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The Relationship Existing between Data Driven Targeted Online Adverts and Customer Reach for Msmes in Anambra State

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Abstract **Original Research Article**

Micro, Small, and Medium Enterprises (MSMEs) in Nigeria, particularly in Anambra State, continue to face challenges in expanding their customer base and maintaining competitive visibility in an increasingly digital marketplace. Despite the growing availability of data-driven tools, many MSMEs have yet to fully adopt targeted online advertising strategies that can enhance their customer reach. This study investigated the relationship between data-driven targeted online adverts and customer reach among MSMEs in Anambra State. Employing a survey research design, data were collected from selected MSMEs across the state's three senatorial zones through structured questionnaires. The findings revealed strong agreement among respondents on the potential benefits of using targeted digital advertising tools, such as audience selection by age and location. Descriptive analysis showed high mean scores on items measuring preference and perceived impact of targeted advertising. Correlation analysis further indicated a statistically significant and strong positive relationship ($r = .855$, $p < 0.05$) between data-driven targeted online adverts and customer reach. The study concludes that leveraging data analytics and targeted advertising techniques can substantially enhance customer engagement and market visibility for MSMEs. It recommends increased digital literacy and support for technology adoption to maximize the marketing potential of MSMEs in the region.

Keywords: Social media usage, Customer reach, Micro, small and medium enterprises.

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have long been recognized as the backbone of economic development in developing countries, including Nigeria. Their role in employment generation, innovation, and poverty alleviation is well documented (Ariyo & Jerome, 2021). A critical component of MSME sustainability and growth lies in their ability to reach and retain customers efficiently. Traditional methods of marketing have become increasingly insufficient, especially in a digitalized world where consumer behavior is largely shaped by online content. As a result, the adoption of data-driven targeted online advertising has emerged as a transformative tool for improving customer reach. Data-driven advertising uses consumer data—such as preferences, browsing behavior, and demographics—to tailor marketing messages to specific segments, thereby enhancing efficiency and conversion rates (Chaffey, 2022). This approach enables MSMEs to deliver personalized content that resonates with potential buyers, thereby increasing engagement and reach. According to Zhang and Mao (2020), businesses that incorporate targeted digital advertising witness an average of 30% increase in customer interaction compared to those relying solely on traditional media.

Globally, digital advertising spending has witnessed exponential growth. Statista (2023) reported that global digital ad spending exceeded $600 billion, with small businesses contributing significantly due

to the accessibility of social media platforms like Facebook, Google Ads, and Instagram. In Africa, despite infrastructural challenges, digital advertising is gaining momentum, particularly in urban areas with increasing internet penetration. In Nigeria, digital marketing adoption among MSMEs is on the rise, driven by mobile connectivity, the proliferation of smartphones, and the growing availability of digital marketing tools (Uchenna & Agbo, 2022). In Anambra State, which houses some of Nigeria's most vibrant commercial hubs like Onitsha, Awka, and Nnewi, MSMEs have begun leveraging digital platforms to expand customer reach. The strategic use of data-driven online advertising has allowed these businesses to target specific customer groups based on geography, interest, and online behavior. Research by Okonkwo and Eze (2023) indicated that over 62% of MSMEs in urban Anambra use Facebook Ads and Google targeting tools to reach potential buyers within and outside the state.

Despite the benefits, challenges such as limited digital literacy, high data costs, and concerns about data privacy impede the full utilization of data-driven advertising by MSMEs. Nevertheless, when properly harnessed, targeted adverts offer MSMEs the potential to overcome geographical constraints, personalize communication, and enhance marketing ROI. The Anambra State Government, through its Ministry of Youth Empowerment and Digital Economy, has initiated several digital literacy programs aimed at equipping MSMEs with the necessary skills to maximize online platforms (Anambra State Government, 2024). Therefore, understanding the relationship between data-driven targeted online advertising and customer reach in the context of MSMEs in Anambra State is imperative. It offers insight into how digital marketing can serve as a catalyst for expanding market access and strengthening competitiveness among small businesses in the state.

2. LITEREATURE REVIEW

2.1. Conceptual Issues

Data-driven Targeted Online Advertising

Chaffey (2022) defines data-driven targeted online advertising as "a form of digital marketing that utilizes user data such as demographics, online behavior, and preferences to deliver personalized adverts to specific audiences with the aim of increasing relevance, engagement, and conversion rates." Lambrecht and Tucker (2013) describe it as "a strategic use of consumer-level data collected through digital interactions to segment audiences and serve them advertisements tailored to their interests, behaviors, and prior engagements, thus optimizing advertising efficiency and effectiveness."

Customer Reach

Kotler and Keller (2016) define customer reach as "the extent to which a firm's marketing messages and offerings are able to effectively connect with its target audience through various channels, thereby increasing the likelihood of customer acquisition and retention." **Tiago and Veríssimo (2014)** describe customer reach as *"the firm's capability to communicate with and attract a large and relevant audience, especially through online channels that support personalized and interactive engagement.*

2.2. Empirical Review

Elragal and Elgendy (2024) developed a framework to evaluate organizational readiness for data-driven decision-making (DDDM). Their research assessed a Swedish food company using a self-designed questionnaire and eleven interviews—ten with decision-makers and one with the IT manager. The results, analyzed through decision-making theories and DDDM principles, showed that the company was well-prepared in its decision processes and leadership but lacked adequate data and analytics capabilities.

Adeniyi and Adeeko (2024) explored how Industry 4.0 technologies affect market scalability among small and medium-sized enterprises (SMEs) in Southwest Nigeria. Using a descriptive survey design with 1,200 respondents, the study found low awareness and limited adoption of Industry 4.0 due to financial constraints, poor electricity supply, and inadequate expertise.

Olateju (2024) investigated the role of digital technology (DT) in Nigerian MSMEs. Data from 320

enterprises—150 adopters and 170 non-adopters—were analyzed using descriptive and econometric tools, including Propensity Score Matching. Results revealed that DT adoption enhanced business growth but did not significantly influence profitability compared to firms that did not adopt DT.

Arce et al. (2024) examined how artificial intelligence (AI) enhances marketing performance. Using a mixed-methods approach, they observed that AI facilitates data-driven marketing decisions, enabling MSMEs to design efficient digital strategies, improve customer engagement, and optimize promotional content.

Arachie, Dibua, and Idigo (2023) assessed AI's role in small business operations. Surveying 379 enterprises selected from 27,546 registered with the Corporate Affairs Commission, they found that most Nigerian MSMEs still rely heavily on manual operations despite the availability of AI tools.

Echendu and Williams (2023) explored how data-driven management influences innovation in Port Harcourt's manufacturing firms. Using quantitative and qualitative methods with 106 participants, the study applied Spearman's correlation and revealed significant positive relationships between analytical capability, data culture, technological competence, and organizational innovation in products, processes, and competitiveness.

Radicic and Petković (2023) analyzed the effect of digitalization on technological innovation among German MSMEs using Mannheim Innovation Panel (MIP) data. The binary probit analysis indicated that digitalization impacts innovation differently across firm sizes and sectors, with modest but significant effects moderated by internal R&D activities.

Lian (2023) examined factors driving digital technology adoption in green supply chain innovation among Malaysian social enterprises. Surveying 410 firms, and using structural equation modeling, the study found that performance expectancy, ease of use, and cost significantly influenced adoption, while facilitating conditions had little impact.

Avenyo, Bell, and Nyamwena (2022) identified determinants of digital technology adoption among 516 South African manufacturers using multivariate probit analysis. The results showed that innovation capacity, export exposure, foreign ownership, and skilled labor promoted adoption, while capital shortages hindered it.

Ogbolu and Adelaja (2022) investigated technology use among informal micro-businesses in Nigeria. Interviews revealed that although owners initially resisted digital tools, simple technologies such as mobile phones improved operational flexibility, customer reach, and transaction convenience.

Finally, Andrade and Tumelero (2022) explored AI's contribution to customer service efficiency in a Brazilian bank's Analytical Intelligence Unit using IBM Watson. Through qualitative content analysis with Atlasti software, the study found that AI-driven chatbots enhanced operational speed, availability, and customer satisfaction, while allowing human agents to focus on complex tasks.

A study on digital and adaptive marketing was conducted in Indonesia Kurniati and Hidayat (2022). The study was qualitative, and it used an interactive model for data analysis. Data were collected by observation, interviews, and documentation. It should be emphasised that being adaptive needs multiple maturation phases by considering various internal and external elements. The results indicated that the Adaptive Strategy (SA) contributed to offering solutions to survive and/or develop. A concept or strategy of "landscape, learning, and leadership" is at least necessary, and this idea or plan should be supported by policies and considerations on effectiveness, utilisation, flexibility, timeliness, value, and/or cost. so that it might improve its capacity to endure and even flourish in a variety of circumstances. Culinary MSMEs employed social media for digital marketing in addition to adaptive tactics. Social media is useful for business because it may connect a brand, corporation, or enterprise with its intended market.

3. METHODOLOGY

3.1. Research Design

Research design serves as a blueprint or roadmap for conducting research. According to

Kothari and Garg (2014), it involves organizing the conditions necessary for collecting and analyzing data in a manner that aligns with the research objectives while ensuring process efficiency. This study employed a Survey Research Design due to its aim of gathering data from selected respondents regarding a phenomenon through the use of a structured questionnaire.

3.2. Area of the Study

The study area is Anambra State, one of the five states in Nigeria's South-East region. The state was created in 1976, emerging from the former East Central State, and is named after the Omambala River that runs through it, with "Anambra" being the Anglicized form of Omambala. Officially established in 1991, Anambra State has its capital in Awka and consists of 21 Local Government Areas (LGAs). Onitsha, known for its significant historical role as a port in the pre-colonial era, serves as a key commercial hub in the state, featuring one of the largest markets in West Africa.

3.3. Population of the Study

The study's population includes MSMEs from three regions within the state's three senatorial zones. Specifically, the areas and the number of MSMEs are as follows: Onitsha (772), Awka (231), and Nnewi (396), resulting in a total of 1,399. This information was sourced from the market traders' unions in each senatorial zone and the Anambra State Ministry of Commerce and Industry in June 2024.

3.4 Sample Size and Sampling Technique

The sample size of the study is determined using Krejcie and Morgan's 1970 sample size determination formula. The formula is given below as:

$$s = \frac{x^2 NP(1-P)}{d^2(N-1) + x^2 P(1-P)}$$

Where

s = Sample size

x^2 = Table value of chi-square for 1 degree of freedom at 0.05% confidence level (3.84)

N = population size (1399)

P = population proportion (assumed to be 0.5 since this would provide the maximum sample size)

d = Degree of accuracy expressed as a proportion (0.05)

$$s = \frac{3.84\ (1399)(0.5)(1-0.5)}{(0.05)^2(1399-1) + (3.84)\ (0.5)(1-0.5)}$$

$$s = \frac{1343}{3.5 + 0.96}$$

$$s = \frac{1343}{4.46}$$

$s \cong 301$

To determine the appropriate allocation of questionnaire to each of the areas, Bowley's (1926) allocation formula

is adopted as shown below:

nh = $\frac{nNh}{N}$

Where n = total sample size.

Nh = No. of items in each stratum in the population.

N = population size.

Application of the Formula

1	Onitsha	301	(772)	/ 1399	= 166
2	Awka	301	(231)	/ 1399	= 50
3	Nnewi	301	(396)	/ 1399	= 85
Total					**301**

3.5 Sources of Data

This study primarily relies on primary data sources, although data collection generally involves both primary and secondary sources. However, for this research, the primary source is deemed the most suitable.

3.6. Method of Data Collection

Data collection was carried out through personal distribution. Two trained research assistants were assigned specific areas and instructed on the distribution process and how to handle potential questions. The research assistants covered Onitsha and Nnewi, while the researcher oversaw the distribution in Awka. This approach was implemented to ensure comprehensive coverage and timely completion of the data collection.

3.7. Validity of Instrument

The instrument was validated with the assistance of the supervisor and experts in instrument design and measurement from the Faculty of Education at Nnamdi Azikiwe University, Awka. They reviewed the questionnaire for clarity and conciseness in simple English. Additionally, the content of the questionnaire was assessed to ensure it accurately measures the intended constructs. This process involved both face and content validity evaluations.

3.8. Reliability of the Instrument

The reliability of the instrument was assessed using Cronbach's Alpha, resulting in a coefficient of 0.873, which surpasses the acceptable threshold of 0.7, thus confirming its reliability. To obtain this data, 30 questionnaires were distributed to MSMEs in Ekwulobia. The responses were subsequently coded and analyzed using SPSS version 20, yielding a reliability coefficient of 0.873.

3.9. Method of Data Analysis

The study's analysis utilized both descriptive and inferential statistics. Descriptive analysis involved the use of frequencies, means, and rankings, while hypotheses were tested using inferential methods, specifically Pearson Product Moment Correlation Analysis.

4. DATA PRESENTATION AND INTERPRETATION OF RSULTS

4.1. Data Analysis

Table 1: Questionnaire Distribution, Collection and Analysis

S/N	Ministries	Distributed	Retrieved	Analysed
1	Onitsha	166	145	140
2	Awka	50	42	40
3	Nnewi	85	78	75
	Total (Percentage)	**301 (100%)**	**265 (88%)**	**255 (85%)**

Source: Field Survey, 2024

The schedule for distributing, gathering, and evaluating the questionnaires is shown in Table 1. As can be seen, 301 questionnaires in total—the sample size for each area—were distributed. Of these, 266 questionnaires—or 88% of the number distributed—were gathered. However, 10 copies of the gathered surveys were worthless because of damage or incomplete responses, thus only 255 questionnaires, or 85% of those distributed, were eventually analysed.

4.1.1. Descriptive Statistics for Research Questions and Test of Hypothesis

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Table 2: Distribution of responses for data driven targeted online adverts and customer reach

S/N	Questionnaire Items	SA (5)	A (4)	UD (3)	D (2)	SD (1)	Mean	Decision
	Data Driven Targeted Online Adverts							
1	I would like to use AI to select those that will see my adverts.	101	104	10	20	20	3.96	Accept
2	Having the opportunity to select the age of those that will see my advert will be great for my business.	180	61	5	9	-	4.62	Accept
3	Choosing the location of those that will see my advert will do my business good.	154	91	10	-	-	4.56	Accept
4	Selecting those that see my ads is very crucial to my business.	201	44	5	5	-	4.73	Accept
	Customer Reach							
5	Targeting the right kind of people will make me reach my ideal customers.	130	55	15	17	38	4.01	Accept
6	My business is known far and wide because of the targeted adverts I run.	-	39	25	81	110	1.97	Reject

7	Targeted advert has no role to play in making more people know about my business.	-	20	13	119	103	1.80	Reject
8	Using targeted advert will make more people to know about my product.	110	99	21	25	-	4.07	Accept

Source: Field Survey, 2024

Table 2 indicates the distribution of responses for data driven targeted online adverts and customer reach, using a threshold of acceptance of 3 as a yardstick for acceptance. For questions used in measuring data driven targeted online adverts, the respondents agreed that they would like to use AI to select those that will see their adverts with a mean of 3.96. A mean of 4.62 also indicates that they accepted that having the opportunity to select the age of those that will see their advert will be great for their business. Similarly, they accepted that choosing the location of those that will see their advert will do their business good and that selecting those that see their ads is very crucial to their business with a mean of 4.56 and 4.73 respectively.

On questions used in measuring customer reach, the respondents agreed that targeting the right kind of people will make them reach their ideal customers with a mean of 4.01. A mean of 1.97, however, showed that they disagreed that their business is known far and wide because of the targeted adverts they run. They also rejected that targeted advert has no role to play in making more people know about their business as revealed by a mean of 1.80. They however agreed that using targeted advert will make more people to know about their product with a mean of 4.07.

4.1.2. Hypothesis Testing

H_0: There is a significant relationship existing between data driven targeted online adverts and customer reach for MSMEs in Anambra State.

H_1: There is no significant relationship existing between data driven targeted online adverts and customer reach for MSMEs in Anambra State?

Table 3: Regression Result for Hypothesis Testing

		DDTOA	CR
DDTOA	Pearson Correlation	1	.855**
	Sig. (2-tailed)		.000
	N	255	255
CR	Pearson Correlation	.855**	1
	Sig. (2-tailed)	.000	
	N	255	256
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Field Survey, 2024

Where:

DDTOA: Data Driven Targeted Online Adverts

CR: Customer Reach

Table 3 indicates the correlation analysis result which states that there is a significant relationship existing between data driven targeted online adverts and customer reach for MSMEs in Anambra State. From the analysis, the r is .855 while the p-value is .000. Given that the p-value is less than .05 level of significance, the alternate hypothesis is thereby accepted and it is stated that there is a statistically significant relationship existing between data driven targeted online adverts and customer reach or MSMEs in Anambra State.

4.2 Discussion of Findings

The analysis was conducted using correlation analysis and the result showed that there is a statistically significant relationship existing between data driven targeted online adverts and customer reach of MSMEs in Anambra State. This finding implies that an increment in the usage of data driven targeted online adverts by MSMEs in Anambra State will also increase the customer reach of the MSMEs. That is when blind or open adverts are avoided by the MSMEs, meaning that they now target those who see their adverts online, it will make them reach an increased number of customers who are interested in what they sell or produce. This finding is in alignment with the findings of Olateju (2024) who examined the impact of digital technology on MSME activities and indicated that the implementation of DT has helped business expansion in the study area among MSMEs that adopted DT compared to MSMEs that did not adopt DT. Also, Echendu and Williams (2023) who investigated the relationship between data driven management and organizational innovation showed that there is a positive and significant relationship between all the dimensions of data driven management tested (i.e robust analytical capabilities, data driven culture and technological capabilities) and organizational innovation as it is linked with the process, product innovation and competitive advantage thus foster innovation.

5. CONCLUSION AND RECOMMENDATIONS

The analysis of responses points to a significant connection between the use of data-driven targeted online adverts and the ability of MSMEs in Anambra State to reach more customers. Respondents expressed strong agreement with the idea that selecting specific demographics—such as age and location—through targeted advertising could benefit their businesses, as reflected in high mean scores. This demonstrates a clear recognition of the strategic value of personalized advertising in attracting potential customers. On the other hand, the lower mean scores on items suggesting widespread recognition of their business due to targeted adverts indicate that while MSMEs acknowledge the potential of such tools, they may not yet be fully optimizing them to achieve broad visibility. Statistically, the correlation coefficient (r = .855) and the highly significant p-value (.000) confirm that a robust positive relationship exists between data-driven targeted online adverts and customer reach. Thus, the study concludes that the effective application of data-driven advertising techniques can substantially improve how MSMEs in Anambra State connect with and attract their target markets. This highlights the need for more focused efforts in adopting and leveraging digital tools for customer outreach. As a result of the findings, it is recommended that data driven targeted online adverts should be deployed more often by MSMEs in Anambra State, as this will help them to increase not just their customer reach, but reaching more tailor-made/desired kinds of customers cheaper and faster.

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