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# The psychological mechanisms through which digital content marketing by online influencers affects customer loyalty: evidence from multiple countries

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**Introduction:** This study examines the impact of digital content marketing on customer loyalty in the context of a rapidly evolving consumer environment marked by rising national income levels and shifting consumption patterns. Drawing on relationship marketing theory (RMT) and self-determination theory (SDT), the study explores how emotional attachment and emotional commitment moderate the relationship between digital content marketing and customer loyalty. By investigating emotional mechanisms in digital content marketing, this study expands the explanatory power of RMT in digital contexts and enriches the application of SDT in consumers' emotional motivations and loyalty.

**Methods:** Using a quantitative research approach, based on multinational sample mainly from Asia (996 valid responses), the study employs partial least squares structural equation modelling (PLS-SEM) to analyse the proposed model.

**Results:** The findings reveal that high-quality digital content marketing significantly enhances customer loyalty, and this relationship is strengthened by both emotional attachment and emotional commitment.

**Discussion:** This study innovatively integrates emotional drivers into digital marketing, addressing the existing gap in exploring emotional mechanisms in this field. It not only enriches theoretical research at the intersection of digital marketing and relationship marketing but also offers practical insights for marketing managers and digital strategists, particularly in highly dynamic and emotionally driven consumer markets. This paper advances the understanding of how emotional mechanisms interact with digital marketing strategies to foster long-term customer relationships, offering implications for both theory and practice. Although the sample mainly from Asia, a leading region for digital marketing and e-commerce, the findings provide valuable insights into the emotional impact of digital content marketing within a global context.

## KEYWORDS

digital marketing, customer loyalty, emotional attachment, emotional commitment, quantitative research

## 1 Introduction

Online influencers play a significant role in influencing consumer behaviours, especially when their social media presence expands the scope and effectiveness of digital marketing strategies. Online influencers are individuals who become famous by creating and distributing contents (Yuan and Lou, 2020). They frequently use their own lives and interests as the main themes for establishing emotional connections with their followers (Ladhari et al., 2020; Guo and Chen, 2022). The direct

interactions between online influencers and targeted consumers through social platforms can enhance brand credibility and user engagement (Liu and Zheng, 2024). Additionally, researchers have demonstrated that the content posted by online influencers significantly influences consumers' purchasing decisions (Javed et al., 2022). This process of "online influencers attracting potential customers by creating and sharing relevant and attractive content, thus driving them to convert to business results" is known as digital content marketing (Sawafah et al., 2021). Hence, digital content marketing driven by online influencers is a key tool for companies to maintain customer relationships and loyalty (Rochefort and Ndlovu, 2024).

Based on a literature review, the present study identified three gaps in this field of research. (a) Although digital marketing has been heavily researched (Emini, 2021), the literature on digital content marketing is still limited (Lopes and Casais, 2022). Digital content marketing can increase customer loyalty due to its visual presentation and brand engagement (Bui et al., 2023). However, misleading and intrusive content can weaken customer loyalty (Azer and Alexander, 2020; Li et al., 2022; Ahmed et al., 2025; Unnisa and Garg, 2025). Therefore, the impacts of digital content marketing on customer loyalty are inconsistent. (b) Most of the existing studies related to digital content marketing focus on developed countries (Hasani et al., 2023). This is because those countries experienced earlier development of the internet and have higher penetration of social media (Ahamed and Gong, 2022). Meanwhile, developing countries tend to have unstable markets and rapid changes in market demand. Internally, they cannot meet consumer demands due to limited resources (Qalati et al., 2021; Rizvanović et al., 2023). (c) Past studies on digital content marketing have concentrated on its impact on consumers' behavioural and cognitive responses, like social interactions, purchase intentions, and credibility of the source (Rosário and Loureiro, 2021; Choudhry et al., 2022). However, limited research has been conducted from emotional views like emotional attachment and commitment (Yan et al., 2024). Although some studies have used data mining and artificial intelligence to analyse digital marketing and emotional responses (Sukmana and Oh, 2024; Saputra and Kumar, 2025), there is still a lack of theoretical frameworks that systematically explains the relationship between digital content marketing and customer loyalty from the perspectives of emotional mechanisms and relationship marketing. Emotional factors not only deepen the understanding of consumer cognition but also closely relate to loyalty (Li et al., 2021; Awasthi et al., 2024). For solving these gaps, this research is grounded in RMT and SDT. RMT describes how digital content marketing strengthens customer relationships by emotional aspects, while SDT explained the mechanism of consumers building loyalty behaviours driven by emotions. Hence, this study raises the following question: what are the psychological mechanisms through which digital content marketing by online influencers affect customer loyalty?

The purpose of this research is to examine how digital content marketing on social media affects consumer loyalty, along with the emotional mechanism used by online influencers. To achieve this aim, the study has developed a conceptual framework consisting of two emotional dimensions, which are emotional attachment and emotional commitment. Each effect in the model is theorised to examine the impact of digital content marketing on customer loyalty and to examine the moderating roles of emotional attachment and emotional commitment in the relationship.

Overall, the results show that social media's digital content marketing has a positive impact on customer loyalty. Further, emotional attachment

and emotional commitment positively moderate the relationship between digital content marketing and customer loyalty. This research mainly focuses on the impact of consumers' emotional dimensions, assessing whether emotional factors are the potential reasons for all consumers' continuous purchasing behaviour. Multiple sets of control variables were also introduced to minimise the impact of interfering variables on the study's findings. Structural equation modelling (SEM) was used to confirm that digital content marketing is strongly positively correlated with customer loyalty, while this relationship is positively moderated by emotional attachment and emotional commitment.

The literature that is currently available on this theoretical model is covered in the next section. The research methodology utilised in this research is explained in Section 3. The study findings are presented in Section 4. Section 5 discusses the theoretical contribution and the practical contribution of this research. Section 6 provides the limitation of the study.

## 2 Literature review

Relationship marketing theory (RMT) and self-determination theory (SDT) serve as the basis for the framework developed for this study.

### 2.1 Relationship marketing theory (RMT)

This research examines how digital content marketing influences customer loyalty through the lens of RMT. It is important for firms to create positive engagement experiences for building long-term relationships with customers (Sofi et al., 2024). RMT, which started in the 1990s, is a framework that focusses on long-term results and stresses the importance of mutual exchange in order to develop long-term relationships between companies and stakeholders (Rosário and Casaca, 2023). A detailed understanding of customer needs is the core of this theory, which helps firms better meet customer expectations. Further, such alignment can increase customer satisfaction (Kusumawati et al., 2021). Such satisfaction commonly originated from positive interactions can develop loyalty and commitment towards service providers (Parasuraman et al., 2021). Hence, relationship marketing finally aims at converting customers into frequent buyers, then into supporters who express positive comments, and finally into brand advocates—this process realised through continuous interaction (Ostrowski, 2021; Parasuraman et al., 2021). Currently, innovative strategies such as digital content marketing have become critical in achieving these goals in digital era. Useful, empathetic, and personalised content shared through such methods are an effective way to deepen business-customer relationships. Julaeha (2024) and Yaghtin et al. (2020) explain how digital content marketing form and maintain loyalty in the long term.

Previous literature related to RMT is mainly used to illustrate the importance of good brand-consumer relationships, especially from the methods of word-of-mouth communication and repetitive usage intention. But there is little research on personal media because of higher cost and changing customer needs (Reinikainen et al., 2021). Influencer-user relationships on social media not only influence consumers' usage intention towards media but also shape their buying behaviour and feelings (Barari et al., 2025). Strong influencer-follower relationships can help firms foster customer loyalty (Qian and Mao, 2023). The quick

updates of digital technology promote a huge change in the market. Many channels can help enterprises build direct and effective links with their customers, especially social media. Hence, the traditional business-customer relationships experience a changing and transferring process towards an interactive connection between online influencers and their followers. The impact of high-quality information exchange in social media influencer-follower relationships is examined in this research, basing on the theory of RMT. For obtaining more support from followers, online influencers create and share interesting, relevant, and timely contents on social media, and they actively interact with followers. Examples of liking behaviours, subscription, and positive feedbacks from fans, which can increase visibility and foster close relationship for online influencers (Qian and Mao, 2023). Consistent and valuable interactions are an effective way for firms to enhance customer trust and commitment, and further reducing cost and perceived risks (Cheng et al., 2023). This approach shape customer opinions and behaviours, then boosting satisfaction and loyalty (Fared et al., 2021).

As explained by RMT, a positive relationship influences the formation of emotional attachment; the stronger consumers' relationship with the brand, the stronger the emotional attachment (Ghorbanzadeh and Rahehagh, 2020). When consumers associate their selves with the brand, a sense of identity is created, which promotes emotional attachment to the brand (Guevremont, 2021; Shimul and Phau, 2023). According to Hongsuchon et al. (2023), enjoyable interactions between consumers and brands can help consumers to establish positive personal connections, which positively affect the formation of the customers' emotional attachment. Many philosophers have confirmed that successful relationship marketing strategies can increase consumers' emotional attachment to a specific brand (Habib et al., 2021; Ahmad and Akbar, 2023). Therefore, building positive relationships is a key factor in forming customers' emotional attachments. Evidently, RMT is closely related to emotional attachment and is the basis of emotional attachment formation.

Bauer et al. (2023) stated commitment as the consumer's emotions and perceptions about their relationship with the brand. According to RMT, this trustful relationship can increase consumers' emotional commitment and loyalty to the brand (Ibrahim and Abd Ghani, 2024; Saeedi, 2025). When consumers prioritise a long-term relationship with a brand, they form an emotional commitment and then increase their willingness to maintain this relationship (Amoroso and Ackaradejruangsri, 2024). Customers' cooperation with a brand, including providing feedback, offering product improvement ideas, and sharing with other customers, originates from their emotional commitment to the brand (Lu et al., 2021; Durmaz et al., 2024). Emotional commitment to the relationship can promote cooperation between buyers and sellers (Lam and Wong, 2020). Hence, it is crucial to cultivate consumers' emotional commitment to the brand for the sake of enterprise development. In relationship marketing, emotional commitment determines the strength of the relationship (Rosário and Casaca, 2023). Therefore, emotional commitment plays an adhesive role between consumers and brands, determining the depth and stability of customer relationship.

## 2.2 Self-determination theory (SDT)

This paper investigates the moderating effects of emotional attachment and emotional commitment, using SDT as the theoretical

foundation. Developed by psychologists Ryan and Deci (2020), SDT is a motivational theory that systematically articulates the relationships between human psychological needs, motivation, and behaviour. In this theory, personality development and self-regulation of behaviour are significantly influenced by the intrinsic resources developed during the process of human evolution (Ryan and Deci, 2023). Therefore, SDT focuses on the individual's intrinsic growth tendencies and basic psychological needs, which are the foundational conditions for achieving self-motivation and personality integration (Vansteenkiste et al., 2020). Howard et al. (2024), through various experimental studies, suggest that psychological needs are essential elements for individual growth and development. Although humans' psychological needs are diverse, the most basic needs include autonomy (individuals feel that their behaviours are guided by their own goals and values and are not forced by external forces), sense of relatedness (individuals feel a sense of connectedness and belongingness to others), and sense of competence (individuals feel that they are equipped to deal with challenges) (Huangfu et al., 2022; Roy et al., 2023). As stated by this theory, individual growth can be positively motivated when these three central needs (autonomy, competence, and relatedness) are satisfied. However, in a social circumstance, if any of these needs are frustrated, it can hurt an individual's task engagement and performance (Chiu et al., 2022). In the uncertain environment of digital commerce, scientists have suggested that customers are more likely to consistently use digital platforms when their competence, autonomy of choice, and interpersonal needs are met (Liao et al., 2020). As suggested by SDT, people need a sense of connection and belonging with others, and hence, the usage of internet and digital commerce can satisfy their needs (Bayram and Barut, 2023). SDT supports the notion that intrinsic motivation is stimulated when individuals feel able to control their behaviours and make decisions independently (Lau and Ki, 2021). In the context of online purchasing, when consumers can successfully use their capabilities and make choices, they will stay longer, and their purchasing satisfaction and willingness to buy will increase (Kim and Lee, 2020).

When online purchasing fulfils customers' basic emotional needs, it fosters deeper emotional connections with the brand (Ghorbanzadeh and Rahehagh, 2020). The internet provides an abundance of stimulation, including in visual, personalised, and interpersonal aspects, and many online behaviours often originate from emotionally driven stimulation (Fu et al., 2020; Kelly and Sharot, 2025). According to SDT, when an object can consistently meet an individual's needs, the individual will gradually regard it as a part of their self-concept, which will lead to attachment. In addition, attachment to an object that can satisfy needs leads to a sense of emotional safety (Ariccio et al., 2021). Therefore, valuable digital content creates emotional attachment by constantly fulfilling users' needs so that they integrate it into their self-concept. This attachment not only enhances users' stickiness to the brand but also motivates them to use the products more frequently and actively engage in purchasing behaviour (Zhang and Choi, 2022). When consumers develop a positive emotional attachment as a result of their interactions with digital content, they develop a psychological status known as emotional commitment to maintain the joy and happiness driven by this kind of emotion. This commitment belongs to the psychological level of identification (Hwang et al., 2021). Users who possess an emotional commitment to the brand tend to regard themselves as supporters or stakeholders of

the brand's values and goals, which will motivate them to engage in repetitive consumption behaviours (KL and Babu, 2024).

### 2.3 The relationship between digital content marketing and customer loyalty

Digital content marketing can be defined as the process of creating, sharing, and exchanging relevant and interesting content in the process of buying decision making for customers. Such content is commonly timely and targeted to customers in order to achieve good business outcomes (Sawafah et al., 2021). Digital content marketing is a useful way to improve customer trust and brand perception, rather than only a tool to promote the brand (de Souza et al., 2023). Evidence suggests that digital content marketing cultivates long-term customer relationships, significantly influencing customers' repeat purchasing behaviours (Yaghtin et al., 2020). Trust and thought leadership among customers are built when organisations publish compelling and pertinent content on social media platforms. Such efforts result in an expanded customer base (Yaghtin et al., 2020).

From RMT's perspective, when meaningful, relevant, and personalised content is delivered through digital marketing channels, brand-consumer interactions will be strengthened. Closer relationships can thus be fostered, ultimately facilitating the formation and maintenance of customer loyalty in the long-term (Yaghtin et al., 2020). The inclination of consumers to purchase products or services consistently is referred as customer loyalty. Previous researchers have generally categorised customer loyalty into behavioural and attitudinal loyalty to explain customers' intentions in terms of purchases, repeat buying habits, and products and services recommended (Rashid et al., 2020). Based on previous studies, customer loyalty is influenced by numerous variables on the customer's side, including income level, age, frequency and habits of using social media, residence (rural versus urban), occupation, gender, and cultural background (Patrick et al., 2020; Chikazhe et al., 2021; Della Ayu Sevira, 2023; Dávila Espuela et al., 2024; Raju et al., 2024; Xia et al., 2024; Wang et al., 2025). By providing valuable information on social media, companies can boost brand reputation and loyalty while attracting new customers based on their needs (Rimadias et al., 2021). When customers access the content published on social media, they obtain useful knowledge and information, which gradually strengthens their engagement with the brand and generates a positive attitude towards products. Such positive attitude enhance customers' loyalty and improve buying intention (de Souza et al., 2023). When customers are exposed to digital content marketing, their loyalty can be further increased through visual presentation and evaluation of the content, which positively correlates with buying intention (Cheng et al., 2022).

However, the impacts of digital content marketing on customer loyalty are inconsistent. Since consumers are unable to actually test the quality of goods, content on social media will create unrealistic and too high expectations from the performance of products (Gubalane and Ha, 2023; Kothari et al., 2025). In the case such expectations do not materialise in real products, the purchasing decision of customers will be dramatically influenced (Jia et al., 2023). The process of online purchasing enhances the possibility and tendency for consumers to be cheated and deceived (Ahmed and Othman, 2024; Abu-Rahme et al., 2025). Misleading information can weaken customer trust and satisfaction, leading to a decline in

customer loyalty (Azer and Alexander, 2020; Ahmed et al., 2025; Unnisa and Garg, 2025). Furthermore, frequent content marketing on social media tends to trigger consumer boredom, causing them to ignore such content (Voigt et al., 2021; Geng et al., 2024). Riedel et al. (2024) has found that most customers have a negative attitude towards intrusive marketing, and compulsive and intrusive content will reduce consumers' perceived value of products and cause negative reactions (Li et al., 2022). Not only do these negative responses destroy the trust of consumers, but they also reduce the image of the brand, which leads to the loss of customer loyalty (Farid and Hammad, 2022). Tayeb et al. (2024) indicate that webpage advertisements cannot attract the attention of consumers easily. Excessive digital content will trigger consumers' resentment to brands, especially when they are looking for valuable information. Because of the internet's quick expansion, the massive influx of information has led consumers to be more resistant to digital content, often avoiding interruptions by closing pop-up windows or installing blocking software (Xu et al., 2020; Ali et al., 2021; Liu et al., 2021; Siddique et al., 2021; Jamil et al., 2022; ShiYong et al., 2022; Wang et al., 2022). Therefore, digital content that lacks personalisation and practical value is difficult to attract users and may even damage the brand's image, thereby weakening customer loyalty (Li et al., 2022). Although previous studies have shown inconsistent impacts of digital content marketing on customer loyalty, few studies have deeply explored the underlying emotional mechanisms (Yan et al., 2024). As explained from some previous studies, the influencer-based digital marketing relies heavily on the emotional factors—visual appeal and deep impressions have a huge effect on consumers' loyalty and trust (Sukmana and Kim, 2024; Iswanto et al., 2025). In contrast with rational judgements, the result shows that consumers' emotional dimensions determine the effectiveness of digital content marketing. This perspective provides an important theoretical foundation to explore how emotional attachment and emotional commitment moderate the relationship between digital content marketing and customer loyalty. Therefore, the present research explores the impact of digital content marketing on customer loyalty and hypothesised:

Hypothesis 1: Digital content marketing has a positive impact on customer loyalty.

### 2.4 The moderating role of emotional attachment

Emotional attachment, which is a vital concept in psychology, is used to describe the deep emotional bond that an individual develops with a particular individual or object (Yang et al., 2022). Saavedra Torres et al. (2020) found that brand attachment moderates the connection between causal attributions and loyalty. When customers have strong brand attachment, they have a higher possibility of generating good opinions to service and actively share to others, hence increasing loyalty (Shimul, 2022). Emotional attachment also acts as a moderator between customers' perceived justice and satisfaction (Zhu and Park, 2022). Currently, most studies focus on emotional attachment directly affects consumer loyalty and satisfaction (Ki et al., 2020; Ghorbanzadeh, 2021; Ghorbanzadeh and Rahehagh, 2021), whereas its moderating role is still less explored (Saavedra Torres et al., 2020).

SDT states that people generally have three psychological needs, which are autonomy, belonging, and competence. Once these needs are met, people will build emotional connections with the brand (Gilal et al., 2025). In brand marketing, Gilal et al. (2025) found that when consumers feel enough autonomy, sense of belonging, and sense of competence in the process of brand marketing, they have a higher likelihood of forming an emotional attachment with the brand. The emotional attachment not only increases user usage but may also influence the user's feelings and reactions. From the perspective of SDT, emotional attachment can moderate the link between brand marketing and customer loyalty (Huangfu et al., 2022). In Taobao livestreaming, Li Jiaqi's achievements are not only due to his professional selling capability but also because of his ability to establish a stable and deep emotional connection with his followers. Through the delivery of welfare, lottery, and continued interaction, he makes fans feel valued and cared, thereby establishing trust and dependency within them. This long-term emotional investment between Li Jiaqi and his fans strengthens then fans' brand loyalty, which triggers purchasing impulses when they receive promotional information, thus forming emotion-driven purchasing behaviours (Observer, 2024). From the perspective of SDT, this continuous interaction makes consumers feel a sense of belonging in their purchasing behaviour, and consumers gain a sense of identity and value through purchasing. Therefore, this phenomenon validates emotional attachment has a favourable moderating effect (Jingling, 2024). However, previous studies have not clarified whether emotional attachment is a positive or a negative moderator on the relationship between digital content marketing and customer loyalty. Therefore, the research explores the moderating impact of emotional attachment on this relationship by developing the following hypothesis:

Hypothesis 2: Emotional attachment positively moderates the impact of digital content marketing on customer loyalty.

## 2.5 The moderating role of emotional commitment

Emotional commitment is a psychological state that describes the degree to which a person views a relationship from a long-term perspective and has the willingness to preserve it regardless of the difficulties faced (Hwang et al., 2021). The classic theory of Allen and Meyer defines commitment as a notion with different dimensions that involves emotional, normative, and continuance dimensions (Stark et al., 2025). According to SDT, the satisfaction of consumers' intrinsic emotional needs by brands greatly shapes behavioural intentions and loyalty (Li and Aumeboonsuke, 2025). Saavedra Torres et al. (2020) claimed that consumers with strong emotional commitment to the company negatively moderate the link between service failure and loyalty due to higher expectations. In addition, KL and Babu (2024) argued that users with high emotional commitment to a brand are more likely to regard the brand as a part of their own values, hence forming loyalty. The connections between leadership bias and knowledge-hiding behaviours are adversely moderated by employees' emotional commitment towards their firms (Du et al., 2022). In a more recent study, emotional commitment acts as a moderator in the link between customer satisfaction and loyalty (Juharsah, 2024).

SDT supports the notion that when people's psychological needs for autonomy and belonging are met, the situation can stimulate internal motivation, maintain positive feeling, and promote individual and organisational development (Slemp et al., 2021; Gagné et al., 2022). Emotional commitment is closely related to these two needs, which can significantly improve satisfaction. It is often viewed as a psychological reflection of identity, belonging, and involvement (Gatt and Jiang, 2021). From SDT, a sense of belonging can enhance emotional commitment and bring positive emotions. With high emotional commitment, individuals find greater internal security in facing uncertainties, which can motivate them to buy products (Zhou and He, 2020). Liang (2022) demonstrated that the relationship between loyalty and brand marketing is moderated by emotional commitment. Based on the above discussion, there are mixed findings regarding the moderating role of emotional commitment on the link between customer loyalty and digital content marketing. Therefore, this research explores the moderating effect of emotional commitment on this relationship by developing the following hypothesis:

Hypothesis 3: Emotional commitment positively moderates the impact of digital content marketing on customer loyalty.

The theoretical model was established based on the literature review, as presented in Figure 1.

## 2.6 Research gaps

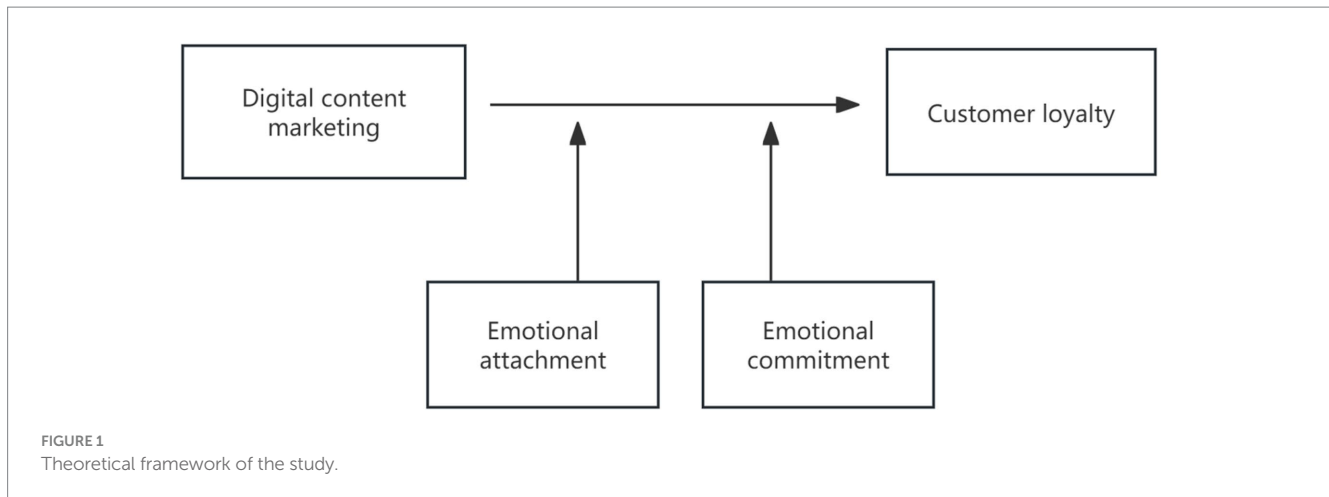
Most of the existing studies related to digital content marketing focus on developed countries (Kapoor and Kapoor, 2021; Wang and McCarthy, 2021; Hasani et al., 2023). For example, Kapoor and Kapoor (2021) analysed how digital content marketing shaped brand protection in the United States (US). Wang and McCarthy (2021) compared how digital content marketing influenced customer engagement in Singapore and Australia. However, there are limited studies on developing countries (Rizvanović et al., 2023). To address this contextual gap, the present research broadens the field of study to developing countries.

Most of the previous studies have focused on traditional digital media (Kapoor and Kapoor, 2021; Kim and Balachander, 2023; Shahid, 2023). However, due to high costs and changing customer demands, there is limited research on social media, particularly personal media (Reinikainen et al., 2021). To address the contextual gap, the present research examines how digital content marketing influenced brand loyalty by an exploration of social media.

Past research on digital content marketing has concentrated on how it influenced consumers' behavioural and cognitive reactions, like social interactions, purchase intentions, and credibility of the source (Rosário and Loureiro, 2021; Choudhry et al., 2022). However, little research have been conducted from the emotional views, like emotional attachment and emotional commitment (Yan et al., 2024). The theoretical gap in this study is bridged through analysing the impact of digital content marketing from a psychological view.

## 3 Research methodology

The methodological approach used in this research is described in this part, along with the quantitative research design, data



collection, questionnaire development, sampling techniques, data analysis using SPSS 26 and SMARTPLS 4.0, and control variables.

### 3.1 Research method

The quantitative research method was utilised in this research, which is centred on logical rigour and data quantification and focuses on explaining research phenomena through statistical analysis (Mulisa, 2022). The data for this study originated from various countries with large amounts of data. The principal drawbacks of the qualitative studies are the small sample size and limited extrapolation (Dengel et al., 2023). This research conducted through quantitative analysis was supported by the results of the earlier studies as it demonstrated the scientific validity and theoretical consistency of the hypotheses. Quantitative methods have been widely applied in the online marketing and consumer behaviour studies with the combination of PLS-SEM (Rana et al., 2023; Baber et al., 2024). This study aims at analysing the effect of digital content marketing on customer loyalty and investigating the moderating effects of emotional attachment and emotional commitment in the relationship between digital content marketing and customer loyalty. Cross-sectional research was implemented whereby the data of respondents were collected at one single point as opposed to the longitudinal tracking procedures (Tribaldos et al., 2020). Cross-sectional design is a common method used to achieve the validity and comparability of results in most multinational consumer research (Saxena et al., 2025). The major data collection tool was a questionnaire. As emphasised by Koo and Yang (2025), the questionnaire instrument will allow the researcher to access large datasets at a lower cost and shorter time. It is also confirmed in different studies that the questionnaire is common in research on online marketing and consumer behaviour (Kumar et al., 2023; Rana et al., 2023; Wu, 2025). In data analysis, this research employed SPSS in descriptive analysis and SmartPLS software in path-relationship testing and moderated effect validation. PLS-SEM was extensively applied in marketing and information systems research, which demonstrates good explanatory power and stability, especially in big sample size and complicated models (Singh and Kaurav, 2022; Anand et al., 2023; Tiwari et al., 2024). Such scientific software tools improve analytical accuracy and methodological rigour in the research findings.

### 3.2 Questionnaire

A self-administered questionnaire was used to collect respondents' opinions in this study. Three experts feedback was used to improve the questionnaire's quality. One was an expert in digital content marketing with high practical experience in the field. The others were academicians with one working on marketing strategy research and the other on quantitative research. After responding from the experts, the questionnaire was revised to become clearer and more relevant. Then a pre-test was conducted to evaluate the instrument's reliability and validity. In marketing research, 15–30 is an adequate sample size for pre-testing in most studies (Taherdoost, 2022). To enhance the feasibility of this research, a sample size of 30 was selected. The items were tested through three rounds with 30 respondents to assess if they were enough to understand and capture data from targeted groups (Gonzales et al., 2023; Pfladderer et al., 2024) As Veugelers et al. (2020) explained that biases in self-reported data can be effectively diminished through multiple rounds of anonymous feedback and expert advice, hence the validity of results is improved.

A five-point Likert scale with 1 (strongly disagree) to 5 (strongly agree) was used in all items. Higher structural validity and reliability have been presented by the five-point Likert scale compared to the four-point or three-point Likert scales (Malik et al., 2021; Aybek and Toraman, 2022; Kusmaryono et al., 2022; Obon et al., 2025). Previous studies Li et al. (2022) and Hasani et al. (2023) were adopted to assess the digital content marketing. Customer loyalty measurements were used from Hasani et al. (2023), and emotional attachment was designed from Shah et al. (2023). For the purpose of assessing emotional commitment, the research applied the scales provided by Maher and Zohra (2017) and Gogan et al. (2018). Respondents are anonymous in this questionnaire so that the respondents provide truthful answers and reliable data. Since Tan et al. (2022) explained that online questionnaires are an effective way to diminish social desirability bias compared to face-to-face surveys, and honesty among respondents and data validity were increased through anonymity. The Cronbach's alpha method is more suitable for measuring indirect and potential variables, such as psychological traits. Compared to other criteria, Cronbach's alpha is suitable for multiple items (Ha, 2020; Emini, 2021; Ha et al., 2021; Edelsbrunner et al., 2025; Team, 2025).

### 3.3 Sampling and data collection

In this study, questionnaires were administered to consumers, with strict compliance to research ethics. Compared to other sample size standards, linear multiple regression with a fixed model and  $R^2$  under the F-test in G-Power is a more suitable method for the moderating effects analysis because the contribution of the interaction terms to the explanatory power of the model can be set (Colombo et al., 2021; Obereider, 2022). The data provided by all participants were kept strictly confidential and limited to the use of this study without disclosing any personal information. The convenience sampling method was used to obtain the sample data. This non-probability sampling method involves selecting a sample of consumers who are easily accessible to the researcher (Golzar et al., 2022). This method is preferred because it is time-saving, efficient, and cost effective (Saleh et al., 2025). Although convenience sampling has limitations regarding representativeness and external validity, its high efficiency and lower cost make it obviously advantageous in exploratory or resource-limited studies, hence it is widely used in social science research (Wild et al., 2022; Winton and Sabol, 2022; Hossan et al., 2023). By including respondents from 8 different regions, with 12 ethnic backgrounds, 4 age groups, 4 occupational backgrounds, and 5 income levels, the diversity of samples significantly enhanced the representativeness and generalisability of results. A final sample size of 996 valid questionnaires was collected for this study. The rule of thumb which provides the theoretical basis for the sample size of survey studies is that the sample size should be between 30 and 500 (White, 2023). Ranatunga et al. (2020) stated that the minimum sample size for a partial least squares (PLS) path model needs to be 10 times the number of arrows pointing to the dependent variable. Since the model of this study has only one variable pointing to the dependent variable, the minimum sample size required is 10. In addition, a minimum of 77 samples are required for this study based on the G-Power software calculation (Figure 2). Considering the population is from multiple countries and the generally weak moderating effects, the final sample size was determined to be 996 to ensure data reliability and to minimise the impact of invalid questionnaires. The sample mainly comes from Asia, covering regions with different cultural, linguistic, and economic backgrounds. Asia holds a leading position in the field of digital marketing (Li et al., 2020), so samples have representative value. This study includes 257 samples from non-Asian countries, which already exceed those of most market research and meet the minimum sample size required for this study. Therefore, the results of this study are reliable (Ringle et al., 2023; Cabanelas et al., 2025).

The questionnaire was distributed via email and QR code, and reminders were sent to maximise the response rate. To ensure data completeness, all questions were mandatory and respondents who did not meet the screening requirements were automatically screened out by the system and were not able to continue filling in the questionnaire. Invalid questionnaires were eliminated at the stage of data collation. The questionnaire distribution process was divided into several steps. First, the researcher emailed the link to the questionnaire with an introductory letter to potential respondents via the Faculty of Business and Management (FBM) of Universiti Teknologi MARA (UiTM). The data for this study was collected through the official email channel of UiTM, and all sources of information were reviewed and approved by the UiTM Ethics Committee. Permission to use the

email channel for data collection was obtained from the official UiTM organisation beforehand. The ethics approval number for this study is REC/08/2025 (PG/MR/441). If no response was received, the researcher sent a reminder email and continuously found new potential consumers until 996 valid questionnaires were collected. After the completion of questionnaire collection, the researcher coded all data and imported it into SPSS software for frequency analysis and descriptive analysis. Subsequently, the research model was validated and analysed in more depth using SmartPLS software.

### 3.4 Data analysis process

Conducted initially was data cleaning through SPSS software, where identified were inconsistencies needing resolution alongside completion of frequency and descriptive stats analyses. Partial least squares structural equation modelling (PLS-SEM) served as the methodological basis for the study (Alsouki et al., 2023). This approach was selected due to its efficiency in handling limited sample sizes. In addition, it does not impose rigid normality assumptions (Hair and Alamer, 2022). PLS-SEM can directly examine moderating effects by constructing interaction terms without considering data normality and variance issues, making it highly suitable for this conceptual model (Hair et al., 2021; Hair and Alamer, 2022). Recently, similar analytical methods have been successfully applied to studies of machine learning and predictive models to analyse behaviour (Lestari et al., 2024; Saputra and Hidayat, 2024; Dewi and Kurniawan, 2025). Subsequently, SmartPLS was employed to evaluate scale reliability and validity. Further, the SmartPLS software was applied to examine the variables' impacts in the proposed framework (Lorenzo et al., 2022). Thus, the main analyses in this study involved testing the pathway relationships and verifying the moderation effects using SmartPLS procedures, aimed ultimately at validating the hypotheses. The process of data analyses with SPSS and SMARTPLS is presented in Figure 3.

### 3.5 Control variables

Based on a review of previous research on customer loyalty, brand marketing, and consumer behaviours, this study incorporated several control variables to ensure that the impact of digital content marketing on customer loyalty is not influenced by other potential factors. The study questions an experimental basis of existing research has confirmed that there is a strong correlation between frequency of use and loyalty of social media (Dávila Espuela et al., 2024). Moreover, the multi-platform social media approach will be able to make users very loyal (Wang et al., 2025). They were operationalised by metric measures on control variables, including which platform they prefer to use each week and how long they are on the platform. There were also demographic parameters, residence, occupation, income, age and gender. Literature is available to justify the importance of such factors in shaping the buying behaviour. Depending on the residence location, such as an urban or rural one, the effect on loyalty to social media users is varied (Raju et al., 2024). The higher the income, the more the brand loyalty is influenced by social media marketing (Della Ayu Sevira, 2023). The customer loyalty was also identified to be affected by demographic factors (age, gender, occupation) (Patrick et al., 2020;

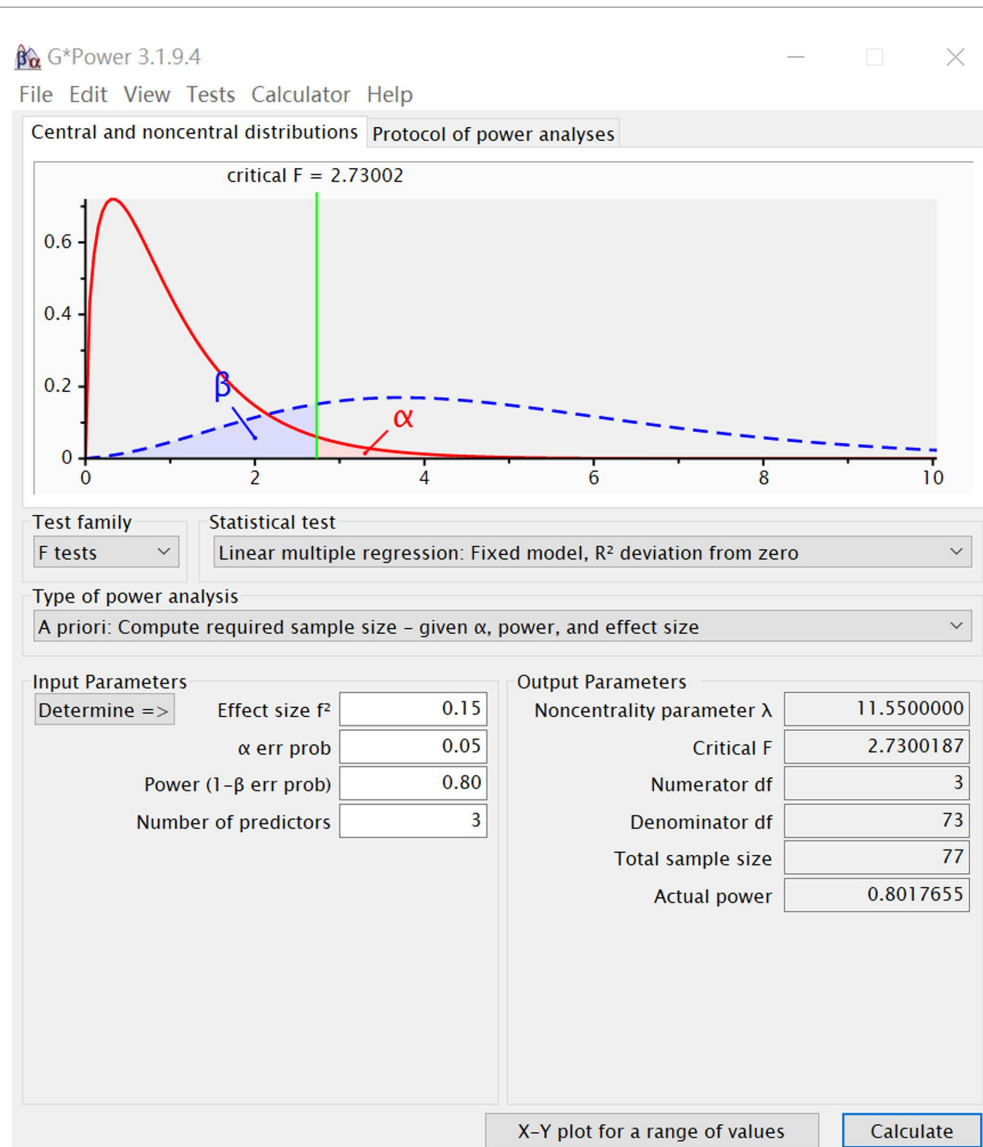


FIGURE 2  
A screenshot of the G-power software.

Chikazhe et al., 2021). This study quantified the variables that were considered as control variables through the assessment of consumer demographic variables. Finally, considering that customers' ethnic background can influence customer loyalty, customers' ethnic background may also influence their consumption habits and brand loyalty (Xia et al., 2024). Therefore, this study used customers' ethnic background as a control variable, which was quantified by asking customers about their ethnicity. These control variables were included to eliminate other factors that can influence customer loyalty and to ensure that the independent effect of digital content marketing on customer loyalty can be accurately assessed. In this study, SEM analysis was conducted using SmartPLS, and the control variables were included as exogenous variables in the model to examine their potential impacts on the dependent variable (customer loyalty) and to control their interference with the main effect (the impact of digital content marketing on customer loyalty). Before inclusion, all control variables were standardised to ensure comparability. Interaction

effects were tested, but the results were not significant, indicating that demographic factors did not moderate the main relationships.

## 4 Results

This section outlines the results of this research. SPSS was utilised to conduct descriptive analysis (Section 4.1), and SmartPLS software was used to assess validity and reliability, to test the path relationships, and to validate the moderating effects (Sections 4.2, 4.3, 4.4, 4.5, and 4.6).

### 4.1 Descriptive analysis

The study was based on a sample unit of individuals. Questionnaires were distributed to 1,185 consumers globally.



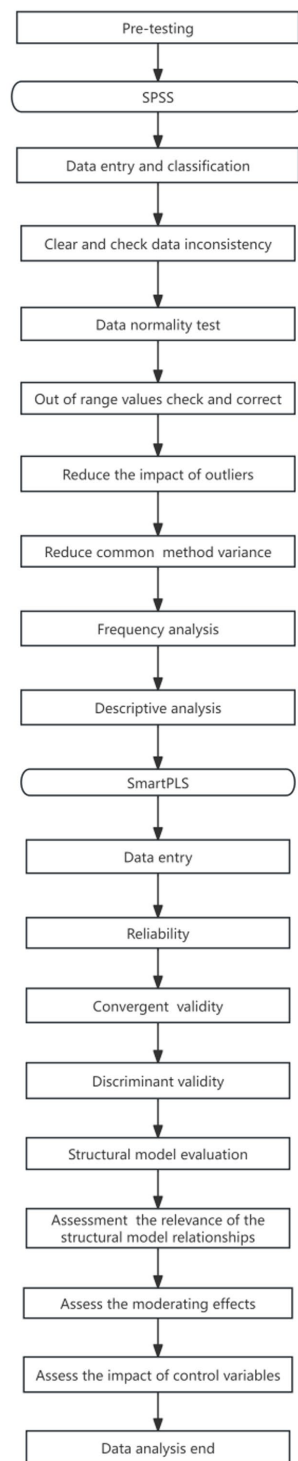


FIGURE 3  
Data analysis (adopted by author).

Respondents were explicitly informed that the survey was to be used for academic research only and that the principles of anonymity and confidentiality were strictly guarded. Respondents were contacted several times to increase the response rate. The quality of the returned questionnaires was strictly screened, and 189 questionnaires with anomalies were excluded for reasons such as all the answers were the same or the respondents did not follow any online influencers.

Ultimately, this study analysed the information received from 996 valid questionnaires involving 20 instruments. The effective response rate was 84.1%. The respondents came from 8 different regions, with 12 ethnic backgrounds, 4 age groups, 4 occupational backgrounds, and 5 income levels. This research screened respondents to include only customers who consistently follow certain online influencers, thus enhancing the representativeness of the results. The detailed data of the respondents are shown in Table 1.

Based on the descriptive analysis of the data, the majority of respondents were from Asia, accounting for 74.2% of the sample, followed by Oceania (6.1%), Europe (5.3%), Africa (4.7%), the Americas (4.6%), and the Middle East (4.5%). The sample was heavily oriented towards Asian participants, which may limit the generalisation of the findings to other regional populations. Asia holds a global leading position in digital marketing and social media usage (Li et al., 2020), so findings have representative value. Future studies can reduce the percentage of Asian participants to 50% or lower. The gender distribution was generally balanced, with 51.2% of participants being male and 48.8% female. In terms of age, the largest number of respondents were aged 35–44 years (31.2%), followed by those aged 25–34 years (28.8%) and 18–24 years (20.7%). The lack of representation by young people under the age of 18 and older people over the age of 45 may be attributed to the restriction of social media use to people under the age of 18 and the operational difficulties of using social media for people over 45. This age characteristic is consistent with previous studies (Lin and Lachman, 2020; Bonsaksen et al., 2024), reflecting that this age group is the core group for digital marketing. In terms of occupation, the sample consists mainly of civil servants (51.0%) and corporate employees (39.2%). The professional category also shows a heavy inclination towards civil servants and corporate employees, possibly because civil servants and corporate employees have stable incomes. In terms of income, most of the participants earned between RM2,000 and RM4,999 (54.8%), followed by RM5,000–RM9,999 (28.2%). The distribution of income is concentrated in the middle level. Racially, the sample was predominantly Asian (74.7%), followed by White (16.7%), with smaller percentages of Black (5.1%), Aboriginal/Native (2.9%), and Hispanic/Latino participants (0.6%). Racial diversity was biased, with Asian groups dominating, which reflects the current concentration of digital consumers in the Asian region, consistent with previous studies (Li et al., 2020; Suranto et al., 2025). This suggests that further research could benefit from a more diverse population to improve the robustness of the findings.

Table 2 shows the usage pattern of social media among the study participants. The majority of participants indicated that they used social media between 2 and 6 h per week, with 31.2% using social media for 4–6 h and 28.6% using it for 2–4 h. A small percentage of the sample (21.1%) used social media between 1 and 2 h per week, 9.8% used it for more than 6 h per week, and 9.3% used it for less than 1 h per week. In terms of social media platform preference, Instagram is the most frequently visited platform by respondents (40.7% of the respondents), followed by TikTok (29.5%), Facebook (19.2%), and YouTube (10.6%). The data provides evidence of the dominance of Instagram and TikTok in terms of social media usage patterns among respondents. Results prove that visual orientation and short video platforms dominate contemporary digital marketing, in line with global digital consumption trends (Meng et al., 2024; Yang and Dongqi, 2025).

TABLE 1 Characteristics of respondents.

Residence	Frequency	Percentage
Africa	47	4.7
America	46	4.6
Asia	739	74.2
Europe	53	5.3
Middle East	45	4.5
Oceania	60	6.1
Others	6	0.6
Gender		
Female	486	48.8
Male	510	51.2
Age		
Under 18 year old	0	0
18–24 years old	206	20.7
25–34 years old	287	28.8
35–44 years old	311	31.2
Over 45 years old	192	19.3
Profession		
Civil servant	508	51.0
Enterprise employee	390	39.2
Freelancer	85	8.5
Student	13	1.3
Monthly income		
Less than RM2,000	66	6.6
RM2,000–RM4,999	546	54.8
RM5,000–RM9,999	280	28.2
RM10,000–RM19,999	39	3.9
More than RM20,000	65	6.5
Ethnic background		
Asian	744	74.7
Black	51	5.1
Hispanic/Latino	6	0.6
Indigenous/Aboriginal	29	2.9
White	166	16.7

### 4.2 Common method bias

Two methods were used to determine the common method bias (CMB) in this study. The Harman’s single-factor test was used to enter all the items to the unrotated exploratory factor analysis. The outcomes showed that the first factor explained 38.56 percent of the total variance, which is less than 50 percent indicating a low degree of common method bias (Kock, 2020). In addition, a variance inflation factor (VIF) analysis was conducted by use of SmartPLS. VIF values of all the latent variables were between 1.684 and 2.670, which is less than 3.3 (Kock, 2021). Both outcomes demonstrate that the data do not indicate any significant multicollinearity and common method bias, which guarantee the reliability and validity of the measurements.

TABLE 2 Pattern of social media usage.

Average weekly usage of social media usage (in hours)	Frequency	Percentage
Less than 1 h	93	9.3
1–2 h	209	21.1
2–4 h	285	28.6
4–6 h	311	31.2
More than 6 h	98	9.8
The main social media platform visited		
Facebook	191	19.2
Instagram	405	40.7
TikTok	294	29.5
YouTube	106	10.6

### 4.3 Convergent validity

Figure 4 shows the main variables explored in this study are the following. According to Hair et al. (2020), convergent validity is a methodological procedure used to examine the instrument validity of measurements, to be more precise, whether various methods of measurements produce stable results when used to measure the same conceptual constructs.

Several important indicators are used to evaluate the convergent validity as evidenced by the literature. The first one is Cronbach alpha that evaluates consistency of items in measurement scales. The scale extends between 0 and 1 where the higher the value the greater the consistency. The generally accepted value is more than 0.7, which means that the measurement tool is internally consistent (Izah et al., 2023). Second is the composite reliability which is consisted of rho\_a and rho\_c, which is a significant measure to determine the reliability of the latent variables. Similarly, composite reliability values take the form of 0 to 1. A reliability of at least satisfactory is usually attained when composite reliability is at or above 0.7 (Sarstedt et al., 2020). One other significant indicator is average variance extracted (AVE) that determines the extent to which latent factors can explain their measurement results. Above 0.5, with a value of AVE, it indicates that AVE can be explained by greater than half of the observed variance, and that there is minimum interference of measurement errors (Cheung et al., 2024).

Table 3 shows that most of the study’s constructs have significant convergent validity, reflected in higher Cronbach’s alpha, composite reliability, and AVE values, which demonstrate the reliability and validity of the study’s constructs. Specifically, digital content marketing demonstrated good internal consistency (Cronbach’s alpha: 0.842), high reliability (rho\_a: 0.842, rho\_c: 0.884), and good convergent validity (AVE: 0.559). Emotional attachment showed good internal consistency (Cronbach’s alpha: 0.810), high reliability (rho\_a: 0.812, rho\_c: 0.875), and good convergent validity (AVE: 0.636). Emotional commitment showed good internal consistency (Cronbach’s alpha: 0.882), excellent reliability (rho\_a: 0.884, rho\_c: 0.914), and good convergent validity (AVE: 0.679). Finally, customer loyalty demonstrated good internal consistency (Cronbach’s alpha: 0.811), high reliability (rho\_a: 0.812, rho\_c: 0.869), and good convergent validity (AVE: 0.569). All constructs

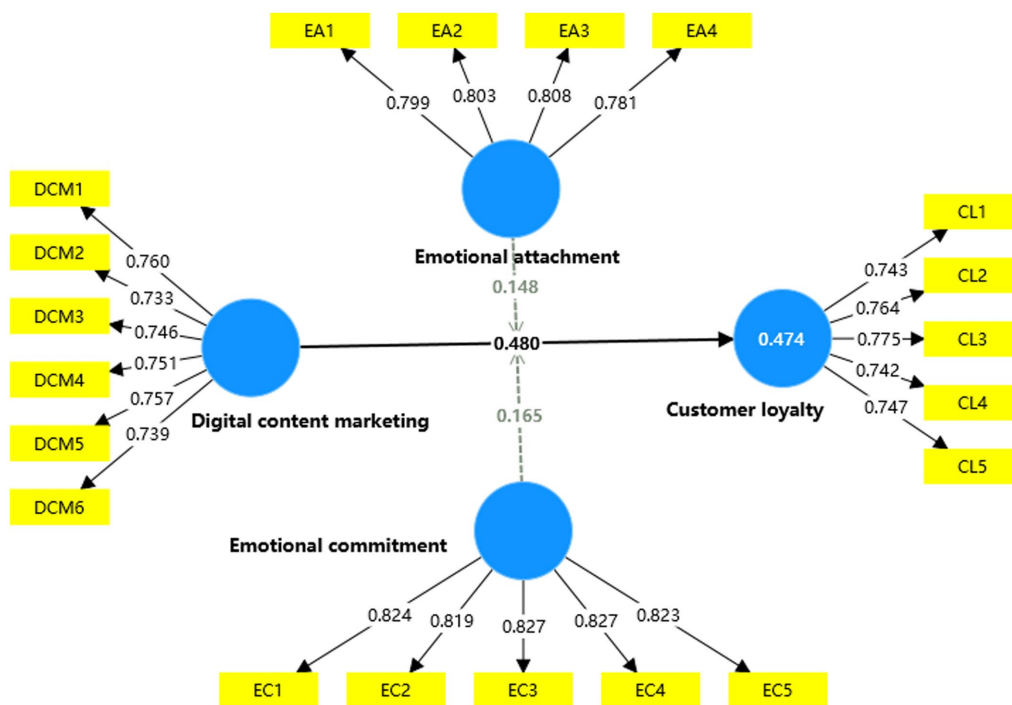


FIGURE 4 The research measurement model.

exceed the recommended thresholds, indicating that the scale has high consistency and reliability. However, the AVE of digital content marketing (0.559) is slightly lower than that of other variables, which may be affected by differences in content and platforms. Hananto and Srinivasan (2024) and Pratama (2024) validated construct validity through same indicators to demonstrate the robustness and methodological consistency of the measurement model in this research.

To assess the psychometric trait of each construct, the results indicated that the outer loadings of all indicators exceeded the threshold of 0.70. Meanwhile, each item’s loading on its corresponding construct was higher than its cross-loadings on other constructs, with a difference greater than 0.10 (Rasoolimanesh, 2022). Hence, this measurement model shows good psychometric reliability.

## 4.4 Discriminant validity

### 4.4.1 Fornell and Larcker criterion

The square root of the AVE of a latent variable must be greater than its correlation coefficient with other latent variables to satisfy Fornell and Larcker’s criterion (Rasoolimanesh, 2022). From the data analysis, a clear pattern emerges where stronger correlations exist between latent variables and their own measurement items than with other latent variables. Table 4 shows that the AVE square roots (displayed along the diagonal, such as 0.755 for customer loyalty) consistently exceed the off-diagonal values within corresponding rows and columns. These numerical comparisons provide evidence of the fulfilment of discriminant validity criteria by all examined latent variables. Thus, it can be seen that distinct boundaries separate each latent variable in the current research context, confirming that all the study’s latent variables have good discriminant validity.

### 4.4.2 HTMT

A novel method that has been proposed for the evaluation of discriminant validity is the heterotrait-monotrait (HTMT) ratio of correlations, where comparisons are made between mean correlation values across distinct constructs and those within identical constructs to examine whether the constructs can be clearly distinguished. Clear differentiation among constructs is seen when the HTMT value remains below the threshold of either 0.85 or 0.90 (Moyo et al., 2022). Table 5 presents all the HTMT values, showing that each fall below these benchmark figures. Good discriminant validity is thereby evidenced by these results, showing that the constructs perform well within the measurement framework.

## 4.5 Effect size ( $f^2$ ), predictive relevance ( $q^2$ ), and predictive validity

This research used the effect size  $f^2$  to examine the impact of exogenous latent variables on endogenous latent variables. As Martins Gnecco et al. (2024) states that  $f^2$  values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively. The results showed that most paths have  $f^2$  values ranging from 0.022 to 0.260, indicating that the predictors have practical impacts. Among them, the effect size of EA → CL is only 0.002, which was negligible, consistent with the theoretical positioning of emotional attachment as a moderator, as described in Table 6. Hence, the model has good explanatory power.

Hypothesis verification was conducted in this study, where the model underwent evaluation via a bootstrap method using 10,000 resamples. The findings revealed that there was a  $Q^2$  coefficient of .254 (more than 0.15), which is moderate in predictive relevance, as

TABLE 3 Convergent validity results.

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Customer loyalty	0.811	0.812	0.869	0.569
Digital content marketing	0.842	0.842	0.884	0.559
Emotional attachment	0.810	0.812	0.875	0.636
Emotional commitment	0.882	0.884	0.914	0.679

TABLE 4 Fornell and Larcker criterion.

Construct	Customer loyalty	Digital content marketing	Emotional attachment	Emotional commitment
Customer loyalty	0.755			
Digital content marketing	0.565	0.748		
Emotional attachment	0.480	0.570	0.798	
Emotional commitment	0.427	0.453	0.586	0.824

TABLE 5 Heterotrait-Monotrait ratio (HTMT) of correlations.

Construct	Customer loyalty	Digital content marketing	Emotional attachment	Emotional commitment	Emotional attachment x Digital content marketing
Customer loyalty					
Digital content marketing	0.683				
Emotional attachment	0.590	0.692			
Emotional commitment	0.503	0.525	0.693		
Emotional attachment x Digital content marketing	0.354	0.022	0.067	0.132	
Emotional commitment x Digital content marketing	0.191	0.202	0.114	0.273	0.612

observed in previous studies (Chinnaraju, 2025). The  $R^2$  is 0.474, and it is greater than the  $Q^2$ . It indicates a moderate predictive ability and good interpretation, thereby eliminating the overfitting issue (Zeng et al., 2021).

To test the predictive validity, this research conducted predictive analysis using the PLSpredict procedure in SmartPLS. The results indicated that the PLS model has lower RMSE and MAE values for all endogenous variables compared to the linear regression baseline model, suggesting that the PLS model performs better in predicting power (Richter and Tudoran, 2024). Hence, this model has good predictive validity and robustness.

## 4.6 Direct effects

In this research, the first hypothesis (H1) is digital content marketing has a significant impact on customer loyalty. The hypothesis is supported by statistical analysis outcomes, with evidence showing a strong positive relationship between digital content marketing and customer loyalty (path coefficient: 0.480,  $p < 0.001$ ).

## 4.7 Moderating effects

This paper examines emotional attachment (H2) and emotional commitment (H3) as moderating variables in the linkage between digital content marketing and customer loyalty. A multi-group analysis (MGA) was conducted, with robustness verified using 5,000 resamples, to evaluate the moderating impacts of these variables. Both constructs were grouped into high- versus low-level categories in the analysis. Significant differences ( $p < 0.05$ ) were observed between high- and low-level groups. This finding is supported by a previous study by Cheah et al. (2023). Notably, emotional attachment has a positive moderating role ( $\beta = 0.148$ ,  $p < 0.01$ ). Likewise, emotional commitment has a significant moderation effect ( $\beta = 0.165$ ,  $p < 0.001$ ).

## 4.8 Control variables

The multiple group analysis (MGA) was performed on the basis of demographic and behavioural control variables applied in the past studies and presented in the literature review. These parameters have been established to affect reactions of consumers towards digital

TABLE 6 Effect size ( $f^2$ ) and predictive validity (PLSpredict) results.

Paths	$f^2$	Indicators	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
DCM → CL	0.260	CL1	0.797	0.654	0.830	0.670
EA → CL	0.002	CL2	0.771	0.629	0.795	0.638
EA × DCM → CL	0.022	CL3	0.774	0.632	0.810	0.659
EC → CL	0.038	CL4	0.792	0.644	0.815	0.656
EC × DCM → CL	0.033	CL5	0.774	0.636	0.795	0.640

marketing. The measurement model consistency across groups was evaluated prior to the analysis to obtain the comparability of the study findings in various groups, and the measurement structure and data analysis were identical.

Several control variables were incorporated into the study's model, consisting of consumers' geographical location, gender differences, age-related factors, occupational categories, income levels (monthly), and ethnic background. Brand loyalty and emotional preferences can vary depending on the relevant characteristics of the individual. Therefore, location was measured as a categorical variable, where 1 = Asian and 0 = non-Asian. Consumers' gender was measured in two categories: 1 = female, 0 = male. Consumers' age was categorised as 1 = under 35 years old and 0 = over 35 years old. Consumers' profession was measured as 1 = non-civil servant, 0 = civil servant. Consumers' monthly income was categorised into two types: 1 = above RM5000, and 0 = below RM5000. Consumers' ethnic background was also categorised into two types: 1 = Asian, 0 = non-Asian. Respondents were asked to answer the following questions: "Where are you currently residing?", "My gender is...", "My age is...", "My profession is...", "My monthly income is...", and "My ethnic background is..."

Numerous researches have focused on the appeal of social media digital content to capture more consumers by making it more interesting and engaging (Yaghtin et al., 2020; de Souza et al., 2023; Julaeha, 2024; Rochefort and Ndlovu, 2024). The researcher incorporated a few variables which have been identified or established to determine the success of the digital content marketing of a brand that include the time spent on social media weekly and the social media networks used. It has been demonstrated that the extent and frequency of social media influence the level of customer acceptance and loyalty to brand marketing content largely (Dávila Espuela et al., 2024; Wang et al., 2025). Thus, the weekly social media use was taken as a categorical variable in this work and 0 = less than 4 h and 1 = more than 4 h. The main social media platform used was measured in two categories: 1 = Instagram, 0 = other users who do not use Instagram. Respondents were asked to answer the following questions: "My average weekly hours of social media use are..." and "The main social media platforms I usually visit include..."

By analysing 996 samples in the MGA, this study found no significant difference between the three hypothesised paths in the conceptual model in different subgroups. The results are shown in Table 7. After the MGA by the subgroups of "location," "gender," "profession," "age," "monthly income," "ethnic background," "weekly time of social media use," and "the main social media platforms used," the study found the  $p$ -values of the three paths of the structural model were less than 0.05, indicating that the three hypothetical paths of the

conceptual model do not have significant differences among subgroups, and the conceptual model is replicated.

## 4.9 Robustness check

A bootstrapping procedure with 10,000 resamples was conducted to check the robustness of this model. The results showed that the path from digital content marketing to customer loyalty ( $\beta = 0.480$ ,  $t = 15.099$ ,  $p < 0.001$ ) was positive and significant. The direct effect of emotional attachment on customer loyalty was not significant ( $\beta = 0.048$ ,  $t = 1.154$ ,  $p > 0.05$ ). However, the interaction between emotional attachment and digital content marketing showed a significant moderating effect ( $\beta = 0.148$ ,  $t = 3.362$ ,  $p < 0.01$ ). Similarly, emotional commitment had a significant positive effect on customer loyalty ( $\beta = 0.216$ ,  $t = 4.587$ ,  $p < 0.001$ ), and its interaction between emotional attachment and digital content marketing also showed a significant moderating effect ( $\beta = 0.165$ ,  $t = 3.907$ ,  $p < 0.001$ ). These results confirm the robustness of the hypothesised relationships.

## 5 Discussion

Existing research indicates that digital content marketing has caused disruptive changes in market, which are highly correlated with customer loyalty. Previous studies indicate that companies can increase customer loyalty by providing valuable content on social media (Rimadias et al., 2021; Bui et al., 2023; de Souza et al., 2023). Through these findings, it can be indicated that customer loyalty is significantly positively impacted by digital content marketing (path coefficient 0.480,  $p < 0.001$ ). Additionally, this research suggests that the relationship between the independent and dependent variables is moderated by two new variables, namely emotional attachment and emotional commitment. The data from this study demonstrates that emotional attachment can enhance the positive impact of digital content marketing on customer loyalty (path coefficient of 0.148,  $p < 0.01$ ). Furthermore, the contribution of digital content marketing to customer loyalty is more significant in the context of higher emotional commitment (path coefficient of 0.165,  $p < 0.001$ ). Overall, the two moderating variables enhance the main effect.

### 5.1 Theoretical contributions

Firstly, this study found inconsistencies in the impact of digital content marketing on customer loyalty. Although existing studies generally agree that customer loyalty is positively influenced by digital

TABLE 7 Multi-group analysis (MGA) of control variables.

Path relationship	2-tailed (Asia vs. non-Asia) $p$ -value	2-tailed (Over 35 vs. Under 35) $p$ -value	2-tailed (Above 5,000 vs. Below 5,000) $p$ -value	2-tailed (ins vs. non-INS) $p$ -value	2-tailed (Asian vs. non-Asian) $p$ -value	2-tailed (Civil servants vs. non-civil servants) $p$ -value	2-tailed (Greater than 4 h vs. Less than 4 h) $p$ -value	2-tailed (Female vs. Male) $p$ -value
DCM $\rightarrow$ CL	0.437	0.195	0.102	0.204	0.412	0.159	0.281	0.211
EA $\times$ DCM $\rightarrow$ CL	0.113	0.174	0.420	0.188	0.118	0.450	0.254	0.399
EC $\times$ DCM $\rightarrow$ CL	0.133	0.149	0.315	0.102	0.136	0.293	0.183	0.228

marketing, there are mixed findings regarding how digital content marketing affects customer loyalty. According to current studies, digital content marketing significantly increases customer trust and boosts customer loyalty (de Souza et al., 2023; Rochefort and Ndlovu, 2024). However, others have concluded that frequent content marketing and misleading content on digital platforms lead to a decline in customer loyalty (Azer and Alexander, 2020; Voigt et al., 2021; Geng et al., 2024; Ahmed et al., 2025; Unnisa and Garg, 2025). Furthermore, information overload causes digital fatigue and psychological resistance among consumers, while the lack of transparency and fairness in algorithmic recommendations results in the users' trust crisis, all of which can influence the effectiveness of digital content marketing (Sharma et al., 2022; Sharma et al., 2024; Saputra and Kumar, 2025). Different cultural backgrounds lead consumers to focus on different aspects in digital content marketing and form loyalty (Faizin et al., 2025; Lusiana et al., 2025). Therefore, this research deeply analyses the diversity and complexity of the relationship between digital content marketing and customer loyalty, revealing a variety of factors affecting this relationship such as the type of content and consumers' emotional responses, thus providing a theoretical basis for further exploration in the field.

This research also expands the emotional dimension in digital content marketing studies. Earlier investigations into digital content marketing's effects, which examined consumer responses like social interaction, purchase intention, and source credibility, predominantly emphasised behavioural and cognitive aspects (Rosário and Loureiro, 2021; Choudhry et al., 2022). Thus, it can be seen that rational factors have received far more attention than emotional ones (Yan et al., 2024). The present study addressed this gap by incorporating emotional attachment and commitment from an affective standpoint. The study revealed how these emotional constructs significantly affect customer decision-making in digital content marketing contexts. Based on self-determination theory, valuable digital content meets users' needs by providing them with a sense of autonomy and competence, thus generating emotional attachment. This attachment motivates them to frequently use and actively purchase products (Kim and Lee, 2020; Liao et al., 2020). Interaction with online influencers can create a sense of belonging among consumers, leading to emotional commitment (Hwang et al., 2021; Bayram and Barut, 2023). Emotionally committed customers consider themselves stakeholders or supporters of the brand, encouraging them for repeated buying products (Zhou and He, 2020). Self-determination theory enlarges the scope of relationship marketing theory and improves the application of relationship marketing theory in the psychological field.

## 5.2 Practical contributions

Firstly, this research provides advice for businesses, especially those with high dependency on online influencer marketing. Firms can develop more effective communication with customers through better digital content strategies, resulting in increased brand visibility and higher loyalty from customers. This study highlights online influencers are playing a pivotal role in digital marketing campaigns. More attractive and communicative content can be developed by coordinating with influencers so that the brand can target its audiences more accurately and increase awareness, thus resulting in improved market competitiveness and higher rates of retention among users. The findings from this research also determine the importance of emotional factors in digital content strategies, particularly when influencer channels are used to share that content. A major takeaway from the research for businesses is in the choice of influencer partners and the development of content strategies, since working with influencers who evoke emotional feedback enables digital content to become more interesting and maintain longer-lasting effect on customers. Effective incorporation of emotional factors will facilitate customer interactions by digital tools and obtain successful marketing activities. Deeper emotions with consumers can be achieved through more emphasis on these aspects of content, ultimately deepening brand loyalty in the long term. Marketing driven by emotions causes risks like misleading content and hidden advertising. When firms collaborate with influencers, they must prioritise transparent disclosure and truthful expression in order to balance marketing innovation with ethical responsibility. Lastly, the findings from this research are beneficial for industry regulators and governmental policymakers. Through analysing the mechanism of digital content marketing on customer loyalty in this research, which can provide a theoretical basis for formulating right policies and regulations. Scientific approaches can not only promote the sustainable and healthy development of the industry but also help regulators in the more effective management of ecosystem in digital content (Kumar et al., 2024).

## 6 Limitations and future research

The deficiencies in this study can be addressed in future studies, although it has some remarkable theoretical and application values. Initially, Asian respondents' views were the main part of the data in this study and the geographical distribution of the sample was relatively concentrated. Such unbalanced distribution can restrain the

generalisability of the findings in this study, so it is difficult to analyse views and behaviours of consumers from a global perspective. The relatively high number of Asian respondents can cause skewness in the data distribution, which potentially influences the stability of standard error estimates and hypothesis testing (Nandy et al., 2025). However, this study includes 257 samples from non-Asian countries, which already exceed those of most market research and meet the minimum sample size required for this study. Therefore, the results of this study are reliable (Ringle et al., 2023; Cabanelas et al., 2025). Future studies can reduce the data bias by limiting the percentage of Asian participants to 50% or lower. Srivastava et al. (2023) claimed that the geographic and cultural diversity of samples can enhance the interpretive power and external validity of research. Therefore, to improve the applicability and generalisability of the findings, future studies should expand the scope of data collection to cover more respondents from other regions and cultural backgrounds, especially from different levels of economic development and cultural environments, to more comprehensively validate the impact of digital content marketing on customer loyalty.

Secondly, this study used questionnaires to collect data. Despite the capability to obtain extensive feedback quickly, questionnaires are subjective and biased. Future research can incorporate secondary data, for example, by analysing real market transaction data, social media interaction data, or customer loyalty metrics, to enhance the accuracy and authenticity of the data of this research. In addition, future research can adopt a multi-method data collection strategy that combines quantitative and qualitative research methods to further validate and supplement the findings of the questionnaire data. The conclusion of control variables may be unambiguous, as the control variables are too detailed to divide.

In addition, even though prior research has not thoroughly examined the potential impact of other emotion-based factors on customer loyalty, only emotional attachment and emotional commitment were included as moderating variables in this study. Future research can introduce more emotion-related moderating variables, such as consumers' emotional evocation, perceived value, and brand trust, to more comprehensively explore the mechanisms of emotional factors in the relationship between digital content marketing and customer loyalty. It will help reveal more complex emotional paths and behavioural patterns, thus providing more bases for the advancement of theoretical frameworks and the formulation of practical approaches. Future research should deepen the research of artificial intelligence. Due to the usage of content generated by AI in digital marketing (Doan, 2025; Utomo et al., 2025), there is a significant need to investigate its contribution in the authenticity of content, emotional needs, and ethical standards. Studies also should analyse from a global perspective about how different regions and culture shape loyalty and emotions, so that understand the global digital development comprehensively.

Despite its limitations, the current research plays an essential theoretical and practical foundation in the interaction between customer loyalty and digital content marketing. Not only does it highlight the key role of digital content marketing in improving customer loyalty but also explains two significant psychological factors (emotional attachment and commitment). Such findings offer important advises for enterprises to promote efficient development for digital content marketing strategies and cultivate customer loyalty, and these results also provide direction for future research exploration and cultivate theoretical extension and practice innovation in the area.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

The studies involving humans were approved by the data for this study was collected through the official email channel of Universiti Teknologi MARA (UiTM), and all sources of information were reviewed and approved by the UiTM Ethics Committee. Permission to use the email channel for data collection was obtained from the official UiTM organisation beforehand. The ethics approval number for this study is REC/08/2025 (PG/MR/441). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

QZ: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. FA: Funding acquisition, Project administration, Supervision, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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