The Table 2.4 reveals that the mean score of the male respondents is higher (3.2710) than the female respondents. Hence, the Z-test is used to test the significance of difference in mean scores between male and female respondents with the null hypothesis mentioned below:

### H<sub>0</sub>: There is no Significant Difference in Perception on the Accessibility of Online Advertisements of the Respondents Classified on the Basis of Gender. Table 2.5

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Significance (	Di Dillerence in	Perception	Between	viale and	remale
		<b>-</b>			

Condor	Z value		
Genuer	Z	Sig. (2-tailed)	
Male and Female	7.821	0.000	

From the table 2.5 it is clear that Z value is 7.821 and the p-value is 0.000 at 5% level of significance. The null hypothesis is rejected. Hence there is a significant difference in perception on accessibility of online advertisement of the respondents classified on the basis of gender.

The classification of respondents according to marital status and their perception regarding accessibility of online advertisement is given in Table 2.6.

 Table 2.6

 Marital Status Wise Classification of the Respondents for their Perception on Accessibility of Online Advertisements

S. No.	Marital Status	Number of Respondents	Mean Score	<b>Standard Deviation</b>
1	Married	302	3.1265	1.72166
2	Unmarried	627	3.1990	1.88782

The Table 2.6 reveals that the mean score of the unmarried respondents is higher (3.1990) than the married respondents. Hence, the Z-test is used to test the significance of difference in mean scores between married and unmarried respondents with the following null hypothesis.

# H<sub>0</sub>: There is no Significant Difference in Perception Regarding Accessibility of Online Advertisement Between Nuclear and Joint Family Respondents.

 Table 2.7

 Significance of Difference in Perception Between Married and Unmarried Respondents

Marital Status	Z value		
Iviai itai Status	Z	Sig. (2-tailed)	
Married and Unmarried	2.822	0.005	

From the Table 2.7 it is clear that Z value is 2.822 and the 'p' value is 0.005 at 5% level of significance. The null hypothesis is rejected. Hence, there is a significant difference in perception regarding accessibility of online advertisement between married and unmarried respondents. Further, classification of respondents according to the nature of family and their opinion regarding accessibility of online advertisement is given below:

### Table 2.8

### Nature of Family Wise Classification of Respondent and Perception on Accessibility of Online Advertisements

S. No.	Nature of Family	Number of Respondents	Mean Score	<b>Standard Deviation</b>
1	Nuclear family	570	3.2477	1.62664
2	Joint family	359	3.0607	2.01385



The Table 2.8 reveals that the mean score of the nuclear family respondents is higher (3.2477) than the joint family respondents. Hence, the Z-test is used to test the significance of difference in mean scores between Nuclear and joint family respondents with the following null hypothesis.

# H<sub>0</sub>: There is no Significant Difference in Perception Regarding Accessibility of Online Advertisements Between Nuclear and Joint Family Respondents.

Table 2.9

### Significance of Difference in Perception Between Nuclear and Joint Family Type of Respondents

Naturo of Family	Z value	
Nature of raining	Ζ	Sig. (2-tailed)
Nuclear and Joint family	7.769	0.000

From the Table 2.9 it is clear that Z value is 7.769 and the p-value is 0.00 at 5% level of significance. The null hypothesis is rejected. Hence, there is a significant difference in perception on accessibility of online advertisement between nuclear and joint family respondents. Further, the accessibility of online advertisement with respect to educational qualification was carried out and the mean scores on accessibility of online advertisement are given below:

# Table 2.10 Educational Qualification Wise Classification of the Respondents for them Perception on Accessibility ff Online Advertisements

S. No.	Qualification	Number of Respondents	Mean Score	<b>Standard Deviation</b>
1	Diploma	117	3.3384	0.92346
2	UG degree	540	3.1844	1.90728
3	PG degree	120	2.995	1.64221
4	Ph.D.	145	3.1641	1.96380
5	Others	7	3.0857	2.43975
Total		929		

It is inferred from the Table 2.10 that the mean score of the respondents with diploma as their educational qualification is the maximum i.e., 3.3384. This is followed by the respondents with UG degree whose mean score 3.1844, then the respondents with Ph.D. degree whose mean score 3.1641, with PG degree scores 2.995 as mean score, and at the last with other qualification scores 3.0857 as mean score. The analysis of variance is applied to test the significance of difference between the mean scores of these categories of the respondents classified according to qualification with the following null hypothesis:

### H<sub>0</sub>: There is no Significant Difference in Perception on Accessibility of Online Advertisements with Respect to Educational Qualification.

#### Table 2.11

### Significance of Difference in Perception among Educational Qualification Wise Classifications of

the Respondents

S. No.	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
1	Between groups	178.377	4	44.594	13.866	0.000



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2	Within groups	2971.634	924	3.216	

From the Table 2.11 it is inferred that p-value 0.000 is lesser than the value of 0.05 at 5% level of significance. So, the null hypothesis is rejected. Hence, it is concluded that there exists a significant difference between the educational qualification of the respondents and their perception regarding accessibility of online advertisement.

#### Table 2.12 Significance of Difference in Perception among Educational Qualification Wise Classification of Respondents

S. No.	<b>Categories Compared</b>	Mean Difference	Sig.			
1	Diploma and PG degrees	1.71731*	0.000			
2	Diploma and Ph.D degrees	$0.87162^{*}$	0.001			
3	UG and PG degrees	$0.94722^{*}$	0.000			
4	Ph.D and PG degrees	$0.84569^{*}$	0.001			
5	Diploma and UG degrees	$0.77009^{*}$	0.000			

\*The mean difference is significant at the 0.05 level.

Post-Hoc Tukey's HSD test is used to test the significant difference between the groups based on mean difference. The qualification with Diploma and PG degree, Diploma and Ph.D. degree, UG and PG degrees, Ph.D and PG degrees, Diploma and UG degrees show more favourable opinion than the respondents with other educational qualification at 5% level of significance.

# Table 2.13 Occupational Status Wise Classification of the Respondents for their Perception on Accessibility of Online Advertisements

S. No.	Occupational Status	Number of Respondents	Mean Score	<b>Standard Deviation</b>
1	Students	782	3.1703	1.78584
2	Teachers	147	3.2027	2.11966

It is inferred from Table 2.13 that the mean score (3.2027) of the teachers is higher than the mean score (3.1703) of the students. Hence, the Z-test is used to test the significance of difference in mean scores between the occupational statuses of the respondents with the following null hypothesis.

### H<sub>0</sub>: There is no Significant Difference in Perception on Accessibility of Online Advertisements Between the Categories of Occupational Status of Respondents.

**Table 2.14** 

### Significance of Difference in Perception among the Occupational Status Wise Classification of The Respondents

Occupational status	Z value				
Occupational status	Ζ	Sig. (2-tailed)			
Students and teachers	0.978	0.328			



From the Table 2.14 it is clear that Z value is 0.978 and the p-value is 0.328 at the level of 5% significance. The null hypothesis is accepted. Hence, there is no significant difference in perception on the accessibility of online advertisement between occupational statuses of the respondents.

 Table 2.15

 Monthly Income Wise Classification of the Respondents for their Perception on Accessibility of

 Online Advertisements

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S. No.	Monthly Income	Number of Respondents	Mean Score	<b>Standard Deviation</b>		
1	Below Rs.20,000	101	3.1029	2.41501		
2	Rs.20,001-Rs.40,000	268	3.2477	1.04705		
3	Rs.40,001-Rs.60,000	304	3.1506	2.07650		
4	Rs.60,001-Rs.80,000	196	3.1704	2.05901		
5	Above Rs.80,000	60	3.1166	1.18310		
Total		929				

From the Table 2.15 it is concluded that the mean score of the respondents with the monthly income Rs.20,001-Rs.40,000 is maximum i.e., 3.2477. This is followed by the respondents with monthly income Rs.60,001-Rs.80,000 whose mean score 3.1704, then the respondents with monthly income Rs.40,001-Rs.60,000whose mean score 3.1506, with income above Rs.80,000 scores 3.1166 as mean score and at the last with monthly income below Rs.20,000 the mean score is 3.1029. The analysis of variance is applied to test the significance of difference between the mean scores of these categories of the respondents classified according to monthly income with the following null hypothesis:

### H<sub>0</sub>: There is no Significant Difference in Perception on the Accessibility of Online Advertisements Among the Respondents Classified on the Basis of Monthly Income.

**Table 2.16** 

Significance of Difference in Perception among the Respondents Based on their Monthly Income

S. No.	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
1	Between groups	58.277	4	14.569		
2	Within groups	3091.733	924	3.346	4.354	.002
Total			928			

From Table 2.16 it is found that p-value is 0.002 lesser than the value of 0.05 at 5% level of significance. So, the null hypothesis is rejected. Hence, it is concluded that there exists a significant difference between the monthly income of the respondents and accessibility of online advertisements.

### **Table 2.17**

### Significance of Difference in Perception Between the Categories Based on Monthly Income of the Respondents

S. No.	Categories Compared	Mean Difference	Sig.
1	Below Rs.20,000 and Rs.20,001-Rs.40,000	0.72395*	0.007
2	Rs.20,001-Rs.40,000 and Rs.40,001-Rs.60,000	0.48552*	0.014



### \*The mean difference is significant at the 0.05 level.

Post-Hoc Tukey's HSD test is used to test the significant difference between the groups based on mean difference. The monthly income below Rs.20,000 and Rs.20,001-Rs.40,000, Rs.20,001-Rs.40,000 and Rs.40,001-Rs.60,000 shows more favourable perception than the respondents with other income categories at the level of 5% significance.

#### Suggestions

To improve accessibility and effectiveness of online advertisements, it is crucial to prioritize mobile friendly context and optimize ads for mobile data usage, as most users access ads though mobile devises. Advertisers should also tailor their campaigns based on demographic insights such as age, education and income to better connect with diverse audience segments. Additionally, efforts to expand affordable broadband and Wi-Fi infrastructure, especially in rural and underserved areas, will enhance overall accessibility and engagement.

#### Recommendations

It is recommended that advertisers and service providers develop targeted, data-driven advertising strategies that focus on mobile optimization and audience segmentation. Collaborating with telecom companies to improve network infrastructure and promoting digital literacy initiatives can further boost user access and interaction. Regular monitoring of user feedback and accessibility trends should guide ongoing campaign adjustments to ensure ads remain relevant and effective across different user groups and technological platforms.

#### Conclusion

Information was gathered by the researcher from the teachers and students at colleges regarding their daily frequency of internet usage, their mode of internet accessibility, and the factors that influence them to click on online advertisements while browsing. It was observed that most of the respondents preferred to remain online throughout the day and primarily used mobile data as their mode of internet access.

The relationship between demographic factors and the general perception of the respondents specially in terms of sensibility, potentiality, interactivity and accessibility was found to be significantly different. As a result, the null hypotheses are not accepted in all cases. This indicates that that all demographic characteristics are likely to influence the respondents' perception of online advertisements in terms of sensibility, potentiality, interactivity and accessibility.

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