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The role of sustainable social media content in enhancing customer loyalty in the hospitality industry

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Abstract

Purpose This study examines how sustainable social media content influences customer loyalty in the hospitality industry, distinguishing between the effects of firm-generated content (FGC) and user-generated content (UGC) across different demographics. Despite the growing significance of social media sustainability practices, limited research explores their direct impact on customer loyalty, particularly in the hospitality sector.

Design/methodology/approach A mixed-method approach was applied. A conceptual model was developed based on a literature review and tested using survey data from 220 social media specialists and hotel clients in Egypt, complemented by 10 expert interviews.

Findings Both FGC and UGC significantly enhance customer loyalty. However, education moderates the relationship between UGC and customer loyalty but does not moderate the impact of FGC. Other demographic factors (age, gender, occupation) were found to have no significant effect.

Research implications/limitations The study is confined to the hospitality sector in Egypt and uses a snowball sampling method, which may limit generalizability. Future research could explore different sectors and geographic contexts.

Originality/value This study addresses a critical research gap by being among the first to examine how sustainable social media content—both firm-generated and user-generated—affects customer loyalty in the hospitality industry. It contributes to the literature by highlighting the moderating role of education, offering valuable insights for marketers seeking to optimize sustainable digital strategies.

Keywords Sustainable social media content, Sustainable firm-generated content, Sustainable user-generated content, Customer loyalty, Demographics, Hospitality industry

Introduction

Traditional marketing methods have evolved significantly with the rapid expansion of the internet and social media networks. Businesses increasingly leverage digital channels to achieve marketing objectives, a trend defined by Chaffey and Chadwick [17] as digital marketing. Social media, in particular, has become a vital marketing tool,

though research on how different types of content influence customer loyalty remains ongoing [10]. Gao et al. [37] emphasize that content from a consumer's perspective plays a key role in digital and social media marketing. The evolution of social media content—spanning videos, images, and text—has significantly impacted the content marketing industry, which had a market volume of approximately \$145 billion in 2014, with expectations of doubling by 2019 [85].

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Despite the increasing reliance on social media for business growth, the intersection between sustainability, social media content, and customer loyalty has been largely overlooked. While sustainability has been widely studied in consumer behavior, limited research has examined how sustainable social media content—both firm generated and user generated—impacts customer loyalty, particularly in the hospitality industry. This study aims to fill this gap by investigating how sustainable social media content fosters customer loyalty and whether demographics moderate this relationship.

The social identity theory (SIT) underpins this research, focusing on the concept of social identity as an individual's awareness of belonging to a particular social group, accompanied by emotions and values associated with that membership [96]. This theory is crucial for understanding group dynamics, as evidenced by in-group favoritism, even under minimal conditions [1, 39]. SIT suggests that aspects of an individual's identity are defined by their group membership [22]. People relate to groups based on shared characteristics, and these groups can be represented in brands and organizations [38]. In the hospitality industry, previous research has shown that customer brand identification, trust, commitment, and satisfaction positively impact customer loyalty when brand values align with customers' identities and self-concepts [80]. This study applies SIT to explore how sustainable social media content—whether generated by firms or customers—affects customer loyalty.

Social media enables businesses to create and share content, facilitating engagement with users. Content can be firm generated or user generated, each with distinct features that influence customer loyalty [8, 86, 99]. This research focuses on four features of firm-generated content: authenticity, usefulness, consensus, and aesthetic nature [49]. Recently, there has been a shift toward embedding social values into content, linking sustainability with consumer engagement and loyalty.

User-generated content (UGC), defined as digital content voluntarily created by customers on social media or websites [78], also plays a crucial role in fostering customer loyalty. Features of UGC include credibility, reliability, and trustworthiness [73], along with cognitive and affective trust, which are essential drivers of customer loyalty [86]. Businesses that leverage UGC effectively can strengthen customer relationships and enhance loyalty [85]. Trustworthiness is a primary driver of user engagement in the service industry, with customer beliefs and values shaping engagement levels [63]. Given the rising consumer preference for sustainable brands, understanding how sustainable content fosters trust and loyalty is critical [86].

This research is also grounded in Stakeholder Theory [71], which emphasizes the importance of considering all stakeholders, including customers, employees, and the community, in achieving sustainability. As digital technology evolves, travelers increasingly rely on UGC from platforms such as TripAdvisor, C-Trip, and Expedia to make informed decisions [96]. However, the hospitality industry faces a challenge in balancing firm-generated and user-generated content while ensuring that sustainability remains at the core of customer engagement strategies. This study addresses this challenge by exploring how social media content—specifically sustainable FGC and UGC—affects customer loyalty, considering the moderating effects of socio-demographic factors [57].

This study differentiates itself from prior research by explicitly examining the impact of sustainability-driven social media content on customer loyalty within the hospitality industry. While existing studies have explored digital marketing and customer engagement separately, few have investigated how sustainable social media content can drive long-term customer loyalty in the hospitality sector. By integrating SIT and stakeholder theory, this study provides new insights into how sustainability in digital marketing can foster stronger customer relationships and brand commitment.

This paper proceeds as follows: An in-depth literature review explores existing research on social media content, customer loyalty, and socio-demographic variables. The research methodology outlines the study's design, data collection, and analytical techniques. The results section presents key findings, followed by a discussion interpreting these results in the context of previous literature. The paper concludes with theoretical and practical implications, along with recommendations for future research.

Literature review

Marketing and digital marketing

In reality, digital marketing focuses on managing various online firm presences, including SEO, SEM, content marketing, influencer marketing, and social media marketing, becoming increasingly enhanced with advancing technology. The widespread use of platforms like WhatsApp and Facebook is providing new opportunities for digital marketers to engage customers and attract them through digital channels enabling more effective and targeted strategies [11, 25]. To create a well-established digital strategy recently, this requires understanding a more complex, competitive purchasing environment than ever before, including customer journeys with different shapes of online presence. To help develop a strategy to reach and influence potential customers online, it is common to

refer to three main types of digital channels that marketers need to consider, which are paid, owned, and earned media [17]. Paid media which are purchased media that require payment for search engine traffic display advertising networks, customers, reach, or conversions. For certain firms, like consumer goods brands, offline media like direct mail and television advertisements are still crucial; owned media owned the brand whether online through the blogs, websites, mails, or their social presence as on social media various platforms, or it can be offline as brochures and retail stores, and both aim for the idea of being multi-channel brand; earned media also refer to as publicity obtained by focusing PR efforts on influencers to raise brand recognition.

According to Olson et al. [68], there are many digital marketing tactics, but the focus is mainly on the following five tactics which are content marketing, applied by Content Marketing Institute: It is a strategic marketing approach aimed at creating and disseminating content that is valuable, relevant, and consistent in order to attract and retain an audience, search engine optimization: Its goal is to rank as high as possible on search engine sites through the long-term, continuous improvement in content and digital asset design, email marketing: It is the process of personally emailing customers and potential customers with current and relevant information, data-driven personalization: It is segmenting the audience and making marketing selections based on personal data rather than past behavior, social media marketing: it is driving traffic to your websites or business via social media platforms such as Google+, LinkedIn, Pinterest, Instagram, Twitter, Facebook, and so on. As previously stated, engaging content gets shared and liked. This applies to any kind of advertising, whether you use an outside social media management business to create yours, or to establish your own online presence to show your content. More significantly, shifting market dynamics and the quick advancement of technology have contributed to the expansion of digital marketing; digital content features like accessibility, navigation, and speed are deemed essential for marketing in order for digital marketing to provide results for firms [11].

The topic of sustainability has been approached by several authors using traditional ethical ideas, with a focus on moving toward greater sustainability, which is sustainable marketing. This is a more comprehensive management concept that centers on attaining the "triple bottom line" by developing, manufacturing, and delivering sustainable solutions that have a greater net sustainable value while consistently meeting the needs of stakeholders and consumers [65].

Social media and sustainability

Using social media, businesses and customers have developed increasingly complex, varied, and intense connections during the last ten years. Businesses are using social media platforms, on the one hand, to reach more customers geographically [37]. Customers are becoming more in control of the marketing communication process and more empowered as a result of social media. They are also starting to create, collaborate, and comment on messages [51]. Social media is the term used to refer to online communities that are made up of individuals who share interests through their interactions, information sharing, and added value creation; these communities serve as a target market for businesses that intersect where businesses can benefit from other social media users in addition to these interest networks by supporting the company and brand identity, in addition to the help to communicate the company's message to potential business partners [69]. It has gradually changed from being a single marketing tool to a source of marketing intelligence; as a result, marketers now need to use social media strategically to gain a competitive edge and outperform competitors. People now rely on social media for everything since they are so embedded in our daily lives: from entertainment to every day news and updates on significant events, evaluations and suggestions of products and services, meeting emotional needs, and managing the workplace [45].

Social media can be considered as owned media of the digital marketing, owned by the business online as their social presence [17]. Social media tools/platforms include social networks as Facebook, LinkedIn, Blogs including personal, community blogs, media and corporate blogs, Wikis as Wikipedia, Google Docs, Media sharing as YouTube, Instagram, Daily motion, Virtual worlds: Second Life, FreeRealms, Habbo Hotel, in addition to social bookmarking as Digg and Reddit [69].

Research is needed to better understand how to effectively inspire sustainable cognition and behavior in light of increased spending and demand for sustainable advertising, particularly in the understudied fields of social media and cross-cultural studies [59]. According to earlier study [24], the benefits of sustainability are not uniform and depend on a firm's practices and capacity to obtain and utilize outside knowledge; however, social media use enhances search openness and gives direct access to external constituencies, which might improve exposure to complementary and heterogeneous knowledge; it was also added that using social media can also raise a company's entrepreneurial awareness, which can result in the creation of better insights due to a greater attention given to the customers.

With an increase in the amount spent on green marketing compared to internet media like Facebook and Twitter, many consumers prefer to receive green marketing messages through conventional media (such as product labels or magazines). However, study on the use of these new media in green advertising efforts is needed given the sharp rise in the usage of social media by marketers and consumers worldwide where according to Minton et al. [59], customers who are concerned about sustainability and the environment have spending power of more than \$230 billion.

Content marketing and sustainability

A variety of forms can be used to display content, such as blogs, e-books, white papers, case studies, how-to manuals, news and updates, forums, Q&A articles, pictures, banners, info-graphics, podcasts, webinars, videos, and content for social media and micro-blogging websites, and recent modifications to Google's algorithm, including Panda, Penguin, and Hummingbird, indicate that content is the most crucial factor to consider when limiting search results.

According to Li et al. [51], researchers claim that content marketing is a customer-focused approach and characterize content's worth as "useful, relevant, captivating, and timely." Thus, this social media marketing strategy offers a two-way dialogue where businesses can make marketing tactics take the lead to provide informative information, and consumers respond favorably to this content. Businesses are investing more and more in the production and sharing of content on social media. Customer engagement is one of the most commonly stated desired outcomes; thus, these marketing efforts won't be successful unless marketers know how to efficiently produce and distribute their content within these platforms to support their goals [87].

Social media content has evolved from a mere marketing tool into a valuable source of marketing intelligence, allowing business to track, examine, and forecast consumer behavior. As a result, marketers now need to use social media strategically to gain a competitive edge and outperform competitors [51]. The communities for content marketing are having the biggest influence on the company's business through the creation and dissemination of interesting content on social media that improves users' everyday lives, relationships where research that has previously been conducted on social media communities has mostly overlooked the important and hidden function that content plays in social media [23].

It is crucial that companies incorporate sustainability and decreased environmental impact into their business models; this recent change has encouraged businesses to incorporate sustainability into many aspects of their

operations, such as supply chain management, staff training, and the creation of new products [24]. So, this research suggests incorporating the sustainability practices into content marketing activities on social media and its impact on loyalty and so provides more insights to better understand and encompass such practices.

H1

The sustainable social media content positively impacts customer loyalty.

Social media content can be classified into two types according to the source whether it is generated by the firm itself or the professionals, divided into firm-generated content (FGC) and user-generated content (UGC) [8, 86, 99]. In marketing research, the usefulness of social media has taken the lead. Studies in this field have looked closely at how UGC affects sales and stock market performance in terms of performance; additional research has compared and contrasted the effects of traditional media, FGC and UGC on the performance evaluations. Recent marketing research has advocated for greater attention to be given to examining the impact of social media on customer-related indicators, acknowledging that the social media-firm performance link primarily results from its effect on consumer attitudes and behavior; in this regard, research has examined the connections between FGC and UGC [8].

While both FGC and UGC contribute to customer loyalty, their mechanisms differ significantly. FGC is carefully curated and designed to reinforce brand identity and credibility. It signals corporate commitment to sustainability, building trust through professional branding and controlled messaging. However, FGC may sometimes be perceived as promotional rather than authentic.

In contrast, UGC is consumer driven and perceived as more credible due to its authenticity. Customers trust peer opinions more than corporate statements, making sustainable UGC a powerful driver of emotional loyalty. For instance, a hotel's branded content about its eco-friendly initiatives (FGC) may establish trust, but a guest's positive review (UGC) about their sustainable stay experience fosters deeper engagement and loyalty.

This distinction is essential for understanding how brands can leverage both FGC and UGC strategically to maximize customer engagement and long-term loyalty in the hospitality sector.

After analyzing the role of social media, it is essential to explore how sustainability, ethical brands, and green products are communicated, ultimately integrating these aspects into the role of social media for promoting

sustainable consumption. Effective communication of corporate sustainability requires diverse marketing tools, such as CSR reports, sustainability reports, social media, and TV ads, which reflect the values of an organization's culture. It is widely accepted that increasing public environmental and social awareness necessitates a multifaceted approach. Green consumers, in particular, are more engaged with environmental claims and can be supported through a well-coordinated communication strategy [92].

Sustainable firm-generated content

By default, the firm-generated content (FGC) is professionally designed, posted, and managed by the marketing team of the firm [8]. Social media (SM) offers brands an affordable way to disseminate information about their products and brands to a wide online audience. International brands have been using social media (SM) more and more as a branding and advertising strategy since SM users are frequently willing to share information and the networks they belong to often have a high degree of richness and reach which enhance information sharing specially in tourism related context [88]. Social media posts are any initial written or graphic content created by marketers and posted on a business's Facebook brand page with the intention of interacting, communicating, and informing customers about products, services, or brand-related information [54].

To provide consumers with the information they need to make informed purchase decisions, it is essential to effectively market green products and sustainable corporations. The media plays a crucial role in building public support for sustainability initiatives due to its ability to quickly educate and inform a large audience. Public support is vital for the success of environmental protection efforts, and information campaigns can be used to engage consumers in the design and implementation of these initiatives [92].

According to Ho et al. [34], the rapid growth of green products and services in response to consumer demand has made green marketing strategies increasingly relevant. These strategies reshape company values and attitudes to meet consumer needs. Key elements of green marketing include green promotion and green innovation, which influence both customer behavior and company profitability. Green marketing involves embracing environmental protection and technological innovations, such as energy-saving practices, eco-friendly product design, and waste recycling. It also helps businesses create socially responsible corporate images by promoting products or services that are environmentally friendly; effective green promotion and innovation can significantly enhance business performance.

Firm-generated content is measure in multiple aspects including authenticity, consensus among customers, aesthetic, and usefulness. Authenticity is defined as the extent to which others believe a message to be true and trustworthy. There has been an attempt to define what authenticity is. Some argued that authenticity is derived from historical facts, attributes, and customs, linking authenticity to objectivity. Others contend that subjective judgments about oneself or an object are just as important as objective characteristics in determining authenticity; consequently, authenticity is strongly associated with genuineness, reality, and truth, and being authentic is original and first hand including three types as objective authenticity, subjective mental associations (symbolic authenticity), and existential motives connected to the object's identity—existential authenticity [75]. Kreling et al. [81] added that the majority of research on authenticity has focused on the observed consistent between presented and actual reality. In this paper, the objective authenticity will be considered as it argued that there is always an obvious, objective foundation or criteria for evaluating objective authenticity where it is inherent in the item itself [75]. Consensus, often known as the majority opinion, is related to others' perspectives and serves as a cognitive clue for the element (e.g., brand) under examination. Several researches imply that consumers depend on consensus as a kind of informative cue while making product decisions [49]. In an information-overloaded environment, consumers may seek a behavioral trigger such as consensus for easier content search and evaluation. Lo and Yao [53] stated that people likely believe information when the content is consistent across different sites and sources. Usefulness, given the context of our research, usefulness is defined as the degree to which consumers perceive the content is beneficial in fulfilling their information need where demonstrating that relevant information shared on social media increases consumer trust and purchasing intentions. Similarly, multiple studies agree that relevant online information has a considerable beneficial effect on consumers' perceptions of brands and purchase intentions [49]. Another common reason people feel that content is not useful is that the content feels incomplete, whereas if users do not trust your content's completeness, they are also unlikely to feel that it is relevant to their needs [42]. Aesthetics is referred to as the degree to which one perceives a specific object to be visually appealing or pleasant.

According to Kwon et al. [49], a visually appealing stimulus improves consumers' desire to explore more on the website and purchase tendencies. Kirillova and Chan [48] stated that product's aesthetic influences consumers' opinions in a variety of ways, which in turn affects the product's ability to succeed commercially; greater visual

appeal makes a product stand out from those of competitors and attracts attention from consumers; it might also serve a symbolic purpose, such as expressing elegance, masculinity, or creativity, because of the axiomatic belief that “what is beautiful is good”; consumers frequently make judgments about the quality and functional aspects of things based only on how unattractive they appear visually, same applied for online appealing website features where it can raise consumer arousal and trigger cognitive states that result in better evaluations of online service quality and revisit intention, commitment, trust, and loyalty; in addition, the study demonstrates how emotional arousal acted as a partial mediating factor in the relationship between the aesthetic evaluation of hotel design and the intention to book; similarly, visual aesthetics, as one aspect of perceived experiential value, has improved consumers’ attitudes toward websites; this has a stronger effect on hotel stays. As a result, the importance of online environment aesthetics is expanding.

H1a

The firm-generated sustainable social media content positively impacts customer loyalty.

User-generated content

Businesses’ interactions with their customers have changed as a result of both users’ and businesses’ existence on social media platforms; they ask, provide feedback, and are expecting rapid, tailored responses to their unique issues [5]. User-generated content (UGC) can be referred to as the content created by customers instead of the firm and professionals [51]. Since user-generated content (UGC) has the power to influence customer brand perceptions and choice, marketers need to pay careful attention to it when it comes to products and brands. Additionally, instead of traditional media like radio and television, customers now choose to read online reviews to learn about items and businesses [64]. UGC can be in form of uploading videos, pictures, blogs, tweets, and posts [78]. People are likely to trust information shared by other users than an advertisement that a business shares [73].

Users create content on social media by exchanging information within a group. As a result, in addition to disseminating sustainability-related content, social media may be an effective tool for sustainability communication by involving people in sustainability conversations. It is a result of the digital era that requires value and information sharing online, particularly on social networking sites [92].

Studies from other industries confirm similar trends in UGC-driven brand loyalty. In the automotive sector, research by Muda and Hamzah [64] found that customer-generated content, such as online reviews and testimonials, significantly influences brand trust and repeat purchases. Similarly, in the fashion industry, social media influencers promoting sustainable clothing brands have been shown to boost customer retention and foster long-term loyalty [5].

These parallels suggest that UGC plays a universal role in shaping customer perceptions, trust, and commitment, making it a valuable tool for the hospitality industry. Hotels and tourism businesses can adopt similar strategies to enhance credibility and strengthen long-term customer relationships.

These days, the consumer is in charge of the interactive online media, content, and communication process and feels empowered, the consumer no longer has much trust in the company’s message and brand, and the effectiveness of traditional marketing techniques and communication is declining. Technology is transforming the marketing environment and its practices [11].

Research shows that people consider information offered from customers to have greater credibility than information posted by businesses [73]. Businesses are employing social media platforms to increase their geographic reach to consumers, improve consumer perceptions of their brands, and foster tighter relationships with them; however, social media is giving consumers more power and allowing them to take a charge of the marketing communication process; as a result, they are now the message creators and collaborators. The social media as a new marketing communication presents new potential and opportunities for organizations as purchase decisions and in turn loyalty—as repeated purchases—as a content plays the crucial role for the social media and customer engagement, the businesses allowed for a new strategy of user-generated content (UGC) as not only a new marketing strategy, but it appears to be a new start [3]. It can be added that UGC has started to be included by marketers as a word of mouth [79]. Over 3.8 billion active social media users are reportedly browsing user-generated content (UGC) to help them make decisions; throughout the digital platforms, tourists aren’t only passive receivers about the information concerning traveling and hotels, where they’re empowered to share their own opinion and build with other’s tours [94]. For example, they are increasingly given ability to comment, modify, and share content, including descriptions, images, and videos of tourist destination as hotels and places [56].

Trust can be built by the content creation or built on the creator itself; customers are attracted to social

media, since online evaluations and recommendations by travelers are seen to have more reliability than traditional visitor information sources. It was stated that internet content may be trusted as long as it is developed and released by independent real individuals with genuine experiences. With the advancement of consumer-generated media, which allows internet users to freely provide any content without validating, editing, or fact checking, travelers need to use caution before finding out the information and media as trustworthy or reputable [14]. Since the past, it has been studied the idea of credibility (about the fourth century BC). In the present day, it has been investigated in the social sciences, communication, and psychology research domains. Trust can be subdivided into cognitive and affective trust, the cognitive is the one related to customer experience and knowledge, while the affective is related to the person's emotion toward an object or a person [86].

Credibility has been defined as trustworthiness, believability, perceived reliability, accuracy, knowledge, and related with various additional connotations depending on the situation, specifically the investigation of information trustworthiness and credibility [73]. Moreover, the risk of running into misinformation is not negligible. Because of this, evaluating and analyzing the credibility of information found online are becoming an essential area of study. Believability, also name for credibility, is the attribute that people perceive since they are not always able to distinguish between real and false information using their own cognitive abilities [72]. Credibility can be identified in terms of its dependability which refers to the stability of data over time and varying conditions, whereas it is concerned with consistency [50]. So, in this research credibility definition as accuracy and dependability will be the included dimensions of the user-generated content. Berhanu and Raj [14] also stated that the trustworthiness and credibility are considered dimensions of UGC. Online sources with insufficient author identity and reputation indications are seen as less credible than other sources of information. Identifying sources influences travel decision-making indirectly and has a major direct impact on perceived credibility [53]. The user-generated sustainable social media content is measured in terms of credibility, how much it's relevant and consistent to the customer's beliefs, benefit from content, knowledge that customers get, its ability to create awareness, being understandable to customers [21, 73, 78, 90, 99].

H1b

The user-generated sustainable social media content positively impacts customer loyalty.

Customer loyalty and sustainability

According to Yum and Yoo [102], customer loyalty is an important factor influencing a company's sustainable performance and growth; loyalty can be defined as the willingness to maintain a long-term relationship with a company and recommend its products or services to others as a deep commitment to a brand that facilitates the continuous repurchase of preferred products or services. Customers who are satisfied with a product or service tend to be loyal and make repeated purchases even if situational influences or marketing efforts cause switching behavior.

Loyalty is a basically a promise to rebuy or revisit a specific brand in the future [83]. People's attitudes and social acceptance, these people are influenced by the media atmosphere. The media affects people's perceptions, thoughts, and beliefs. Businesses are finding it harder to attract and retain clients as a result of the growing competition in the service industries. As a result, there is a growing need to encourage customer loyalty. In this context, loyalty turns into a crucial marketing tool that should be directed not only at the consumer but also toward the business, serving as a key indicator of its performance [97].

Recently, academics and practitioners agree that improving customer loyalty and adopting corporate sustainability principles can have several of significant beneficial impacts on business, and also they have indicated that organizations that develop, put into practice, and spread appropriate sustainability guidelines enhance their perceived and actual corporate sustainability, which helps them attract and retain employees [61]. Organizations must identify the green target group to effectively reach the right consumers with targeted social media content. The social media audience interested in ethical lifestyles generally consists of younger consumers who are already engaged in sustainability and ethical manufacturing. These consumers are particularly interested in an organization's ethical values. On social media, consumers often group themselves into lifestyle communities, enabling advertisers to create targeted ads that align with their specific needs and interests. As a result, organizations can easily connect with the green target group by focusing on online sustainability communities and related content [92]. In addition, researches have shown that engagement brand love can lead to higher consumer

engagement and loyalty through the positive e-word of mouth, which can turn consumers into loyal and advocates for their preferred brands [40]; Carlson et al. [16] defined the customer engagement behavior in two dimensions which are the customer's feedback and collaboration that can be part of the user-generated content.

In practice, it shapes people's behavior and relationship; these media have considerable power to shape beliefs, change life habits, and promote media content behaviors. New research shows a significant correlation between the use of social media and its effects on people and society [13]. Loyalty is defined as a deeply held commitment to buy or re-support a preferred product or service in the future, despite the possibility of customers switching due to external factors like marketing efforts, settings, and any other influential effort [28, 100]. Marketers mostly perceive and apply customer loyalty principles as successful retention where several promotions designed to reward consumers for revisiting the same company, recommending the same brand and repurchasing the same product over time [91]. Loyalty among consumers has long been a key consideration in marketing strategy. A growing number of businesses have realized in recent years that they must become more customer focused in light of the intense global competition [60].

Customer demographics

Demographics can be defined as selected characteristics from the population in the context of marketing through which customer markets can be identified and segments can be made as gender, age, income, marital status, and education which have frequently been employed and researched to segment the consumer base [66, 74].

Consumer demographics are defined as characteristics of consumer including age, income, gender, literacy and education; they are critical in services marketing as they highly impact decision-making and preferences [57]. Demographics can apparently influence marketing plans and strategies, impact how can the businesses target, and interact with various consumer types [55].

According to Henrique and Matos [33], the *gender* under empirical researches in the demographic context and loyalty was reflected as crucial moderator, considering the gender of the sample, yielded several significant and reliable findings. Considering the relationships that include consumer loyalty and analyze data in automotive, it was found that, between men and women with the same satisfaction level, the repurchase probability was greater for women. Biedenback and Marell [15] have found that customer experience is included in ensuring brand loyalty; such experience is resulted from various factors of demographics and culture [60]. Based on these researches that stated that demographics can impact

loyalty, it is used as mediator in this research between social media content and customer loyalty.

H2

The demographics moderates the relationship between sustainable social media content and customer loyalty.

Relationship between sustainable social media content and loyalty

Although brand research studies agree that social media community development leads to increased brand loyalty and trust, there are still differing views on how to achieve this loyalty. Customers are affected by social media when they use it; it can be said that it affects people's attitudes and social acceptance; these people are influenced by the media atmosphere; the media affects people's perceptions, thoughts, and beliefs. In practice, it shapes people's behavior and relationship; these media have considerable power to shape beliefs, change life habits, and promote media content behaviors. New research shows a significant correlation between the use of social media and its effects on people and society [13]. Khan et al. [46] declared that online customer loyalty has been found to be linked with the level of trust that online consumers have in the service provider. Digital content marketing is an essential and rising vehicle to develop customer awareness, engagement, sales, lead conversion, trust, and loyalty [36]. According to Seiler et al. [86], 63% of the companies recently are relying on the social media to leverage the customer loyalty and added that customers are using the UGC as a main way to make their purchasing decisions, whereas the trust can have a positive impact on customer loyalty which in turn affects the overall success of the company; the content and the trust are considered the driver of customer loyalty where such trust can be built by the creation of content whether this content is generated by the firm or by the user.

Recent studies further highlight that sustainability-driven social media engagement fosters long-term customer loyalty. Research by Hollebeek and Macky [36] found that customers who actively engage with sustainability-related social media content are more likely to demonstrate higher emotional loyalty and advocacy behaviors. Similarly, Seiler et al. [86] emphasized that UGC enhances trust and engagement in hospitality brands, where customer reviews on eco-friendly practices significantly influence repeat bookings.

In addition, studies from retail and food service industries suggest that social media sustainability campaigns can strengthen brand attachment and drive repurchase behavior [101]. These insights align with the hospitality

industry, where brands that actively showcase sustainability initiatives on platforms like TripAdvisor and Instagram experience increased customer retention and positive word of mouth.

In terms of supporting the advancement of environmental sustainability, two viewpoints of behavioral modification were distinguished. According to the first viewpoint, promoting a suitable attitude and expanding public awareness of a problem are the two main ways that behavior changes. According to the second viewpoint, people can behave in their economic self-interest after methodically evaluating their options; they are not required to act with sufficient knowledge or awareness beforehand where it is known that the second perspective is extremely effective at promoting sustainable behavior through programs like community-based social marketing. It has been established by several theoretical and empirical researches that behavioral modification may result from activities of the raising awareness objective [30].

Marketing scholars have increasingly focused on the broader aspects of sustainability. To address macro-marketing challenges, it has been suggested that a combination of micro-marketing techniques and policy interventions is necessary. This paper argues that sustainable development can be achieved through proactive corporate marketing and active government involvement, aligning with the aggregate marketing system (AGMS) concept. Governments also need to translate sustainability priorities into actionable policies, while corporate marketers must adopt transformative strategies to make sustainability central to business practices. This dual effort is essential for achieving sustainable development goals, as consumer awareness alone is not enough to drive market change. Therefore, conscious institutional interventions are crucial [89].

So, in this research, the main argue is the impact of the sustainable firm-generated content and sustainable customer-generated content on the customer loyalty under the mediating effect of demographics.

Hospitality industry

According to Ali et al. [7], among several activities that make up the hospitality industry which is a billion-dollar industry are mainly hotel business, tourism services, event planning, and transportation. High-quality services and satisfied customers are the key drivers of this rapidly expanding industry. Without a focus on satisfying the wants, expectations, and requirements of its customers, any company in the hospitality sector can't survive and maintain a positive reputation. Recently, tourism and hospitality industries are crucial, where they are considered as a vital source of income for country. As a

result, many countries are trying to gather the attention of guests and tourists to their destinations, to be able to grow; it was added that hospitality is a specific type of relationship between the traveler and a host. Hospitality industry is one of the primary driving forces of the global economy including the hotel sector. The extensive and broad adoption of modern technologies in such industry recently has reshaped the way in which services are provided and received where they are enhancing guest experiences and promoting the hospitality service platform [77]. The tourism and hospitality industry today are developing significantly with the application of information technology in its operations and strategies; social media is becoming an increasingly important tool for pre-trip planning, decision-making, and the sharing of tacit knowledge. [47].

Ukpabi and Karjaluoto [95] stated that in the tourism and hospitality services industries, user-generated content (UGC) has become an effective tool tourists use to gather information to make travel decisions, through textual, pictorial, and video sharing of travel experiences; users enhance the free travel information offered to prospective travelers on new markets, concepts, and sensitive topics. The following factors highlight how important user-generated content (UGC) is to tourism and hospitality services: First of all, since traveling is a hedonic experience, travelers want to maximize their time away, so they research their options by reading other travelers' evaluations and comments. Second, since travel cannot be experienced before it is consumed, travelers must rely on the insights and experiences of other people. Lastly, since customer reviews are seen as truthful and reliable, people rely on them as a reliable source of information when making travel-related decisions. People are now depending on the online traveling agencies when booking [48].

One of the most common UGCs that customers use to inform their travel decisions is an online review where customers examine other travelers' online reviews to get inspiration, narrow down their options, lower risk, and double check their booking selections. Reviews left by travelers are valued and seen as more reliable than data from for-profit companies [3]. Online reviews have shown to have a significant impact on consumer intent to book, hotel occupancy rate, room revenue, and overall business performance [53]. In order to survive or at least succeed in today's digital environment, the hospitality sectors have a strong interest in guaranteeing their services meet customer expectations, since this is what drives repeat business [7, 9].

According to [14], user-generated content is seen as having greater credibility than advertising in the media, official tourism websites, and tour operators and travel

agencies, it was added that the other issue that makes online reviews less reliable or ambiguous is a lack of details regarding the reviewers' sources on the websites, while negative reviews with a hidden source are thought to be less credible than other types of evaluations; reviews with identified sources are perceived as more reliable and can positively impact visitors' initial trust in the services and facilities provided by the tourism industry; this can be because that the social media, today, is one of the most effective opportunities for a tourist destination. By putting companies or tourist places directly in contact with travelers and providing destination management organizations (DMOs) with limited financial and human resources with an opportunity to reach travelers globally, this approach eliminates the need for traditional intermediaries.

Rather than being a constant commitment to sustainability, definitions of sustainability in the hospitality sector may be understood as being built around business imperatives; second, the industry does not address materiality and external assurance in a comprehensive manner, which damages the sustainability reporting process's credibility; third, the idea of sustainable consumption and any criticism of the sector's dedication to economic expansion are noticeably absent from both the industry's sustainability reporting and the scholarly literature on sustainability [44].

The sustainability in corporate life is an old concept where it was associated along with productivity with the development of private institutions [12]. However, in recent times, the concept of sustainability has gradually gained popularity on corporate boards; an increasing number of businesses recognize sustainability as one of the new competitive forces and a major source of both long-term competitive advantage opportunities and risks, where Jones et al. [44] stated that in business, sustainability has grown in importance, but the hotel industry may have been slightly later to respond. The hospitality industry is experiencing a rapid increase in research output on sustainability. Several research agendas are addressed, such as the design of green hotels, energy minimization, the role of innovations in technology in achieving sustainability, sustainable tourism, consumer marketing of sustainability, and the contribution of human resource management practices to sustainability. The literature has emerged with a wide range of themes and issues addressing sustainability within the hospitality business.

Hotels should pay attention to the content of online reviews and the expertise level of reviewers. Efforts should be undertaken to provide positive and outstanding experiences for hotel guests which can motivate expert reviewers to write positive reviews. In the

dynamic landscape of the hospitality, travel, and tourism industry, hotels are increasingly relying on diverse content strategies to engage and retain customers.

The proliferation of both firm-generated content (FGC) disseminated by the hotel itself and user-generated content (UGC) contributed by guests has created a complex interplay of influences on customer loyalty. Despite the recognized importance of content in shaping customer perceptions, there exists a gap in understanding the distinct impact and interaction of FGC and UGC on customer loyalty within the hotel sector.

This gap puts a significant challenge for hotels seeking effective strategies to enhance customer loyalty in the age full of digital interactions. Thus, there is a compelling need to investigate the sustainable hotel-generated and user-generated content consequential effects on customer loyalty. According to this gap, the research aims to contribute with valuable approaches to hotel management, marketing practitioners, and scholars, allowing and helping them to formulate more knowledgeable and targeted strategies encompassing the sustainable practices for building long-term customer loyalty in such high competition between hotels. In the dynamic landscape of the hospitality, travel, and tourism industry, hotels are increasingly relying on diverse content strategies to engage and retain customers.

According to this gap, the research aims to contribute with valuable approaches to hotel management, marketing practitioners, and scholars, allowing and helping them to formulate more knowledgeable and targeted strategies for building long-term customer loyalty in such high competition between hotels"; in addition to that, it is noted that negative reviews have higher perceived credibility than positive ones. Hotels should handle such negative reviews and respond professionally to those reviewers [53].

Social identity theory (SIT) explains how individuals define themselves based on group memberships. In the context of sustainable social media content, customers align with brands that reflect their values, particularly regarding environmental and ethical responsibility. Sustainable firm-generated content (FGC) enhances brand identification by showcasing corporate responsibility, reinforcing customer trust, and increasing loyalty. Meanwhile, sustainable user-generated content (UGC) fosters credibility and peer validation, making customers feel part of a like-minded community.

This study extends SIT by demonstrating how sustainability-focused FGC and UGC create identity-driven loyalty among hospitality consumers, reinforcing their connection to brands that align with their values.

Research methodology

The researcher proposed a conceptual model, as shown in Fig. 1, based on a thematic review of relevant literature. This model illustrates the relationships among variables and was explored using a mixed-method approach, integrating both qualitative and quantitative research methods.

The qualitative phase involved expert interviews with industry professionals, including social media specialists and content creators, to gain exploratory insights. A structured set of questions was prepared, covering multiple aspects of sustainable content creation and its impact on customer loyalty. The interviews focused on understanding how sustainability is integrated into content strategies, the role of social media in shaping customer perceptions, and the effectiveness of firm-generated and user-generated content in fostering customer loyalty.

A list of questions were prepared and conducted through the interviews with field experts; the questions covered various aspects starting with general understanding on sustainable content as how do you define sustainable practices in content creation? how to categorize the content as sustainable and shift the content to include sustainability concerns, how this can impact customers and how they perceive the sustainability trends, then moved to the role that social media plays in impacting the customers and shaping their behaviors and attitudes toward the companies, it was also asked about the content quality and types and how they use and promote firm- and user-generated content and how they both differ in their impact on customer loyalty? What are the main drivers of customer loyalty and if it impacts the overall company sales and reputation, it was asked if that sustainable content affects customer loyalty differently across various platforms

(Instagram, Twitter, Facebook, TikTok), if yes, how this happens? and What kind of user and firm sustainable content (comments, shares, likes) can better enhance the customers interaction and brand image, and at the end their future expectations for the social media and sustainable content creations were taken into consideration; the findings showed that each social media platform has its own unique form of content that goes viral usually; they agreed that sustainable content can be identified as a content merged with ethical, environmental, and social responsibility practices. Content creators emphasized that sustainable content is now essential rather than optional due to increasing customer demand. They also highlighted its importance in enhancing brand image; it was shown by most of them that user-generated content is perceived more credible than firm and the companies have to put more effort to gain the trust of customers and turning them into loyal customers. These insights helped refine the research model and guide the development of the survey instrument used in the quantitative phase.

The quantitative phase consisted of a structured survey administered to 220 social media specialists and hotel clients, assessing their perceptions of FGC and UGC in sustainable content marketing using validated measurement scales. The qualitative insights were used to ensure the relevance of the survey questions and to capture a broad range of industry perspectives.

To ensure methodological rigor, qualitative data were analyzed using thematic analysis, identifying key themes related to sustainable content strategies, content credibility, and consumer engagement. These findings were then compared with the quantitative results to validate and enhance the overall interpretation of customer loyalty drivers.

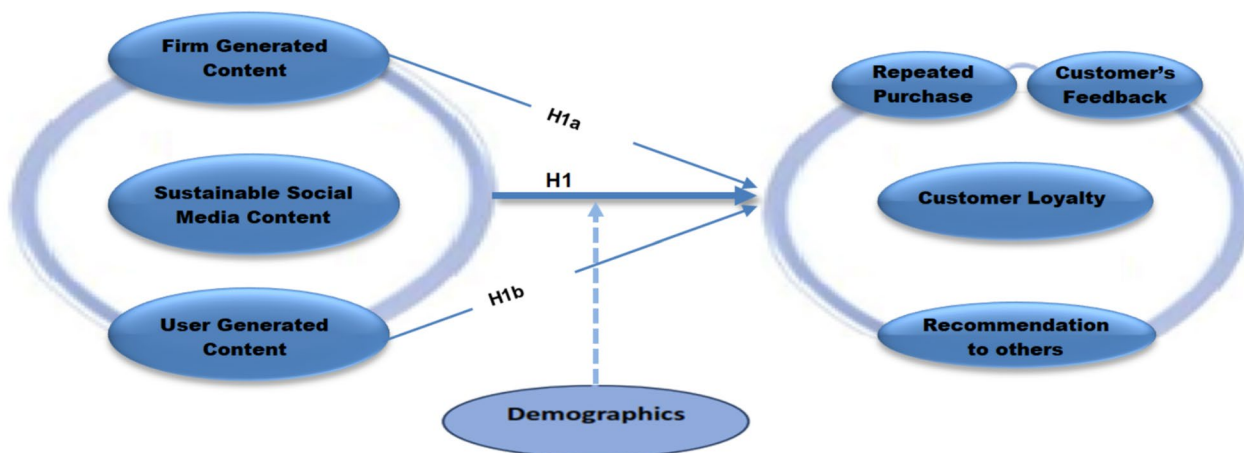


Fig. 1 Conceptual model. This model is derived from social identity theory [1, 22, 93]

By integrating both qualitative and quantitative insights, this study ensures a comprehensive analysis of how sustainable social media content impacts customer loyalty, capturing both consumer and managerial viewpoints.

Measures

A quantitative questionnaire was carried out to identify the effect of social media content on strengthening customer loyalty. A 24-item questionnaire were developed and tested with on a small sample of academic professionals for clarity. Conceptual definitions about the firm- and user-generated content were given to the respondents as a reference to interpret the questionnaire. The dependent variable, customer loyalty, was measured in terms of repeated purchase, recommendations to others, and customer's feedback [28, 76, 83, 100, 102]. The independent variables, firm-generated content, were measured in terms of authenticity, usefulness, aesthetics, consensus & majority opinion [42, 48, 49, 75, 81], and the user-generated content is measured in terms of credibility, how much it's relevant and consistent to the customer's beliefs, benefit from content, knowledge that customers get, its ability to create awareness, being understandable to customers [21, 73, 78, 90, 99]. Demographics are measured in terms of age, gender, education, and work, Nasir et al. [103] [57, 90]. Most variables utilize a five-point Likert scale ranged from strongly agree "5" to strongly disagree "1," and the rest has multiple choice questions. Descriptive analysis, confirmatory factor analysis, and structural equation model were used as statistical techniques to analyze the sample responses and reach the findings of the hypotheses developed.

Data and sample

The population for this research is the Egyptian and foreign customers living in Egypt whether existing or potential, who have social media accounts and aware of the online presence of various hotels on social media platforms (as an accommodation business within the Egyptian hospitality industry). The population doesn't have a frame due to the lack of comprehensive lists that includes all Egyptian and foreign customers in Egypt included in the population. So, the researchers used a non-probability snowball sampling technique where they are cost-effective with minimum time limit [41]. This research adopted snowballing sampling technique as the population frame isn't available; in addition to the dynamic nature of social media users, where both can make it a hard-to-reach population, this can be handled through the flexibility of snowball sampling as it can adjust to the changing dynamics of the population [70, 82]. Snowball sampling allows the researchers to expand the sample

size and collect valuable insights from the targeted population and handle the changing nature [67].

Snowball sampling was chosen due to the absence of a comprehensive list of hotel clients and social media specialists in Egypt, making it difficult to apply probability-based sampling methods. This technique allowed the researchers to identify and recruit relevant participants who actively engage with sustainable social media content, ensuring that the sample included individuals with direct exposure to hospitality-related social media marketing. Additionally, snowball sampling facilitated access to both consumers and industry professionals, whose insights are critical for understanding the impact of sustainable social media content on customer loyalty.

However, one issue of this technique is the potential for over-representation of certain demographic groups and lack of randomization, which may affect generalizability [98]. To mitigate these biases, the researchers ensured diversity in the initial set of respondents, incorporating variations in age, education levels, and professional backgrounds. Additionally, data saturation was monitored to confirm that additional responses did not introduce significantly new perspectives, thus improving the validity of the findings.

The sample size of this research is 220 respondents, consisting of 60% hotel clients (132 respondents) and 40% social media specialists (88 respondents). They were contacted via an online questionnaire, ensuring a diverse range of demographics including age, gender, occupation, and education. This distribution was intentionally structured to integrate both consumer and industry perspectives, capturing insights from hotel customers who engage with sustainable content and marketing professionals responsible for its creation. These participants helped examine how sustainable social media content influences customer loyalty from both the consumer and industry viewpoints.

To ensure relevance to the research goals, the participants were selected from firm- and user-generated social media contexts, all of which aim to ensure the avoidance of bias in the results and obtain representative sample; it was ended with 220 as the responses started to be repeated and according to the data saturation technique which is a common guiding principle for assessing the adequacy of a purposive sample; it is frequently used to estimate sample sizes specially in qualitative research [27, 32]; the sample was ended when the results became saturated. The questionnaire was as a Google form with QR-Code to facilitate the responses as an e-questionnaire. It is distributed over various social media platforms, sent through e-mails, and sent to the area of acquaintances. SEM is applied in this research as the research model includes a moderator. According to Little, et al. [52],

structural equation modeling (SEM) is most used when examining the interactions of variables, especially in the presence of a moderator where the strength of the relationship changes depending on the level of the moderator; SEM is also useful for analysis of moderators because it can emphasize both direct and indirect effects at the same time, providing a strong evidence about how the relationship works which is consistent with this research. SEM is effectively utilized for Likert scale data, so it is used in this research [62]. The data are free from outliers and missing values, making Smart PLS an appropriate method to use.

SEM was chosen as the primary analysis technique due to its ability to evaluate complex relationships between variables, particularly when testing moderation effects. Smart PLS was specifically selected because it effectively handles small to medium sample sizes and accommodates non-normally distributed data [84]. This makes it an ideal choice for this study, given the nature of the sample and the research design.

To ensure model reliability and validity, a measurement model assessment was conducted using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). Following this, the structural model was tested using path coefficients, R^2 values, and significance levels, with bootstrapping (5,000 resamples) to confirm the robustness of the results.

Data analysis procedure

The researcher employed the Smart PLS to conduct a deep analysis for the responses. Each statement of the questionnaire is evaluated on the basis of its validity and reliability.

Sample description

Cochran [20] decides the size of the sample used

$$n = \frac{z^2 * p * (1 - p)}{e^2} = \frac{(1.96)^2 * (0.5)(0.5)}{0.1^2} \approx 96.04 \approx 97 < 220$$

Therefore, the sample needs to exceed 97 respondents to obtain a margin of error of 0.1

Results

Validity and reliability

Descriptive statistics

As shown in Table 1, the majority of the sample was males. Around three quarters of sample are employed. In addition, almost 66% of the sample were undergraduate and postgraduate students. The majority aged below 25 years old representing almost 75% of the sample.

Table 1 Frequency tables for demographics in phenomenon.

Source: Calculations based on sample of 220 respondents using SPSS 26

	Sub-category	Frequency	Percentage
Gender	Male	140	63.64
	Female	80	36.36
Occupation	Employed	164	74.55
	Unemployed	56	25.45
Education	High school	74	33.64
	Bachelor	96	43.64
	Postgraduates	50	22.73
Age	18–25	164	74.55
	26–34	34	15.45
	35–44	10	4.55
	45–54	12	5.45

Confirmatory factor analysis

Upon evaluating the dependability of the dimensions, it is discovered from Table 2 that all measures of Cronbach's alpha exceeded 0.7 [58], indicating a high level of internal consistency. In contrast, all dimensions demonstrated a composite reliability above 0.7 and an average variance extracted above 0.5 [58], confirming their validity. Given that the variance inflation factors (VIFs) are below five, it can be inferred that multicollinearity does not pose a problem in the model [58]. Furthermore, all item loadings surpassed 0.5, underscoring the significance of the statements [58].

Model testing

Structural equation modeling

The model in Fig. 2 is showing the relationships between five latent variables. Each of these latent variables is measured by several observed variables represented as sub-dimensions in the graph each had loading higher than 0.5.

The model in Fig. 3 is showing the relationships between five latent variables as in figure I. However, there is the moderator effect on the model. Each of these latent variables is measured by several observed variables represented as sub-dimensions in the graph; each had loading higher than 0.5.

As indicated from Table 3, both firm-generated and user-generated contents had positive significant impact on the loyalty of the respondents at 99% confidence level. At 0.05 level of significance, age had no significant impact on loyalty.

One possible explanation for the insignificance of demographic variables is that sustainability messaging appeals across different consumer groups,

Table 2 Reliability and validity analysis for phenomenon. *Source:* Calculations based on sample of 220 respondents using Smart PLS

	Items	Loadings	Outer VIF	Cronbach's Alpha	Composite reliability	Average variance extracted
Firm generated	FG1	0.734	1.968	0.848	0.891	0.622
	FG2	0.764	3.322			
	FG3	0.896	2.129			
	FG4	0.749	1.869			
	FG5	0.791	2.088			
Loyalty	L1	0.784	1.47	0.745	0.855	0.662
	L3	0.792	1.891			
	L4	0.863	2.097			
User generated	UG1	0.78	1.808	0.787	0.853	0.541
	UG4	0.584	1.376			
	UG5	0.7	1.531			
	UG8	0.811	1.672			
	UG9	0.78	1.97			

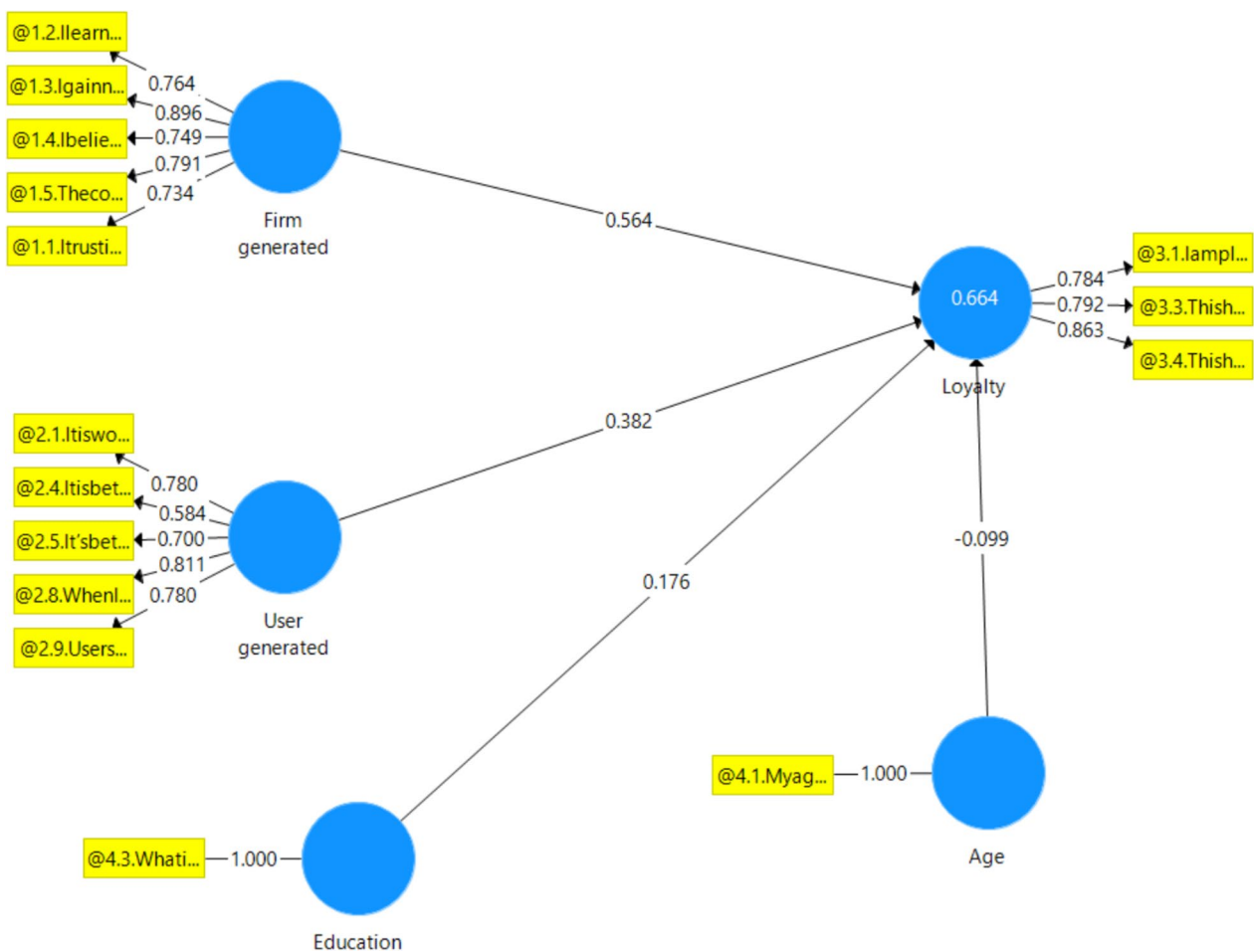


Fig. 2 Structural equation model of the phenomenon. *Source:* Calculations based on sample of 220 respondents using Smart PLS

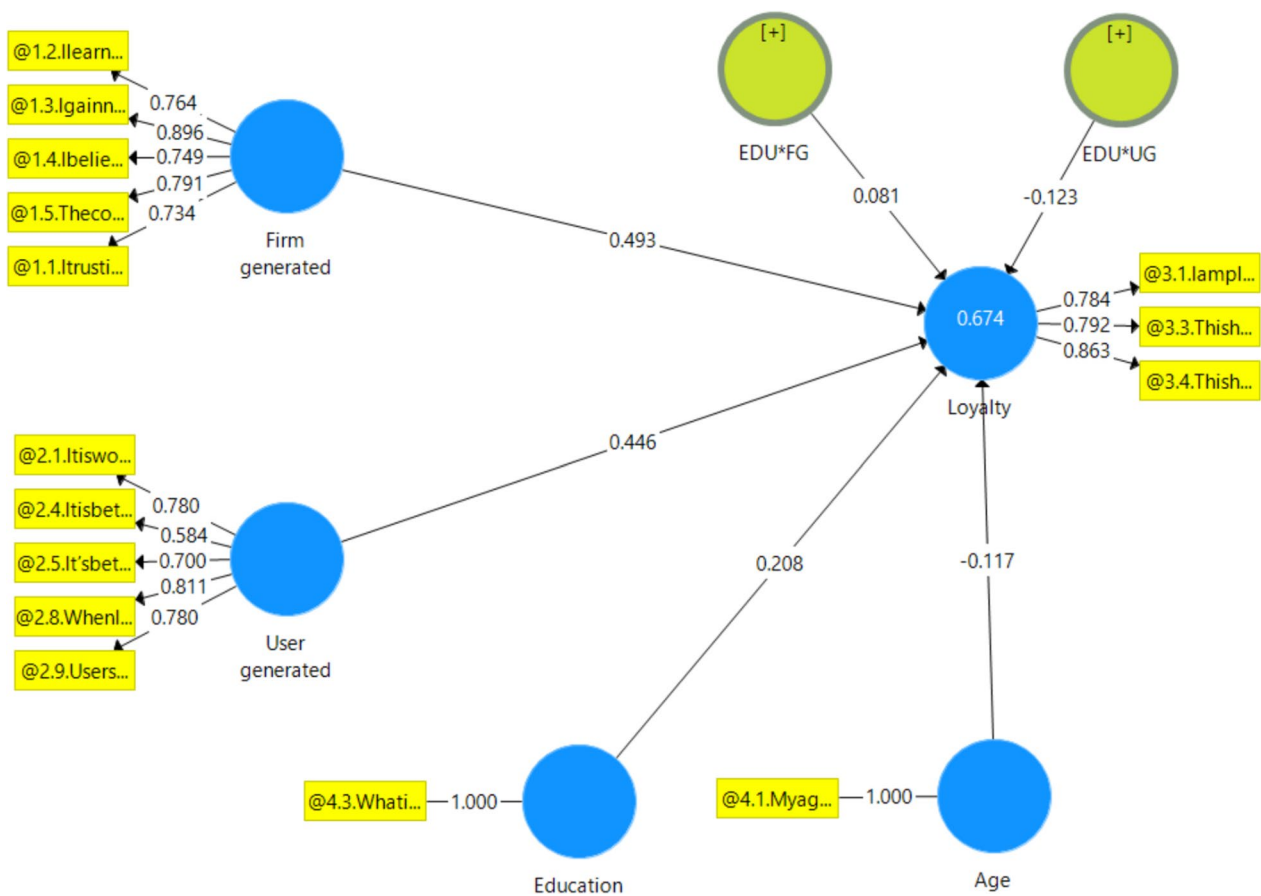


Fig. 3 Structural equation model of the phenomenon. Source: Calculations based on sample of 220 respondents using Smart PLS

Table 3 Path coefficients for the structural equation model. Source calculations based on sample of 220 respondents using Smart PLS

	Hypotheses	Original sample	Standard deviation	T statistics	P Values
Before adding moderator effect	Age → loyalty	-0.099	0.059	1.667	0.096
	Education → loyalty	0.176	0.046	3.852	0.000
	Firm generated → loyalty	0.564	0.068	8.309	0.000
	User generated → loyalty	0.382	0.044	8.66	0.000
After adding moderator effect	Age → Loyalty	-0.117	0.057	2.059	0.04
	EDU*FG → loyalty	0.081	0.049	1.643	0.101
	EDU*UG → loyalty	-0.123	0.052	2.358	0.019
	Education → loyalty	0.208	0.051	4.094	0.000
	Firm generated → loyalty	0.493	0.072	6.897	0.000
	User generated → loyalty	0.446	0.056	8.001	0.000

as environmental and ethical concerns are increasingly recognized as global issues [4]. Unlike traditional marketing, which segments audiences based on demographics, sustainability-driven engagement is influenced more by shared values than individual characteristics.

Additionally, social media provides a common digital space where users interact with sustainability messaging in a similar manner, regardless of their demographic background. Prior research suggests that customer engagement with sustainability efforts is driven primarily by ethical alignment rather than demographic factors,

especially in industries such as hospitality, where eco-friendly practices are now an expected standard rather than a unique selling point [29].

These findings indicate that customer loyalty in sustainability marketing is shaped more by ethical considerations than by demographic characteristics. Future research could explore alternative moderating variables, such as cultural background or environmental consciousness levels, to further understand consumer engagement variations.

However, education was found to have a significant impact on loyalty. Therefore, only education as a demographic can be studied as a moderator in the relationship between generated content and loyalty.

After adding moderating effect, education was found to have a significant role as a moderator in the relationship between user generated and loyalty at 95% confidence level. However, there was no enough evidence that it played a moderating role in the relationship between firm-generated content and loyalty at 0.05% level of significance. Still education and user-generated content had direct significant impact on loyalty at 99% confidence level. In addition, firm-generated content still had direct positive significant impact on loyalty at 99% confidence level. The moderation effect helped reveal also the age had a direct significant impact on loyalty at 95% confidence level.

Model evaluation

Table 4 shows the R square for loyalty is 0.664, indicating that 66.4% of the variability in loyalty can be explained by the model. As moderators are added, the percentage of the variability in loyalty explained by model increases to 67.4% showing the importance of the moderator. Q^2 is a measure of the model's predictive relevance. A Q^2 value greater than zero indicates the model has predictive relevance, while a value less than zero indicates it does not. The Q^2 value for loyalty is 0.443, indicating the model has predictive relevance for this construct [104].

Further interpretation of findings

The results indicate that both firm-generated content (FGC) and user-generated content (UGC) have a significant positive impact on customer loyalty at a 99%

confidence level (Table 3). The strong path coefficients for FGC ($\beta=0.493, p<0.01$) and UGC ($\beta=0.446, p<0.01$) confirm that social media content—whether created by companies or users—plays a crucial role in building long-term customer relationships.

Moderation analysis & key insights

While education significantly moderated the effect of UGC on loyalty ($\beta=-0.123, p<0.05$), it did not have a significant moderating effect on FGC ($p=0.101$). This suggests that educated consumers tend to be more influenced by peer-generated sustainable content rather than brand-generated material. In contrast, age, gender, and occupation did not moderate the relationship, indicating that sustainability messaging resonates broadly across different demographic groups.

Summary of key findings

The results of this study indicate that both firm-generated content (FGC) and user-generated content (UGC) significantly enhance customer loyalty in the hospitality industry. However, education was found to moderate the relationship between UGC and customer loyalty, while other demographic factors such as age, gender, and occupation did not show significant moderating effects.

These findings suggest that sustainable social media content plays a crucial role in strengthening customer loyalty, with UGC being particularly influential among consumers with higher education levels. The following discussion further interprets these results, linking them to theoretical and practical implications.

Discussion

The researchers can summarize the discussion in Table 5:

Conclusion

Current research investigates the impact of social media content on the customer loyalty under the moderating effect of demographics in hospitality industry. The conclusions resulted from such study imply that the firm-generated content (FG) and user-generated content (UG) significantly and positively impact the customer loyalty; it was also found that the demographics specifically the education significantly moderates the relationship between UG and loyalty. In discussion section, we will explore these results and relate them with the results of prior studies. The first hypothesis of the current research suggests that the FGC positively impacts the customer loyalty. The hypothesis was accepted which is relatively consistent with the results of other related previous researches; for example, according to Abdallah and Jumaa [6], (FGC) positively affects how consumers make purchasing decisions; however, they concluded that FGC

Table 4 Model evaluation metrics for purchase intention.

Source calculations based on sample of 220 respondents using Smart PLS

	R square	R square adjusted	SSO	SSE	Q^2
Before	0.664	0.657	660	376.643	0.429
After	0.674	0.665	660	374.537	0.433

Table 5 Summary of research findings

Hypotheses	Independent variable	Dependent variable	Moderating variable	Statistical test used	Findings
H1: The sustainable social media content positively impacts customer loyalty	Sustainable social media content	Customer loyalty		Path coefficient—structural equation modeling using Smart PLS; for overall model evaluation: test used: R square and Q ² (predictive relevance)	H1 is accepted; the sustainable social media showed a positive impact on the customer loyalty
H1a: The firm-generated sustainable social media content positively impacts customer loyalty	Firm-generated sustainable social media content	Customer loyalty		Path coefficient—structural equation modeling using Smart PLS	H1a is accepted where it was found that FGC usually has a strong effect on brand loyalty which was consistent with previous researches [6, 31, 94]
H1b: The user-generated sustainable social media content positively impacts customer loyalty	The user-generated sustainable social media content	Customer loyalty		Path coefficient—structural equation modeling using Smart PLS	H1b is accepted; The main results supported the second hypothesis and showed its correctness where the user-generated content significantly impacts the customer loyalty, which was corresponding to results of previous researches [86, 94, 101]
H2: The demographics moderates the relationship between sustainable social media content and customer loyalty	Sustainable social media content	Customer Loyalty	Demographics	Frequency analysis (using SPSS) To determine the frequency distribution and percentages for demographic variables; interaction effects (moderation analysis through structural equation modeling using Smart PLS through path coefficient and T-statistics)	H2 is accepted
			Age	Same as mentioned above	Rejected
			Gender	Same as mentioned above	Rejected
			Occupation	Same as mentioned above	Rejected
			Education	Same as mentioned above	The results indicated that the education has a positive significant impact on the loyalty and it can act as a moderator between user-generated content and customer loyalty; however, it doesn't moderate the relationship between firm-generated content and customer loyalty; education affects the relationship between being an undergraduate student and loyalty; individuals who have higher education levels or are engaged in advanced studies exhibit stronger or different loyalty patterns compared to those with lower educational attainment

influences buying decisions more than UGC does for telecom products and services which can in turn influence their repurchase. Other researches confirmed the results of the current research as well; the authors found that FGC usually has a strong effect on brand loyalty. Additionally, how these attributes affect loyalty can vary depending on the context [94]. Wei et al. [31] stated after analysis that the FGC has a strong positive impact on perceived quality and brand trust where brand trust and perceived quality, in turn, boost brand loyalty.

The second hypothesis stated the user-generated content (UGC) positively impacts the customer loyalty; the main results supported the second hypothesis and showed its correctness, which is consistent with Seiler et al. [86], where this study looked at how user generated affects how loyal customers are to retailers in Europe and findings showed that when customers trust the UGC, they are more loyal both emotionally and in terms of rebuying the products. The study also found that millennials are particularly influenced by user-generated content, especially in terms of emotional loyalty. Overall, user-generated content helps build customer loyalty and encourages repeat business. From another perspective, the researchers showed a similar relationship between the UGC, purchase intention, and customer loyalty, where findings included that user-generated content (UGC) directly influences four aspects of brand value. Specifically, how people perceive the quality of the brand and their loyalty to it affect how UGC influences their intention to buy. In other words, UGC impacts purchase intentions through how it shapes brand quality and customer loyalty [101]. Another research also assured the findings where according to Tyrväinen et al. [94], UGC impacts the customer loyalty toward the brands.

The third hypothesis of the research stated that the demographics in terms of age and education moderate the relationship between both the FGC and customer loyalty and between UGC and customer loyalty; the results indicated that the education has a positive significant impact on the loyalty indicating that education has a meaningful impact on the relationship between being an undergraduate student and exhibiting loyalty. This could mean that the level or type of education an individual has received influences how strongly their undergraduate status affects their loyalty. For instance, individuals with higher educational attainment or those engaged in more advanced studies might show stronger or different patterns of loyalty compared to those with less education. It was also resulted that education significantly moderates the relationship between UGC and loyalty, so the hypothesis is accepted in terms of education. Among other researches that supported similar results, Mishra and Prasad [60] indicated that education has a

significant correlation with customer loyalty. Education plays an essential role in identifying the occupational status in society, so, it can be assumed that individuals with higher levels of education are likely to have different buying behaviors, as greater brand loyalty, compared to those with lower educational status, so it can act a moderator [2]. Various literature sources suggest that demographic factors such as educational qualification play a moderating role between customer satisfaction and loyalty [19]. According to Chi [18], education can impact the perception of product and service image, with the role of a moderator, as it affects the relationship between the independent variable image perception and the dependent variables satisfaction and loyalty. Studies have shown that customers of higher education levels are more exposed to technology and better attitude toward it so they are more likely to interact with and make purchase decision through the Internet, so, education can moderate relationships between various factors, such as website quality and e-loyalty [26].

The acceptance of this hypothesis suggests that education plays a crucial role in shaping or altering the relationship between education status and loyalty. It might imply that education helps in developing traits or perspectives that enhance or modify how loyalty is expressed or experienced.

On the other hand, the results illustrated a rejection to the hypothesis that included education significantly moderates the relationship between FG and loyalty. Education affects how people respond to user-generated content (UGC) because educated people might judge it differently. However, education doesn't change how people react to firm-generated content (FGC) since it is generally seen as promotional and doesn't vary much with education. This can be attributed to the more credibility of user-generated content than the firm-generated content where they perceive FGC as promotional more than credible [43, 94], so education may play a role in perceiving the user-generated content but didn't make a difference when they were exposed to firm generated as it is seen as promotional rather than being criticized based on education as UGC. In result, it can be concluded that the education significantly moderates the relationship between UGC and loyalty, but education doesn't moderate the relationship between FGC and loyalty.

However, the hypothesis that reflects that age, gender, and occupation have a positive significant impact on the loyalty was rejected which frustrates the relationship between such demographic dimensions and the customer loyalty. The research has tested these customers' demographics statistically and was included in the questionnaire elements; however, gender and occupation were removed the statistics after showing

insignificance to prevent any potential weakening of the model and maintain its strength. These results match what earlier studies found; Adewale [2]. Reached that age as a demographic factor, which was found to have no significant impact on customer loyalty. In relatively corresponding context, this result was in contrast with other researches as it was in contrast with Manyanga et al. [57] who concluded that age moderates the effect of customer satisfaction on loyalty and gender; education and income don't. This can be attributed to the context of the research, where the current research is relative to social media and applied to hospitality industry, while others got other different variables, applications, and even samples which lead to different results.

Social identity theory suggests that loyalty and behaviors of the people are influenced by their feeling of belonging to a group. Applying this in the context of social media, customers often feel connected to brands, communities, or users sharing content with same values, interests, beliefs, and experiences. So, if the firm creates content that is consistent with a customer's values and provides them credibility, it can increase their sense of belonging to that group where the group is reflected in this research as the company or the community they're sharing with; this relevancy and higher content quality positively increase loyalty because people tend to remain loyal to groups, they feel relevant to.

These findings align with prior studies demonstrating the positive impact of FGC on brand loyalty [6, 31, 94], emphasizing its role in enhancing brand trust and perceived quality. Similarly, our results reinforce previous research indicating that UGC significantly boosts customer engagement and loyalty [86, 101].

However, the non-significance of age, gender, and occupation as moderators contrasts with the findings of Manyanga et al. [57], who observed that age moderates the effect of customer satisfaction on loyalty. This discrepancy may stem from differences in industry context (hospitality vs. general consumer goods) and the growing universal appeal of sustainability-focused content across demographics.

Implications

Both user-generated and firm-generated contents enhance customer loyalty. Marketers should invest in strategies that encourage and utilize both types of content. This could involve creating campaigns that inspire customers to share their experiences and actively manage brand-generated content to reinforce positive brand associations.

Hospitality managers should actively design content strategies that encourage both user-generated content (UGC) and firm-generated content (FGC) to maximize customer engagement. This can be achieved by:

- Encouraging user participation through interactive campaigns, contests, and reward-based social media initiatives.
- Leveraging brand storytelling in firm-generated content to emphasize sustainability efforts and customer experiences.
- Monitoring and responding to UGC to enhance credibility and foster brand loyalty.
- Personalizing marketing content based on customer interactions to improve long-term engagement and retention.

Education significantly enhances the relationship between user-generated content and customer loyalty. This suggests that more educated consumers are likely to be more responsive to user-generated content. Marketers should consider tailoring content and messages to cater to this demographic, potentially incorporating more in-depth or sophisticated content for educated audiences. Since age did not significantly impact customer loyalty in this study, marketers might focus less on age-specific strategies and instead concentrate on other factors like content type and educational background that more strongly influence loyalty. So practically, the practitioners can benefit from this research to integrate content strategies and develop integrated marketing strategies that leverage both user-generated and firm-generated content to maximize their positive impact on customer loyalty.

Sustainability-focused digital marketing can enhance brand loyalty by aligning marketing messages with consumers' ethical values. Hospitality brands can achieve this by:

- Showcasing sustainability efforts in firm-generated content, such as eco-friendly hotel practices and CSR initiatives.
- Empowering consumers to share sustainability experiences through user-generated content campaigns.
- Integrating sustainability into loyalty programs, offering rewards for customers who engage with green initiatives.
- Utilizing AI-driven personalization to tailor sustainability-related messages based on customer interests and engagement patterns.

These approaches not only enhance customer loyalty but also strengthen brand credibility and long-term customer trust.

In addition to tailoring marketing efforts to address the needs and preferences of customers with varying educational backgrounds, particularly in how firm- and user-generated content is presented and utilized and finally focusing on content quality through ensuring high standards for firm-generated content to consistently engage and retain customers, regardless of their educational background.

Based on the research results, marketing managers and experts in the hospitality industry specially content creators and social media specialists should more focus on the quality of the content strategy created from its design to implementation; first, through the firm (FGC) by making it appealing to wide audience, they also should segment and target the audience according to their education level through various dimensions of FGC mentioned in this research and customize the content for each of them, as providing detailed and informative content with more visual elements for more educated customers than the less educated that may seek simplified and easy understanding as including in their posts information about the industry itself, real pictures for hotel and photographs of the previous tourists experiencing new things in the hotel and same for the rest of the FGC dimensions, all of which will help to build loyalty and relationship with customers; this all will be reflected in the hotel image on social media where the posts created will be of higher quality so it gains customers trust and credibility; in addition, hospitality marketing managers can encourage the creation of UGC that highlights personal stories, reviews, and experiences that adjust and relate with different educational backgrounds as creating a community where customers with similar education levels can share experiences in the hotel which will make the customer feel more relevance of UGC and increase their loyalty through revisiting the hotel, providing a positive feedback or recommending it for others.

Limitations and future research

This study was conducted in the hospitality industry of Egypt. Thus, the empirical findings of the study could be more applicable to further industries as mobile phones, automotive, or telecommunication. The research can be implemented in countries rather than Egypt.

Future research should explore cross-country comparisons to assess whether the impact of firm-generated and user-generated content on customer loyalty differs across various cultural and economic settings. Since consumer attitudes toward sustainability and digital engagement may vary by region, comparing different geographic markets (e.g., developed vs. developing countries) would help determine whether the observed relationships hold consistently across contexts. Such research could also

account for factors like cultural perceptions of sustainability, digital literacy, and varying levels of social media penetration.

Future research should employ longitudinal studies to assess how customer loyalty develops over time in response to sustainable social media content strategies. While this study captures customer attitudes at a specific point, loyalty is a dynamic process influenced by ongoing interactions and brand engagement. A longitudinal approach could track shifts in customer perceptions, engagement levels, and retention rates over an extended period, offering deeper insights into the long-term effectiveness of sustainability-driven digital marketing efforts.

Moreover, the impact of education as a moderator between FC and loyalty was found not significant, which could be due to the perception of the customer to the FGC as a promotion. One of the limitations is that the research used snowballing sampling method. A limitation of this technique is the potential for bias, as snowball sampling depends on referrals from initial participants which can create a risk of bias and relies heavily on the original contacts. As a result, the findings from studies employing this method may have limited generalizability to the broader population because of the non-random nature of the sample, so further researches can use other methods. More dimensions of the research variable can be utilized in additional researches; for example, customer loyalty can be considered in terms of cognitive, emotional, and conative.

The effectiveness of sustainable social media content may vary across different platforms. Platforms such as Facebook and Instagram emphasize visual and interactive engagement, making them ideal for storytelling and UGC-driven campaigns. In contrast, platforms like TripAdvisor and Google Reviews focus more on customer feedback and reputation management, influencing brand trust through customer reviews rather than brand-generated content as indicated in the following research questionnaire (Table 6).

Future research should explore how platform-specific engagement dynamics affect customer loyalty in response to sustainable content, helping hospitality managers refine their digital marketing strategies based on platform characteristics.

Other studies may consider this factor carefully in the hospitality industry. Among the limitation is that demographics have been included with two factors which are age and education, so in the further researches, more aspects can be added as gender, family life cycle, and occupation so developing more moderating effects on loyalty. Further researches can consider the cultural factors and their effects in the research as ethnicity, technology, or social norms.

Table 6 Questionnaire

Statements	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	References
Firm-Generated Content						
1.1. I trust information posted by hotels on their social media about their services						Osei-Frimpong et al. [105]
1.2. I learn more about the hotel when reading posts by the hotel itself						
1.3. I gain new perspective on things when reading posts by hotels						
1.4. I believe in hotels if its posts truly reflect their real services						
1.5. The content of videos, graphics and audios makes the hotel content attractive						
1.6. I get affected by customer's reviews on hotels posts,						
User-Generated Content						
2.1. It is worthwhile to see user generated about hotels on social media						Muda and Hamzah [64]
2.2. When I reserve in a hotel the impact of negative reviews on social media affects my loyalty						Shuqair, et al. [90]
2.3. Reviewer's credibility of a hotel influences my loyalty toward this hotel						

Table 6 (continued)

Statements	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	References
2.4. It is better if the hotel user-generated content is consistent with my most basic beliefs						Shuqair, et al. [90]
2.5. It's better if the content generated by hotel guests is relevant for me						
2.6. It's easy to understand the user-generated content of hotels						Woo-Hyuk Kim [99]
2.7. The user-generated content helps me to get the information I want						Daugherty, et al. [21]
2.8. I gain a new perspective on hotels when creating UGC						Daugherty, et al. [21]
2.9. Users' posts on social media increase awareness about the hotel						Shuqair, et al. [90]
Customer Loyalty						
3.1 I am pleased to recommend the hotel I stay to other people						Pitchayadejanant and Nakpathom [76]
3.2. Next time I stay at a hotel, I intend to visit the same one						Pitchayadejanant and Nakpathom [76]
3.3 This hotel I stay is my first choice						Pitchayadejanant and Nakpathom [76]
3.4. This hotel I stay is very attractive						Pitchayadejanant and Nakpathom [76]

Additionally, cultural differences in how individuals perceive and engage with social media platforms may influence customer loyalty in response to sustainable social media content. Prior studies indicate that social media users from collectivist cultures may place higher value on peer recommendations and UGC, whereas those from individualist cultures may be more influenced by FGC and brand messaging [35]. Future research could explore how cultural differences impact the effectiveness of sustainable digital marketing strategies, particularly in shaping brand perceptions and trust.

For the future researches, they can also apply and test the model in different industries as banking sector, industries in retail sector as fashion, and other countries as well, to lead to more comprehensive results with broader implications.

Appendix Questionnaire

Dear Participants,

We are carrying out research under the title “The Role of Sustainable Social Media Content in Enhancing Customer Loyalty in the Hospitality Industry.” We need your kind cooperation for the fulfillment of this research. Kindly note that all information that you will provide will be kept strictly confidential and you will remain completely anonymous throughout. The information you give will only be used for this research and not shared with anyone else. Thank you in advance for your contribution and support.

Do you use social media?

- Yes
- No

Do you see posts about hotels on social media?

- Yes
- No

See Table 6

If yes, kindly pass to the next section.

Demographics

My age is.

- Below than 18 years
- 18–25
- 26–34
- 35–44

- 45–54
- 55 or above

What is your highest level of education?

- Less than high school
- Completed high school
- Bachelor degree
- Advanced degree

What is your current work?

- High-school student
- University student
- Unemployed
- Retired
- Other (please specify)

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Author contributions

R.M. has scrutinized the literature and formulated the research gap. In addition, he wrote down the literature review. Y.T. formulated the methodical framework of this study to achieve the desired objectives. Y.T. selected the sample size from the available population and has designed, together with R.M., the data collection instrument and suggested the method of data analysis. R.M. has presented the discussion of results. The discussion of different collected data presented in the results. Y.T. contributed to this research by collaborating with R.M. in the design of the data collection instruments. All authors have read and approved the manuscript.

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Availability of data and materials

The authors declare they have full access to all study data, take fully responsibility for the accuracy of the data analysis, and have authority over manuscript preparation and decisions to submit the manuscript for publication.

Declarations

Ethics approval and consent to participate

The authors confirm that they have read, understand, and agreed to the submission guidelines, policies, and submission declaration of the journal. A local ethics committee ruled that no formal ethics approval was required in this particular research; they only asked to have a copy of the published report after the research has been completed.

Consent for publication

Consent for participant is not applicable. Authors confirm that the manuscript is the authors' original work and the manuscript has not received prior publication and is not under consideration for publication elsewhere. Authors re-assure that they have contributed significantly to the work, have read the manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to its submission. Also, authors of this paper confirm that the paper is not copied or plagiarized version of some other published work. Authors declare that this paper is not submitted for publication in any other Journal or Magazine till the decision is made by journal editors, and that if the paper is finally accepted by the journal for publication, authors confirm

immediate publication of the paper by paying all charges or its withdrawal according to the journal withdrawal policies.

Competing interests

The authors declare that they have no competing interests. None declared under financial, general, and institutional competing interests. The authors declare they have full access to all study data, take fully responsibility for the accuracy of the data analysis, and have authority over manuscript preparation and decisions to submit the manuscript for publication.

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