

Social media marketing activities and purchase intention among bottom-of-the-pyramid consumers: The moderating role of sustainability perception in Egypt's FMCG sector

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Keywords

Social Media Marketing Activities; Purchase Intention; Bottom-of-the-Pyramid Consumers; Sustainability Perception; FMCG Sector; Consumer Behaviour; Egypt.

Abstract

Despite the rapid expansion of social media marketing in emerging markets, literature has substantially neglected the Bottom of the Pyramid consumer segment in MENA markets. In Egypt, nearly 30% of the population resides below the national poverty line (CAPMAS,2023). Furthermore, over 60% of the population ranging from low-to-middle income bracket. (International Monetary Fund, 2024). The purpose of this study is to examine the effect of Social Media Marketing activities on purchase intention among Bottom of the Pyramid consumers in Egypt's FMCG sector, to test whether sustainability perception moderates this relationship.

Addressing this gap, we developed a conceptual framework measuring the effects of social media marketing activities on Bottom of the Pyramid customers' intention to purchase with the moderating role of sustainability perception. An online survey with 270 valid respondents was conducted, the data being analyzed using Partial least squares structural equation modeling (PLS-SEM). The results showed that Social Media Marketing activities have a significant positive effect on purchase intention ($\beta = 0.962$, $p < .001$, $R^2 = 0.928$). Although sustainability exerted small but significant direct effect on purchase intention ($\beta = 0.141$, $p = 0.001$), it did not moderate the relationship between Social Media Marketing activities and purchase intention.

The study challenges the assumption that sustainability perception functions as a boundary condition in low-income consumer contexts and extends the Social Media Marketing activities framework to Bottom of the Pyramid consumers. The study also highlights the actionable insight for FMCG marketers: when targeting low-income Egyptian consumers on social media, prioritize entertaining, informative, and e-WOM driven content.

Introduction

In the digital era, social media has significantly altered brand-consumer communication. The rapid growth of social media platforms, including Facebook, Instagram, TikTok, and YouTube, has transformed them from basic communication tools into significant commercial instruments that impact consumer purchasing decisions. Social media has become the central marketing channel for consumers for fast-moving consumer goods where products are purchased frequently, consumed quickly, and chosen largely on the basis of price, habits, and peer influence (Dwivedi et al., 2021).

Although there is a volume of research that studied social media marketing, there are significant areas remaining: the majority of studies have been conducted in high-income contexts, neglecting the digital consumer behaviors of lower-income consumers in developing countries. Although they are active participants who respond to marketing stimuli and make daily consumption decisions by engaging with brands through digital channels.

Egypt's population surpassed 106 million in 2024, making it one of Africa's most populous nations and one of the largest consumer markets in the Middle East and North Africa region (World Bank, 2024). In Egypt, nearly 30% of the population resides below the national poverty line (CAPMAS,2023). Furthermore, over 60% of the population ranging from low-to-middle income bracket. (IMF, 2024).

In early 2024, Egypt had an estimated 45 million active social media users, which accounted for approximately 41% of the population. Facebook continues to be the most popular platform, with over 44 million users, followed by Instagram, TikTok, and YouTube. 92% of internet consumers in Egypt utilized mobile devices to access social media with average daily social media usage 3 hours a day (DataReportal, 2024). Even with this reality, Social media marketing research has paid little attention to how Bottom of the Pyramid consumers respond and act upon marketing content that encountered on social media platforms (Kolk et al., 2022).

In response to the successive currency devaluations that have occurred since 2022, Egypt's FMCG market has become more reliant on digital and social media platforms to connect with a consumer base that has become more price-sensitive (IMF, 2024).

The role of sustainability perception is an additional dimension that this study introduces. In the past decade, sustainability has transitioned from the periphery to the core of consumer behavior research. A growing body of evidence indicates that consumers' attitudes and purchasing decisions are significantly influenced by their perceptions of environmental, social, and economic sustainability (Trivedi et al., 2022).

However, this literature is characterized by significant and rarely acknowledged bias: the vast majority of consumer studies that are sustainability-focused have been conducted among high-income populations in developed economies, with fewer than 8% of these studies focusing on developing economy contexts (Jaiswal & Kant, 2018). This establishes a concerning assumption: that sustainability is primarily a concern of the privileged, and that consumers, whose primary concern is economic survival, are irrelevant. This investigation contests that assumption. Even among low-income Egyptian consumers, sustainability perception may significantly influence purchase decisions, and it may also affect the extent to which social media marketing content is transformed into purchase intent.

Moreover, consumer's perception of a brand as environmentally responsible, socially conscious, or economically accessible may either amplify or minimize the persuasive effect of the marketing content they encounter on social platforms. This moderate dynamic's validity in a Bottom of the Pyramid context has not been empirically investigated. The current study is motivated by three overlapping gaps in this context. First, the gap of population: the literature of social media marketing activities has strongly focused on middle and upper-income consumers, neglecting the Bottom of the Pyramid consumers. Second, the geographical gap: the broad MENA region and Egypt remain significantly understudied in FMCG and also in digital marketing research. Third, the theoretical gap: while sustainability perception has been examined in previous research as a predictor of consumer behavior, its potential role as a moderator variable in the relationship between social media marketing activities and purchase intention particularly in Bottom of the Pyramid consumers in emerging market context has not been examined.

All of these gaps together show a clear and important chance for original scholarly addition. This study addresses all three gaps by examining the effect of social media marketing activities with its five dimensions: entertainment, informativeness, interaction and community, trend and customization, and electronic word of mouth on purchase intention among Bottom of the Pyramid consumers in Egypt's FMCG sector, in addition to test the moderating role of sustainability perception in this relationship.

The structure of this study is organized as follows: section 2 reviews the foundation of literature and hypotheses development. Section 3 describes the methodology and measurement scales. Section 4 presents the data analysis and results. Section 5 describes the conclusions, Implications (theoretical and practical) and limitations and future area of research.

Theoretical foundation

Stimulus-Organism-Response (S-O-R) Model

The Stimulus-Organism-Response (S-O-R) model, initially introduced in the field of environmental psychology by Mehrabian and Russell in 1974, has been extensively adopted in consumer behavior research. This model elucidates the process by which external stimuli influence individuals' internal states and subsequent behaviors. In this framework, stimuli (S) are defined as environmental cues that elicit psychological reactions. Organism (O) encompasses the cognitive and affective processes of consumers, while responses (R) denote the resultant attitudes and behavioral outcomes. In the context of digital

marketing, the S-O-R model serves as an effective framework for analyzing the impact of online interactions on consumer decision-making.

Social media marketing activities function as external stimuli that present consumers with information, interactivity, and social cues, thereby initiating various psychological processes (Kumar and Hsieh, 2024; Kuo and Chen, 2023). These processes subsequently influence consumers' product evaluations and purchase-related behaviors (Erensoy et al., 2024). Based on this perspective, the current study conceptualizes the dimensions of social media marketing activities—namely informativeness, interactivity, personalization, trendiness, entertainment, and electronic word-of-mouth (eWOM)—as stimuli (S). Upon exposure to these activities, consumers develop internal cognitive and affective evaluations, such as perceived quality, perceived value, and perceived trust, which constitute the organism (O). These evaluations ultimately drive consumer responses (R), specifically customer satisfaction and purchase intention, within FMCG industry.

Utilizing the S-O-R framework, this research provides a solid theoretical basis for analyzing the impact of social media marketing activities on purchase intention and. Additionally, it broadens the use of the SO-R model to the realm of sustainability perception on purchase intention, emphasizing the importance of consumers' sustainability perception in determining the intention to purchase.

Signaling Theory

This study utilizes Signaling Theory to analyze consumer interpretation of sustainability-related information conveyed through social media marketing activities. Signaling Theory posits that organizations emit observable signals to reduce information asymmetry, enabling consumers to evaluate organizational attributes that may otherwise be challenging to assess. Messages pertaining to sustainability, corporate social responsibility initiatives, environmental, social, and governance practices, and environmentally responsible actions serve as credibility signals in digital marketing contexts, impacting consumer perceptions and behavioral responses. When consumers view signals as authentic and trustworthy, they are more inclined to develop favorable assessments and heightened intentions to purchase. Consequently, consumers' perceptions of sustainability are likely to influence their interpretations and responses to social media marketing initiatives. This theoretical perspective provides a robust foundation for examining how perceptions of sustainability affect the degree to which social media marketing activities can enhance or diminish the purchase intentions of Bottom-of-the-Pyramid consumers in Egypt's FMCG sector.

Signaling theory, based on information economics research (Spence, 1973), shows that consumers in the market are disadvantaged relative to manufacturers. Consumers face information deficits and are required to evaluate eco-labeled products and services based on incomplete and misleading information. One party has more or better information than the other in this asymmetric information setting. Consumers rely on cues/signals to evaluate the quality of eco-labeled products (Kirmani & Rao, 2000). For example, Atkinson and Rosenthal (2014) applied signaling theory to investigate the relationship between the impact of eco-label sources and consumer trust. Further, the stimulus-organism-response model also suggests that green advertising can be used as an external stimulus or signal to influence the internal cognition of the individual and this in turn influences the attitude and behavioral response of the individual (Mehrabian & Russell, 1974). Green advertising could be a signal, which is an action or strategy of the seller (Kirmani & Rao, 2000). Advertising is a signal because it minimizes risk and reduces consumer ignorance, but consumers are less likely to use signals as important information libraries when their credibility is questioned (Boulding & Kirmani, 1993). Eco-labels or certification may help to build consumer trust and provide a degree of consumer confidence in the credibility of these claims. Finally, in this asymmetric information environment, consumers rely on signals for their internal cognition and to decide whether they will buy eco-labeled products or services. S-O-R establishes the fundamental framework connecting marketing stimuli to perceptions related to sustainability. Signaling theory clarifies consumer behavioral responses.

Utilizing the S-O-R framework, social media marketing activities are understood as external marketing stimuli that can affect consumers' purchase-related responses. Signaling Theory elucidates how sustainability-related information and perceptions influence consumers' interpretation of marketing messages in contexts characterized by information asymmetry. Integrating the two perspectives allows this study to investigate both the impact of social media marketing activities on purchase intention and the extent to which consumers' sustainability perceptions modify the strength of this relationship. This theoretical integration holds significant relevance in the Bottom-of-the-Pyramid context, where consumers assess marketing information amid financial constraints and restricted access to dependable product information.

Bottom-of-the-Pyramid Consumers

Bottom of the Pyramid consumers, who are low-income and predominantly reside in developing (emerging) markets, earn less than US\$5 daily and frequently lack access to essential resources such as clean water and digital infrastructure (Ferdous et al. 2024). They represent a considerable yet underserved customer segment, despite their limited financial resources (Chakrabarti and Henneberg 2023). In particular, these consumers, who are not only numerous but also exhibit strong loyalty to (e.g., local) retailers (Mukherjee et al. 2020), are increasingly inclined to consume (more) sustainably (Chakrabarti and Duncan 2025; Korsunova et al. 2022).

Nevertheless, their market participation is frequently impeded by systemic vulnerabilities, such as limited product access, inflated prices, and exposure to substandard or counterfeit goods (Gupta and Srivastav 2016). Marketers are presented with an irresistible opportunity to establish consumption ecosystems that are more inclusive and equitable as a result of these structural inefficiencies. In particular, by utilizing interactive social media platforms, they can enhance the accessibility of products, transparency, and the acquisition of brand knowledge, thereby empowering consumers (Ferdous et al. 2024; Utami et al. 2021). Recent evidence suggests that sustainability-focused content on social media may have a positive impact on customer engagement and contentment (Chang et al. 2023). We anticipate that this will also be the case for BoP consumers (Chakrabarti and Duncan 2025; Viswanathan et al. 2010).

Consequently, the theoretical integration of sustainability and social media marketing activities, which culminates in the integrative concept of social media marketing activities, is anticipated to generate value for both Bottom of the Pyramid consumers and firms (Adomako et al. 2021; Zollo et al. 2020).

Nevertheless, there is a dearth of scholarly research on social media marketing activities from the perception of Bottom of the Pyramid consumers and how this impacts the purchase intentions to Bottom of the Pyramid consumers with moderation role of sustainability perception, particularly in the Bottom of the Pyramid context (Adomako et al. 2021). Prior research has concentrated on consumers who are more affluent (e.g., Hudson et al. 2016; Zollo et al. 2020), which has revealed a significant literature-based divide in the Bottom of the Pyramid context. This research aims to address this gap by examining the impact of social media marketing activities on the engagement, satisfaction, and well-being of Bottom of the Pyramid consumers, as will be further elaborated upon below.

Social media marketing activities

Social media marketing is a sales strategy that is frequently employed nowadays. Companies have been using social media for the past many years to connect with existing customers, attract new customers, and promote awareness of their products, services and issues. Businesses have a number of social media platforms through which they can talk to potential clients. Companies can create material for their customers using social media and spread it to their following. Social media may also help firms to know more about their customers' preference and behavior. As per Bushara et al. (2023), social media marketing has become an important tool for enterprises to recruit new customers and retain interactions with existing customers.

Numerous well-known social media platforms and applications, such as Facebook, Instagram, and YouTube, have experienced consistent growth in user numbers and overall appeal. This is why numerous reputable brands and companies utilize them to advertise their products.

In recent years, businesses have increasingly utilized social media to engage with customers and promote their products (Okazaki, Díaz-Martín, Rozano & Menéndez-Benito, 2015). A. J. Kim and E. Ko (2010) developed a framework for the analysis of social media. This framework outlines five primary aspects of social media: entertainment, contact, customization, trendiness, and electronic word-of-mouth.

Entertainment

Consumers frequently utilize social media platforms to derive pleasure, alleviate their daily obligations, and delight themselves. Manthiou, Chiang, and Liang (Rebecca) (2013) have characterized social media consumers as fun seekers who derive pleasure from this activity.

According to Muntinga, Moorman, and Smit (2011), users utilize social media for entertainment, relaxation, and escape from problems or routines, as well as to enhance their emotional state, enjoy cultural or aesthetic content, and expedite the passage of time. Consequently, social media users consume brand-related content on social media for enjoyment, relaxation, and entertainment. Entertainment has been empirically verified to have a positive impact on consumer attitudes toward green products as a component of social media (Wang, Chowdhury, Deng & Wang, 2019; Gupta & Syed, 2022). Furthermore, A. J. Kim and E. Ko (2012) discovered that entertainment had a positive influence on the development of brand-consumer relationships and consumer evaluations of brands. The subsequent hypotheses are defined in light of the aforementioned statements:

H1: Social media marketing activities have a significant positive effect on purchase intention among Bottom of the Pyramid consumers in the Egyptian FMCG sector.

H1a: Entertainment positively influences purchase intention.

Informativeness

According to Yadav and Rahman (2018), the implementation of social media marketing activities allows for the identification of consumer behavior and the development of effective marketing strategies. Aggarwal and Mittal (2022) define "informativeness" as the degree to which marketing materials offer an excess of information that facilitates the understanding of societal issues, products, and services. Social media marketing is comprised of five actions or dimensions: trendiness, Informativeness, personalization, interaction, and electronic word-of-mouth (WOM), as per Yadav and Rahman (2018).

Social media is utilized by organizations to facilitate interactive communication, establish agreeable business relationships with customers, and resolve customer concerns. The objective of this strategy is to cultivate strategic relationships with stakeholders and promote positive word-of-mouth (Meliawati et al., 2023). Thus, the following hypothesis is supposed as follows: H1b: Entertainment positively influences purchase intention.

Interaction and Community

Social media leads to discussions and exchange of opinions between customers. Their interactions can give companies some knowledge about consumers who participate in the social media platform of certain brands. Consumer interactions radically change the communication dynamics between brands and consumers and drive the rise of user-generated content on social media (Bazi, Filieri & Gorton, 2020).

The interactivity function encourages users to join groups and chat with other users, creating a sense of community. This increased consumer loyalty can be leveraged by companies to promote purchase intention. This characteristic of social media enables the establishment of online communities that might inspire environmental initiatives (Ballew et al, 2015).

The outcomes of empirical investigations support the previous theoretical assumptions. Gupta and Syed (2022) found that interaction has a substantial effect on the consumer choice for green products. Interaction affects the preferences for green products, as shown by Y. Wang et al. (2019). Based on the theory and the results of empirical investigation, the hypothesis is formulated as follows: H1c: Interaction and Community positively influence purchase intention.

Customization

Customization is a feature of social media that allows companies to establish customized information and customized information queries. This feature allows consumers to plan and customize the products they wish to purchase. Y.-Q. Zhu and H.-G. Chen (2015) emphasize that customization is predicated on the two categories of messages that can be transmitted to consumers: customized messages and broadcast messages. Customized messages are directed at a specific individual or a smaller group of individuals, as seen in messages on the Facebook platform.

Companies can optimize information for specific consumers by customizing social media, which significantly distinguishes it from traditional media (Seo & Park, 2018). Companies also employ customization as a tool to emphasize the distinctive qualities of their brands and to enhance consumers' loyalty and attitudes toward them (Martin & Todorov, 2010). Studies have demonstrated that customization is a substantial factor in the decision-making process when purchasing products (Godey et al, 2016).

Trendiness

Social media may provide consumers with the newest current news and subjects for debate. Furthermore, consumers can be informed about the latest news and product information, and the company itself, culminating in the use of social media as a search engine. Therefore, consumers may have more faith in news and information acquired from social media than those learned from traditional media (Naaman, Becker & Gravano, 2011). Hence, this feature of social media is characterized by "providing the most recent information about products or services" (Godey et al, 2016).

D. G. Muntinga et al (2011) stated that the trendiness in social media satisfies the four categories of motivation in customers, i.e., surveillance, knowledge, pre-purchase information and inspiration. Surveillance is about the fact that consumers may see and inform themselves about their social environment. Knowledge means that people search for information about brands on the Internet to benefit from other consumer knowledge and experience and to learn more about the desired product. Pre-buy information means consumers will be able to read reviews of products or conversations about brands when making a purchasing decision. Inspiration is the condition where consumers get new ideas, based on information about companies, meaning that this is what inspires customers.

S. Xie and G. R. Madni (2023) found that information seeking and keeping up with the latest trends in social media had a substantial effect on young consumers' purchasing behavior. In the research conducted by the authors Y. Wang et al (2019) a similar result was found, who show that trendiness affects consumers' intention to purchase. From the above-mentioned statements, the following hypothesis is formulated: H1d: Trendiness and Customization positively influence purchase intention.

Electronic Word of Mouth

Electronic word-of-mouth describes the exchanges that occur on social media platforms among consumers concerning brands (Muntinga et al., 2011). Studies have shown that consumers perceive electronic word-of-mouth as more trustworthy, relatable, and pertinent compared to the information provided by companies on the Internet (Gruen, Osmonbekov, & Czaplewski, 2006). Instead of merely paying attention to corporate advertisements, consumers are engaging with the experiences and insights shared by fellow consumers on social media. These platforms are ideal for this type of word-of-mouth because they allow users to create and disseminate brand-related information to friends, family, and acquaintances without any limitations (Kim & Ko, 2012; Godey et al., 2016).

S.-C. Chu and Y. Kim (2011) conceptualize electronic word-of-mouth in social media through three distinct perspectives: opinion seeking, opinion offering, and opinion transmission. Consumers engaged in opinion seeking typically solicit advice or reviews from other consumers to inform their purchasing decisions regarding desired products. Conversely, some consumers, identified as opinion leaders, express their thoughts on various topics, significantly influencing other consumers' attitudes and behavioral intentions. The third perspective, opinion transmission, highlights the role of electronic word-of-mouth in facilitating the flow of information among customers within the internet environment.

Numerous studies have demonstrated the impact of electronic word-of-mouth promotion on consumer behavior. Saeed, Farooq, Kersten, and Ben Abdelaziz (2019) found that consumer purchasing behavior concerning green products is affected by both positive and negative information about sustainability on social media. Similarly, Gupta and Syed (2022) concluded that electronic word-of-mouth exerts the most significant influence on customer perceptions of green products compared to other aspects of social media marketing. These findings support the following hypothesis: H1e: Electronic word-of-mouth (e-WOM) positively influences purchase intention.

Sustainability Perception

Currently, there is no universally accepted definition of sustainability perception. (Panda et al. 2020) conceptualize sustainability perception as comprising two distinct dimensions: social sustainability awareness and environmental sustainability awareness. (Missimer et al. 2016) characterize social sustainability as encompassing multiple facets, including health, influence, capability, fairness, and the generation of meaning. Conversely, (Holdren et al. 2024) emphasize that environmental sustainability primarily concerns the preservation or enhancement of the Earth's life-support systems. An expanding body of research has demonstrated a close interconnection between social and environmental sustainability. Building upon this foundation, Punyatoya, 2014 contends that increased consumer awareness of environmental behaviors fosters the adoption of green lifestyles, and that sustainable development necessitates consistent and balanced advancement in both social and environmental domains. Consequently, this study defines awareness of sustainable development as individuals' perceptions and comprehension of social and environmental sustainability, coupled with the belief that development should integrate environmental considerations to harmonize economic, environmental, and social objectives.

Sustainability perception plays a crucial role in clarifying consumers' environmental concerns. Studies have shown that environmental awareness can moderately influence purchase intentions, and that consumers with high environmental concern are more likely to engage in environmentally protective behaviors. Asif et al. 2017 further indicates that consumer awareness positively strengthens the intention to purchase. Fraj et al., 2006 similarly reports that consumers concerned about environmental pollution are more inclined to engage in green consumption due to their environmental apprehensions. Based on these findings, it is proposed that perception of sustainability influences purchase intention. Accordingly, the following hypothesis is proposed:

H2: Sustainability perception positively moderates the relationship between social media marketing activities and purchase intention.

Purchase Intention

Previous studies indicate that consumers' purchase intentions are significantly influenced by the entertainment value, degree of interaction, and word-of-mouth communication facilitated via social media platforms. For example, Kumar et al. (2020) demonstrated that social media marketing exerts a substantial impact on consumers' buying decisions. Similarly, Fajri et al. (2021) found that social media marketing not only enhances brand awareness but also fosters stronger purchasing behaviors. Consequently, organizations are advised to strategically utilize social media platforms, not merely to augment their marketing efforts but also to engage with consumers in ways that promote online purchase intentions.

Furthermore, Heidari et al. (2023) demonstrated that social media marketing effectively enhances consumer attachment to firms, builds trust, and increases purchase intentions. Accordingly, the present study aims to assess the impact of social media marketing activities on purchase intention with moderation role of sustainability perception. In this regard, Heidari et al. (2023) and Ramadhani and Prasasti (2023) contended that social media marketing activities elevate purchase intentions by bolstering brand trust and brand equity. Putri (2021) further highlighted that social media marketing activities can augment consumers' purchase intentions by emphasizing the interactive exchanges occurring between businesses and customers on social media platforms.

Research Gap and Hypothesis Development

The preceding literature review identifies three intersecting gaps that collectively justify the current study.

Firstly, there exists a population gap. Research on social media marketing activities predominantly focuses on middle- and upper-income consumers in developed economies. In contrast, Bottom-of-the-Pyramid (BoP) consumers, who represent the largest global consumer segment, are significantly underrepresented in digital marketing literature (Kolk et al., 2022). This gap is particularly significant as BoP consumers actively use social media, engage with brand content, and make daily purchasing decisions under constrained economic conditions.

Secondly, there exists a geographical gap in research. Egypt, along with the broader MENA region, is notably understudied in the fields of FMCG and digital marketing. This is despite Egypt's status as one of the most populous countries in Africa and its rapidly growing social media user base, which comprises approximately 45 million active users (DataReportal, 2024). The majority of existing studies are predominantly based in Western or East Asian contexts, thereby limiting the applicability of their findings to emerging market conditions.

Third, there exists a theoretical gap. Although sustainability perception has been studied as a direct predictor of consumer behavior (Trivedi et al., 2022), its potential function as a moderating variable, particularly in the context of the relationship between social media marketing activities and purchase intention among BoP consumers—remains unexplored empirically. This gap is significant, considering the increasing academic focus on sustainability within low-income consumer contexts (Chakrabarti and Duncan, 2025).

Collectively, these gaps present a distinct opportunity for original scholarly contribution. Utilizing the S-O-R model and Signaling Theory, this study formulates the following hypotheses:

H1: Social media marketing activities exert a significant positive impact on purchase intention among Bottom-of-the-Pyramid consumers within the Egyptian FMCG sector. Each dimension of social media marketing activities is posited to independently and positively affect purchase intention:

H1a: Entertainment exerts a positive influence on purchase intention.

H1b: Informativeness exerts a positive influence on purchase intention.

H1c: Interaction and Community exert a positive influence on purchase intention.

H1d: Trendiness and Customization exert a positive influence on purchase intention.

H1e: Electronic word-of-mouth (eWOM) exerts a positive influence on purchase intention.

H2: The perception of sustainability positively moderates the relationship between social media marketing activities and purchase intention, such that the positive effect of social media marketing activities on purchase intention is more pronounced among consumers with a heightened perception of sustainability.

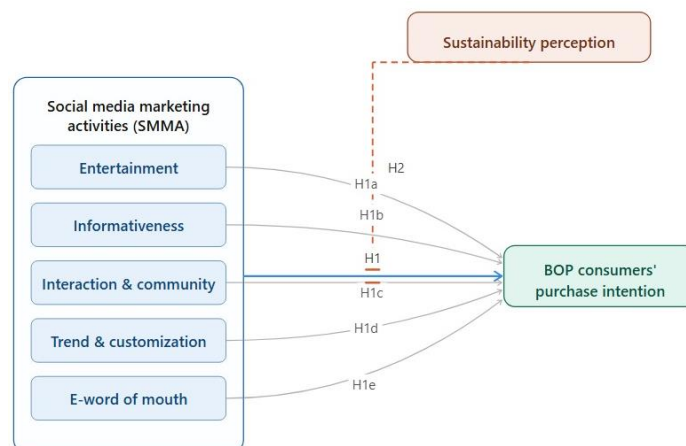


Figure 1: Conceptual framework

Methodology

Questionnaire Development

The study used quantitative approach to collect data. Thus, the measurement items for all constructs were derived from previous validated studies. The questionnaire was structured into six sections: section one covers questions related to consumers' Socio-Demographic Profile; Section two includes questions related to Social Media Usage Behavior. Section three contained detailed questions related to the social media marketing activities. Section four contained questions related to purchase intention. Section Five contained questions related to consumers' Sustainability Perception. Section Six contained questions related to Brand-Specific Experience and General Attitudes toward FMCG Brands.

The scale of Social Media Marketing Activities was adopted from Yadav & Rahman (2017) and updated with additional items from Kim & Ko (2012) and Seo & Park (2018). The construct included five dimensions, namely: entertainment, informativeness, engagement and community, trendiness and personalization and electronic word of mouth (e-WOM). The dependent variable purchase intention was adapted from Dodds et al. (1991) and have been widely utilized in consumer behavior studies. We used the scales of Lee et al. (2013) and Nguyen et al. (2019) to assess consumers' evaluation of organizational environmental and social responsibility activities. All measurement items were slightly adapted to fit the context of FMCG products and social media platforms in Egypt. Responses were rated on a five-point Likert scale, where 1 = "strongly disagree" and 5 = "strongly agree." The questionnaire was pilot tested on a small sample of customers to evaluate clarity, content validity and contextual appropriateness prior to data collection.

Sample and Data Collection

To test the hypotheses, The study conducted quantitative research methods. The study targets FMCG consumers in Egypt who use social media platforms. The questionnaires were distributed online to collect data from FMCG consumers through WhatsApp, Facebook, and Instagram by posting the questionnaire link. The survey link was shared with consumers through social media platforms and also emailed to potential respondents. In Total, approximately 400 potential respondents were contacted for participation in the survey. A total of 270 respondents completed the survey. The respondents were informed that the study was for academic purposes. Consequently, the study employed a convenience sampling procedure due to the unavailability of the list of e-commerce providers and social media platforms in Egypt. The study on social media was also conducted by previous researchers who employed convenience sampling (Yadav&Rahman, 2018; Ibrahim and Aljarah, 2021).

Data Analysis and Results

Demographic Profile of Respondents

The final sample comprised 270 respondents. The sample was predominantly male (77.0%), with the largest age groups being 25–34 years (40.7%) and 35–44 years (41.9%). Most respondents reported monthly household incomes between EGP 2,000–5,999, and the most common household size was 5–6 persons (52.6%). Full demographic details are presented in Table1

Table 1. Socio-demographic characteristics of respondents

Demographic variable	Category	N (%)
Gender	Male	208 (77.0%)
	Female	62 (23.0%)
Age group (years)	18–24	29 (10.7%)
	25–34	110 (40.7%)
	35–44	113 (41.9%)
	45–54	11 (4.1%)
	≥55	7 (2.6%)
Educational attainment	No formal education	10 (3.7%)
	Primary/preparatory education	56 (20.7%)
	Secondary education	103 (38.1%)
	Technical diploma	54 (20.0%)
	Bachelor's degree	40 (14.8%)

Demographic variable	Category	N (%)
Monthly household income (EGP)	Postgraduate degree	7 (2.6%)
	<2,000	12 (4.4%)
	2,000–3,999	91 (33.7%)
	4,000–5,999	115 (42.6%)
	6,000–7,999	52 (19.3%)
Employment status	Employed full-time	10 (3.7%)
	Employed part-time	38 (14.1%)
	Self-employed/Freelancer	109 (40.4%)
	Unemployed/Job-seeking	76 (28.1%)
	Student	35 (13.0%)
Place of residence	Retired	2 (0.7%)
	Cairo	67 (24.8%)
	Giza	36 (13.3%)
	Alexandria	59 (21.9%)
	Qalyubia	62 (23.0%)
	Sharqia	34 (12.6%)
	Dakahlia	10 (3.7%)
	Other governorate	2 (0.7%)
Household size (number of persons)	1–2	5 (1.9%)
	3–4	116 (43.0%)
	5–6	142 (52.6%)
	≥7	7 (2.6%)

Preliminary Data Screening and Assumption Testing

Prior to hypothesis testing, the data were screened for missing values, outliers, normality, common method bias, and multicollinearity. The final sample included 270 valid cases with no missing data. Four univariate outliers were retained as plausible observations. The variables showed moderate non-normality, which was considered acceptable given the use of bootstrapped/robust estimation. Harman's single-factor test indicated a potential common method bias concern (65.54% of explained variance), and collinearity diagnostics suggested elevated VIF values for several predictors.

Table 2. Preliminary data screening summary

Screening aspect	Result	Interpretation
Final sample size	270	Adequate retained sample
Missing data	0 missing values	No imputation required
Univariate outliers	4 cases retained	Retained as plausible responses
Normality	Negative skewness; kurtosis elevated; K-S significant	Moderate non-normality, acceptable with bootstrapping/robust estimation
Common method bias	Harman's first factor = 65.54%	Potential CMB present
Collinearity	Several first-order VIFs high; higher-order VIF = 5.57	Collinearity concern; interpret cautiously

Exploratory Factor Analysis (EFA)

Exploratory factor analysis was conducted for SMMA, Purchase Intention, and Sustainability Perception. The data were suitable for factor analysis, with high KMO values and significant Bartlett's tests for all construct blocks. The results supported a clear one-factor structure for Purchase Intention, whereas SMMA and Sustainability Perception showed notable cross-loadings, indicating overlap among their first-order dimensions. Overall, the EFA confirmed the factorability of the data but suggested limited empirical distinctiveness among several subdimensions.

Table 3. Summary of exploratory factor analysis results

Construct	No. of items	Factors extracted	KMO	Bartlett's test $\chi^2(df)$	p-value	Total variance explained
Social Media Marketing Activities (SMMA)	20	5	0.976	6040.70 (190)	< .001	76.01%
Purchase Intention	9	1	0.955	1953.20 (36)	< .001	66.62%
Sustainability Perception	12	3	0.955	2906.31 (66)	< .001	70.46%

Measurement Model Assessment (Outer Model)

The measurement model was assessed in terms of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The results showed acceptable measurement quality at the reliability and convergent validity levels, as all indicator loadings exceeded 0.60, reliability coefficients were satisfactory, and all AVE values were above the recommended threshold of 0.50. However, discriminant validity was not established for the first-order constructs, as both the Fornell-Larcker criterion and HTMT indicated substantial overlap among several dimensions, particularly within SMMA and Sustainability Perception. Overall, these findings support the reliability and convergent validity of the measures but suggest that the first-order dimensions are not sufficiently distinct and should therefore be interpreted with caution.

Table 4. Reliability and convergent validity assessment

Construct	Cronbach's alpha	Rho_A	Composite reliability (CR)	AVE	Minimum loading	Maximum loading
Entertainment	0.888	0.903	0.892	0.676	0.700	0.926
Informativeness	0.875	0.887	0.879	0.647	0.673	0.878
Interaction and Community	0.879	0.886	0.881	0.651	0.713	0.864
Trend and Customization	0.880	0.892	0.883	0.655	0.709	0.892
Electronic word-of-mouth (eWOM)	0.901	0.904	0.902	0.697	0.784	0.877
Environmental Sustainability	0.894	0.907	0.897	0.689	0.687	0.905
Social Responsibility	0.860	0.870	0.864	0.615	0.711	0.864
Economic Accessibility and Value	0.878	0.883	0.880	0.647	0.741	0.882
Purchase Intention	0.946	0.949	0.947	0.666	0.685	0.903

Structural Model Assessment (Inner Model)

The structural model was evaluated using R^2 , f^2 , Q^2 , VIF, and path coefficients. The results showed that the model explained a substantial proportion of the variance in Purchase Intention ($R^2 = 0.928$; Adjusted $R^2 = 0.927$) and demonstrated strong predictive relevance ($Q^2 = 0.927$). SMMA emerged as the dominant predictor, showing a large effect ($f^2 = 1.753$) and a strong positive association with Purchase Intention ($\beta = 0.857$, $p < .001$), whereas Sustainability Perception had a smaller but significant effect ($f^2 = 0.046$; $\beta = 0.141$, $p = 0.001$).

However, the predictor constructs showed borderline to moderate collinearity ($VIF = 5.572$), and the high explanatory power should therefore be interpreted alongside the earlier evidence of limited discriminant validity. Overall, the results support the strong predictive role of the higher-order constructs, particularly SMMA, in explaining Purchase Intention.

Table 5. Structural model results

Endogenous construct	R ²	Adjusted R ²	Q ²
Purchase Intention	0.928	0.927	0.927

Table 6. Effect sizes (*f*²)

Predictor	R ² included	R ² excluded	<i>f</i> ²	Effect interpretation size
SMMA	0.928	0.802	1.753	Large
Sustainability Perception	0.928	0.925	0.046	Small

Table 7. Structural collinearity assessment

Predictor	VIF
SMMA	5.572
Sustainability Perception	5.572

Table 8. Structural path coefficients

Path	Beta (β)	Std. Error	t-value	p-value	Decision
SMMA → Purchase Intention	0.857	0.040	21.635	< .001	Supported
Sustainability Perception → Purchase Intention	0.141	0.040	3.494	0.001	Supported

Hypotheses Testing - Direct Effects

The direct-effect results showed that SMMA had a strong positive effect on Purchase Intention, supporting H1 ($\beta = 0.962$, $p < .001$). A supplementary first-order analysis further indicated that Entertainment (H1a), Informativeness (H1b), and eWOM (H1e) had significant positive effects on Purchase Intention, whereas Interaction and Community (H1c) and Trend and Customization (H1d) were not significant. Overall, these findings highlight the strong aggregate effect of SMMA on Purchase Intention, while the first-order dimension results should be interpreted cautiously given the earlier discriminant validity concerns.

Table 9. Direct effect of SMMA on Purchase Intention

Hypothesis	Path	β	t-value	p-value	95% CI	Decision
H1	SMMA → Purchase Intention	0.962	57.354	< .001	[0.926, 0.998]	Supported

Table 10. Direct effects of SMMA dimensions on Purchase Intention

Hypothesis	Path	β	t-value	p-value	95% CI	Decision
H1a	Entertainment → Purchase Intention	0.213	4.001	< .001	[0.097, 0.312]	Supported
H1b	Informativeness → Purchase Intention	0.321	6.479	< .001	[0.166, 0.443]	Supported
H1c	Interaction and Community → Purchase Intention	0.088	1.814	0.071	[-0.041, 0.235]	Not supported
H1d	Trend and Customization → Purchase Intention	0.053	1.038	0.300	[-0.060, 0.202]	Not supported
H1e	eWOM → Purchase Intention	0.320	5.943	< .001	[0.156, 0.490]	Supported

Moderation Analysis

The moderation analysis showed that the interaction between SMMA and Sustainability Perception was not statistically significant ($\beta = -0.036$, $p = 0.162$), and thus H2 was not supported. This indicates that Sustainability Perception did not significantly moderate the relationship between SMMA and Purchase Intention. Although the simple slopes remained positive across low, mean, and high levels of the moderator, these differences should be interpreted descriptively only because the interaction term itself was nonsignificant.

Overall, the findings suggest that the positive effect of SMMA on Purchase Intention was relatively stable across levels of Sustainability Perception.

Table 11. Moderating effect of Sustainability Perception on the relationship between SMMA and Purchase Intention

Hypothesis	Path	β	Std. Error	t-value	p-value	95% CI	Decision
H2	SMMA $\times$ Sustainability Perception $\rightarrow$ Purchase Intention	-0.036	0.026	-1.401	0.162	[-0.121, 0.022]	Not supported

Table 12. Conditional effects of SMMA on Purchase Intention at different levels of Sustainability Perception

Moderator level	Moderator value	Conditional effect	Std. Error	t-value	p-value
Low (-1 SD)	-0.740	0.865	0.040	21.653	< .001
Mean	0.000	0.838	0.042	20.104	< .001
High (+1 SD)	0.740	0.811	0.051	15.919	< .001

Overall, the results indicate that social media marketing activities are a strong and consistent predictor of purchase intention among BoP consumers in the Egyptian FMCG sector. The higher-order model showed substantial explanatory and predictive power, with SMMA emerging as the dominant predictor and Sustainability Perception contributed that smaller but significant direct effect. At the same time, the findings should be interpreted with caution because the first-order dimensions showed limited discriminant validity and some collinearity, suggesting overlap among related constructs. Finally, the hypothesized moderating role of Sustainability Perception was not supported, indicating that the positive relationship between SMMA and Purchase Intention remained broadly stable across different levels of the moderator.

Conclusion

The purpose of this study is to examine the effect of social media marketing activities on purchase intention of Bottom of the Pyramids consumers in the FMCG business in Egypt with the perception of sustainability as a moderating variable. The findings are clear and consistent from PLS-SEM on 270 Bottom of the Pyramids customer samples.

The findings are useful for marketers and interesting for academics. The most interesting finding is the link between social media marketing activities and purchase intention. For this consumer segment, social media marketing activities were found to be a very good predictor of buying intent with a path coefficient of 0.962 and R^2 of 0.928, a finding that shows the increasing relevance of digital platforms in the day-to-day lives of low-income Egyptian customers.

The findings are statistically significant as well as socially and commercially relevant in a setting where more than 60% of the population is in the low to moderate income sector and social media usage is still growing at a fantastic pace. The results suggest that enjoyment, informativeness and electronic word-of-mouth are the most important drivers of purchase intention. Interaction, community development, trend and personalization were not important. This indicates that Bottom of the Pyramids users in Egypt

choose funny, educative and socially validated content from their peers rather than personalized or interactive content. This high is tied to the nature of the FMCG buying decisions and internet consumption habits of this demography. The first and least surprising moderator was perception of sustainability. There was a tiny but statistically significant direct influence on purchase intention ($\beta = 0.141$, $p = 0.001$) indicating that comprehension of sustainability issues does contribute to buying decisions to some extent in Bottom of the Pyramids customers. However, this moderation hypothesis was not supported ($\beta = -0.036$, $p = 0.162$), indicating that the relationship between social media marketing activities and purchase intention was generally steady whether the customers' position on sustainability was strong or weak. This is an interesting observation in itself. It indicates that the influence of sustainability perception on purchase intention is a direct effect and not a boundary condition that elaborates or reduces the effect of social media marketing.

Social media marketing activities can be employed to gain a deeper insight into the digital customer behavior in the lower end market segments. They offer a realistic view of how Bottom of the Pyramids consumers in emerging countries use and respond to social media marketing in their daily purchase decision.

Implications

Theoretical Implications

The study contributes significantly to the literatures on social media marketing, sustainability, and consumer behavior in several key ways.

Initially, this study enhances the existing literature on Social Media Marketing Activities (SMMA) by assessing their effectiveness within an emerging economy, specifically in the context of the Bottom-of-the-Pyramid (BoP). The prior research has predominantly focused on middle-income, affluent, or digitally proficient consumers. Current findings indicate that SMMA is a significant predictor of purchase intention among economically challenged consumers in Egypt's FMCG industry. This study enhances the external validity of SMMA theory by illustrating its applicability to underserved and resource-constrained market segments.

Secondly, the study enhances the existing literature on sustainability by illustrating that perceptions of sustainability significantly influence purchase intentions. This study demonstrates that customers are progressively incorporating environmental, social, and economic considerations into their purchasing decisions, even within low-income market segments where functional and economic factors are typically viewed as predominant. Consequently, the perception of sustainability should be viewed not merely as a concern for affluent consumers, but rather as a crucial determinant of consumer decision-making across various socioeconomic strata.

Third, and most significantly, the study challenges a prevalent assumption in contemporary marketing and sustainability research that views on sustainability must enhance the efficacy of marketing communications. Surprisingly, the perception of sustainability did not influence the relationship between SMMA and purchase intention. This research indicates that consumers in the BoP environment perceive social media marketing stimuli and sustainability evaluations as largely independent decision-making pathways.

The results indicate that sustainability perception serves as a concurrent determinant of purchase intention, rather than merely a boundary condition that alters the effectiveness of social media marketing activities. Consumers may perceive sustainability programs as attractive and advantageous during the purchase decision, yet these perceptions do not significantly influence the effectiveness of social media marketing content. Differentiation enhances the existing understanding by demonstrating that cognitions associated with sustainability stimuli and digital marketing stimuli can be processed by distinct psychological systems.

Furthermore, the data provides an alternative viewpoint to the dominant assumptions derived from Signaling Theory. Sustainability initiatives are frequently viewed as signals that bolster credibility and improve the efficacy of marketing communications. Current studies suggest that the signaling benefits of these activities may be weaker for BoP consumers, for whom informational value, entertainment, and

electronic word-of-mouth are more influential in shaping purchase decisions. Consequently, sustainability may serve as an independent evaluation criterion rather than a factor influencing responses to marketing materials.

Ultimately, the research enhances the existing literature on consumer behavior in developing countries by highlighting the contextual factors influencing sustainability outcomes. The non-significant moderating effect identified in this study suggests that the theoretical relationships posited for developed markets may not readily extend to low-income consumer segments in emerging countries. Future research must adopt a more context-sensitive approach to assess the influence of sustainability concepts on digital consumer behavior.

Practical Implications

The results have direct and significant implications for FMCG companies in Egypt and other emerging markets. Since entertainment, informativeness and electronic word-of-mouth are the main factors influencing purchase intention, marketing budgets should be allocated to content that informs, entertains and triggers peer sharing, rather than to complicated personalization engines or community building features that may not have the same effect on this audience.

Electronic word of mouth is particularly important. Genuine customer reviews, testimonials and peer recommendations should be a key element of any FMCG social media strategy for this market segment, as Bottom of the Pyramid consumers seem to rely heavily on social validation from their networks when making purchasing decisions.

The effect of social media marketing activities was not mitigated by perception of sustainability, but it had a direct impact on purchase intention, indicating that sustainability messaging is not incompetent for low-income consumers, but works on its own. When brands communicate their sustainability objectives clearly and in an easy-to-understand manner, and not as the core of their sales, they could see these objectives indirectly influence consumers' purchase decisions over time.

To conclude, the findings point to the importance of digital inclusion policies for governments and development agencies. With social media becoming an increasingly crucial channel for Bottom of the Pyramid consumers to source, evaluate and purchase products, affordable internet access and digital literacy amongst lower-income populations is not just a social need but an economic one.

Limitations and Future Research Directions

The key limitation of this study is the sample size was adequate, however limited to a few governorates in Egypt. Male responders were over-represented significantly (77%). Future study should aim for a more geographically diversified and gender-balanced sample, both inside Egypt and outside of the broader MENA and Sub-Saharan African Bottom of the Pyramid markets, to improve generalizability. Moreover, cross-sectional research keeps causal inference to a time-based snapshot. Longitudinal research investigating the impact of social media marketing on purchase intention over time will contribute to the comprehensive knowledge of these interactions, especially in Egypt's emerging digital infrastructure and FMCG sector.

In addition, the non-significant moderation effect found on sustainability perception means that more research is needed to answer the research question. Rather than interpreting sustainability perception as a moderator, future research could investigate if the relationship between social media marketing activities and purchase intention is moderated differently by different elements of sustainability perception (environmental, social and economic).

Future research can extend this research by adding other theoretical models such as the technology acceptance model, theory of planned behavior or social comparison theory, to better understand the motivational and cognitive processes underlying the impact of social media marketing on the purchase decisions of Bottom of the Pyramid consumers. However, qualitative methods such as interviews may be employed in combination with quantitative results to provide insight into the lived experiences and decision-making processes that may not be fully captured by survey data.

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