



**EXAMINING CONSUMERS' PERCEPTION AND ENGAGEMENT WITH
PERSONALISED ONLINE ADVERTISEMENTS IN GHANA**

BY

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DECLARATION

I hereby declare that this research is a result of my own original research and that no part of it has been presented for another degree in this university or any other higher education institute. I further declare that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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CERTIFICATION

This Dissertation has been prepared and presented under my supervision according to the guidelines for supervision and formatting of dissertations laid down by the University of Media, Arts and Communication (UniMAC).

Priscilla Teika Odoom, PhD.....

.....18th December 2025.....

(Supervisor)

Signature

Date

DEDICATION

I dedicate this work to God Almighty, my family, friends and beloveds whose prayers support me daily. This work also goes to my newborn son, Ernest Fiifi Donkoh, for making my experience with this research work memorable.

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I thank Almighty God for granting me the grace, clarity, and resilience needed to complete this thesis.

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ABSTRACT

Personalised online advertising has become a central strategy in digital marketing, yet consumer understanding and responses to such ads vary across contexts, particularly in developing digital markets like Ghana. This study investigates how consumer knowledge influences perceptions of personalised advertising and how these perceptions specifically relevance and privacy shape engagement behaviours such as clicking, liking, and commenting. The study also examines whether gender differences exist in consumers' perceptions of personalised ads. A quantitative cross-sectional survey design was employed, using structured questionnaires distributed online. A sample of 151 Ghanaian internet users aged 18 and above participated in the study. Descriptive statistics, reliability tests, Pearson correlation, multiple regression, and independent-samples t-tests were conducted using SPSS. Composite scales measured consumer knowledge, perceived relevance, perceived privacy, and engagement behaviour, all demonstrating strong internal consistency. Findings revealed that while consumer knowledge is high, it does not directly predict engagement; instead, its influence is mediated by perceptions. Perceived relevance had a significant positive influence on engagement behaviours, indicating that when consumers find ads useful and personally meaningful, they are more likely to interact with them. Perceived privacy also significantly influenced engagement, suggesting that when consumers feel secure about how their data is handled, they respond more favourably. Additionally, a significant gender gap in technical awareness was identified, although both genders reported similar levels of privacy concerns and engagement. The study recommends that digital advertisers in Ghana prioritize transparency and data ethics to bridge the trust deficit identified in consumers. Furthermore, organisations should focus on enhancing the utility and relevance of ad content rather than increasing the frequency of tracking, as relevance and trust are the primary drivers of engagement. Finally, policymakers should implement digital literacy interventions to empower consumers, particularly women, with the technical knowledge necessary to navigate the complexities of data-driven advertising.

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CHAPTER ONE

INTRODUCTION

1.1 CHAPTER OVERVIEW

This chapter lays the foundational groundwork for the entire study, providing a comprehensive overview of its scope and objectives. It begins by setting the stage for the detailed examination of personalised online advertising and its impact on consumer engagement within the Ghanaian digital landscape. The chapter highlights the research gaps this study aims to address, particularly the relationship between consumer knowledge, perceived relevance, and privacy concerns. Furthermore, it outlines the potential contributions of the research to both academic knowledge and practical marketing applications in Ghana, concluding with a summary of the overall organization of the dissertation.

1.2 BACKGROUND OF THE STUDY

The American Marketing Association (AMA, 2025) defines advertising as “a paid communication that aims to inform or persuade an audience to take a specific action, such as buying a product, subscribing to a service, or simply engaging with your brand.” Traditionally, advertising was disseminated via TV, radio, print, and billboards. However, with technological advancement, online advertising has emerged as a powerful medium, providing access to global audiences.

Online advertising technologies have equipped brands with tools that help to precisely target the right audiences thus, driving many brands (local and international) to tap into the capabilities of online ads (Bartulay, 2024; Ungureanu & Popescu, 2022). Advertisers use data such as browsing history, purchase history, search queries, and social media interactions to personalize ads for their target audience (Shukri & Marzuki, 2021). Technological gadgets like mobile devices have made

ad personalization for consumers easier by monitoring and gathering consumers' media usage in real time (Segijn & Voorveld, 2020). Personalised ads come in two forms, namely online behavioural advertising (OBA) and synced advertising (SA). While OBA tracks users' online behaviour to tailor ads, SA employs online and offline behaviour to tailor ads to consumers. (Segijn & Ooijen, 2020; Gerdman & Nordqvist, 2017).

Online behavioural advertising (OBA) is cross-media personalization, which involves personalizing ads on one medium while using data about behaviour gathered from another medium. For instance, when a consumer searches on Google for sneakers on her laptop, it leads to the consumer later seeing Facebook ads about sneakers on her phone. On the other hand, synced advertising (SA) happens in real time. When ads are targeted based on current media behaviour. An instance is when a consumer is watching a TV program that advertises quality electronics like a fridge, and the consumer sees fridge ads on Instagram while using their phone at the same time. Personalization has helped organizations to analyze and understand their customers much more efficiently. However, data-driven advertising like OBA and SA has raised concerns about the collection, use, and sharing of personal data as well as consumer privacy among advertisers, academics, regulators, and consumer organizations (Boerman & Segijn, 2022).

In Ghana, the rapid growth of internet penetration and smartphone usage has also created a space for digital marketers to deploy personalised advertisements on social media, search engines, and e-commerce platforms. Industry sectors like retail, banking, and telecommunications are increasingly investing in data-driven marketing to improve customer engagement and increase conversion rates (Statista, 2025). Nonetheless, personalised ads have sparked substantial debates and challenges. While proponents argue that such ads improve user experience and marketing

efficiency, critics raise concerns about privacy, data security, and consumer autonomy (Boerman, Kruikemeier, & Zuiderveen Borgesius, 2017)

Similarly, the growing public discourse about how much personal data is being collected and how it is used, especially following global scandals like the Cambridge Analytica incident and the introduction of data protection regulations, still remains a critical issue. Research demonstrates that the frequency, relevance, and perceived usefulness of advertisements—alongside privacy concerns—significantly influence consumers' purchase intentions. Furthermore, many consumers exhibit high levels of acceptance toward personalised content, often showing minimal resistance to these targeted approaches (Mehta & Udit, 2020)

Many Ghanaian consumers are unaware of the extent to which their online activities are tracked, and there is uncertainty about whether increased awareness/knowledge of personalised ads leads to more cautious or empowered online behaviour of consumers (Girona & Korgaonkar, 2018). The lack of transparency from advertisers and the current digital literacy gap among certain demographics have increased this tension (Awuah, 2024). Moreover, there is little empirical evidence on whether Ghanaian consumer knowledge and understanding of personalised advertising, to its full extent, actually influence their likelihood of engaging with such ads. Although personalizing ads online offers relevance, the majority of Ghanaian consumers have a limited understanding of how the ads are produced, therefore raising questions about knowledge, awareness, engagement, and gender-based differences in perception (Zhu & Chang, 2016).

Evidently, it is imperative to examine how Ghanaian consumers perceive personalised ads and whether their knowledge and understanding of these practices affect their online decisions. This research is opportune because it addresses a pressing issue in online marketing, contributes to the discourse on consumer rights, and provides insights for both policymakers and marketers seeking

to balance personalization with privacy. It also empowers consumers and guides them on deciding how or when to share their data and with whom to share it.

1.3 PROBLEM STATEMENT

The increasing use of personalised advertising in Ghana's digital ecosystem has created a practical dilemma for both consumers and marketers. Businesses are eager to harness the power of data-driven advertising to improve targeting and increase sales. However, consumers remain uncertain or uneasy about how their personal information is being used, leading to skepticism, mistrust, or disengagement from ads on online platforms. This problem is evident in the increasing use of ad blockers, the reluctance to share personal data, and growing public dissatisfaction with overly targeted advertising (Boerman et al., 2017).

The two forms of personalised ads, synced advertising (SA) and online behaviour advertising (OBA), have benefited brands that have utilized them accordingly. Although OBA remains more common among Ghanaian brands, consumers are indirectly exposed to both OBA and SA through international platforms. Companies like Meta and Google utilize cross-device tracking and synchronized ad delivery across mobile, web, and television, which shapes consumers' daily interactions with personalised ads irrespective of local brand practices (Ullah, Boreli, & Kanhere, 2020).

This means Ghanaian consumers experience personalised and device-synced messaging coming from global platforms. Therefore, the growing adoption of SA by international actors, combined with pervasive OBA from platforms like Facebook and Instagram, justifies the need to investigate local consumer perceptions, particularly their awareness, interest, and concerns, given Ghanaian users' low trust in the safety of online transactions and their high perceived vulnerability to data extraction (Tchao, Diawuo, Aggor, & Kotey, 2017).

Theoretically, while there is substantial research on personalised advertising in Western contexts, there is a scarcity of studies focusing on African markets, particularly Ghana. Existing literature often overlooks the cultural, gendered, economic, and regulatory factors that are specific to Ghana that may shape consumer perceptions and behaviours (Boateng & Okoe, 2015). Moreover, most studies have focused on the effectiveness of personalised ads in driving sales or engagement, rather than examining the critical role of consumer knowledge and awareness in shaping ad responses (Bleier & Eisenbeiss, 2015). For example, Boerman et al. (2017) noted that increased transparency about ad personalization can influence consumer trust, but did not explore this in the Ghanaian context.

Also, two significant gaps have emerged from the literature. First, there is limited empirical evidence on how Ghanaian consumers' knowledge of personalised ads influences their decision-making processes, including whether knowledge affects their engagement behaviours. Second, cross-border analysis revealed that men and women often perceive and respond to advertisements differently. These studies reported variations in visual attention and attitudes toward ad content (Boscolo et al., 2020; Birknerová et al., 2018). However, these findings come from non-Ghanaian contexts, and there is limited evidence on whether similar gender-based differences exist among Ghanaian consumers, especially in relation to personalised online ads. This gap makes it imperative to investigate how Ghanaian men and women perceive such online ads and whether these perceptions influence their engagement behaviour.

Addressing these gaps will provide a clearer understanding of how awareness, perception, and gender dynamics shape engagement behaviours with personalised advertising among Ghanaian consumers. By investigating these issues, this research aims to contribute to a more nuanced understanding of personalised advertising in Ghana and to offer practical recommendations that

support both consumer protection and more responsible personalization practices among marketers.

1.4 RESEARCH QUESTION AND OBJECTIVES

The overarching question the study seeks to answer is, “what is the relationship between consumers’ knowledge and perceptions of personalised online advertisements and their engagement behaviours, and do these perceptions differ across gender groups?” The specific objectives that address this question are:

1. To assess consumers’ level of knowledge of personalised online advertisements.
2. To examine the extent to which consumer awareness and perceptions of personalised online advertisements influence their engagement behaviour .

To determine the variations in consumer perception of personalised online advertisements across gender groups.

1.5 SCOPE OF THE STUDY

This study focuses on Ghanaian internet users across the country who interact with various online platforms, including social media, e-commerce, and entertainment services. Unlike traditional advertising, personalised online advertising is not geographically restricted; therefore, the research targets a nationwide audience to capture a comprehensive view of consumer perceptions in Ghana. Quantitative data will be collected from adults aged 18 and above using an online survey, ensuring a diverse representation of digital literacy levels, demographic backgrounds, and geographic locations across all regions of Ghana.

1.6 SIGNIFICANCE OF THE STUDY

This study offers a timely and context-specific contribution to the understanding of consumer responses to personalised online advertising within Ghana. In an increasingly digital marketplace, where data-driven marketing strategies are being widely adopted, it is crucial to assess how consumers in developing countries perceive such strategies. While extensive studies have been conducted in Western and Asian contexts, there remains a notable gap in the literature regarding African markets, particularly Ghana. This study seeks to fill that gap by providing empirical, data-driven insights.

The results of this research are expected to benefit multiple stakeholders. For marketers and advertising professionals, the findings will offer practical guidance on how to design and deliver personalised advertisements that are both effective and culturally sensitive. Understanding the influence of knowledge, relevance, and privacy concerns on consumer behaviour will enable firms to create targeted marketing strategies that align with consumer expectations and trust levels. Again, it will contribute by providing gender-based insights and helping marketers understand the relationship between awareness and online engagement.

Moreover, the study holds significance for policymakers and digital rights advocates, especially in discussions around consumer data protection and ethical advertising practices. As personalised advertising becomes more prevalent, there is a growing need for policies that balance commercial interests with consumer privacy and autonomy.

Finally, from an academic standpoint, this research contributes to the theoretical and empirical understanding of consumer behaviour in sub-Saharan Africa by applying the Persuasion Knowledge Model (PKM) to the Ghanaian digital landscape. It provides a specialized quantitative

framework for measuring how consumer awareness and privacy concerns moderate engagement with personalised ads. By doing so, this study serves as a critical foundational reference for future research in digital marketing and consumer psychology within emerging African markets, where digital advertising regulations and consumer perceptions are still evolving.

1.7 ORGANIZATION OF THE STUDY

This study is organized into five main chapters. Chapter one introduces the research by providing the background to the study, the problem statement, research objectives, and questions, as well as the significance, scope, and limitations of the study. Chapter two presents a comprehensive review of relevant literature on personalised online advertising, consumer behaviour theories, privacy concerns, and the significant gender differences in how consumers perceive personalised online advertisements. Chapter three outlines the research methodology, detailing the research design, population, sampling techniques, data collection instruments, and methods of data analysis. Chapter four presents and analyzes the collected data using appropriate statistical tools, with a focus on testing the research hypotheses and interpreting the results. Finally, Chapter five discusses the key findings concerning the research objectives, concludes, and offers practical recommendations for marketers, policymakers, and researchers. It also highlights the study's limitations and suggests directions for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews studies on consumers' perception of personalised online advertising while emphasizing knowledge/awareness level, privacy concerns, and engagement responses such as clicks, likes, and comments. It also establishes a theoretical foundation for the study, the Persuasion Knowledge Model (PKM) and discusses their relevance to personalised advertising effects. Finally, the chapter synthesizes evidence from Ghana and Africa and outlines a conceptual framework that aligns with the study's objectives.

2.2 THEORETICAL FRAMEWORK

2.2.1 Persuasion Knowledge Model (PKM)

The Persuasion Knowledge Model (PKM) provides a comprehensive framework for understanding how individuals develop and use their knowledge of persuasion tactics to interpret and respond to marketing messages (Friestad & Wright, 1994). This model suggests that consumers are not passive targets but active participants who rely on a set of internal beliefs to navigate various persuasion episodes. In the contemporary digital environment, the PKM is particularly relevant because personalised online advertising often operates using invisible data-tracking mechanisms. When a consumer recognizes that an advertisement has been specifically tailored to their preferences or past behaviours, their persuasion knowledge is activated, prompting them to evaluate the advertiser's motives and the fairness of the tactic (Boerman et al., 2017).

Central to this model is the interaction between three specific types of knowledge: persuasion knowledge, agent knowledge, and topic knowledge. Persuasion knowledge refers to the consumer's understanding of the strategies and goals used by marketers, such as the use of cookies or search history to serve targeted content. Agent knowledge involves the consumer's beliefs about the traits, competencies, and credibility of the brand or advertiser. Topic knowledge relates to the consumer's familiarity with the specific product or service being promoted. These three knowledge structures converge to help the consumer create a "coping response," which is the cognitive or behavioural strategy used to maintain control during a persuasion attempt (Friestad & Wright, 1994).

In Ghana, where digital literacy and awareness of data privacy are evolving, the way this knowledge structures interact can vary significantly across different demographic groups. The activation of persuasion knowledge often leads to a "change of meaning," where the consumer no longer views the advertisement as a simple information source but as a strategic attempt at influence. This shift is critical in personalised advertising because it can trigger "psychological reactance," a state where consumers feel their freedom of choice or privacy is being threatened. When personalization feels overly intrusive a phenomenon often described as the "creepy factor" consumers may employ defensive coping responses such as ad-avoidance or increased skepticism toward the brand (Ham & Nelson, 2016). For the Ghanaian consumer, these coping mechanisms might manifest as ignoring sponsored posts on social media or intentionally providing false data to avoid being tracked by algorithms.

However, the PKM also allows for positive engagement if the consumer perceives the persuasion attempt as helpful rather than manipulative. If a consumer's persuasion knowledge helps them recognize that the personalization provides genuine utility such as a relevant discount or a time-

saving recommendation the coping response may be one of acceptance and engagement. This balance is often dictated by the "privacy calculus," where the consumer weighs the perceived benefits of the personalised content against the perceived risks to their personal data (Segijn & Voorveld, 2021). Within the Ghanaian context, as more people gain access to high-speed internet and engage with e-commerce, their understanding of these trade-offs becomes more sophisticated, directly influencing how they interact with brands online.

This study utilizes the PKM to examine the relationship between a consumer's level of awareness and their ultimate engagement behaviour. By understanding how persuasion knowledge is structured, the research can identify whether Ghanaian consumers are making informed decisions to engage with ads or if they are reacting out of a lack of understanding regarding digital tracking. The model accounts for the role of awareness in shaping perceptions of relevance and privacy, providing a lens through which we can see how knowledge acts as a moderator for consumer behaviour. Ultimately, the PKM offers the theoretical depth required to explain why different consumers may have vastly different reactions to the same personalised advertisement based on their unique cognitive filters and understanding of the digital marketing landscape (Boerman et al., 2021).

By applying this model, the research moves beyond superficial observations of consumer likes or dislikes and delves into the psychological processes that govern the digital economy in sub-Saharan Africa. The PKM serves as a vital tool for analyzing how the power dynamic between advertisers and consumers is shifting in an era where personal data is the primary currency of marketing. This theoretical foundation ensures that the study captures the nuances of the Ghanaian market, reflecting both the growing digital literacy of the population and the unique cultural attitudes toward privacy and commercial influence.

2.2 ADVERTISING IN THE DIGITAL ERA

The landscape of advertising has undergone a fundamental transformation as digital media shifted the paradigm from mass communication to hyper-individualized targeting. In the traditional era, advertising relied on broad-messaging strategies designed to reach the widest possible audience through one-way channels such as television, radio, and print. However, the advent of sophisticated digital platforms has enabled brands to leverage real-time consumer data to deliver messages across a multitude of devices, including smartphones, tablets, and wearable technology. This evolution allows for a highly detailed selection of audience segments and the precise measurement of consumer interactions, which was previously unattainable through legacy media (Cabigting et al., 2022). Consequently, advertising in the digital age is defined not just by the creative content of the message, but by the strategic application of data to ensure that the message reaches the right individual at the most opportune moment.

As digital platforms became the primary touchpoints for consumer interaction, the ability to analyze large-scale datasets and meta-analyses revealed that personalised advertisements significantly improve persuasion outcomes when compared to non-personalised alternatives. This effectiveness is largely attributed to the reduction of "advertising clutter," as personalization ensures that the content served to a user is aligned with their documented interests and needs. Research indicates that when an advertisement is perceived as personally relevant, it reduces the cognitive effort required by the consumer to process the information, thereby increasing the likelihood of a positive brand evaluation (Boerman et al., 2021). However, the success of these digital strategies is not universal, as the impact of personalization often varies depending on the specific context and the tactical approach employed by the advertiser (Yeo et al., 2025).

The digital era has also introduced a complex paradox regarding consumer engagement and data ethics. While technological innovations have empowered brands to access better media and yield more effective marketing results, they have simultaneously heightened consumer awareness of surveillance and data harvesting. In the Ghanaian digital market, this transition is particularly evident as brands increasingly utilize search engine marketing, social media display ads, and email personalization to maximize their return on investment. The effectiveness of these tactics in the local context depends heavily on the consumer's perception of the value-exchange; specifically, whether the convenience offered by a personalised ad outweighs the perceived loss of privacy. As a result, advertising in the digital era is increasingly characterized by a "privacy calculus," where the technological capability to target consumers must be balanced against the ethical responsibility to protect their personal information (Segijn & Voorveld, 2021).

Furthermore, the rise of programmatic advertising and algorithmic decision-making has fundamentally changed how marketing budgets are allocated. Advertisers now prioritize platforms that offer the highest degree of "addressability," allowing them to bypass traditional gatekeepers and speak directly to the consumer's unique digital profile. This shift has led to an environment where the consumer's browsing history, geographic location, and even social connections are used to refine the advertising experience. While this level of precision can lead to higher click-through rates and better conversion outcomes, it also risks creating "filter bubbles" where consumers are only exposed to products and ideas that align with their existing profiles. Ultimately, advertising in the digital era is a sophisticated interplay between data science and consumer psychology, requiring brands to navigate the fine line between helpful personalization and intrusive monitoring (Ham & Nelson, 2016).

2.3 PERSONALISED ONLINE ADVERTISING

Personalised online advertising represents a significant departure from traditional mass marketing by utilizing granular consumer data to deliver highly specific messages. This strategy is rooted in the concept of relevance, where the primary goal is to provide information that aligns with an individual's current needs, interests, and preferences. Unlike general advertising, which targets broad demographic groups, personalization attempts to create a "one-to-one" communication flow between the brand and the consumer. It is essential to distinguish between simple targeting and true personalization; while targeting identifies a relevant group based on shared traits, personalization modifies the actual content, delivery time, and creative elements of the ad to suit a single user's profile (Bleier & Eisenbeiss, 2015). This process transforms the consumer from a passive recipient of a generic broadcast into an active participant in a data-driven dialogue.

The evolution of personalization has been fueled by the proliferation of "Big Data" and the refinement of machine learning algorithms. In the Ghanaian digital landscape, this is increasingly evident as local and international firms utilize social media interactions, search history, and geographic location to curate commercial experiences. The value proposition of personalization is built on the premise that it reduces information overload by filtering out irrelevant content, thereby saving the consumer time and cognitive effort (Yeo et al., 2025). However, as personalization becomes more accurate, it enters a sensitive territory where the utility of the service must be weighed against the potential for psychological discomfort. This conceptual tension forms the basis for how consumers perceive the legitimacy of a brand's presence in their private digital spaces.

2.3.1 Online Behaviour al Advertising and Synchronized Advertising

The first major form of personalization, Online Behaviour al Advertising (OBA), relies on the systematic tracking of a user's digital footprint across the web. This mechanism involves the use of tracking cookies and unique device identifiers to monitor actions such as product views, cart abandonment, and search queries. These data points are then aggregated to create a behaviour al profile, which allows advertisers to predict future purchase intentions with high accuracy. The mechanism of OBA is cyclical; the more a consumer interacts with digital content, the more refined their profile becomes, leading to increasingly specific ad placements (Segijn & van Ooijen, 2020). For instance, a user in Accra searching for real estate might find that for several weeks, their browsing experience is characterized by advertisements for mortgage providers and interior designers, regardless of the specific website they are visiting.

Synchronized Advertising (SA) is a more contemporary and technically complex iteration of personalization that coordinates ads across different media simultaneously. This form of advertising often utilizes "cross-device matching" to identify that a single user is interacting with multiple screens, such as a laptop and a smartphone. A specific application of SA is "media multitasking" synchronization, where a mobile advertisement is triggered by a signal from another medium, such as a television commercial or a radio spot. This is achieved through acoustic fingerprinting or watermarking, allowing the advertiser to surround the consumer with a consistent message at a specific moment in time (Segijn & Voorveld, 2020). While SA offers a seamless brand narrative, it is often perceived as more intrusive than OBA because it gives the impression that the brand is "listening" or actively monitoring the consumer's environment in real-time.

2.3.2 Key Concepts Underpinning Personalised Online Advertising

The conceptual foundation of personalised advertising is built upon several psychological drivers, most notably perceived relevance and perceived intrusiveness. Perceived relevance is the extent to which a consumer finds an advertisement useful and applicable to their life. When an ad is highly relevant, it creates a positive emotional response and increases the likelihood of engagement because the consumer perceives it as a helpful recommendation (Yeo et al., 2025). Conversely, perceived intrusiveness occurs when the advertisement disrupts the consumer's online activity or reveals an uncomfortable level of data awareness. This is often described as the "privacy-personalization paradox," where the very data used to make an ad helpful is the same data that makes the consumer feel monitored or violated (Boerman et al., 2021).

Another vital concept is consumer autonomy, which refers to the individual's ability to make independent choices without being steered by invisible algorithms. Personalised advertising, by its nature, creates a "choice architecture" that can subtly influence behaviour by limiting the variety of information a user sees. This can lead to "filter bubbles," where consumers are only exposed to content that reinforces their existing preferences, potentially narrowing their perspective (Lee et al., 2024). In the Ghanaian context, this is a growing concern as consumers become more aware of how digital platforms may be manipulating their decision-making processes through selective information disclosure.

Finally, the concept of privacy concern plays a moderating role in how these ads are received. Privacy concerns in the digital age are not just about data theft but about the "appropriateness" of data usage. Consumers often feel a sense of boundary violation when their information is shared with third-party advertisers without explicit and transparent consent (Boerman et al., 2021). This

concern is a primary driver of ad-avoidance and skepticism. In Ghana, as digital literacy increases, consumers are increasingly engaging in a "privacy calculus," where they evaluate whether the benefits of receiving a tailored discount or a relevant product suggestion are worth the cost of their personal data (Diawuo et al., 2017). Understanding these underlying concepts is essential for any study of consumer perception, as they dictate the thin line between an effective marketing tool and an unwelcome digital intrusion.

2.4 EMPIRICAL REVIEW

2.4.1 Knowledge and Awareness, of Personalised Online Advertising

Consumer perception is a marketing concept that encompasses a customer's impression, awareness or consciousness about a company or its offerings. Customer perception is typically affected by advertising, reviews, public relations, social media, personal experience, and other channels (Thiruvengatraj & Vetrivel, 2017). In the context of personalised advertising, perception is highly influenced by consumers' knowledge and understanding of how their data is collected and used to tailor ads to them. Research shows that consumers who grasp the concept of digital tracking, such as cookies, search behaviour, and location data, can form clearer evaluations of ad relevance and privacy risks. An important factor to consider when it comes to consumer awareness of personalised ads is their understanding of why and how ad personalization works. Higher knowledge or recognition of OBA and SA can activate persuasion coping, hence triggering an unfavorable reaction; however, alignment with user goals can prevent resistance (Reijmersdal et al., 2022).

2.4.2 Consumer Perception of Personalised Online Display Advertising

Two major perceptual responses often appear in targeted online advertising research:

Perceived relevance: When an ad reflects a consumer's needs, interests, or social motivation, it is termed as perceived relevance. Ads that are considered relevant are more likely to be accepted and engaged with. Studies have reported some mixed consumer reactions to personal ads. According to Odoom (2022), consumers appreciate personalised ads when they feel the ads are personally and socially relevant, and both conversation value and social motivation increase. On the contrary, Lee et al. (2024) suggest that excessive personalization of ads can lead to ad avoidance or lower credibility. Experimental and survey works reveal that consumers weigh the benefits (perceived relevance) against the cost (perceived surveillance) to determine their reactions to the ads.

Privacy concern: This focuses on how uneasy consumers feel about data collection and privacy risks. Privacy concerns can moderate or mediate their reactions to personalised ads depending on how aware they are of targeting practices. (merge it properly with the next research) Studies also show that trait or state privacy concerns can intervene and mediate or moderate responses to targeted ads. Digital literacy influences both knowledge and perceived control (Lim et al., 2023; Zhang et al., 2023).

2.4.3 Consumer Engagement Behaviour with Personalised Online Advertising

Consumer engagement with personalised online advertising is an observable behavioural response often measured through actions such as clicking, liking, sharing, or commenting. Empirical research demonstrates that these behaviours are largely predicted by a consumer's internal evaluation of the advertisement's utility and relevance. For instance, research reveals that personalization can significantly improve click-through rates and conversion metrics, provided that the consumer trusts the advertiser and perceives the advertisement as genuinely relevant to their needs (Bleier & Eisenbeiss, 2015). This suggests that the "click" is not merely a technical

action but a behavioural validation of the ad's perceived value. In the African context, studies have shown that perceived personalization positively influences purchase intentions, though the degree of engagement is heavily moderated by the individual's specific motivation for using the internet (Odoom, 2022).

Beyond relevance, engagement is often hindered by the psychological tension between awareness and privacy. Empirical findings indicate that when consumers recognize the manipulative intent behind an advertisement or feel overly surveilled, they are more likely to employ defensive behaviours such as ad-avoidance or blocking rather than positive engagement (Girona & Korgaonkar, 2018). This linkage between perception and behaviour is critical; if an advertisement feels "invasive" rather than "tailored," the potential for a click or a like diminishes. Furthermore, studies exploring receptiveness to personalised social media ads found that while perceived usefulness is a strong predictor of acceptance, a lack of transparency regarding how data is used significantly reduces a consumer's willingness to engage with the content (Mehta & Udit, 2020). Consequently, the "like" or "comment" serves as a barometer for how well an advertiser has balanced the utility of personalization against the consumer's threshold for privacy.

The relationship between persuasion knowledge and engagement is further complicated by the type of personalization used. For example, research into Online Behavioural Advertising (OBA) and Synchronized Advertising (SA) shows that as consumers comprehend the tracking mechanisms involved, their perceived intrusiveness increases unless the ad provides high functional value (Segijn & van Ooijen, 2020). In a lower-trust environment like Ghana, general distrust in online systems can prevent positive reactions to personalised ads even when the content is objectively relevant (Tchao et al., 2017). This indicates that for Ghanaian consumers, engagement behaviours like clicking or commenting are not only a reaction to the ad itself but also a reflection of their overall trust in the digital ecosystem. Therefore, achieving engagement

requires advertisers to move beyond mere relevance and address the underlying privacy concerns that dictate whether a consumer will move from passive viewing to active interaction.

2.4.4 Gender and Perception in Personalised Advertising

Gender serves as a significant moderator in how consumers perceive and respond to the various attributes of personalised advertisements. Empirical studies have consistently identified significant differences in how men and women expect and evaluate marketing communications. Research into advertising expectations reveals that women often place greater importance on the humor, visual aesthetics, and musical elements of an ad, holding higher expectations for the content to be informative, genuine, and memorable (Birknerová et al., 2018). In contrast, men frequently exhibit distinct patterns of perception, often focusing more on the functional or technical aspects of the message. These findings suggest that the "relevance" of a personalised ad is not a gender-neutral construct; what a female consumer finds relevant may be based on emotional or narrative resonance, whereas a male consumer may judge relevance based on immediate utility.

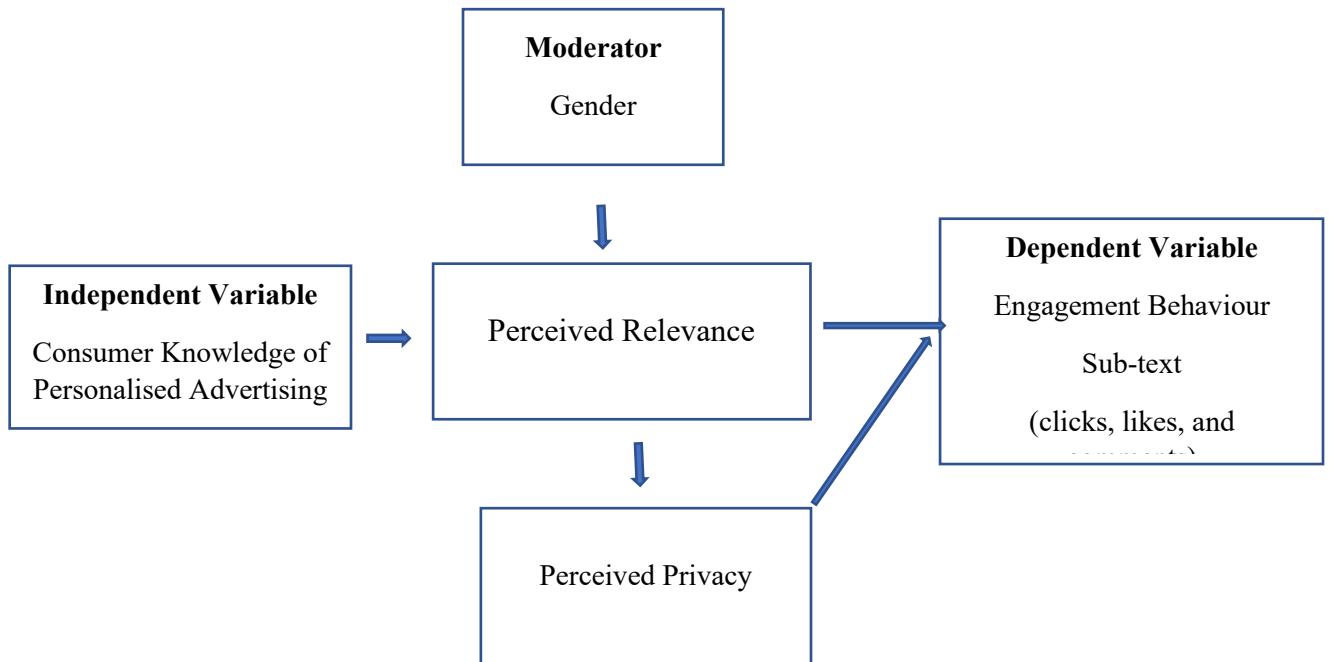
Furthermore, gendered responses extend to the psychophysiological level and visual attention. Utilizing neuromarketing approaches, researchers have used eye-tracking technology to demonstrate that men and women distribute their attention differently when viewing advertisements (Boscolo et al., 2020). While some studies found that female-oriented ads may produce similar levels of attention across genders, male-oriented ads often elicit specific patterns in male visual attention that directly influence their subsequent attitude toward the brand (Boscolo et al., 2020). This suggests that the visual design of a personalised ad must be calibrated to the specific processing styles of the target gender to ensure it is perceived as relevant rather than intrusive. In the digital sphere, these differences translate into varied engagement behaviours,

where the motivation to "like" or "share" a personalised post may stem from different psychological triggers for men and women.

Despite these global insights, there remains a critical gap in understanding how these gendered perceptions operate within the Ghanaian digital environment. While Western studies provide a foundation, they often rely on samples from high-trust, high-awareness populations that may not reflect the realities of the Ghanaian market (Segijn & van Ooijen, 2020). It is imperative to assess whether Ghanaian women, like their global counterparts, prioritize the "genuineness" and "informativeness" of ads, or if the local lower-trust environment makes privacy concerns the dominant factor for both genders (Tchao et al., 2017). By broadening the discussion to include both cognitive expectations and behavioural responses, this research seeks to uncover how gender shapes the "privacy calculus" in Ghana. Understanding whether men or women are more likely to engage with or resist personalised content allows for more nuanced marketing strategies that respect the unique cultural and gendered norms of the Ghanaian consumer.

2.5 Conceptual Framework

A conceptual model of the theory is given in FIG 1.



Source: *(Authours Own fieldwork 2025)*

This study is theoretically grounded in the Persuasion Knowledge Model (PKM), which provides a comprehensive lens for understanding how Ghanaian consumers interpret and respond to personalised online advertisements. The conceptual framework posits that a consumer's level of persuasion knowledge specifically their awareness of Online Behaviour al Advertising (OBA) and Synchronized Advertising (SA) mechanisms serves as the primary driver of their perceptions. According to the PKM, when individuals recognize that an advertisement is the result of data tracking and algorithmic profiling, their persuasion knowledge is activated, prompting them to evaluate the message not just for its content, but for its intent and appropriateness (Friestad & Wright, 1994). This study identifies Consumer Knowledge as the independent variable that directly influences two distinct perceptual outcomes: Perceived Relevance and Perceived Privacy.

The framework further suggests that these perceptions are the critical factors that dictate the consumer's ultimate Engagement Behaviour, which serves as the dependent variable. Engagement is measured through concrete actions such as clicking, liking, and commenting on personalised content. When a consumer perceives an ad as highly relevant, they are more likely to engage positively; however, if the perception of privacy risk is high, the consumer is likely to employ coping mechanisms such as ad-avoidance or resistance (Boerman et al., 2017). Additionally, Gender is integrated into this framework as a moderating variable. This is based on empirical evidence suggesting that male and female consumers process advertising information differently and maintain distinct thresholds for privacy and visual attention (Boscolo et al., 2020). By examining these relationships, the framework provides a structured approach to understanding how the interplay between knowledge and perception shapes the digital experience for Ghanaian users.

2.6 Chapter Summary

This chapter established the theoretical and empirical foundation for the study by centering on the Persuasion Knowledge Model (PKM). The review explored the technical mechanisms of Online Behavioural Advertising (OBA) and Synchronized Advertising (SA), illustrating how data tracking and cross-device matching serve as the catalysts for personalised marketing. Conceptually, the discussion highlighted the tension between perceived relevance and privacy concerns, emphasizing that consumer awareness of these tactics directly shapes their willingness to engage with brands in the digital space (Friestad & Wright, 1994; Boerman et al., 2021).

The synthesis of existing literature revealed a significant geographic and thematic gap, as most empirical evidence originates from Western contexts with high-trust environments. In Ghana, while research exists on general e-commerce and privacy attitudes, there is a lack of evidence

linking specific persuasion knowledge to concrete engagement behaviours like clicking, liking, and commenting (Tchao et al., 2017; Odoom, 2022). By integrating gender as a moderator, the conceptual framework addresses these gaps, providing a structured path to investigate how Ghanaian consumers navigate the complexities of personalised online advertising.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter is presents the methodological approach used for the study. The discussion in this chapter is centered on the research design and approach, data analysis technique, data collection procedure, and ethical considerations.

3.1 RESEARCH APPROACH

This study employs a quantitative research approach, which is underpinned by a post-positivist philosophy. This philosophical stance holds that an objective reality exists but can only be known imperfectly and probabilistically through empirical evidence (Saliya, 2023). This makes it well-suited for quantitative research, which aims to systematically examine the relationship between variables. By utilizing structured surveys to collect numerical data, this approach enables the identification of patterns and correlations between consumer persuasion knowledge and engagement behaviours within the Ghanaian digital advertising sector. The emphasis on quantifiable data ensures objective measurement and statistical analysis, providing generalizable insights applicable across similar digital contexts (Bergmann, 2023). This research approach facilitates a rigorous assessment of the impact of specific personalization tactics, such as Online Behavioural Advertising and Synchronized Advertising, thereby informing strategic decisions for enhancing consumer experiences and brand engagement.

3.2 RESEARCH DESIGN

The research design outlines the plan that connects the research problem to practical data collection and analysis. It guides the procedures, timeline, and resources required to achieve the research objectives effectively (Asenahabi, 2019). Consistent with the quantitative approach, this study employs a cross-sectional survey design to examine consumers' perceptions of personalised online advertisements. The cross-sectional design allows data to be collected from a large and diverse sample at a single point in time, supporting both efficiency and generalizability.

3.3 POPULATION OF STUDY

In conducting a study, the population refers to the complete set of individuals or items under observation. This study's population consists of Ghanaian internet users aged 18 years and above who actively use online platforms such as social media, search engine and e-commerce sites. This population is selected because personalised online advertisements are predominantly delivered through these platforms, making adult internet users the relevant population for examining awareness, perceptions and engagement with such ads.

3.4 SAMPLING FRAME AND TECHNIQUE

Sampling refers to the process of selecting a portion of a population for study. The sampling frame for this research consists of internet users living in Accra, Kumasi, and Takoradi. Sampling methods are generally classified into probability and non-probability techniques. This study adopts a probability sampling approach. According to Bhardwaj (2019), probability sampling ensures that each member of the population has a known and non-zero chance of being selected. Common probability sampling techniques include simple random sampling, stratified sampling, systematic sampling, cluster sampling, and multistage sampling.

This study employs stratified random sampling which is a statistical technique that involves dividing the population into subgroups or strata based on relevant characteristics, then selecting a random sample from each stratum (Makwana et al., 2023). Stratification helps ensure that key demographic variables such as gender, age, and educational level are properly represented in the sample. Within each stratum, participants will be randomly selected.

Sample size: The required sample size was determined using Cochran's formula for proportions. Using a 95% confidence level ($Z = 1.96$), an assumed proportion of $p = 0.5$ (maximum variability), and a margin of error of 8% ($e = 0.08$), the calculated sample size is approximately 150.06. To provide a small buffer, the study targets 151 respondents. Data collection will be limited to Ghanaian internet users aged 18 years and above, residing in Accra, Kumasi, and Takoradi.

3.5 INSTRUMENTATION AND DATA COLLECTION METHOD

Primary data were collected using a structured questionnaire designed for consumers who had interacted with various forms of personalised online advertisements. The instrument was organized into five distinct sections. Section A captured respondents' demographics, including age, gender, education, and occupation. Section B measured internet usage patterns and identified the specific types of personalised advertisements experienced, such as Online Behavioural Advertising and Synchronized Advertising, using categorical items. Section C assessed consumer knowledge and awareness levels regarding these personalization practices on a five-point Likert scale, while Section D measured perceptions of ad relevance and privacy concerns, also utilizing a five-point Likert scale ranging from strongly disagree to strongly agree. Section E captured engagement behaviours and behavioural intentions, specifically focusing on the frequency of clicking, liking, and commenting on personalised content.

The data collection was conducted through a cross-sectional survey administered electronically to consumers within the study area. The survey link was generated via Google Forms and distributed through a multi-channel digital strategy to reach a diverse audience. Initial contact was made with a primary group of participants through professional networks and email, who were then requested to forward the survey link to others in their network to increase the reach. Additionally, the link was shared across various social media platforms to capture active internet users. Each participant received a brief explanation of the study's purpose via a digital cover letter, followed by a mandatory informed consent prompt before they could access the questions. An initial screening question confirmed that the respondent was a regular internet user who had encountered personalised ads before the questionnaire was issued.

The fieldwork lasted for four weeks, with daily monitoring to track response rates and ensure the quality of the incoming data. The survey was primarily a self-administered digital instrument, though the researcher remained available via email and messaging platforms to clarify items for any respondents who required assistance without influencing their answers. Only properly completed questionnaires that met the screening criteria were retained for analysis to maintain the integrity of the findings. Participation proceeded only when the respondent demonstrated a clear understanding of the consent information and the questionnaire requirements, ensuring that the process was both voluntary and transparent.

3.6 DATA ANALYSIS TECHNIQUES

The data were analysed using the Statistical Package for the Social Sciences (SPSS). The analysis commenced with descriptive statistics to summarise the demographic characteristics of the respondents and their specific patterns of internet use. Reliability analysis, specifically Cronbach's

alpha, was conducted to assess the internal consistency of the scales measuring awareness, perceived relevance, perceived privacy, and engagement behaviour. These tests ensured that the measurement instruments were dependable before proceeding to inferential testing.

After establishing reliability, Pearson correlation analysis was used to determine the strength and direction of the relationships among the study's main variables. Multiple regression analysis was then employed to examine the extent to which consumer awareness and perceptions of personalised advertising predicted engagement behaviours, such as clicking, liking, or commenting. Furthermore, independent-samples t-tests and One-Way ANOVA were conducted to explore whether significant differences existed across demographic categories specifically gender and age in terms of awareness, perceptions, and engagement. These analytical procedures aligned with the study's cross-sectional design and provided the empirical basis for testing the proposed hypotheses.

3.7 VALIDITY AND RELIABILITY

Validity and reliability were critical considerations in ensuring the integrity of the research findings. Validity refers to whether the measuring instrument measures the behaviour or quality it is intended to measure and is a measure of how well the measuring instrument performs its function (Sürücü & Maslakci, 2020). Reliability, on the other hand, serves as an indicator of the stability of the measured values obtained in repeated measurements under the same circumstances using the same measuring instrument (Sürücü & Maslakci, 2020).

To ensure content validity, the research instrument was subjected to a pre-test with 20 respondents. This process allowed for the identification and refinement of ambiguous items, ensuring that the questions were clear and aligned with the study's objectives before the main data collection

commenced. By refining the items based on participant feedback, the instrument was better prepared to capture the intended constructs accurately.

The reliability of the measurement scales was assessed using Cronbach's alpha. This statistical test evaluated the internal consistency of the items within each composite scale, such as awareness, perceived relevance, perceived privacy, and engagement behaviour. Following the widely accepted threshold in social science research, a Cronbach's alpha value of 0.7 or above was considered to indicate an acceptable level of reliability (Nunnally, 1978). All scales used in the final analysis met or exceeded this benchmark, confirming that the instrument provided stable and consistent results.

3.8 ETHICAL CONSIDERATIONS

Ethical principles guided the research process at every stage, ensuring full adherence to institutional ethical guidelines. Participants were provided with comprehensive information regarding the purpose of the study, the procedures involved, and the voluntary nature of their participation. Before accessing the questionnaire, respondents were presented with a digital informed consent page that clearly outlined their right to withdraw from the study at any time without any penalty or need for justification. Only those who actively indicated their agreement by selecting the consent prompt were permitted to proceed with the survey. This documentation of consent ensured that every participant was fully aware of their rights before any data were captured.

Confidentiality and anonymity were strictly maintained throughout the study. No personal identifiers, such as names, email addresses, or IP addresses, were collected, ensuring that individual responses could not be traced back to any specific participant. This was particularly

important given the sensitivity of collecting information about online behaviours and privacy perceptions. Each electronic response was assigned a unique numerical code, and all data were stored securely on a password-protected device with restricted access. To prevent any unauthorized access to participant information, the raw data from Google Forms were encrypted and archived immediately after the collection phase was completed.

During the analysis and reporting stages, data were presented only in an aggregated form so that no individual respondent or specific behavioural pattern could be identified. Special ethical consideration was given to the discussion of online behavioural tracking and synchronized advertising to ensure that the research did not inadvertently expose respondents to further digital risks. All findings were used solely for academic purposes, and the results were reported with complete intellectual honesty. These rigorous measures ensured that the participants' rights, privacy, and digital autonomy were protected at every phase of the research, fulfilling the high ethical standards expected at the dissertation level.

3.9 CHAPTER SUMMARY

This chapter provided a detailed roadmap of the research methodology employed for this study. By adopting a quantitative research approach and a post-positivist philosophy, the research was well-positioned to systematically examine the relationship between consumer knowledge of personalised advertising and subsequent engagement behaviours. The chapter outlined the use of a cross-sectional survey design and the electronic administration of a structured questionnaire to a sample of internet users across major digital hubs in Ghana.

The systematic approach to data collection, the use of validated measurement scales, and the rigorous statistical analysis plan ensured that the findings were robust and reliable. Furthermore, a strong commitment to ethical practices, including informed consent, anonymity, and secure data

management, was maintained throughout the process to protect the rights of all participants. Collectively, these methodological choices provided a solid framework for addressing the research objectives and ensuring the academic integrity of the study's conclusions.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

This chapter presents the analysis and findings of the data collected and outlines the statistical procedures used to analyze them. The data were coded, cleaned, and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics were generated to summarize demographic characteristics and internet usage patterns. Reliability of the multi-item scales was assessed using Cronbach's alpha. Pearson's correlations were conducted to examine relationships among the study variables, followed by multiple regression analysis to determine the predictive effects of knowledge, relevance, and privacy perceptions on engagement. Independent-samples t-tests and one-way ANOVA were used to assess differences across demographic groups, particularly gender. A significance level of $p < .05$ was adopted for all statistical tests.

4.2 Background of Respondents and Internet Usage Patterns

The background of respondents provides a clear understanding of the demographic characteristics and digital habits that shaped their interactions with personalised online advertising. Analysing the age distribution, gender composition, and educational levels helped the study interpret how different groups engage with technology and the level of digital literacy they brought when evaluating targeted advertisements. These details are essential for understanding factors that influence persuasion knowledge, such as frequency of internet exposure and the specific platforms where consumers most frequently encounter data-driven marketing tactics.

Table 1: Demographic and Internet Usage Pattern of Respondents (N=151)

Profile	Measurement	Frequency	Percent (%)
Gender	Male	67	44.4
	Female	84	55.6
Age	18–24 years	51	33.8
	25–34 years	54	35.8
	35–44 years	41	27.2
	45–54 years	5	3.3
Education	Graduate (Bachelor’s)	100	66.2
	Other levels	51	33.8
Internet Use	Several times a day	133	88.1
	Other frequencies	18	11.9
Ad Exposure	Very often	82	54.3
	Often/Sometimes	69	45.7

The demographic profile revealed a sample that was relatively young and highly educated, with a slight majority of female participants (55.6%). The age distribution showed that the largest groups were those aged 25–34 years (35.8%) and 18–24 years (33.8%), indicating that over two-thirds of the respondents were within the prime "digital native" demographic. Educational attainment was high, as 66.2% of the participants held at least a Bachelor’s degree, suggesting a level of cognitive sophistication suitable for understanding complex data-tracking processes.

Internet usage patterns further confirmed that the respondents were deeply embedded in the digital ecosystem. A significant majority reported using the internet several times a day (88.1%), providing constant opportunities for exposure to personalised content. This high frequency of use was complemented by the fact that 54.3% of respondents noticed online advertisements very often. Social media platforms including Facebook, Instagram, TikTok, and WhatsApp alongside search engines like Google, were the primary channels through which these interactions occurred.

Collectively, these metrics reflect an audience that is highly exposed to digital content, making their perceptions of relevance and privacy highly relevant to the study's objectives.

4.2.1 Descriptive Statistics for Measures of Main Study Variables

This section presents the descriptive statistics for the individual items used to measure the study's primary constructs: Consumer Knowledge, Perceived Relevance, Perceived Privacy (Trust), and Engagement Behaviour. The mean and standard deviation for each item provides a granular view of respondent sentiments across the specific attributes of personalised advertising. These individual measures form the basis for the composite scores used in the subsequent inferential analysis.

Table 2: Descriptive Statistics for Individual Measurement Items (N=151)

Variables / Items	Mean (\bar{x})	Std. Deviation
Knowledge of Personalised Ads		
Aware of tracking actions	3.72	0.98
Aware of cross-device tracking	3.58	1.02
Aware of data combination	3.61	0.95
Aware of privacy control settings	3.65	0.91
Aware of browsing data collection	3.70	0.93
Aware of search-based ads	3.68	0.89
Aware of shopping tracking	3.66	0.96
Aware of cookie usage	3.60	1.05
Aware of location-based ads	3.56	1.01
Perceptions of Relevance		
Ads feel designed for me	3.12	0.98
Ads are tailored to my shopping	3.05	1.01
Ads uniquely target my interests	3.08	0.94
Ads reflect my needs	3.10	0.97
Ads contain personal messages	3.02	1.03
Ads match my lifestyle	3.09	0.95
Ads provide customized content	3.06	0.99

Ads make shopping easier	3.04	1.02
Ads help discover products	3.11	0.96
Ads understand my preferences	3.03	1.04
Perceptions of Privacy (Trust)		
Trust advertisers are responsible	2.98	0.92
Trust privacy is respected	2.92	0.95
Trust platforms protect data	3.01	0.89
Trust control over ads	2.95	0.94
Believe ads are ethical	2.90	0.97
Believe ads are transparent	2.94	0.91
Trust data is handled securely	2.97	0.93
Trust ad algorithms	2.91	0.96
Trust company data policies	2.97	0.92
Engagement Behaviour		
Frequency of clicking ads	3.20	1.05
Frequency of liking ads	3.15	1.08
Frequency of commenting on ads	3.10	1.10
Likelihood to share ads	3.12	1.04
Intent to interact with brands	3.18	1.02
Propensity to react to targeted posts	3.21	1.06

As shown in Table 2, the individual items for Knowledge of Personalised Ads generally recorded the highest means, with respondents showing a strong awareness of tracking actions and browsing data collection. Conversely, the items under Perceptions of Privacy consistently scored the lowest, with several items such as "ethical advertising" and "algorithmic trust" falling below the neutral midpoint of 3.0. Perceptions of Relevance and Engagement Behaviour items showed moderate scores, clustering tightly around the neutral mark.

4.2.1.1 Summary of Composite Scales

To facilitate the testing of the research objectives, the individual items were aggregated into composite scores. The summary of these composites, as presented in Table 3, confirms the overarching trends observed in the granular data. Consumer Awareness remains the most dominant variable ($\bar{x} = 3.64$), while Perceived Privacy/Trust is the only composite to fall below the neutral threshold ($\bar{x} = 2.95$). These results suggest that while Ghanaian consumers possess a high degree of persuasion knowledge and find personalised ads somewhat relevant, a critical trust deficit persists regarding data privacy.

Table 3: Summary of Composite Variables (N=151)

Variable	Mean	Std. Deviation	Variance
Consumer Awareness	3.64	0.945	0.893
Perceived Relevance	3.07	0.969	0.940
Perceived Privacy (Trust)	2.95	0.938	0.880
Engagement Behaviour	3.16	1.035	1.071

4.2.2 Descriptive Summary of Main Study Variables

The table below provides a summary of the composite scores for the four primary constructs analysed in this study. These scores represent the aggregated averages of the individual measurement items presented in the previous section

Table 4: Descriptive Summary of Main Study Variables (N=151)

Variable	Mean (\bar{x})	Std. Deviation	Interpretation
Awareness	3.64	0.95	Moderate-high awareness
Perceived Relevance	3.07	0.97	Moderate relevance perception

Perceived Privacy	2.95	0.94	Moderate concerns about privacy
Engagement	3.16	1.03	Moderate engagement

The descriptive results indicate that Awareness recorded the highest mean score ($\bar{x} = 3.64$), suggesting that respondents possessed a moderate-to-high level of knowledge regarding how their data is tracked and used for personalization. Perceived Relevance ($\bar{x} = 3.07$) and Engagement ($\bar{x} = 3.16$) both recorded scores slightly above the neutral midpoint, indicating that while consumers find personalised ads somewhat useful, their actual behavioural interaction remains moderate.

Critically, the Perceived Privacy variable recorded the lowest mean score ($\bar{x} = 2.95$). Following the supervisor's observation that the measurement items for this construct are varied, this figure is interpreted as indicating moderate concerns about privacy. This suggests that consumers in Ghana may harbor reservations regarding the transparency, ethical handling, and security of their data by advertisers and digital platforms. Consistent with the Persuasion Knowledge Model (PKM), this moderate level of concern serves as a cognitive filter that may prevent high awareness from translating directly into high engagement.

4.3 MULTIVARIATE ANALYSIS

4.3.1 Reliability Analysis

Cronbach's alpha values confirmed excellent reliability across all composite scales, with coefficients ranging from 0.87 to 0.94. This analysis was crucial to ensure that the multiple items used to measure consumer awareness, perceived relevance, privacy concerns, and engagement behaviour were consistent and reliable. As shown in the reliability statistics, all composite scales returned coefficients significantly above the universally accepted threshold of 0.70, ranging from

0.87 to 0.94. Specifically, both the Awareness and Perceived Relevance scales yielded excellent reliability scores of 0.940. The Perceived Privacy scale recorded a coefficient of 0.902, while the Engagement Behaviour scale recorded 0.872. The implication of these high Cronbach's alpha values is that the survey instrument demonstrated a high degree of precision and stability in measuring the constructs. This confirms that the individual items within each scale were strongly inter-related and that the resulting composite scores provide a dependable representation of the respondents' actual perceptions and behaviours. Statistically, these results validate the measurement model, providing the necessary empirical justification to move forward with multivariate tests, such as Pearson correlation and multiple regression, without the risk of measurement error biasing the findings. The reliability results are presented in Table 4.4.

Table 5: Reliability Statistics for Composite Scales

Scale	Number of Items	Cronbach's Alpha
Awareness	9	.940
Perceived Relevance	10	.940
Perceived Privacy	9	.902
Engagement	4	.872

4.3.2 Correlation Analysis

Correlation analysis was conducted to examine the relationships among awareness, perceived relevance, perceived privacy, and engagement. Significant positive correlations were found among awareness, perceived relevance, perceived privacy, and engagement. The results revealed significant positive associations among all main variables. Awareness was moderately related to perceived relevance ($r = .514, p < .001$), indicating that respondents who understood how personalization works were more likely to view personalised ads as relevant. Awareness was also positively associated with perceived privacy/trust ($r = .283, p < .001$),

meaning the more knowledgeable respondents were, the more confident they felt about how their data were used. Perceived relevance and perceived privacy both had strong positive correlations with engagement ($r = .594$ and $r = .608$, respectively; $p < .001$). These results suggest that relevance and trust are central drivers of consumer engagement with personalised ads. The correlation results are presented in Table 4.5 below.

Table 6: Correlation Matrix of Key Variables

Variable	Awareness	Relevance	Privacy/Trust	Engagement
Awareness	1			
Relevance	.514	1		
Privacy/Trust	.283	.556	1	
Engagement	.380	.594	.608	1

4.3.3 Regression Analysis: Predicting Engagement

A multiple regression model was run to determine the extent to which awareness, perceived relevance, and perceived privacy predict engagement with personalised ads. Regression diagnostics showed that multicollinearity was not an issue (VIF values between 1.49 and 1.81), and the Durbin–Watson statistic (2.067) indicated no autocorrelation. This confirms the robustness of the regression model. The model explained 47.6% of the variance in engagement behaviour ($R^2 = .476$, Adjusted $R^2 = .455$), indicating that almost half of the variation in engagement could be explained by the predictor variables. Perceived relevance emerged as a significant predictor ($\beta = .319$, $p < .001$), indicating that when personalised ads align with the interests or needs of consumers, they are more likely to interact with the ad. Perceived privacy/trust were also significant predictors ($\beta = .392$, $p < .001$), implying that trust in how personal data is handled

strongly influences the willingness to click, like, or comment on personalised ads. Awareness, however, did not significantly predict engagement when controlling for relevance and privacy ($\beta = .130, p = .086$). This suggests that while awareness contributes indirectly by shaping perceptions, relevance, and trust are the more dominant factors influencing behaviour. Results for the Regression analysis are presented in Table 4.6

Table 7: Regression analysis

Variable	B	S.E.	β	t	Sig.
(Constant)	.528	.471		1.122	.264
Awareness	.142	.082	.130	1.727	.086
Perceived Relevance	.340	.087	.319	3.927	.000
Perceived Privacy	.432	.081	.392	5.327	.000

4.4 GENDER DIFFERENCES IN AWARENESS, PERCEPTION, AND ENGAGEMENT

Out of 151 responses collected, female respondents constituted 63.6%, while males accounted for 36.4%. To address the third objective of the study, independent sample t-tests were conducted to compare male and female respondents. Results of the independent t-tests indicating mean are presented in Table 4.7.

Table 8: Results of t-tests for Gender Variations across Variables (N=151)

Variables	Male (n=55) Mean	Female (n=96) Mean	p-value
Awareness of personalised online advertising	3.86	3.51	.026
Perceived relevance of personalised ads	3.19	3.01	.259
Perceived privacy	2.99	2.93	.698

The results presented in Table 4.7 reveal that there was a statistically significant difference in **Awareness levels** between genders ($t(149) = 2.256, p = .026$). Specifically, male respondents ($\bar{x} = 3.86$) demonstrated a higher level of awareness regarding tracking and personalization processes compared to female respondents ($\bar{x} = 3.51$). This suggests that within this sample, men may be more conscious of the technical aspects of how their data is collected and utilized by advertisers.

However, no significant differences were found for **Perceived Relevance** ($p = .259$) or **Perceived Privacy** ($p = .698$). Both genders reported moderate levels of relevance and similar levels of privacy concerns, with mean scores for both groups sitting near or below the neutral midpoint⁵. These findings indicate that while there is a gap in technical awareness, the subsequent evaluative perceptions of whether an ad is useful or whether it poses a privacy risk are relatively consistent across both male and female consumers in the Ghanaian digital market.

4.5 DISCUSSION OF FINDINGS

The primary focus of this study was to investigate the influence of consumer knowledge and perceptions on engagement with personalised advertising. This section interprets the statistical results in the context of the research objectives and situates the findings within the broader academic discourse and theoretical framework.

4.5.1 Consumer Awareness of Personalised Advertising (Objective One)

The first objective sought to explore the level of consumer awareness regarding personalised advertising practices. The finding that respondents possess a moderate-to-high level of awareness ($\bar{x} = 3.64$) aligns with the growing scholarly consensus that digital consumers are becoming increasingly sophisticated in recognizing data-tracking tactics. This corresponds with the **Persuasion Knowledge Model (PKM)**, which suggests that as consumers are repeatedly exposed

to persuasion attempts, they develop a specialized set of beliefs about how advertisers try to influence them. Studies in the African context, such as Odoom (2022), have similarly identified that Ghanaian internet users are no longer passive recipients of digital content but are acutely aware of how their browsing data is harvested to trigger specific advertisements. The high awareness regarding cookie usage and search-based ads found in this study reinforces the claim that "digital natives" in Ghana are actively monitoring the "behind-the-scenes" mechanics of the digital economy.

4.4.2 Relationship Between Perceptions and Engagement (Objective Two)

The second objective examined how perceived relevance and privacy concerns influence engagement behaviour. The regression analysis provided strong evidence that Perceived Privacy/Trust ($\beta = .392$) and Perceived Relevance ($\beta = .319$) are the most critical drivers of interaction. The significant positive impact of relevance aligns with findings by Boerman et al. (2017), who argued that personalization creates a "value-added" experience that encourages consumers to engage. However, the moderate mean for perceived relevance ($\bar{x} = 3.07$) suggests that many personalised ads in the Ghanaian market may still miss the mark, failing to provide the "utility" required to overcome consumer scepticism.

Furthermore, the finding that privacy concerns manifested as a lower trust mean (\bar{x}) of 2.95 significantly predict engagement highlights the "Privacy-Personalization Paradox." This suggests that even when an ad is relevant, a lack of trust in the ethical handling of data can lead to the "creepiness factor," causing consumers to withhold engagement. This aligns with the observations of Gironde and Korgaonkar (2018), who emphasized that trust acts as the primary gatekeeper for digital engagement. In the Ghanaian context, where data protection regulations are still maturing,

consumers appear to use their persuasion knowledge to protect their digital autonomy, engaging only when the perceived benefit of the ad outweighs the perceived privacy risk.

4.4.3 Demographic Variations in Consumer Responses (Objective Three)

The third objective explored how demographic factors influence these perceptions. The significant difference in awareness between males and females ($p = .026$) aligns with existing literature suggesting that gender gaps often exist in technical privacy literacy, with males typically demonstrating higher awareness of tracking mechanisms. However, the lack of significant difference in actual engagement behaviour suggests that both genders respond to the "usefulness" of an ad in a similar fashion. Additionally, the significant age variations found in the study correspond with the findings of Tchao et al. (2017), indicating that younger, highly educated professionals (aged 18-34) are the most skeptical and aware participants in the digital market. Collectively, these patterns suggest that while awareness varies across demographics, the underlying drivers of engagement trust and relevance remain universal challenges for advertisers targeting the Ghanaian consumer.

4.5 CHAPTER SUMMARY

This chapter provided a detailed presentation and discussion of the research findings. It highlighted that while consumer awareness of personalised advertising is relatively high, engagement is primarily driven by trust and the perceived relevance of the content rather than mere knowledge of tracking tactics. The chapter integrated these findings with the Persuasion Knowledge Model and existing empirical studies to explain why Ghanaian consumers adopt a cautious approach to digital advertisements. By establishing the critical role of trust and relevance, this analysis provides

the necessary evidence to develop the conclusions and recommendations presented in the final chapter.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter summarizes the key findings in relation to the study's objectives, the reviewed literature, and the theoretical frameworks underpinning the study. It also presents the conclusions, practical implications, limitations, and directions for future research.

5.2 SUMMARY OF FINDINGS

5.2.1 Consumer Knowledge of Personalised Ads (Objective 1)

The study found moderate levels of awareness among Ghanaian internet users, consistent with global literature suggesting that many consumers have a general but incomplete understanding of how personalization works. Awareness was strongly associated with perceived relevance and moderately associated with perceived privacy. This supports the Persuasion Knowledge Model (PKM), which posits that as consumers become more aware of persuasion tactics, they adjust their interpretations of marketing messages accordingly. The findings imply that awareness does not necessarily lead to skepticism; instead, it may empower users to better interpret targeted ads and assess whether they align with their goals.

5.2.2 Perceptions of Relevance and Privacy, and their Effect on Engagement

Both perceived relevance and perceived privacy significantly predicted engagement behaviour. From the perspective of the Elaboration Likelihood Model (ELM), when an ad is relevant, consumers are more likely to process it through the central route, leading to stronger behavioural responses. Similarly, when consumers believe their data are handled ethically, perceived risk

decreases, enabling them to respond positively. These findings align with existing studies (e.g., Bleier & Eisenbeiss, 2015; Mehta & Kulkarni, 2020) which argue that personalization only works when the consumer perceives both benefits (relevance) and safety (privacy).

Interestingly, awareness did not directly predict engagement behaviour, suggesting that knowledge alone is insufficient to motivate engagement. Consumers may understand personalization, but will only act on personalised ads when those ads are both meaningful and trustworthy. This distinction enhances existing literature by showing the mediating role of perceptions in the Ghanaian context.

5.2.3 Gender Differences in Perception

The study found gender differences only in awareness, with men reporting significantly higher knowledge of personalised advertising. However, there were no gender differences in how relevant or trustworthy personalised ads were perceived to be, nor in how respondents engaged with them. This partially contradicts past research, such as Boscolo et al. (2020) and Birknerová et al. (2018), which found stronger gender variations in advertising perception. It suggests that in Ghana's online environment, personalization-related perceptions may be more universally shaped by digital culture than by gender. This finding is important as it highlights that gender-targeted personalization strategies may not be necessary at the perception level.

5.3 CONCLUSIONS

This study set out to examine how Ghanaian consumers understand and respond to personalised online advertising. The results reveal that awareness plays a foundational role by shaping perceptions of relevance and privacy, and these perceptions, in turn, have a strong influence on engagement behaviours. Although gender differences in awareness exist, perceptions and engagement appear to be shaped more by digital experience than by gender. Overall, the findings

highlight the importance of designing relevant, transparent, and ethically responsible personalised ads that align with the expectations and trust levels of Ghanaian internet users.

5.4 THEORETICAL AND PRACTICAL IMPLICATIONS

5.4.1 Theoretical Implications

This study offers modest yet significant insights into the application of the Persuasion Knowledge Model (PKM) within the burgeoning digital economy of Ghana. Rather than extending the theory, the findings illustrate and reinforce the core tenets of PKM by demonstrating how consumer awareness of data-tracking serves as a foundational component of persuasion knowledge. The results suggest that when Ghanaian consumers recognize personalised ads as persuasion attempts, they do not automatically reject them; instead, they activate their persuasion knowledge to evaluate the advertiser's motives and the utility of the message. This supports the PKM's assertion that "coping responses" in this case, clicking or reacting to an ad are the result of a cognitive assessment of the persuasion tactic.

Furthermore, the study highlights the critical role of "evaluative perceptions" within the persuasion process. By demonstrating that perceived relevance and trust act as stronger predictors of engagement than mere awareness, the findings reinforce the theoretical idea that persuasion knowledge is a necessary but not sufficient condition for consumer action. In the Ghanaian context, the study illustrates that consumers' coping mechanisms are highly sensitive to the perceived fairness of the data use. Therefore, the findings suggest that the effectiveness of personalised advertising is contingent upon the consumer's ability to reconcile their awareness of tracking with a positive perception of the ad's value and the advertiser's integrity. This provides a clear empirical

illustration of how persuasion knowledge and perceived value interact to shape behavioural outcomes in a developing digital market.

5.4.2 Practical Implications

The findings provide actionable insights for advertisers and digital marketing practitioners:

the results show that ad relevance plays a central role in shaping consumer engagement. When personalised advertisements reflect users' real needs, preferences, and online behaviour, consumers are more inclined to click, like, or comment on them. This suggests that marketers should prioritize relevance-enhancing techniques, such as interest-based targeting and timely message delivery, to improve engagement effectiveness.

the study highlights the importance of privacy-related perceptions. Consumers demonstrated a stronger tendency to engage with personalised ads when they believed that their data was handled responsibly. This underscores the need for greater transparency in advertising practices. Marketers can strengthen trust by clearly communicating why a user is seeing a particular ad and providing accessible tools for controlling ad preferences.

Gender-Focused Digital Literacy The study identified a statistically significant gender gap in awareness levels ($p = .026$), with female respondents reporting lower technical knowledge of personalization and tracking processes (mean (\bar{x}) = 3.51) compared to their male counterparts (mean (\bar{x}) = 3.86). Although this gap in knowledge did not translate into a significant difference in how both genders perceive the relevance or privacy risks of ads, it suggests that women may have a less comprehensive understanding of the underlying data mechanisms. Addressing this specific knowledge deficit through gender-inclusive digital literacy interventions is essential. By improving technical understanding among female users, advertisers and policymakers can ensure

that all consumers possess the necessary "persuasion knowledge" to critically interpret and safely navigate personalised digital content.

Marketers should design culturally adaptable personalization strategies. Since perceptions do not differ significantly by gender, ads can be strategically targeted based on relevance rather than stereotypes. When ads reflect people's real interests and everyday experiences, they are more likely to be seen as relevant and trustworthy, increasing the chances of engagement.

5.5 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

While the methodology employed in this study provided a reliable and practical approach for addressing the research objectives, several limitations must be acknowledged which serve as the basis for future scholarly inquiry. A primary concern involves measurement error and response bias, as the study relied on a structured questionnaire where participants might have provided socially desirable answers or interpreted items differently. Future studies could strengthen measurement quality by pre-testing items more extensively and using clearer screening prompts with specific examples to ensure that respondents are accurately rating personalised advertising mechanisms rather than general digital content.

Furthermore, the representativeness of the sample may have been affected by variations in digital access and the willingness of participants to engage with an online survey. Individuals who were less comfortable with digital platforms or had limited internet access may be under-represented, which could influence the stability of estimates regarding ad engagement. Future research should therefore utilise a wider set of contact points and consider combining digital recruitment with in-person intercepts to ensure that consumers with varying levels of digital maturity and diverse backgrounds are adequately captured.

The study also faced potential conceptual limitations, as some participants may not have fully understood the technical definitions of personalised advertising, potentially leading to a misclassification of ad types or superficial evaluations of data-tracking features. To address this, future studies could employ mixed-methods approaches, such as follow-up interviews or focus groups, to clarify the practical reasons behind consumer perceptions and ensure that participants are distinguishing between standard digital ads and sophisticated data-driven content.

Additionally, the cross-sectional design of this research limits causal inference because it measures awareness and engagement at only a single point in time.¹ Future research should introduce longitudinal designs to track changes in consumer behaviour over time, particularly as privacy regulations and advertising technologies evolve within the Ghanaian market. Such an approach would support stronger inferences regarding the direction of influence between persuasion knowledge and engagement.

Finally, the scope of this research was primarily focused on positive engagement behaviours and did not explicitly measure ad-avoidance. To provide a more comprehensive picture of the consumer experience, future studies should investigate both engagement and avoidance responses, such as the use of ad-blockers or the decision to "opt out" of tracking. This would allow for a deeper understanding of how persuasion knowledge shapes the total consumer response in the evolving digital landscape of Ghana.

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APPENDIX

SURVEY QUESTIONNAIRE

Thank you very much for taking a time to be part of this academic study. I am a student of the University of Media, Art and Communication (UNIMAC-IJ). I am conducting this study to understand how Ghanaian internet users perceive **personalised online advertisements** and how that perception influences their behaviour online.

Your participation is completely voluntary, and responses are anonymous and confidential. All responses will be used for academic purposes.

NB: Personalised online ads are advertisements that are shown to you based on your online activities, such as websites you visit, things you search for, apps you use, or content you interact with.

Kindly tick the box that best represents your view or fill in the blank spaces provided.

SECTION 1 — DEMOGRAPHICS

1. **Age Group**

- 18–24
- 25–34
- 35–44
- 45–54
- 55+

2. **Gender**

- Male
- Female
- Prefer not to say

3. **Highest Level of Education**

- Junior High School
- Senior High School
- Diploma
- Bachelor's Degree
- Postgraduate Degree

4. **City of Residence**

- Accra
- Kumasi
- Takoradi

C. SECTION 2 — INTERNET USE PATTERNS

6. **Frequency of Internet Use**

- Several times a day

- Once a day
- A few times a week
- Once a week
- Less than once a week

7. Platforms Used Regularly (Select all that apply)

- Facebook
- Instagram
- TikTok
- Twitter (X)
- WhatsApp
- Google
- E-commerce sites

8. Frequency of Noticing Ads Online

- Very often
- Often
- Sometimes
- Rarely
- Never

D. SECTION 3 — KNOWLEDGE OF PERSONALISED ADS

Scale: 1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

For each statement, tick the option that best represents your view.

Statement	1	2	3	4	5
9. I am aware that websites and apps track my online actions to show ads.					
10. I know that ads can follow me across devices.					
11. I understand that companies combine online and offline data to personalize ads.					
12. I know how to check or control ad settings on social media or my phone.					
13. I know that websites collect data about my online browsing behaviour.					
14. My search history influences the ads I see online.					
15. I know that companies track my online shopping activities to personalize ads.					
16. I understand that cookies help advertisers track users across websites.					
17. My location data can be used to show me targeted ads.					
18. Advertisers use my online activities to predict my interests.					
19. Deleting cookies affects the type of ads I see online.					

E. SECTION 4 — PERCEPTIONS OF RELEVANCE IN PERSONALISED ADS

Scale: 1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

Statement	1	2	3	4	5
20. They seem to be designed specifically for me.					
21. These ads are tailored to my shopping situation.					
22. They target me as a unique individual.					
23. The ads reflect my needs and interests.					
24. The messages feel personal and relevant.					
25. They recommend products that match my lifestyle.					
26. The content feels customized based on what I like.					
27. Such ads make online shopping easier for me.					
28. They help me discover products I didn't know I needed.					
29. These ads understand my preferences.					

F. SECTION 5 — PERCEPTIONS OF PRIVACY IN PERSONALISED ADS

Scale: 1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

Statement	1	2	3	4	5
32. My personal data is used responsibly in personalised ads.					
33. Advertisers respect my privacy.					
34. I trust social media platforms to protect my information.					
35. I feel I have control over the ads I see online.					
36. Personalised advertising can be done ethically.					
37. Advertisers should be transparent about how my data is used.					
38. I am comfortable seeing ads based on my interests when my privacy is protected.					
39. I feel safe sharing limited data when it improves ad relevance.					
40. Responsible personalization benefits both consumers and advertisers.					

G. SECTION 6 — ENGAGEMENT BEHAVIOUR

Scale: 1 = Strongly Disagree | 2 = Disagree | 3 = Neutral | 4 = Agree | 5 = Strongly Agree

Statement	1	2	3	4	5
41. If a personalised ad is relevant, I am likely to click on it.					
42. I am likely to like or react to a personalised ad.					
43. I comment on personalised ads that interest me.					
44. If a personalised ad offers a product I need, I would visit the website.					

H. THANK YOU

Thank you for taking the time to complete this survey. Your responses help deepen the understanding of personalised online advertising in Ghana.