



International Journal of Business Information Systems

ISSN online: 1746-0980 - ISSN print: 1746-0972

<https://www.inderscience.com/ijbis>

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DOI: [10.1504/IJIBIS.2025.10074234](https://doi.org/10.1504/IJIBIS.2025.10074234)

Article History:

Received:	03 July 2025
Last revised:	12 August 2025
Accepted:	14 August 2025
Published online:	28 October 2025

Social media marketing role on online purchasing decisions in Indonesia

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Abstract: This study explores how advertising programmes and social media marketing shape the way Indonesian consumers process ads and ultimately make online purchase decisions. We surveyed 579 internet users across 15 provinces in Indonesia, analysing their responses using structural equation modelling (SEM). The findings reveal that both advertising programmes and social media marketing play a direct role in influencing how people engage with ads and make buying choices online. Interestingly, while social media marketing does not directly push consumers to click 'buy', it does shape how they perceive and process ad content – which then nudges them toward a purchase. In other words, social media's real power lies in shaping consumer awareness and attitudes, which later translate into sales. These insights suggest that brands should focus not just on pushing promotions but also on crafting engaging, thought-provoking social media content that guides consumers toward confident purchasing decisions.

Keywords: advertising programmes; social media marketing; information processing; online purchasing decisions; Indonesia.

Reference to this paper should be made as follows: Sularto, L. and Kozlova, N. (2025) 'Social media marketing role on online purchasing decisions in Indonesia', *Int. J. Business Information Systems*, Vol. 50, No. 7, pp.1–22.

Biographical notes: Lana Sularto is an Associate Professor of Economics at Gunadarma University in Indonesia. His books includes *Tax Accounting*, a chapter about *E-Marketing on International Essays on Small and Medium Sized Enterprises* book chapter, as well as three reference books on *Insurance*. He got eight competitive grants from the Ministry of Research, Technology, and Higher Education of Indonesia, including international collaborative research projects. He has one patent and ten intellectual property rights. He has published 67 research papers about e-marketing and accounting information systems in national and international journals from Indonesia, India, the UK, Greece, Netherlands, and Uzbekistan.

Nelli Kozlova is an Associate Professor of Marketing at Peter the Great St. Petersburg Polytechnic University in Russia. She served as the Deputy Director of International Affairs. Her research is about marketing, consumer behaviour, marketing research, international business communication, and regional development. She also served as a coordinator of international polytechnic summer school programs 'city branding', and 'tourism marketing toolkit'. She has 20 international teaching experiences (2017–2024), and has published two monographs, two textbooks, 11 trainee programs, and 60 scientific and educational publications.

1 Introduction

The majority of marketers consider social media acts as the leading platform for reaching customers broadly and efficiently. This report highlights that the use of social media for marketing offers advantages in terms of audience reach and cost savings, especially through organic content and targeted advertising (Stelzner, 2025). The presence of countless users engaging actively on social media platforms creates a huge opportunity for companies to expand their reach and increase engagement with customers. In Indonesia, one of the newest cases is TikTok Shop. TikTok, which is a social media that was originally an application dedicated to short video clips, it has transformed into a robust e-commerce hub, allowing users to make purchases directly through the application. TikTok has transformed social media marketing strategies by integrating entertainment content with e-commerce. It offers advanced advertising features and enables companies to reach more targeted audiences, reflecting a shift from traditional marketing to a more interactive and measurable digital approach (Alfian et al., 2024). However, the TikTok Shop was once shut down by the government some time ago because its existence threatened local MSMEs and there were widespread cases of fraud using the platform. There is no doubt that TikTok Shop has emerged as a successful platform. Despite its success, this development prompts various questions and concerns. One major consideration is whether merging social media and e-commerce on a single platform is truly beneficial? Apart from that, does direct selling via social media have an effect on 'consumer purchasing decisions'?

According to recent data, as of January 2023, Indonesia had approximately 167 million individuals actively using social media platforms (Yonatan, 2023), constituting 78% of the country's total internet users, which stands at around 212.9 million (Muhtar, 2023). This number is expected to rise in the future. In 2017, the percentage of social media users in Indonesia was 92.82% (Indonesiabaik.id, 2018). With the expansion of Indonesia's e-commerce sector, online advertising has emerged as a pivotal marketing tool in reaching increasingly digitally connected consumers. Advertising can act as a key driver in influencing consumers to choose a particular product, a particular online store, or even pique their interest to start shopping online (Gao et al., 2021; Mehta et al., 2020). Thus, it is essential to explore and understand the effect of advertising programme implementation on online product purchase decisions in Indonesia. The decision to online purchase products will go through the stages of processing advertising information carried out by consumers when they get exposure to advertisements for a good or service provided through digital platforms (Paredes et al., 2023). Under these circumstances, business professionals need to grasp how the

implementation of advertising programmes and social media-based marketing may affect the processing of advertising information by consumers, as well as the implications for online product purchasing decisions in Indonesia. It is expected that the study's conclusions will be useful as a reference for companies to become more impactful in planning social media marketing strategies and increasing consumer satisfaction in Indonesia.

2 Literature review

The theoretical foundation of this literature review draws on two well-established frameworks: the elaboration likelihood model (ELM) (Petty and Cacioppo, 1986) and integrated marketing communications (IMC) theory (Schultz et al., 1993). The ELM provides insight into how consumers process advertising messages through two distinct pathways. In the central route, individuals carefully evaluate the content of the message itself, engaging in thoughtful consideration. Alternatively, the peripheral route suggests that consumers may rely on peripheral cues – such as the visual appeal or context of the advertisement – without deeply analysing the message. This distinction is particularly relevant when examining how different advertising programme designs and social media marketing strategies influence how consumers absorb information and make purchase decisions. Creativity, message presentation, and choice of platform all play critical roles in capturing consumer attention and shaping engagement.

Meanwhile, IMC theory underscores the importance of delivering consistent, coordinated messages across multiple marketing channels. It highlights social media as a crucial element within this integrated approach, facilitating ongoing interaction between brands, consumers, and other marketing participants. This continuous engagement enhances how consumers process advertising messages and impacts their online purchasing behaviour.

Together, these theories provide a robust conceptual framework for this study. They help explain how advertising programmes and social media marketing activities intersect to shape consumers' information processing, and ultimately, their decisions to purchase products online in Indonesia. This integrated perspective offers valuable insight into the interplay of advertising creativity, platform selection, and consumer engagement within today's dynamic digital marketplace.

2.1 Influence of advertising programme implementation on advertising information processing

The European Parliament conducted research on how targeted advertising impacts advertisers, access to markets and consumer decision-making (Fourberg et al., 2021). Their findings revealed that online advertising markets offer both challenges and opportunities. Social media platforms, particularly through features like Stories, have become instrumental in determining advertising effectiveness (Belanche et al., 2019). Advertisers utilise these platforms, allowing users to click on ads for additional brand information. Information search plays a crucial part in influencing purchasing decisions, with social media becoming a primary information provider throughout 'purchase decision-making' (Belanche et al., 2019). Creativity in advertising has been explored by

Harvard Business Review, which found that creative ads are more memorable, have long-lasting effects, require less spending, and foster a fan community more quickly. In this research, five aspects of advertising creativity were identified, including originality, elaboration, artistic value, flexibility and synthesis. Advertising professionals can use these methods to pinpoint the most effective strategies (Reinartz and Saffert, 2013). Nevertheless, advertising's role in shaping consumer behaviour (CB) is not consistently positive. Research investigating the effects on how consumer knowledge, information delivery methods, and presentation styles affect advertising revealed that consumers frequently lack awareness regarding the persuasive purpose underlying social media advertisements (Nagaraj, 2007).

The study additionally showed that frequent advertising can be viewed as annoying and aggressive, reducing the appeal to buy those foods (Molenaar et al., 2021). In conclusion, advertising programme implementation can greatly influence how advertising information is processed (Sachdeva, 2020). Online advertising markets present opportunities alongside challenges, and 'social media platforms' have become a key player in determining advertising effectiveness. Creativity has a significant function in advertising effectiveness, but the impact of advertising on CB is not always positive. It holds significance for advertisers to consider the impact of their advertising strategies on CB and to use methods like those identified in these studies to find out which advertising strategies work best.

2.2 *Social media marketing's impact on advertising information processing*

In the past, marketing primarily utilised traditional communication channels like TV, radio and print media. However, the advent of 'social media' has transformed marketing strategies significantly. Marketing through social media has developed into a methodical and purposeful approach aimed at building a company's presence, credibility, and brand among potential customer communities (Wen, 2020). Social media platforms have emerged as major advertising platforms in contemporary society (Belanche et al., 2019). Advertisers often feature their ads within Stories, enabling consumers to engage with ads by accessing further brand information. Information-seeking is a fundamental element in the shopping decision-making cycle, with social media platforms now considered the primary source of information during this process (Belanche et al., 2019).

An overview of previous research on social media utilisation in marketing highlighted its potency in helping companies engage with their intended audience (Krishnamurthy, 2022). The review identified four key themes in current literature on 'social media marketing': 'social media' as a communication tool, a relationship-building tool, a marketing research tool, and a sales tool (Krishnamurthy, 2022). Another study explored the transformation of social media influence, revealing that 'social media' has transformed marketing communications by altering the ways in which consumers choose, distribute and assess information (Grover et al., 2022).

Social media platforms structure their revenue models around internet-based advertising, a thriving industry with annual revenue growth exceeding 20% (Belanche et al., 2019). Additionally, a study of how the presentation style of 'social media' content and the choice of platform impact user engagement behaviour revealed that user engagement on social media is affected by both the content format and the specific platform where it is shared (Shahbaznezhad et al., 2021). This research pioneers the empirical assessment of 'social media' engagement behaviour by studying the impacts of

various types of content and platforms (Shahbaznezhad et al., 2021). In summary, these studies underscore the impact of ‘social media marketing’ on advertising information processing. ‘Social media marketing’ serves as a powerful medium for companies to engage with their intended audience, and ‘social media’ platforms have emerged as significant advertising channels in contemporary society, fundamentally altering how consumers interact with and evaluate information. The type of content and the platform it is presented on can influence social media engagement behaviour.

2.3 The influence of advertising programme implementation on online product purchase decisions

Advertisers have been employing diverse methods to stimulate purchasing decisions through compelling commercial messages (Krishnamurthy, 2022). As highlighted within the body of research concerning ‘social media marketing’, it is evident that ‘social media’ has changed how consumers acquire information and make purchasing choices (Krishnamurthy, 2022). ‘Social media’ serves as the medium for social networking, reshaping the information-gathering and decision-making processes for consumers (Krishnamurthy, 2022). In a study examining the effect of consumer reviews on ‘online buying decisions’, evidence indicated that both older adults and students are significantly influenced by consumer reviews in the course of making digital purchasing decisions (von Helversen et al., 2018). This study investigated the influence of both average consumer ratings and individual emotional reviews on online purchase intentions was examined in one study. Another study explored how influencer-based promotions play a role in how young people make buying choices (Gelati and Verplancke, 2022). The findings revealed that businesses in the beauty and style sector makes strategic use of influencers and social media to affect consumer decisions and shape their purchasing decisions. Additionally, influencer marketing was found to significantly influence the purchasing habits of youthful consumers.

In the study of consumer purchasing patterns, researchers commonly use constructs such as attitude toward advertisements, brand loyalty, and brand awareness to predict how marketing communications on various media channels impact effectiveness (Zhao et al., 2022). Advertisers are employing diverse techniques to influence buying decisions by crafting compelling commercial messages (Dwivedi et al., 2021). Research exploring the upcoming trends in ‘digital and social media marketing’ discovered the organisations benefit significantly from social and digital marketing. These methods provide opportunities for lower expenses, enhanced brand recognition and boosted sales (Dwivedi et al., 2021). However, the study also found that there are challenges and opportunities in online advertising markets that need to be addressed. Overall, these studies highlight the influence of advertising programme implementation on online product purchase decisions. Social media has changed how consumers collect information and decide on purchases, including customer reviews, and influencer marketing show a significant influence on ‘online purchase intentions’. Advertisers are employing various strategies to influence purchase choices with impactful promotional messages. Organisations can capitalise on significant opportunities through social and digital marketing strategies, but there are also challenges and opportunities in online advertising markets that need to be addressed.

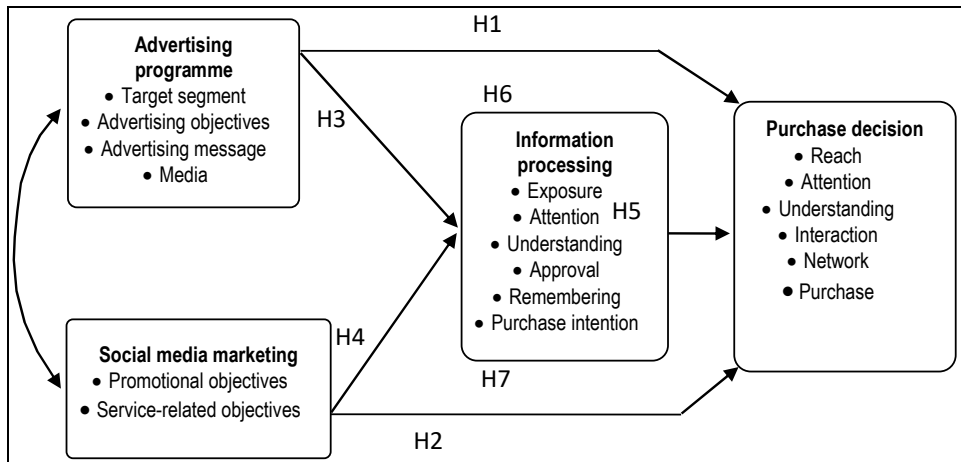
2.4 *The influence of 'social media marketing' on online product 'purchase decisions'*

'Social media marketing' encompasses a purposeful and strategic approach designed to establish a company's presence, reputation, and brand among potential customer communities (Krishnamurthy, 2022). A review of 'social media marketing' strategies in literature revealed that businesses widely employ social media for product or service promotion and customer engagement, and cultivate brand loyalty (Wen, 2020). Several strategies identified in the review include 'content marketing', 'influencer marketing' and 'social media advertising'. Another research emphasised the impact of 'social media marketing' on buying decisions in the tyre industry (Ramsunder, 2011). 'Social media marketing' offers an affordable avenue, further research is necessary to evaluate its overall effectiveness in influencing purchase decisions. An investigation into social media's impact on consumer buying choices indicated that social media directly influences purchases (Barysevich, 2020). The study identified four direct ways in which social media affects purchases: streamlined customer journeys, enhanced product research, social proof and personalised advertising. Bryła et al. (2022) demonstrated that the impact of 'social media marketing' positively enhances consumer participation in environmentally responsible consumption on engaging consumers. Factors influencing consumer engagement identified in the review included 'social media' content, platforms and influencers. Overall, these studies underscore how social media marketing affects online shopping decisions. It has become an important platform for company to advertise their products and interact with customers, and foster brand loyalty. Social media marketing directly shapes purchasing decisions and informs strategies, including content marketing, influencer marketing, and social media platform advertising, all of which can influence consumer engagement and 'purchase decisions'.

2.5 *Advertising information processing impact on online product purchase decisions*

Marketers allocate resources to different media platforms to shape CB. Each advertising platform exerts a distinct influence on CB. Media advertising's role in shaping CB is a multifaceted phenomenon influenced by factors such as the media type, ad content, target audience and presentation context. The effect can manifest in both favourable and unfavourable ways, contingent upon the ad type and audience (Sama, 2019). Similarly, the effect of advertising information processing on online product purchases is intricate and relies on variables like ad type, content, audience and context. Robert J. Lavidge and Gary A. Steiner introduced the hierarchy-of-effects model in 1961, representing stages like analysis of stimuli (input processes) and retrieval from memory (output processes). The model simplifies behaviours as 'think', 'feel' and 'do', corresponding to cognitive, affective and conative actions (Reinartz and Saffert, 2013). Thus, the influence of advertising information processing on online product purchases is very complicated, because it is influenced by many variables, for example content, type of advertisement, context and audience.

Considering the impact described for each variable, the research framework and corresponding hypotheses are shown in Figure 1.

Figure 1 Research model and hypotheses

Advertising initiatives can strongly impact online product purchases in Indonesia, as demonstrated in various studies. For instance, research conducted by Galuh Putri Riyanto (2021) revealed the substantial positive influence of advertising programmes on online 'product purchase decisions' in the country. Furthermore, a study published in the *Economics and Business Quarterly Reviews* found that viral marketing in e-commerce, specifically at Smesco Indonesia, had a substantial and positive contribution to purchasing choices. This demonstrates that advertising strategies incorporating viral marketing can profoundly influence online product purchase decisions in Indonesia, as evidenced by the research of Rosmayani and Mardhatillah (2020). Additionally, the quantity of product reviews shared online by consumers has been shown to significantly sway potential customers' buying decisions, highlighting the positive impact of advertising programmes incorporating online reviews (Hidayat et al., 2021). Furthermore, another study emphasised the substantial role of sales promotions in building brand awareness, ultimately leading to purchase decisions, underscoring the positive influence of advertising programmes including sales promotions on online product purchases in Indonesia (Hidayat et al., 2021).

Hypothesis (H1) The implementation of advertising programmes positively and significantly impacts consumers' decisions to buy products online in Indonesia.

The research study analysed the relationship between efforts in 'social media marketing' and the intention to place an order, revealing a strong connection between them mediated by trust and brand image (Moslehpour et al., 2021). This suggests that 'social media marketing' initiatives hold substantial potential to positively influence online product purchase decisions in Indonesia. Another study highlighted the strong influence of influencer marketing on purchasing intentions, suggesting that social media marketing strategies incorporating influencers can also have a crucial influence on forming online product purchases in Indonesia (Hanaysha, 2022). These findings were cited from Zhang and colleagues' research as mentioned in Moslehpour et al.'s (2021) study revealed that the quantity of product reviews shared online by consumers can deeply influence the purchasing choices of potential buyers. This suggests that social media marketing efforts

that include online reviews can exert a strong and beneficial impact on online product purchase decisions in Indonesia. Viral marketing in e-commerce notably influences purchasing choices at Smesco Indonesia (Rosmayani and Mardhatillah, 2020). This implies that incorporating viral marketing in social media marketing endeavours can significantly enhance online product purchase decisions in Indonesia.

Hypothesis (H2) ‘Social media marketing’ activities exert a substantial and advantageous outcome on online product purchase decisions in Indonesia.

The research offers a framework and a series of research hypotheses that encapsulate and expand upon existing theories related to information processing in advertisements, suggests that advertising information processing is shaped by multiple factors, including the characteristics of the advertisement, viewer attributes, and the setting where the advertisement is viewed (MacInnis and Jaworski, 1989). Sama (2019) explores the role of media advertisements on CB. The research proposes that CB, encompassing purchase intention and brand loyalty, can be notably impacted by advertising programmes. Additionally, it suggests that the processing of advertising information is influenced by the media type employed for advertising. The investigation delves into the effects of advertising on ‘CB’, emphasising the substantial influence of advertising programmes on aspects such as purchase intention and brand loyalty. Furthermore, the study posits that the processing of advertising information is subject to factors such as advertisement characteristics (content, format and message) (MacInnis and Jaworski, 1989), viewer characteristics (motivation, involvement and cognitive style) (Zhao et al., 2022), and the contextual environment in which the advertisement is observed, including social and cultural factors (Pal, 2019).

Hypothesis (H3) Indonesian consumers who are exposed to advertising programmes demonstrate a significantly higher degree of advertising information processing compared to those who are not exposed.

A comprehensive critical assessment of contemporary literature regarding social media marketing reveals its potential to significantly shape CB, impacting purchase intent and brand loyalty. The study proposes that ‘social media marketing’ endeavours can influence the processing of advertising information by offering consumers more information and opportunities to interact with brands (Jamil et al., 2021).

Research investigating the role of ‘social media’ in integrated marketing initiatives suggests that it facilitates smooth and continuous engagement and communication between consumers, partners, events, media outlets, digital platforms and retailers. This implies that ‘social media marketing’ efforts can exert a considerable influence on advertising information processing by providing consumers with increased opportunities to engage with brands and products (Krishnamurthy, 2022).

Studies exploring the behavioural response of consumers to media advertisements indicate that initiatives in social media marketing can profoundly shape CB, affecting purchase intent and brand loyalty. The research also suggests that social media marketing efforts can influence the processing of advertising information by providing consumers with additional information and opportunities to engage with brands (Grover et al., 2022).

Hypothesis (H4) Indonesian consumers exposed to social media marketing exhibit a significantly higher level of advertising information processing compared to those not exposed.

The research that explored how 'social media marketing' efforts impact purchase intentions by way of trust and brand image as mediating factors suggests a substantial impact of these activities on the intention to purchase. This suggests that advertising information processing can mediate the association between advertising programmes and online product purchase decisions in Indonesia (Moslehpour et al., 2021). The study provides a conceptual framework and a series of research proposals that capture and expand upon the existing theory of processing information from advertisements, also suggests that advertising information processing is impacted by a range of elements, such as the features of the advertisement, the attributes of the viewer, and the context in which the advertisement is viewed. This suggests that advertising information processing can act as an intermediary in the relationship between advertising programmes and online product 'purchase decisions' in Indonesia (MacInnis and Jaworski, 1989). Other study that analysed the effect of how consumers perceive of brand equity on business financial performance, suggests that advertising information processing can serve in the role of a linking factor between 'advertising programmes' and online product 'purchase decisions' in Indonesia by building brand equity (Ahmed et al., 2019). The study that examined the factors leading to and outcomes of trust in online buying choices, suggests that advertising information processing functions as an intermediary in advertising programmes and online 'product purchase decisions' in Indonesia by building trust (Yoon, 2002). The study that explored the way advertising drives or alters CB, suggests that advertising information processing can mediate the relationship between advertising programmes and online product purchase decisions in Indonesia by influencing purchase intention and brand loyalty (Christian and Hidayat, 2022).

Hypothesis (H5) Advertising information processing influences product purchasing decisions in Indonesia.

Advertising is a compelling means of impacting CB and purchasing decisions. In Indonesia, advertising information processing has been shown to play a crucial role in determining product purchases. Numerous research efforts have explored the correlation between advertising information processing and how Indonesian consumers behave, highlighting the key drivers behind their purchase decisions. A notable study made use of the theory of 'protection motivation' and the theory of 'information processing' to analyse the prevalence of fraud incidents in Indonesian online marketplaces (Teofilus et al., 2020). A different study investigated the elements that impact consumers' buying choices in the creative industries of Bandung City, Indonesia (Teofilus et al., 2020). The research discovered that Indonesian consumers go through stages like problem identification, gathering information, evaluating options, making purchases and post-purchase actions. Another study focused on gauging customer satisfaction in online shopping among Indonesian e-commerce users, emphasising information quality and trust factors. In this context, information quality holds a slightly higher significance compared to consumer trust (Madiawati et al., 2020). In a fourth study conducted in Pekanbaru City (Sriram et al., 2021), the impact of advertising on information processing and 'purchase decisions' for cosmetic products was examined. The research revealed that advertising encourages purchasing decisions in a significant and positive way through information

processing. In a fifth study, researchers examined how Safi's halal cosmetic products in terms of design, promotion, and overall quality had an impact on the buying choices of Muslim consumers. Safi users (Nugroho Hadi et al., 2022). The findings revealed that advertising significantly and contributed positively to consumer purchasing decisions, especially among younger consumers. Finally, a study conducted in Indonesia examined how social media advertising influences consumers' intention to purchase (Teofilus et al., 2020). The results demonstrated that the information presented in ads assists consumers in making educated and appropriate buying decisions. Taken together, these studies provide a strong research background that supports the idea that advertising information processing influences product purchasing decisions in Indonesia.

Hypothesis (H6) Advertising information processing plays a mediating role in connecting advertising programmes and online product purchase decisions in Indonesia.

The research discovered that consumers' intention to purchase is strongly affected by the way they adopt information, suggests that advertising information processing can play a mediating role in the effects of 'social media marketing' and online product purchase decisions in Indonesia by influencing information adoption (Leong et al., 2022). Other study found that the use of Instagram for 'social media marketing' has a strong influence on purchase intentions in the Indonesian pre-packaged tea beverage segment (Aji et al., 2020). This suggests that advertising information processing is involved in mediating the relationship between 'social media marketing' and 'online product purchase decisions' in Indonesia by influencing purchase intention.

Hypothesis (H7) Advertising information processing mediates the relationship between social media marketing and online product purchase decisions in Indonesia.

The processing of advertising information serving as a link in associating 'social media marketing' with online product purchases in Indonesia. A study investigating the function of 'social media advertising' in influencing information processing and the buying decisions of cosmetic products in Pekanbaru City demonstrated that 'social media advertising' has a strong impact on both information processing and 'purchase decisions' (Marhadi et al., 2019). As a result, 'social media marketing' holds the capacity to impact online product purchasing decisions in Indonesia, with advertising information processing playing a mediating role in this connection.

3 Research methodology

Quantitative methodology was adopted in this research to examine the research model and hypotheses. Data were gathered through formal questionnaires conducted via Google Forms, employing a total sample of $n = 579$. The participants, aged 18 and above, were internet and social media users. Data collection was conducted from January 2025 to March 2025, with online questionnaires being the primary mode of gathering information. Additionally, private sector employee constituted the majority of participants in the paper survey in 15 provinces out of a total of 38 provinces in Indonesia – an important group since they are highly active on social networks. These 15 provinces were chosen with both representativeness and practicality in mind. With 38 provinces

across the country, Indonesia shows wide differences in culture, economy, and technology – especially when it comes to internet use and e-commerce adoption. By including 15 provinces, the research captures enough regional diversity, such as contrasts between urban and rural areas, Java and non-Java regions, and provinces with higher versus lower levels of digital development. At the same time, limiting the scope to 15 keeps the study manageable in terms of time, cost and logistics.

To better understand the effect of implementing advertising programmes and ‘social media marketing’ on advertising information processing and its implications on decisions to buy products online in Indonesia, a structural equation modelling (SEM) research design was used. This research employed a cross-sectional survey approach. The independent variables are the implementation of advertising programmes and social media marketing, as for the dependent variable, it refers to online product purchase decisions and for mediating variable is advertising information processing. Participants were recruited from various online shopping platforms in Indonesia. The survey questions in this research were formulated based on existing literature related to advertising programmes, social media marketing, advertising information processing and online product purchase decisions.

The questionnaire comprised six demographic questions and 23 variables related questions on the Likert scale. The questionnaire is based on Torres (Leong et al., 2022), Haudi et al. (2020), Riantini et al. (2019) and Putra et al. (2020) questionnaires. The Likert scale data analysis approach enables the assessment of a participant’s general perspective on the presented items, helping identify those viewed more favourably (Pritha Bhandari, 2020). The statements provided were assessed using a rating scale with seven options, with 1 indicating strong disagreement and 7 indicating strong agreement Data was calculated by using Smart PLS version 3 programme. The collected data was presented in pictures and tables.

4 Results

4.1 Respondent demographics

An overview of the characteristics and profiles of internet users explored in this study describes respondents’ personal information including gender, age, occupation, total income per month, years on the internet, and daily internet usage as shown in Table 1.

These demographic characteristics are appropriate for respondents who have the potential to be active in online shopping.

4.2 Assessment of the measurement model (outer model)

4.2.1 Convergent validity

Referring to Figure 2, the outer model values for all indicators measuring variables x_1 , x_2 , z , and y exceed 0.5, indicating that each indicator is considered valid.

Table 1 Respondent demographics

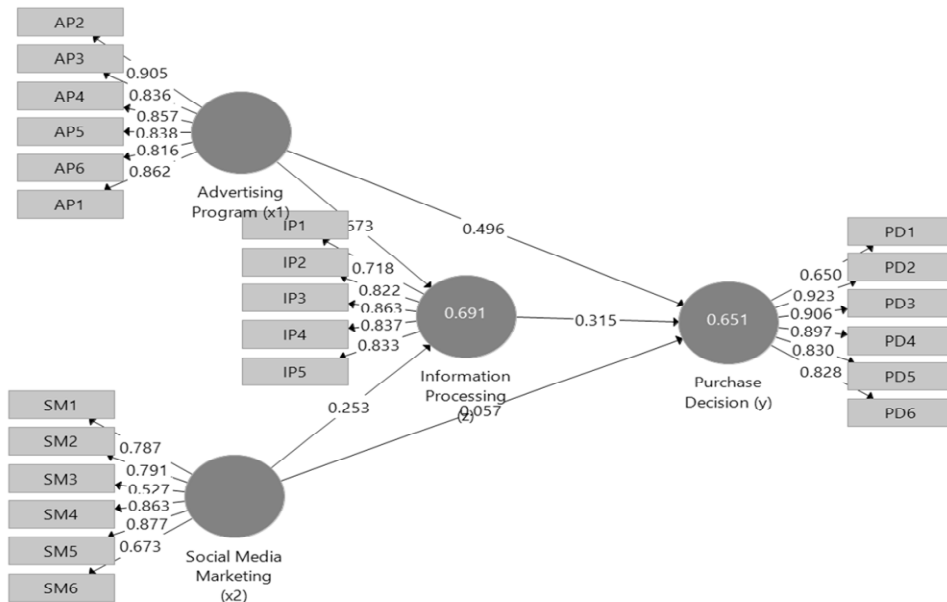
<i>Sex</i>	<i>Percentage</i>
Man	41.11%
Woman	58.89%
<i>Age</i>	<i>Percentage</i>
15–20 years	8.98%
21–25 years	10.71%
26–35 years	52.85%
36–45 years	20.21%
Above 46 years	7.25%
<i>Job</i>	<i>Percentage</i>
Private sector employee	65.46%
Government employees	13.47%
Academics	12.09%
Others	8.98%
<i>Monthly income</i>	<i>Percentage</i>
Under 2 million rupiah	11.96%
IDR 2 to 5 million	19.41%
IDR 5 to 10 million	63.14%
More than IDR 10 million	5.49%
<i>Years on the internet</i>	<i>Percentage</i>
Less than 4 years	6.47%
4–7 years	17.06%
8–10 years	42.75%
Over 10 years	33.73%
<i>Daily internet usage</i>	<i>Percentage</i>
1 to 5 hours per day	30.98%
6 to 10 hours per day	39.41%
Over 10 hours per day	27.65%

4.2.2 Discriminant validity

The results indicate that the average variance extracted (AVE) scores of all constructs are higher than 0.555, thereby fulfilling the criteria for discriminant validity.

Table 2 Average variance extracted

	<i>Average variance extracted (AVE)</i>
Advertising programme (x1)	0.727
Information processing (z)	0.666
Purchase decision (y)	0.712
Social media marketing (x2)	0.582

Figure 2 Convergent validity

4.2.3 AVE root value (Fornell Larcker criterion)

The root AVE score of each variable surpasses its AVE correlation in relation to variables, confirming the evidence of discriminant validity being met.

Table 3 AVE root value

	<i>Cronbach's alpha</i>	<i>rho_A</i>	<i>Composite reliability</i>
Advertising programme (x1)	0.925	0.925	0.941
Information processing (z)	0.874	0.883	0.909
Purchase decision (y)	0.916	0.918	0.936
Social media marketing (x2)	0.850	0.876	0.890

4.2.4 Model collinearity test

The analysis was conducted by examining the 'variance inflation factor' (VIF) values (Sarstedt et al., 2014; Garson, 2016).

Table 4 Collinearity statistics (VIF)

	<i>Advertising programme (x1)</i>	<i>Information processing (z)</i>	<i>Purchase decision (y)</i>	<i>Social media marketing (x2)</i>
Advertising programme (x1)		1.358	2.826	
Information processing (z)			3.240	
Purchase decision (y)				
Social media marketing (x2)		1.358	1.565	

All variable indicators have VIF values less than 5, indicating the absence of multicollinearity among the measured indicators.

4.2.5 Reliability

- 1 Cronbach alpha: > 0.7 (Vinzi et al., 2010)
- 2 rho A: > 0.7 (Vinzi et al., 2010)
- 3 composite reliability > 0.6 (Chin and Dibbern, 2010).

Table 5 Construct reliability and validity

	<i>Advertising programme (x1)</i>	<i>Information processing (z)</i>	<i>Purchase decision (y)</i>	<i>Social media marketing (x2)</i>
Advertising programme (x1)	0.853			
Information processing (z)	0.803	0.816		
Purchase decision (y)	0.779	0.748	0.844	
Social media marketing (x2)	0.514	0.598	0.501	0.763

From the data provided, it is evident that the scores for Cronbach's alpha, composite reliability, and rho-A of each variable meet the established thresholds, indicating acceptable reliability.

4.3 Assessment of the structural model (inner model)

4.3.1 R-square

R-square reflects the extent to which the variability of the endogenous variable is justified by the associated exogenous variables. The standards are as follows:

- An R^2 -value of 0.75 suggests a substantial (large/strong) relationship.
- An R^2 -value of 0.5 points to a moderate degree of relationship.
- An R^2 -value of 0.25 signifies a weak (small) relationship.

Table 6 R-square

	<i>R-square</i>	<i>R-square adjusted</i>
Information processing (z)	0.691	0.690
Purchase decision (y)	0.651	0.649

Path model 1 shows an R-square of 0.691, suggesting that x1 and x2 explain 69.1% of z's variance (moderate). Path model 2 yields an R-square of 0.651, indicating that x1 and x2, mediated by z, explain 65.1% of the variance in y (moderate).

4.3.2 F-square

F-square quantifies how strongly an explanatory (exogenous) variable has on a response (endogenous) variable within the model.

The criteria, as stated by Cohen (2013), are as follows:

- A value of $f^2 = 0.02$ represents a small or weak impact.
- A value of $f^2 = 0.15$ signifies a moderate impact.
- A value of $f^2 = 0.35$ indicates a substantial or strong impact.

Table 7 F-square

	<i>Advertising programme (x1)</i>	<i>Information processing (z)</i>	<i>Purchase decision (y)</i>	<i>Social media marketing (x2)</i>
Advertising programme (x1)		1.080	0.250	
Information processing (z)			0.088	
Purchase decision (y)				
Social media marketing (x2)		0.152	0.006	

Reviewing the results from the analysis, the path coefficients reveal interesting relationships between the variables. The strongest influence comes from $x1 \rightarrow z$, with a substantial coefficient of 1.080, indicating a large effect. Meanwhile, $x2 \rightarrow z$ shows a moderate effect (0.152), suggesting a meaningful but less pronounced relationship. Turning to the impacts on y, $x1 \rightarrow y$ registers a moderate coefficient (0.250), while $x2 \rightarrow y$ appears negligible (0.006), implying it contributes little in this model. The $z \rightarrow y$ path also reflects a modest effect (0.088), reinforcing that z plays a mediating role, though not as strongly as x1. These findings highlight that x1 is the dominant driver, particularly for z, while x2's influence is marginal. The modest mediation of z on y suggests other factors may be at play – something worth exploring further.

4.4 Hypothesis test

4.4.1 Direct effect (path coefficient)

The analysis of direct effects is essential for testing hypotheses related to the straightforward effect from the exogenous to the endogenous variable. This is assessed using the path coefficient, which is interpreted as follows: a positive path coefficient indicates a direct and positive connection – meaning that as the exogenous variable increases, the endogenous variable also rises. Conversely, a negative path coefficient suggests an inverse relationship, where an increase in the exogenous variable leads to a decline in the endogenous variable. Understanding these distinctions helps clarify the nature of the relationships I am analysing and ensures accurate interpretation of the model's findings.

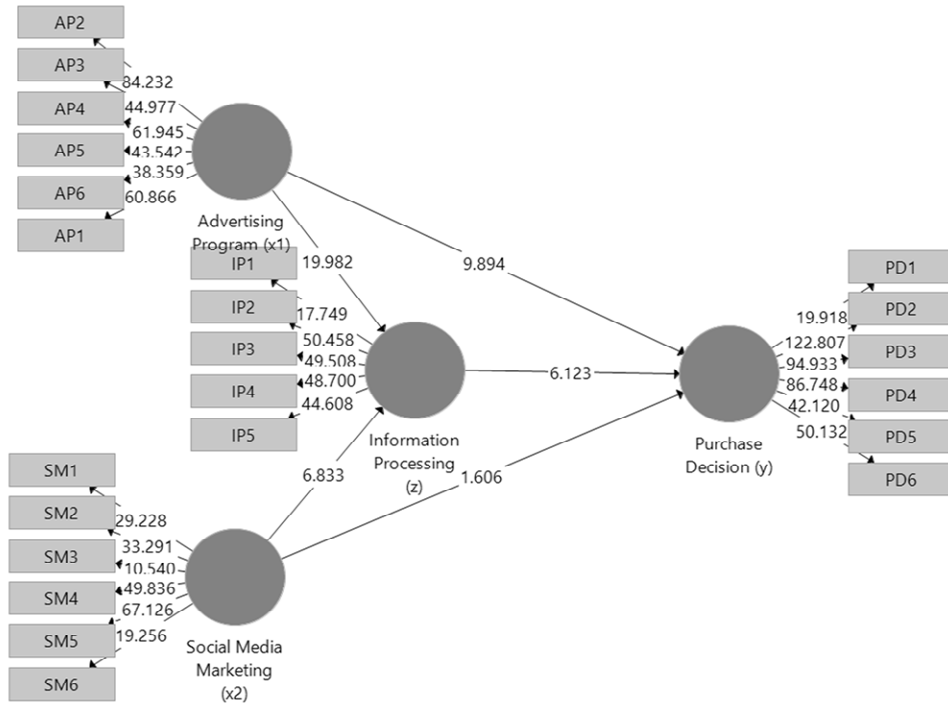
Probability/significance value (P-value)

Statistical significance is achieved when the P-value falls below the 0.05 threshold. In contrast, a P-value greater than 0.05 indicates that the effect is not statistically significant.

Referring to Table 8, the conclusions derived are as follows:

- $x1 \rightarrow y$ shows a positive path coefficient of 0.496 where the P-value equals 0.000 (< 0.05), indicating a significant direct effect (supports H1).
- $x1 \rightarrow z$ has a positive coefficient of 0.673, where the P-value equals 0.000 (< 0.05), meaning the relationship is significant (supports H2).

- $x_2 \rightarrow y$ yields a positive coefficient of 0.057, but the P-value equals 0.094 (> 0.05) indicates a non-significant effect (does not support H3).
- $x_2 \rightarrow z$ presents a positive coefficient of 0.253 where the P-value equals 0.000 (< 0.05), demonstrating a significant effect (supports H4).
- $z \rightarrow y$ shows a positive coefficient of 0.315, where the P-value equals 0.000 (< 0.05), confirming a significant influence (supports H5).

Figure 3 Direct effect (path coefficient)**Table 8** Path coefficients

	<i>Original sample (O)</i>	<i>Sample mean (M)</i>	<i>Standard deviation (STDEV)</i>	<i>T-statistics (O / STDEV)</i>	<i>P-values</i>
Advertising programme (x1) → information processing (z)	0.673	0.671	0.037	18.265	0.000
Advertising programme (x1) → purchase decision (y)	0.496	0.497	0.049	10.036	0.000
Information processing (z) → purchase decision (y)	0.315	0.317	0.054	5.814	0.000
Social media marketing (x2) → information processing (z)	0.253	0.255	0.039	6.462	0.000
Social media marketing (x2) → purchase decision (y)	0.057	0.056	0.034	1.679	0.094

The findings indicate that advertising programmes exert both a strong direct effect on purchase decisions and an indirect effect through information processing. This suggests that effective advertising not only stimulates immediate purchasing behaviour but also enhances the way consumers process and evaluate information, ultimately leading to more informed decisions. In contrast, social media marketing does not directly influence purchase decisions but contributes significantly to information processing. This highlights its role as a supportive channel that facilitates consumer understanding, awareness, and engagement rather than as a direct driver of purchases. From a practical perspective, companies should prioritise advertising campaigns that communicate clear value propositions and persuasive messages, as these have proven to directly influence consumer buying behaviour. At the same time, social media marketing should be strategically integrated to complement advertising by enriching consumer knowledge and building trust through interactive and informative content. Enhancing the quality of information presented – through storytelling, engaging visuals, or user-generated content – can strengthen information processing, and in turn, increase the likelihood of purchase. Future research and managerial practice are encouraged to explore how specific types of social media content, such as influencer endorsements, reviews, or short videos, might strengthen the indirect pathway from social media marketing to purchase decisions.

4.4.2 Indirect effect

Indirect effect testing is carried out to evaluate hypotheses in which an exogenous variable exerts its effect on an endogenous variable indirectly by way of a mediating variable. The interpretation criteria are as follows: the P-value threshold of 0.05 remains pivotal in mediation analysis. When results fall below this cutoff, we see evidence that the mediator successfully transmits the independent variable's effect. But when P-values exceed 0.05, the relationship appears more direct – our hypothesised mediator does not seem to play its expected role.

Table 9 Specific indirect effects

	<i>Original sample (O)</i>	<i>Sample mean (M)</i>	<i>Standard deviation (STDEV)</i>	<i>T-statistics (O / STDEV)</i>	<i>P-values</i>
Advertising programme (x1) -> information processing (z) -> purchase decision (y)	0.212	0.212	0.037	5.753	0.000
Social media marketing (x2) -> information processing (z) -> purchase decision (y)	0.080	0.081	0.020	3.938	0.000

The results demonstrate significant mediation effects through the information processing variable (z). For the advertising programme (x1), the strong indirect effect (0.212, $p = 0.000$) confirms that purchasing decisions are influenced through how consumers process advertising information. This indicates the advertising's effectiveness depends considerably on cognitive engagement with the content. Social media marketing (x2) also shows a significant mediated path (0.080, $p = 0.000$), though with a smaller effect size. This suggests information processing still plays a role in translating social media exposure to purchases, but likely shares influence with other mechanisms. The difference

in effect sizes between the two channels may reflect their distinct natures – advertising appears to require deeper information processing, while social media may operate through additional pathways beyond cognitive engagement.

5 Conclusions

Drawing from the findings above, it is evident that the advertising programme variable directly influences purchasing decisions made by internet users. In contrast, the ‘social media marketing’ variable does not directly affect purchasing decisions. However, both the advertising programme and social media marketing variables directly affect information processing by internet users. In Indonesia, the way internet users process information directly influences their decisions to purchase consumer products. Additionally, when examining the non-direct impact of advertising efforts and ‘social media marketing’ strategies on consumer ‘product purchasing decisions’ through information processing variables, it can be inferred that advertising programmes indirectly affect consumer purchasing decisions through information processing variables. Similarly, ‘social media marketing’ variables also indirectly influence ‘consumer purchasing decisions’ through ‘information processing’ variables. Thus, the theoretical contribution that can be made is that advertising programmes can directly influence purchasing decisions by internet users, as well as indirectly influence purchasing decisions through information processing variables. Meanwhile, social media marketing variables cannot directly influence purchasing decisions by internet users, but can indirectly influence purchasing decisions through information processing variables. This happens because internet users in Indonesia try to process the information they get through social media first before deciding to buy products via the internet in Indonesia.

6 Research limitations

The study’s first limitation is the challenge of establishing a causal observed relationship between ‘social media marketing’ and ‘consumers’ purchasing decisions’ could be affected by the study’s design and other variables that shape CB. Another limitation lies in the application of a cross-sectional approach, which restricts the establishment of a cause-effect association over an extended period. The third limitation is the potential introduction of response biases due to the use of questionnaires created through Google Form, which may affect the quality of the collected data and limit the ability to reflect the full complexity of factors influencing product purchase decisions. The fourth limitation of this study is that most respondents – about 65% – came from the private sector. Because they tend to have higher incomes, better internet access, and more exposure to digital marketing, the results may overstate how strongly social media marketing influences online shopping compared to other groups like public employees, students or informal workers. Future research should aim for a more balanced sample to better reflect Indonesia’s diverse population. Lastly, the findings obtained from the research might be specific to the Indonesian context and the products or services under investigation, thus limiting their generalisability to other countries or industries.

Declarations

All authors declare that they have no conflicts of interest.

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