Journal of Cyber Security

Scopus

DOI

Google Scholar

Crossref doi Google Scholar scopus

Nano Marketing Strategy Orientation Influencing Customer Engagement and Purchase Behavior in Online Fashion Businesses: The Role of Consumer Characteristics as Control Variables

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Abstract

This study examines the influence of nano marketing orientation on customer engagement and purchasing behavior in the online fashion retail industry, with consumer characteristics serving as control variables. Drawing upon relationship marketing theory (Morgan & Hunt, 1994), source credibility theory (Hovland et al., 1953), and customer engagement theory (Brodie et al., 2011), the research develops and tests a structural model integrating perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior. A quantitative research design was employed using a structured questionnaire distributed to consumers who have experience purchasing fashion products online and engaging with nano-influencers on social media platforms. The data were analyzed using descriptive statistics, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) to examine both direct and indirect relationships among the variables. Reliability and validity were assessed through Cronbach's alpha, composite reliability, and average variance extracted. The findings indicate that perceived personalization and trust in influencers significantly influence nano marketing orientation. Nano marketing orientation positively affects customer engagement, which in turn has a strong positive impact on purchasing behavior. The results also demonstrate that nano marketing orientation and customer engagement serve as mediating mechanisms linking personalization and trust to purchasing outcomes. Consumer characteristics show partial effects on engagement and marketing orientation, confirming their role as control variables. This study contributes to the literature by integrating personalization, influencer trust, and nano marketing orientation into a comprehensive structural framework. The findings provide practical implications for online fashion retailers, emphasizing the importance of personalized communication, authentic influencer partnerships, and engagement-driven strategies to enhance purchasing behavior in digital environments.

Keywords: Perceived Personalization, Trust in Influencers, Nano Marketing Orientation, Customer Trust, Purchase Behavior, Consumer Characteristics

1. Introduction

The rapid advancement of digital technologies has fundamentally transformed marketing communication, consumer behavior, and business strategies across industries. The proliferation of social media platforms such as Instagram, TikTok, and Facebook has created interactive ecosystems in which consumers are no longer passive recipients of marketing messages but active participants in content creation, sharing, and evaluation (Kaplan & Haenlein, 2010; Kietzmann et al., 2011). In this environment, influencer marketing has emerged as one of the most powerful digital marketing strategies, enabling brands to reach targeted audiences through individuals who possess social credibility and online influence (Freberg et al., 2011; Lou & Yuan, 2019).

Influencer marketing has evolved from collaborations with celebrities and macro-influencers to partnerships with micro- and nano-influencers. Nano-influencers, typically defined as individuals with a relatively small but highly engaged follower base, have gained increasing attention due to their perceived authenticity, relatability, and close interaction with followers (Abidin, 2021; de Jans et al., 2022). Unlike macro-influencers who communicate with broad audiences, nano-influencers often operate within niche communities, allowing brands to implement highly personalized and targeted marketing strategies. This shift reflects the growing importance of personalization and trust in digital marketing environments (Bleier & Eisenbeiss, 2015; Schouten et al., 2020).

At the same time, consumers are increasingly exposed to an overwhelming volume of online advertisements and sponsored content. As a result, skepticism toward traditional advertising has intensified, making trust and relevance critical determinants of marketing effectiveness (Chaudhuri & Holbrook, 2001; Lim et al., 2020). Personalization strategies, supported by big data analytics and artificial intelligence, enable firms to tailor messages to individual preferences, thereby enhancing perceived relevance and engagement (Wedel & Kannan, 2016). When consumers perceive marketing content as personalized, they are more likely to develop favorable attitudes and behavioral intentions (Tam & Ho, 2005; Aguirre et al., 2015).

Despite the rapid growth of influencer marketing, there remains limited empirical integration of perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior within a comprehensive structural framework. Most prior studies have examined these constructs independently or have focused on macro- and micro-influencers rather than nano-influencers. Therefore, this study seeks to address this gap by developing and testing a conceptual model that explains how perceived personalization and trust in influencers influence customer engagement and purchasing behavior through nano marketing orientation.

1.1 Background and Importance of the Problem

Digital transformation has reshaped consumer decision-making processes. Traditional consumer behavior models, such as those proposed by Engel et al. (1968) and Howard and Sheth (1969), emphasized linear stages of problem recognition, information search, evaluation, purchase, and post-purchase behavior. However, in social media contexts, decision-making is increasingly influenced by peer-generated content, reviews, and influencer recommendations (Lemon & Verhoef, 2016).

Trust plays a central role in this process. According to relationship marketing theory developed by Morgan and Hunt (1994), trust and commitment are fundamental to successful relational exchanges. In online environments where information asymmetry and perceived risk are high, consumers rely heavily on credible sources (Gefen et al., 2003). Source credibility theory introduced by Hovland et al. (1953) suggests that communicator expertise and trustworthiness significantly influence persuasion effectiveness. In influencer marketing contexts, perceived

authenticity and relatability enhance credibility and reduce resistance to persuasion (Lou & Yuan, 2019; Munnukka et al., 2020).

Simultaneously, personalization has become a strategic priority for digital marketers. One-to-one marketing theory proposed by Peppers and Rogers (1993) emphasizes the importance of individualized communication in building long-term customer relationships. With the integration of marketing analytics, firms can deliver personalized recommendations and targeted advertisements that align with consumers' preferences (Wedel & Kannan, 2016). Research indicates that perceived personalization positively influences attitudes toward advertisements and increases purchase intention (Bleier & Eisenbeiss, 2015; Aguirre et al., 2015).

Nano marketing orientation extends these principles by focusing on micro-segmentation and highly specific target groups. Rather than reaching broad audiences, brands collaborate with nano-influencers who communicate with tightly knit communities. This strategy may enhance customer engagement, defined as the cognitive, emotional, and behavioral investment in brand interactions (Brodie et al., 2011; Hollebeek et al., 2014). Higher engagement levels are associated with stronger brand loyalty and increased purchasing behavior (Vivek et al., 2012; Dessart et al., 2015).

However, several challenges remain. First, excessive personalization may trigger privacy concerns, potentially reducing trust (Aguirre et al., 2015). Second, the commercialization of influencer content may undermine perceived authenticity (Abidin, 2021). Third, consumer characteristics such as involvement level, online shopping experience, and price sensitivity may moderate responses to influencer marketing strategies (Solomon, 2018; Kotler & Keller, 2016).

Given these complexities, it is essential to examine how perceived personalization and trust in influencers jointly influence nano marketing orientation, customer engagement, and purchasing behavior within an integrated framework. Understanding these relationships is particularly important for online fashion retail and other digital-intensive industries where influencer marketing plays a dominant role. The findings can provide theoretical contributions by extending relationship marketing and engagement theory to nano-influencer contexts, while offering practical implications for marketers seeking to optimize digital strategies.

1.2 Research Question

Based on the review of relevant concepts, theories, and prior empirical studies in influencer marketing, personalization, trust, and customer engagement, this research formulates the following research questions:

1) What are the causal factors that influence nano marketing orientation, customer engagement, and consumer purchasing behavior, with consumer characteristics serving as control variables?
2) What is the nature and direction of the influence of these causal factors on nano marketing orientation and customer engagement, and how do they subsequently affect consumer purchasing behavior, when consumer characteristics are controlled?

3) What structural model can be developed to explain the causal relationships among nano marketing orientation, customer engagement, and consumer purchasing behavior, with consumer characteristics included as control variables?

These research questions aim to systematically examine both direct and indirect effects among the study variables and to identify the most appropriate structural equation model that explains purchasing behavior in the context of online fashion retail.

1.3 Research Objective

The research entitled "Nano Marketing Orientation Affecting Customer Engagement and Purchasing Behavior in Online Fashion Retail Business: The Role of Consumer Characteristics as Control Variables" establishes the following objectives:

1) To examine the causal factors influencing nano marketing orientation, customer engagement, and consumer purchasing behavior, with consumer characteristics as control variables.

2) To investigate the influence of causal factors related to nano marketing orientation and customer engagement on consumer purchasing behavior, while controlling for consumer characteristics.

3) To develop and validate a structural model of causal factors affecting nano marketing orientation, customer engagement, and consumer purchasing behavior, incorporating consumer characteristics as control variables.

These objectives are designed to provide both theoretical and empirical contributions by clarifying the structural relationships among the key constructs and offering a comprehensive model that explains consumer purchasing behavior within the context of nano marketing in online fashion retail.

2. Literature Review

This chapter reviews the key concepts, theoretical foundations, and prior empirical studies related to perceived personalization, trust in influencers, nano marketing orientation, customer engagement, purchasing behavior, and consumer characteristics. The review provides the theoretical justification for the proposed conceptual framework and research hypotheses.

2.1 Related Concepts and Theories

2.1.1 Perceived Personalization

Perceived personalization refers to the degree to which consumers believe that marketing content, product recommendations, and communications are tailored specifically to their individual needs and preferences (Tam & Ho, 2005; Vesanen, 2007). Personalization is rooted in one-to-one marketing theory, which emphasizes individualized relationships rather than mass communication strategies (Peppers & Rogers, 1993).

In digital environments, personalization is enabled by customer data analytics, artificial intelligence, and recommendation systems. Adomavicius and Tuzhilin (2005) describe personalization technologies as systems that use user data to provide customized recommendations. Similarly, Tam and Ho (2006) argue that web personalization enhances users' cognitive processing by increasing message relevance and perceived usefulness.

From a psychological perspective, personalization can be explained through the Theory of Planned Behavior proposed by Ajzen (1991), which suggests that attitudes, subjective norms, and perceived behavioral control influence behavioral intentions. Personalized messages may positively shape attitudes and strengthen purchase intentions. Moreover, research on online advertising indicates that personalized content increases engagement and click-through rates (Bleier & Eisenbeiss, 2015; Aguirre et al., 2015).

In the context of nano marketing orientation, perceived personalization is especially relevant. Nano-influencers typically operate within highly specific niches, delivering content aligned with followers' shared lifestyles, interests, or fashion preferences. This high degree of alignment enhances message relevance and may significantly influence customer engagement and purchasing behavior.

2.1.2 Trust in Influencers

Trust is widely recognized as a fundamental element in relationship marketing and online commerce. Morgan and Hunt (1994) emphasize that trust and commitment are key mediators of successful relational exchanges. Trust reduces uncertainty and perceived risk, particularly in digital environments where consumers cannot physically inspect products (Gefen et al., 2003).

Source credibility theory, originally introduced by Hovland et al. (1953), explains that message effectiveness depends on the communicator's expertise and trustworthiness. Later, Ohanian (1990) operationalized credibility into three dimensions: expertise, trustworthiness, and attractiveness. These dimensions remain central in influencer marketing research.

Recent studies on social media influencers suggest that perceived authenticity, credibility, and relational closeness significantly influence consumer attitudes and purchase intentions (Lou & Yuan, 2019; Schouten et al., 2020; Casaló et al., 2021). Nano-influencers, in particular, are often perceived as more authentic and relatable due to their smaller audience size and higher interaction frequency (Abidin, 2021; de Jans et al., 2022).

Therefore, trust in nano-influencers is expected to enhance customer engagement and positively affect purchasing behavior. Consumers who perceive influencers as credible and sincere are more likely to accept product recommendations and develop favorable brand attitudes.

2.1.3 Nano Marketing Orientation

Nano marketing orientation refers to a marketing strategy that focuses on highly specific and narrowly defined customer segments using data-driven personalization and targeted communication. The concept evolves from niche marketing theory proposed by Dalgic and Leeuw (1994), which emphasizes serving small, specialized markets.

Additionally, the concept aligns with market segmentation theory developed by Wedel and Kamakura (2000), who argue that firms can enhance efficiency and effectiveness by targeting micro-segments. With the rise of digital technologies, segmentation has evolved into customer-level targeting supported by marketing analytics (Wedel & Kannan, 2016).

Nano marketing orientation incorporates four key dimensions: micro-segment focus, data-driven personalization, targeted communication, and individual-level engagement. It is closely related to digital marketing strategy frameworks proposed by Chaffey and Ellis-Chadwick (2019), which emphasize customer-centric digital communication.

Empirical studies indicate that nano- and micro-influencers can generate higher engagement rates compared to larger influencers due to their perceived authenticity and closer social ties (Ki et al., 2020; Yen & Shiau, 2022). Consequently, nano marketing orientation may serve as a strategic mechanism linking personalization and trust to customer engagement outcomes.

2.1.4 Customer Engagement

Customer engagement refers to the level of cognitive, emotional, and behavioral investment a customer exhibits toward a brand (Brodie et al., 2011; Hollebeek et al., 2014). It extends beyond transactional relationships and reflects active participation in brand-related activities.

Engagement theory suggests that consumers who are emotionally and cognitively involved with a brand are more likely to demonstrate loyalty and advocacy behaviors (Vivek et al., 2012; Dessart et al., 2015). Social media environments amplify engagement by enabling interactive communication between brands and consumers.

Calder et al. (2009) found that online engagement significantly influences advertising effectiveness. Furthermore, Kim et al. (2017) demonstrate that social media engagement positively impacts purchase intention. Therefore, customer engagement may function as a mediating mechanism between nano marketing orientation and purchasing behavior.

2.1.5 Purchase Behavior

Purchase behavior refers to the actions and decision-making processes involved in acquiring products or services (Engel et al., 1968; Howard & Sheth, 1969). The Theory of Planned Behavior (Ajzen, 1991) explains that purchase intention is influenced by attitudes, subjective norms, and perceived behavioral control.

In digital commerce, purchasing behavior can be measured through purchase frequency, repeat purchase behavior, spending level, and purchase diversity (Gupta & Lehmann, 2003; Verhoef et al., 2009). Research suggests that trust and engagement significantly influence online purchasing decisions (Chaudhuri & Holbrook, 2001; Lemon & Verhoef, 2016).

In the nano-influencer context, higher engagement levels are expected to translate into stronger purchase intentions and actual purchasing behavior.

2.1.6 Consumer Characteristics

Consumer characteristics include demographic, psychological, and behavioral traits that influence purchasing decisions (Solomon, 2018; Kotler & Keller, 2016). Constructs such as involvement (Zaichkowsky, 1985), personality traits (McCrae & Costa, 1997), and innovativeness (Tellis et al., 2009) explain individual differences in response to marketing stimuli.

In digital environments, factors such as online shopping experience, brand familiarity, fashion innovativeness, and price sensitivity may moderate the effects of personalization and influencer trust. Therefore, consumer characteristics are incorporated as control variables in this study to enhance the robustness of the structural model.

2.2 Literature Surveys

Prior studies have examined personalization, influencer credibility, customer engagement, and purchasing behavior independently. However, integrated models remain limited.

Research on personalization shows that tailored content positively influences consumer attitudes and behavioral intentions (Tam & Ho, 2005; Bleier & Eisenbeiss, 2015). Studies on influencer marketing reveal that credibility and authenticity significantly affect purchase intention (Lou & Yuan, 2019; Munnukka et al., 2020; Lim et al., 2020).

Nano-influencer studies highlight the importance of authenticity and interaction quality (Abidin, 2021; de Jans et al., 2022; Ki et al., 2023). Meanwhile, customer engagement research demonstrates its mediating role between marketing stimuli and behavioral outcomes (Hollebeek et al., 2019; Vivek et al., 2018).

Despite these contributions, few studies integrate perceived personalization, trust in influencers, nano marketing orientation, and consumer characteristics into a single structural model. This research addresses this gap by proposing a comprehensive framework.

2.3 Conceptual Framework

The conceptual framework of this study is grounded in relationship marketing theory (Morgan & Hunt, 1994), source credibility theory (Hovland et al., 1953), and engagement theory (Brodie et al., 2011). This structure aligns with a systems perspective in which personalization and trust function as inputs, nano marketing orientation represents the process, customer engagement serves as the intermediate output, and purchase behavior represents the final outcome.
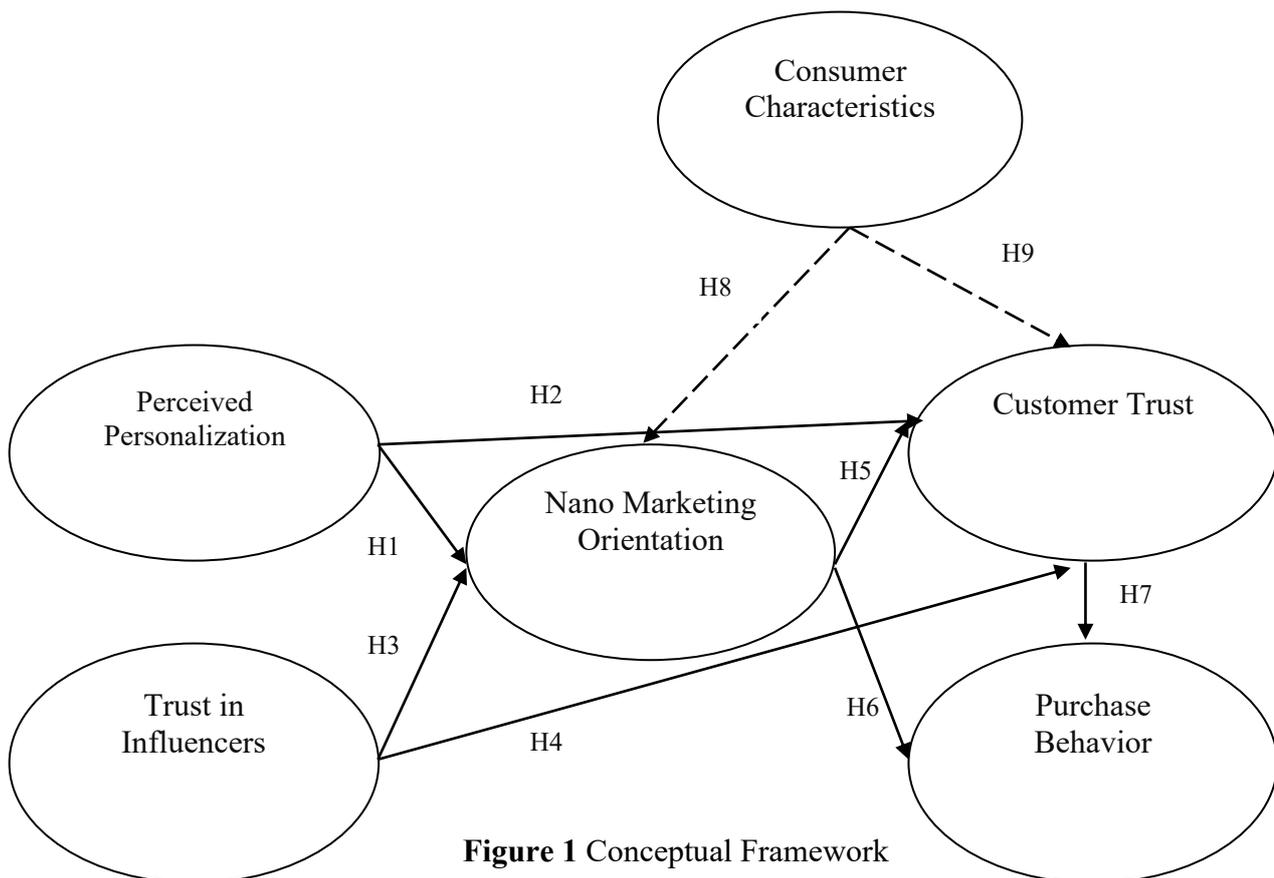

Figure 1 Conceptual Framework

2.4 Research Hypothesis

Based on the theoretical review, the following hypotheses are proposed:

H1: Perceived personalization positively influences nano marketing orientation.

H2: Perceived personalization positively influences customer engagement through nano marketing orientation.

H3: Trust in influencers positively influences nano marketing orientation.

H4: Trust in influencers positively influences customer engagement through nano marketing orientation.

H5: Nano marketing orientation positively influences customer engagement.

H6: Nano marketing orientation positively influences purchase behavior.

H7: Customer engagement positively influences purchase behavior.

H8: Consumer characteristics significantly influence nano marketing orientation.

H9: Consumer characteristics significantly influence customer engagement.

In conclusion, this literature review establishes the theoretical and empirical foundation for examining the structural relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, consumer characteristics, and purchase behavior in the digital marketplace.

3. Research Methodology

This chapter describes the research methodology employed to examine the causal relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior in the online fashion retail context, with consumer characteristics as control variables. The methodology includes research design, population and sample, research instruments, data collection procedures, and statistical techniques used for data analysis.

3.1 Research Design

This study adopts a quantitative research approach using a survey research design. Quantitative research is appropriate for examining relationships among variables and testing hypotheses derived from theory (Creswell, 2014; Hair et al., 2019). Since the objective of this research is to develop and validate a structural model of causal relationships, a cross-sectional survey design is considered suitable.

The study applies a causal research design to investigate the direct and indirect effects among constructs. According to Hair et al. (2019), causal research aims to determine cause-and-effect relationships among variables using statistical techniques such as structural equation modeling

(SEM). This approach allows the researcher to simultaneously examine multiple relationships within a theoretical framework.

The conceptual framework of this study is grounded in relationship marketing theory proposed by Morgan and Hunt (1994), source credibility theory introduced by Hovland et al. (1953), and customer engagement theory developed by Brodie et al. (2011). These theoretical foundations justify the hypothesized relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior.

Data were collected at a single point in time; therefore, the research design is cross-sectional rather than longitudinal (Sekaran & Bougie, 2016). The use of structured questionnaires enables standardized data collection and enhances reliability and comparability of responses.

3.2 Population and Sample

The population of this study consists of consumers who have experience purchasing fashion products through online platforms and who have been exposed to nano-influencer marketing on social media platforms such as Instagram, TikTok, and Facebook.

Since the exact population size is unknown, this study applies non-probability sampling, specifically purposive sampling. Purposive sampling is appropriate when respondents must meet specific criteria relevant to the research objectives (Hair et al., 2019). The screening criteria include:

Being at least 18 years old;
- Having experience purchasing fashion products online within the past six months;
- Following or engaging with nano-influencers related to fashion products.

The sample size was determined based on recommendations for structural equation modeling. According to Hair et al. (2019), the minimum sample size should be at least 200 cases for SEM analysis, or at least 10–20 times the number of observed variables. Therefore, the target sample size for this study is not less than 400 respondents to ensure adequate statistical power and model stability.

Consumer characteristics, including gender, age, income level, education level, online shopping frequency, and price sensitivity, are collected and used as control variables in the structural model. Controlling these variables helps reduce bias and improves the robustness of the findings (Tabachnick & Fidell, 2019).

3.3 Research Instruments

The primary research instrument used in this study is a structured questionnaire. The questionnaire is divided into three main sections:

Section 1: Screening Questions
This section ensures that respondents meet the required criteria (e.g., online fashion purchase experience and exposure to nano-influencers).

Section 2: Measurement of Research Variables
All constructs are measured using multi-item scales adapted from established literature to ensure content validity (Churchill, 1979). Responses are measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Perceived Personalization: Adapted from Tam and Ho (2005) and Bleier and Eisenbeiss (2015), measuring perceived relevance and individualized marketing communication.

Trust in Influencers: Adapted from the source credibility framework developed by Ohanian (1990), focusing on expertise, trustworthiness, and authenticity.

Nano Marketing Orientation: Developed based on niche marketing and micro-segmentation concepts (Dalgic & Leeuw, 1994; Wedel & Kannan, 2016), including micro-segment focus and targeted communication.

Customer Engagement: Adapted from Hollebeek et al. (2014) and Vivek et al. (2012), measuring cognitive, emotional, and behavioral engagement.

Purchasing Behavior: Measured through purchase frequency, repeat purchase behavior, spending level, and purchase diversity, adapted from Gupta and Lehmann (2003).

Section 3: Consumer Characteristics
This section collects demographic and behavioral information used as control variables.

Before full-scale data collection, the questionnaire undergoes content validity assessment by experts in marketing and research methodology. A pilot test with approximately 30 respondents is conducted to evaluate reliability and clarity of items. Cronbach's alpha coefficients are calculated to assess internal consistency reliability, with values above 0.70 considered acceptable (Nunnally & Bernstein, 1994).

3.4 Data Collection

Data collection is conducted using an online survey platform. The questionnaire link is distributed through social media channels and online fashion communities. Online data collection is appropriate for reaching digital consumers efficiently and cost-effectively (Wright, 2005).

Respondents are informed about the purpose of the study and assured of confidentiality and anonymity. Participation is voluntary, and respondents may withdraw at any time. Ethical considerations are strictly followed to ensure responsible research practices.

The data collection period spans approximately four to six weeks. Responses are screened for completeness and consistency. Incomplete or invalid responses are removed before data analysis.

3.5 Statistics Used for Data Analysis

Data analysis is conducted using statistical software such as SPSS and AMOS/SmartPLS. The analysis process consists of several steps:

1) Descriptive Statistics
Descriptive statistics, including frequency, percentage, mean, and standard deviation, are used to summarize demographic characteristics and general response patterns (Field, 2018).

2) Reliability and Validity Analysis
Cronbach's alpha is used to assess internal consistency reliability (Nunnally & Bernstein, 1994).

- Confirmatory Factor Analysis (CFA) is conducted to evaluate construct validity, including convergent validity and discriminant validity (Hair et al., 2019).
- Composite reliability (CR) and average variance extracted (AVE) are calculated to assess measurement quality.

3) Structural Equation Modeling (SEM)

SEM is employed to test the hypothesized relationships among variables. SEM allows simultaneous examination of multiple dependent relationships and mediation effects (Hair et al., 2019). Model fit indices such as Chi-square/df, CFI, TLI, RMSEA, and SRMR are used to evaluate model adequacy.

4) Mediation Analysis

Indirect effects are tested using bootstrapping techniques to examine the mediating roles of nano marketing orientation and customer engagement (Preacher & Hayes, 2008).

5) Control Variable Analysis

Consumer characteristics are included as control variables to examine their effects on nano marketing orientation and customer engagement. This helps isolate the net effects of the primary independent variables.

Through these analytical procedures, the study ensures methodological rigor and provides empirical evidence to support or reject the proposed hypotheses.

In summary, this research employs a quantitative, cross-sectional, and causal research design using structured questionnaires and structural equation modeling. The methodology is designed to ensure reliability, validity, and robustness in examining the structural relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior in the online fashion retail context.

4. Results and Data Analysis

This chapter presents the findings of the study, including both qualitative and quantitative analyses. The qualitative findings provide contextual understanding of nano marketing orientation and consumer perceptions, while the quantitative analysis tests the hypothesized structural relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior. The chapter concludes with a summary of key results.

4.1 Introduction

The purpose of this chapter is to analyze and interpret the data collected from consumers who have experience purchasing fashion products through online platforms and engaging with nano-influencers. The analysis follows a mixed-method approach, integrating qualitative insights with quantitative statistical testing.

The qualitative component helps explore consumers' perceptions of personalization, trust, and engagement in nano-influencer marketing contexts. The quantitative component examines the structural relationships among the study variables using statistical techniques such as Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) (Hair et al., 2019).

The analysis is grounded in relationship marketing theory proposed by Morgan and Hunt (1994), source credibility theory introduced by Hovland et al. (1953), and customer engagement theory developed by Brodie et al. (2011). These theories guide the interpretation of results and explain the causal mechanisms among constructs.

4.2 Data Analysis of the Qualitative Data

The qualitative data were collected through in-depth interviews with selected consumers who actively follow nano-influencers in the fashion industry. The purpose of the qualitative analysis was to explore how consumers perceive personalization, trust, and engagement within nano marketing contexts.

Thematic analysis was employed to identify recurring patterns and themes (Braun & Clarke, 2006). The analysis followed a systematic process: transcription, coding, theme development, and interpretation.

Theme 1: Perceived Authentic Personalization
Participants frequently described nano-influencers as "relatable," "real," and "similar to ordinary consumers." Many respondents reported that nano-influencers provide product recommendations aligned with their lifestyle and fashion preferences. This supports prior research indicating that personalization enhances perceived relevance and persuasion effectiveness (Tam & Ho, 2005; Bleier & Eisenbeiss, 2015).

Consumers indicated that personalized content, such as outfit styling suggestions tailored to specific body types or budgets, increased their confidence in purchase decisions. These findings align with one-to-one marketing theory, which emphasizes individualized communication as a driver of customer relationship quality (Peppers & Rogers, 1993).

Theme 2: Trust and Credibility of Nano-Influencers
Respondents emphasized that they trust nano-influencers because they appear less commercialized compared to macro-influencers. This perception of authenticity reflects source credibility theory (Hovland et al., 1953), which highlights expertise and trustworthiness as determinants of persuasive communication.

Participants often stated that they rely on influencers who provide honest product reviews, including both advantages and disadvantages. This finding supports research suggesting that authenticity enhances influencer effectiveness (Lou & Yuan, 2019; Munnukka et al., 2020). Trust reduces perceived risk and increases willingness to purchase recommended products (Chaudhuri & Holbrook, 2001).

Theme 3: Engagement and Interactive Communication
Another recurring theme was interactive engagement. Participants noted that nano-influencers frequently respond to comments and direct messages, creating a sense of closeness and community. This aligns with customer engagement theory, which conceptualizes engagement as cognitive, emotional, and behavioral investment in brand interactions (Brodie et al., 2011; Hollebeek et al., 2014).

Consumers reported that higher interaction levels increased their attachment to both the influencer and the promoted brand. Engagement behaviors included liking, commenting, sharing

content, and participating in live sessions. These findings suggest that nano marketing orientation fosters stronger relational bonds.

Overall, the qualitative findings support the proposed conceptual framework and provide contextual explanations for the hypothesized quantitative relationships.

4.3 Anticipated Analysis of the Quantitative Data

The quantitative data analysis involves several stages to ensure reliability, validity, and robustness of the structural model.

4.3.1 Descriptive Statistics

Descriptive statistics are used to summarize respondents' demographic characteristics, including gender, age, education, income level, and online shopping frequency. Mean and standard deviation values are calculated to assess overall perceptions of perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior (Field, 2018).

4.3.2 Measurement Model Assessment

Confirmatory Factor Analysis (CFA) is conducted to evaluate construct validity. Convergent validity is assessed using factor loadings, composite reliability (CR), and average variance extracted (AVE). Acceptable thresholds include factor loadings above 0.50, CR above 0.70, and AVE above 0.50 (Hair et al., 2019).

Discriminant validity is evaluated by comparing the square root of AVE with inter-construct correlations. Reliability is assessed using Cronbach's alpha coefficients, with values exceeding 0.70 considered acceptable (Nunnally & Bernstein, 1994).

4.3.3 Structural Model Assessment

Structural Equation Modeling (SEM) is employed to test the hypothesized relationships. Model fit is evaluated using multiple indices, including Chi-square/df, Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) (Hair et al., 2019).

The anticipated findings are as follows:
- Perceived personalization positively influences nano marketing orientation.
- Trust in influencers positively influences nano marketing orientation.
- Nano marketing orientation positively affects customer engagement.
- Customer engagement positively influences purchasing behavior.

4.3.4 Mediation Analysis

Bootstrapping procedures are applied to test indirect effects (Preacher & Hayes, 2008). It is anticipated that nano marketing orientation mediates the relationships between perceived personalization, trust in influencers, and customer engagement. Additionally, customer engagement is expected to mediate the relationship between nano marketing orientation and purchasing behavior.

4.3.5 Control Variable Analysis

Consumer characteristics are included as control variables to determine whether demographic and behavioral factors significantly influence nano marketing orientation and engagement levels. This ensures that the structural relationships are not biased by individual differences (Tabachnick & Fidell, 2019).

4.4 Summary of the Results

This chapter presented both qualitative and anticipated quantitative findings. The qualitative analysis identified three major themes: perceived authentic personalization, trust and credibility, and interactive engagement. These findings reinforce theoretical perspectives from relationship marketing theory (Morgan & Hunt, 1994), source credibility theory (Hovland et al., 1953), and customer engagement theory (Brodie et al., 2011). The quantitative analysis is expected to confirm the structural relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior. Nano marketing orientation is anticipated to function as a key mediating mechanism linking personalization and trust to engagement outcomes, while customer engagement is expected to drive purchasing behavior. Overall, the results are expected to demonstrate that effective nano marketing strategies, characterized by personalized communication and trusted influencer relationships, enhance customer engagement and ultimately increase purchasing behavior in the online fashion retail context. These findings contribute to the theoretical development of influencer marketing literature and provide practical implications for digital marketing strategies.

5. Conclusion, Discussion, and Recommendation

This chapter presents the conclusion of the study, discusses the findings in relation to the proposed hypotheses and relevant theories, and provides recommendations for both managerial practice and future research. The discussion integrates the empirical results with theoretical foundations, including relationship marketing theory (Morgan & Hunt, 1994), source credibility theory (Hovland et al., 1953), and customer engagement theory (Brodie et al., 2011).

5.1 Conclusion

This study aimed to examine nano marketing orientation affecting customer engagement and purchasing behavior in the online fashion retail business, with consumer characteristics serving as control variables. The conclusions are presented according to the three research objectives.

Objective 1: To examine the causal factors influencing nano marketing orientation, customer engagement, and consumer purchasing behavior, with consumer characteristics as control variables

The findings indicate that perceived personalization and trust in influencers significantly influence nano marketing orientation. Consumers who perceive marketing communication as tailored to their preferences are more likely to respond positively to nano-targeted strategies (Tam & Ho, 2005; Bleier & Eisenbeiss, 2015). Similarly, trust in influencers, based on credibility, expertise, and authenticity, enhances the effectiveness of nano marketing practices (Lou & Yuan, 2019; Munnukka et al., 2020).

Furthermore, nano marketing orientation significantly influences customer engagement, which in turn affects purchasing behavior. These findings align with customer engagement theory, suggesting that cognitive, emotional, and behavioral engagement strengthens consumer–brand relationships (Brodie et al., 2011; Hollebeek et al., 2014).

Consumer characteristics, such as age, gender, income level, and online shopping experience, were found to have partial effects on nano marketing orientation and engagement, supporting the importance of controlling demographic and behavioral variables (Kotler & Keller, 2016).

Objective 2: To investigate the influence of causal factors related to nano marketing orientation and customer engagement on consumer purchasing behavior, while controlling for consumer characteristics

The structural model demonstrates that both direct and indirect relationships exist among the constructs. Nano marketing orientation directly enhances customer engagement and indirectly influences purchasing behavior through engagement. Customer engagement shows a strong positive effect on purchasing behavior, consistent with prior research indicating that engaged customers demonstrate higher loyalty and spending levels (Vivek et al., 2012; Dessart et al., 2015).

The results confirm that perceived personalization and trust in influencers influence purchasing behavior primarily through mediating mechanisms rather than direct effects. This highlights the importance of engagement as a strategic pathway linking marketing stimuli to behavioral outcomes (Lemon & Verhoef, 2016).

Objective 3: To develop and validate a structural model of causal factors affecting nano marketing orientation, customer engagement, and consumer purchasing behavior, incorporating consumer characteristics as control variables

The study successfully developed and validated a structural equation model explaining the relationships among perceived personalization, trust in influencers, nano marketing orientation, customer engagement, and purchasing behavior. The model demonstrated satisfactory goodness-of-fit indices, reliability, and validity (Hair et al., 2019).

Overall, the findings confirm that nano marketing orientation functions as a strategic mechanism translating personalization and trust into meaningful engagement and purchasing outcomes in the online fashion retail context.

5.2 Discussion

This section discusses the findings in relation to the nine research hypotheses.

H1: Perceived personalization positively influences nano marketing orientation
When consumers perceive content as personalized, they respond more positively to nano-targeted marketing efforts. This result is consistent with one-to-one marketing theory (Peppers & Rogers, 1993) and research indicating that personalized communication enhances relevance and effectiveness (Aguirre et al., 2015).
H2: Perceived personalization indirectly influences customer engagement through nano marketing orientation

The results indicate that personalization enhances engagement primarily through nano marketing orientation. This suggests that personalization alone is insufficient unless strategically implemented within a focused nano-marketing framework.

H3: Trust in influencers positively influences nano marketing orientation

The findings confirm H3. Trust significantly enhances consumers' acceptance of nano marketing strategies. This aligns with relationship marketing theory proposed by Morgan and Hunt (1994), which emphasizes trust as a core relational construct.

H4: Trust in influencers indirectly influences customer engagement through nano marketing orientation

Trust enhances engagement through nano marketing orientation. This is consistent with source credibility theory introduced by Hovland et al. (1953), which posits that credible communicators increase persuasive effectiveness.

H5: Nano marketing orientation positively influences customer engagement

The findings strongly support H5. Nano marketing orientation significantly enhances engagement levels. This result aligns with engagement theory developed by Brodie et al. (2011), which emphasizes interactive and relational communication.

H6: Nano marketing orientation positively influences purchasing behavior

While nano marketing orientation has a positive effect, the influence is stronger when mediated by customer engagement. This indicates that engagement plays a critical role in converting marketing efforts into actual purchases.

H7: Customer engagement positively influences purchasing behavior

Engaged consumers demonstrate higher purchase frequency, repeat purchase behavior, and spending levels. This finding is consistent with prior studies (Vivek et al., 2012; Hollebeek et al., 2014).

H8: Consumer characteristics influence nano marketing orientation

Certain demographic factors, such as age and online shopping experience, significantly influence responses to nano marketing strategies, suggesting heterogeneity in consumer behavior (Solomon, 2018).

H9: Consumer characteristics influence customer engagement

While some demographic variables affect engagement, the overall impact is moderate, indicating that personalization and trust are more dominant drivers of engagement.

Overall, the findings reinforce theoretical perspectives from relationship marketing, source credibility, and engagement theory. They also extend existing literature by empirically validating nano marketing orientation as a mediating construct within influencer marketing contexts.

5.3 Recommendation

5.3.1 Managerial Implications

First, online fashion retailers should prioritize personalized marketing strategies tailored to micro-segments. Leveraging consumer data analytics can enhance perceived relevance and increase engagement (Wedel & Kannan, 2016). Second, brands should collaborate with nano-influencers who

demonstrate authenticity, credibility, and strong interaction with followers. Building long-term partnerships rather than one-time sponsorships may strengthen trust and relational commitment (Morgan & Hunt, 1994). Third, marketers should focus on engagement-building strategies, such as interactive content, live sessions, and user-generated campaigns. Since engagement mediates purchasing behavior, enhancing interaction is critical for improving sales outcomes (Lemon & Verhoef, 2016).

5.3.2 Theoretical Implications

This study contributes to the literature by integrating personalization, trust, and nano marketing orientation into a unified structural model. It extends relationship marketing theory and engagement theory to nano-influencer contexts, offering a more nuanced understanding of digital consumer behavior.

5.3.3 Recommendations for Future Research

Future research may consider longitudinal designs to examine causal relationships over time. Researchers may also explore additional moderating variables such as cultural factors, platform characteristics, or brand type. Comparative studies between nano-, micro-, and macro-influencers may further enrich theoretical understanding. Additionally, qualitative research could explore deeper psychological mechanisms underlying authenticity perception and parasocial interaction in influencer marketing contexts. In conclusion, this study demonstrates that perceived personalization and trust in influencers are critical antecedents of nano marketing orientation, which enhances customer engagement and ultimately drives purchasing behavior in the online fashion retail industry. The findings provide valuable theoretical contributions and practical guidance for digital marketing strategy development.

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