Article

On being green in the social media interactivity's information seeking-sharing: Case of Generation Z in Indonesia

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Abstract: Social media interactivity creates consumer's space of information seeking-sharing where its intensity could produce knowledge, creates new values and changes behavior. The aim of this study is to exploratory investigate the dual role of Generation Z's information seeking-sharing behavior within green context through the interactive space of social media as a resource for the development of social media marketing strategy. The research employs mixed-method approach of qualitative-explorative data mining, quantitative cross-tabulation Chi-Square test, and integration. Two findings of this research are elaborated. First, consumer's space of information-seeking leads to the process of green awareness rationalization, i.e., how environment-oriented actions can be rationalized. Second, consumer's space of information-sharing leads to green social values, i.e., How environment-oriented actions can be socially recognized. The marketing implications of these two findings are business' efforts to develop green-oriented strategic mindset through space of social media marketing "customer engagement" where the dual role of information seeking-sharing within green context is facilitated.

Keywords: space of information seeking-sharing; green awareness; social media

1. Introduction

The phenomenon of social media popularity (Abbas et al., 2022), and the formation of engagement in social media interactivity (de Oliveira Santini et al., 2020) opens opportunities for the creation of environmental values through social media marketing strategy (Armutcu et al., 2023; Bukar et al., 2022; Byrum, 2019; Chang et al., 2023). The context of Generation Z as the most productive social media users shows the ability to respond to changes more quickly due to a relatively high sense of curiosity (PrakashYadav and Rai, 2017; Reinikainen et al., 2020). This argument emphasizes strategic opportunity in the development of social media interactive space where all Generation Z potentials could be directed into environmental values as the pillars to strengthen business competitiveness.

In social capital and learning theory (Carmichael et al., 2015; Han and Xu, 2020; Hu and Huang, 2023; Machalek and Martin, 2015; Méndez-León et al., 2022; Saraf et al., 2022) the information-seeking and information-sharing nature of social media use activities forms interactivity and engagement to social relations. Social interaction and information exchange activities on Social Network Sites (Liou et al., 2016) or in virtual communities (Fauzi, 2020) involve seeking and sharing information. These

activities are influenced by individual factors and are characterized by shared values, community identity forms (Boccia Artieri et al., 2021), and a focus on the credibility of information. These activities determine how the presence of virtual communities could create engagement and provide experiences (Ch'ng and Hoo, 2022; Liou et al., 2016; Zhao and Shi, 2022).

The nature of social media facilitates different forms of informational openness in interpersonal communication affecting pro-environmental behavior (Armutcu et al., 2023; Ch et al., 2021; Eweje, 2020). Previous research indicates the engaging character of social media that accumulates knowledge, broadens horizons and increases responsiveness, while shaping green behavior (Han and Xu, 2020). Social media interactivity accumulates knowledge, then knowledge becomes a resource for the formation of a belief system (Belcastro et al., 2022; Boccia Artieri et al., 2021). In the context of environmental issues, the belief system changes behavior through green awareness. This study was carried out by investigating the collective shared values and empathy among Generation Z in addressing environmental issues through social engagement i.e., a revitalized and enhanced global partnership that brings togetherness by mobilizing all available resources as underscored by Sustainability Development Goals (SDG) # 17 Partnerships for the Goals, Section # 60) (Taghvaee et al., 2023).

There are few studies that discuss the influence of social media to promote pro-environmental behavior specially in the case of Indonesia as one of the most populous Generation Z in the world (25.87% over total population of 270 million) (Genoveva and Tanardi, 2022). In general, social media as a means of social recognition among Generation Z has not been fully developed to increase the capacity of business competitiveness through the responsiveness towards environmental issues. (Abbas et al., 2022; de Oliveira Santini et al., 2020; Fauzi, 2020; Han and Xu, 2020; Liou et al., 2016; Zhao and Shi, 2022).

Looking at the significance of this research the authors propose the aim of the study to investigate the dual role of Generation Z's information seeking-sharing behavior within green context through the interactive space of social media as a strategic resource for the development of social media marketing strategy. (Agrawal et al., 2023; Dragolea et al., 2023; Gomes et al., 2023).

2. Theoretical background

Environmental awareness as a central theme of global norms is now becoming a reference for business strategies to improve competitiveness. In the era of social media, the use of social media provides the space of information seeking-sharing interactivity, and enables the development of awareness towards the environment. Social media users can use the interactivity space to accumulate new knowledge, build a belief, and change values. Therefore, social media marketing strategies that contribute to increasing environmentally oriented competitiveness can treasure strategic advantage of the power of social and learning capital generated by social media.

2.1. Social capital theory

Social capital theory extends social capital as the result of interactivity of social relations mediated by the advancement of social media technology, accumulating

knowledge and changing behavior (Machalek and Martin, 2015). On being social refers to the role of others as reference of specific behavior (Saraf et al., 2022). Context of social capital is where seeking and sharing information derived from the presence of others could create value (Carmichael et al., 2015).

Social Capital Theory posits social media use to empower social capital, a precursor to organisational innovation. The theory acknowledges that social ties fostered by social media have a substantial role on behaviors and attitudes (Méndez-León et al., 2022; Saraf et al., 2022). This context explains social media as an effective tool for sharing knowledge and promoting conversations on green initiatives. Therefore, it enhances the credibility of a company's branding on sustainability (Amer, 2023; Méndez-León et al., 2022)

2.2. Social learning theory

With reference to social learning theory, human behavior is the product of continuous reciprocal interactions between cognitive, behavioral and social factors. Human thoughts, emotions and behavior are directly influenced by experience, as well as indirectly acquired through the presence of others (Han and Xu, 2020).

The growing number of social media use creates a public space of social interactivity in sharing information and knowledge. This context demonstrates an understanding of present social issues, accumulating new information and knowledge that to some extent changes behavior. The concept built through Social Learning Theory are behavioral change and collective benefits (Hu and Huang, 2023; Mansoor and Paul, 2022; Shen et al., 2023).

2.3. Information-seeking behavior

In Haridasan et al (2021) it is explained that information-seeking behavior plays a major role where consumers try to reduce uncertainty and risk perceptions before making a purchase. This behavior is carried out using various channels. Online search is a popular alternative because it is able to provide access related to functional and price information (Haridasan et al., 2021).

The factors that influence information-seeking behavior are perceived benefits and perceived price. Active information-seeking behavior drives consumer purchase intention. The study conducted by Haridasan et al (2021) describes the main themes related to consumer information-seeking behavior, especially in the online context, namely: perceived risk, uncertainty, involvement, knowledge, price, and experience.

Perceived risk is related to consumers' perceptions of uncertainty about the consequences of a purchase. In this view, a high level of information search intensity is due to the belief that it will reduce risk. Consumers may not limit their information search to one source (in their own circles) but to a variety of sources to reduce financial and performance risk. While uncertainty is defined as the challenge encountered by consumer in finding the best alternatives due to insufficient information. Uncertainty affects information-seeking behavior. The higher the perceived level of uncertainty, the higher the tendency of individuals to search for information.

Involvement as one of the determinants of information-seeking behavior is an individual's perception of certain objects based on needs, values and interests that have

been embedded. Products that have strong engagement to individuals might trigger information-seeking activity from various external sources.

Knowledge refers to the amount of experience and individual recognition of a product. In the subjective knowledge dimension (perception of what is already known) individuals incline to seek information aimed at confirming what is already known. In the objective knowledge dimension, information-seeking behavior focuses on the perception of the attributes of an object.

Price could be one of the drivers in information-seeking behavior, when individuals seek information to get a better price. The intensity of information-seeking increases when individuals search for products in a certain price range. In this price-oriented information-seeking behavior, individuals choose well-known brands that have normal market prices when they are unable to find products within the expected price range.

Shopping experience can influence information seeking behavior. This shopping experience increases product recognition. Product recognition aids the evaluation of alternatives from multiple sources of information. On recognised information sources based on previous shopping experience individuals tend to reduce information-seeking efforts. Information-seeking (especially online) is mostly done by individuals with a high level of education and those who are highly skilled in using technology as part of their daily lives. Motivation to search for information from various information sources also arises when individuals feel their information search experience is increasing.

There is a discrepancy between the high degree of consciousness and the minimal action take to address practical environmental issues in the community. The study by Yang and Huang (2019) noted the tendency to inconsistency was linked to awareness of environmental problems (green awareness). Green awareness is influenced by the urgent priorities of environmental issues. Prioritized environmental issues form a risk perception, motivate individuals to seek information for the solution of their problems, while triggering real action.

Motivation for information-seeking through social media can be ineffective where information avoidance occurs, i.e., when individuals feel there is a large gap between what they know and what they should need to know. (Yang and Huang, 2019)

Some theoretical models to explain variables that influence information-seeking behavior: (1) Theory of motivated information management (Afifi and Weiner, 2004); (2) The Comprehensive Model of Information Seeking (Johnson and Meischke, 1993).

The foundation of Theory of Motivated Information Management (Afifi and Weiner, 2004) is the relationship between uncertainty and motivation for information-seeking. The theory mentions the phases of the information management process in interpersonal relationships, emphasis on the role of effectiveness, as well as attention to the interactive nature of information management. While The Comprehensive Model of Information Seeking (Johnson and Meischke, 1993) explains three main schemas in the prediction of information-seeking behavior namely: (1) Antecedents (demographics, personal experience, salience, and beliefs); (2) Information Field ie. channels and carriers of information; (3) Information-seeking Actions (scope, depth and method of information-seeking).

2.4. Information-sharing behavior

Chang et al. (2023) explained the Yale model of communication processes. The model examines the influence of green message factors (target framework, argument content, and consistency of argument), source (source credibility) and recipient (environmental awareness) on communication processes seen from: (1) perception and attitude of recipients (including information value, persuasive power, and communication effectiveness); (2) interest in sharing green message. Research findings show that a high level of environmental awareness affects the relationship between message characteristics, source credibility, and information value, which then leads to a high interest in sharing green messages.

Cheng (2011) describes information sharing behavior in the context of value chain formation. Referred to as collaborative behavior in value-based relationships, information sharing behavior involves more than one party in the exchange and sharing of information.

Liu et al (2016) explain information sharing behavior in its role in shaping social capital. Information sharing behavior is an interactive activity that requires parties in the information sharing process to actively exchange information. Information sharing behavior in the context of social capital emphasises three main dimensions, respectively: (1) Cognitive; (2) Structural; (3) Relational.

Flores (2023) explains that information sharing behavior is part of the phenomenon of the ease of using social media to generate new information. There are two basic models in information sharing behavior: (1) Sharing information without changing the original message (referred to as lean-back); and (2) Sharing information by adding or modifying the content of the original message (referred to as lean-forward). Sharing information without changing the original message is referred to as passive information diffusion. While sharing information by changing the original message is referred to as pro-active information diffusion. Information sharing behavior is influenced by an individual's emotional level. Kim and Yang (2017) mentioned features in social media that influence information sharing behavior include: sensory, visual, and rational. These three forms of social media features have an affective or cognitive effect on information sharing behavior.

2.5. The impact of social media on green awareness

Social media has become one of the media formats that could carry messages and promote green buying behavior through eco-purchasing involvement. Social media can be used as where the users involve in the role of content creator. Social media becomes an effective tool of creating a conscious environment when it can be used to create value where its creators have space to update (Boccia Artieri et al., 2021; Bukar et al., 2022; Byrum, 2019; Chang et al., 2023).

The context of Generation Z has been considered as the most relevant in today's discussion about the impact of social media on green awareness. Born between 1997 and 2012, Generation Z (Gen Z) are the first generation to have grown up with the social media. The main characteristic of Gen Z is that they tend to purchase that reflect their values (Prakash Yadav and Rai, 2017; Reinikainen et al., 2020). The personality factors of Generation Z have contributed to specific consumption behavior. As

generation born in the digital era; Generation Z are familiar with mostly all digitally-facilitated social interaction platforms. Their nature of curiosity and tendency to build personal identity have made them more adaptable to values that might uplift their social status such as environmental values. (Agrawal et al., 2023; Canova and Paladino, 2023; Dragolea et al., 2023; Gomes et al., 2023; Noor et al., 2023; Palomo-Domínguez et al., 2023)

3. Methods

The research has its objective to identify the phenomena of social media use and green awareness development, and their implications for marketing strategy. Mixed-method approach is employed as indicated by trend of previous social media-related research (Li et al., 2022; Mokhtar and Hasan, 2023; Steiner et al., 2023) i.e., qualitative-exploratory data collection and quantitative-cross-tabulation Chi-Square test.

The choice of this mixed-method was based the followings: First, there is a lack of theoretical support in the study of information-seeking and information-sharing social media interactivity. The qualitative-exploratory approach of data mining aims to identify and recognise basic concepts through a screening process of previous research articles. The sufficient basic concepts will greatly help clarify the perspective on the object of research as well as complement the discussion of research results. Second, the data cannot fulfil the assumption of normality given the characteristics of the population ie. generation Z who are vulnerable in making product choices. Generation Z is in an age range where there is a tendency for individuals to easily change in determining product choices or to be inconsistent). This tendency might create bias. Based on these considerations, the researcher used a non-parametric approach ie. quantitative-cross-tabulation Chi-Square test.

The convenience sampling technique was chosen. The considerations taken are the characteristics of the research as initial research aimed at clarifying a phenomenon, and need to be followed up with more comprehensive follow-up research.

Ninety Generation Z respondents of university students aged 21–24 years in Indonesia are selected through convenience sampling method using the following criteria: (1) To have at least one active social media account; (2) To have access to social media in the category of "often use" of social media for various uses; (3) To have a minimum category "sufficient" of the environmental understanding; and (4) To involve in environment-related chat or conversation through social media platform within minimum category "moderately use".

The mixed-method approach consists of three steps: (1) Step-1: Qualitative-explorative data mining; (2) Step-2: Quantitative cross-tabulation Chi-Square test; dan (3) Step-3: Integration.

3.1. Step-1: Qualitative-explorative data mining

This method is carried out through two stages of data mining (**Figures 1** and **2**). Two keywords are used in the data mining process, namely: (1) Information seeking-sharing and socialmedia (Stage 1 and **Figure 1**); and (2) Social media use and green awareness (Stage 2 and **Figure 2**). Both stages are conducted aimed at finding the

theme of the relationship between the role of information seeking-sharing in social media and green awareness development.
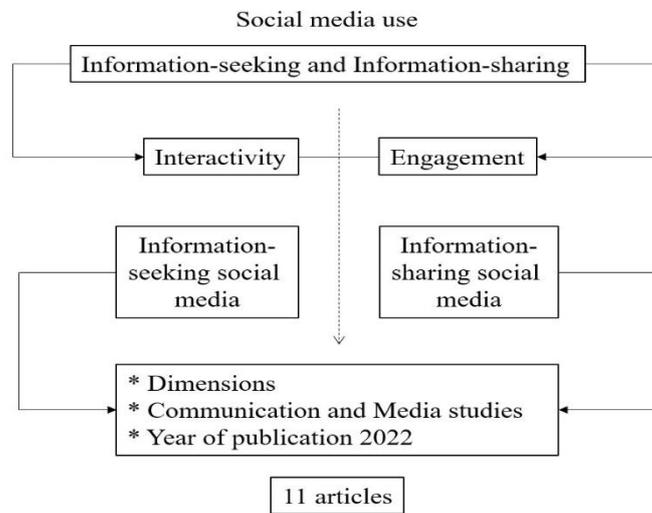
Figure 1. Data mining Stage-1 "information seeking-sharing and social media".
(Abbas et al., 2022; Kin et al., 2022).
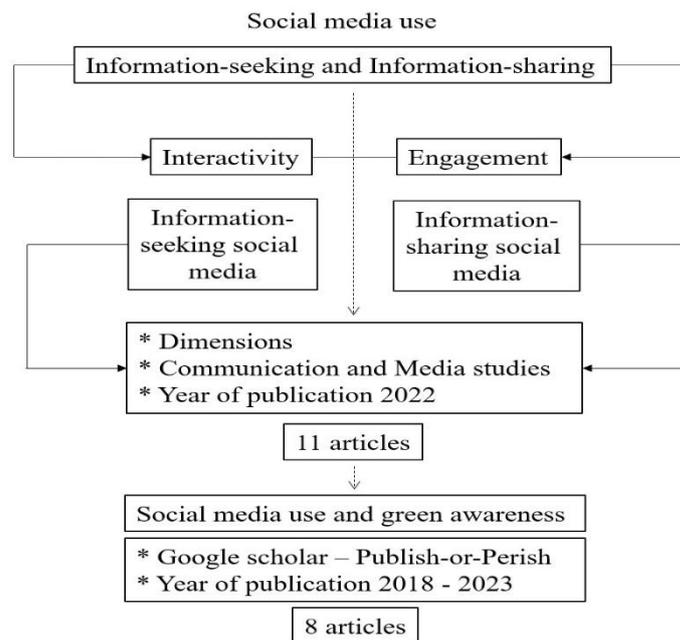
Figure 2. Data mining Stage-2 "social media use and green awareness".
(Abbas et al., 2022; Agrawal et al., 2023; Kin et al., 2022).

3.2. Step-2: Quantitative cross-tabulation Chi-Square test

In this step, quantitative ordinal data were collected using questionnaire. Five Likert-scaled items of the questionnaire were developed and questions or statements in the items were derived from Social Capital Theory and Social Learning Theory. The five Likert-scaled items are quantified and scored as follows: (1) 5 = Strongly Agree; (2) 4 = Agree; (3) 3 = Neutral; (4) 2 = Disagree; (5) 1 = Strongly Disagree. Questionnaires in Google Form were randomly distributed through three popular

social media platforms i.e., Instagram, Twitter, and Facebook.

The relationship between six variables was measured. They are (1) Variable-1: The level of social media use to find information about environmental problems (X1); (2) Variable-2: The degree of social media use to share information on environmental issues (X2); (3) Variable-3: The level of social media use to find information other than on environmental issues (X3); (4)Variable-4: the level of social media use to share information beyond environmental problems (X4); (5) Variable-5: The perception that pro-environmental products are usually expensive (Y1); and (6) Variable-6: the intention to buy environmentally-friendly products (Y2). The hypothesis development is presented as the following **Figure 3**.
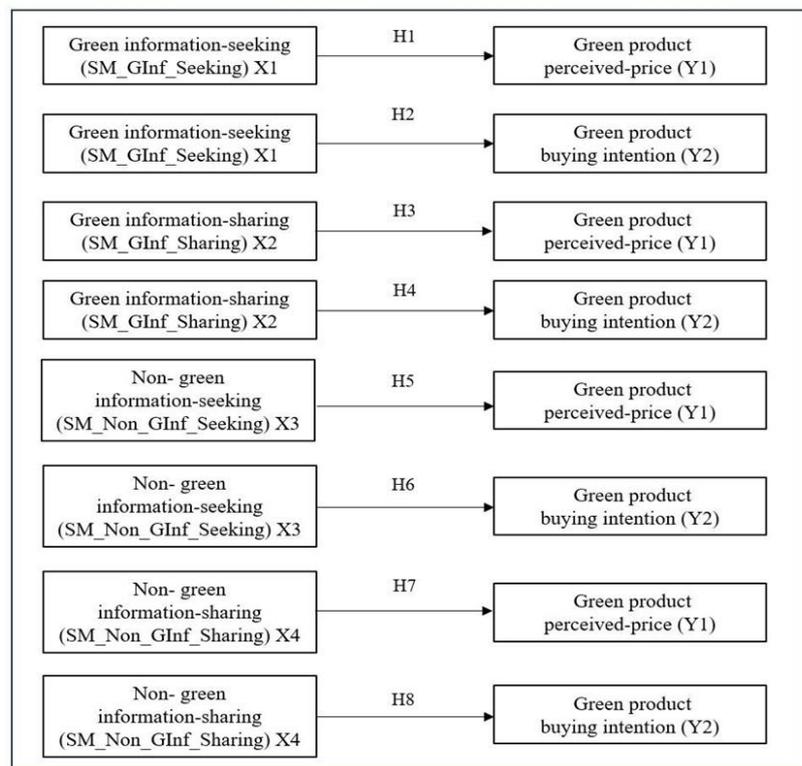
Figure 3. Hypothesis development.

3.3. Step-3: Integration

In this Step-3 integration, the themes of interactivity and engagement (through the role of information seeking-sharing in social media use) with green awareness are integrated narratively with the findings of a quantitative cross-tabulation approach. The process of integrative approach is presented in the following **Figure 4**:
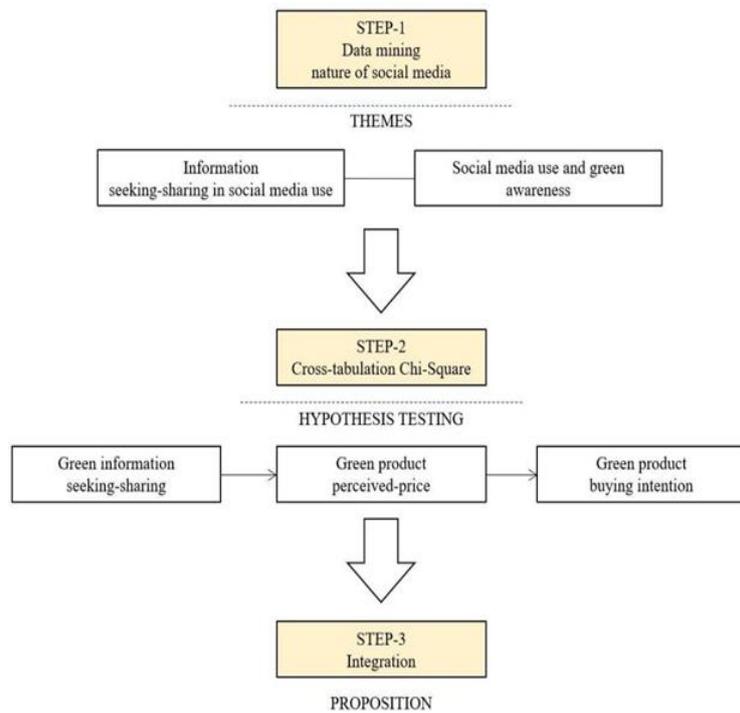
Figure 4. Integration (1).

4. Results and discussion

4.1. Step-1: Qualitative-explorative data mining

In Step-1 the following keywords are explored using Dimensions and/or Google Scholar database: (1) Information seeking-sharing and social media; and (2) Social media use and green awareness. The exploration is conducted using the criteria: (1) Publications 2022 (Keyword = information seeking-sharing and social media) and 2018–2023 (Keyword = social media use and green awareness); (2) Area of Science Communication and Media studies (Keyword = social media use and green awareness). 19 (nineteen) articles were screened and summarized, including: (1) 11 articles related to "information seeking-sharing and social media"; (2) 8 articles related to "social media use and green awareness". The summarized findings of selected articles are presented in the following **Tables 1** and **2**.

Table 1 shows that social media can be a practical-effective means of developing the power of social relations, changing attitudes and behaviors in responding to various pressing social issues. This argument is relevant to the role of social media in changing environmentally friendly behavior, accumulating knowledge about environmental sustainability values.

Existing studies show the dynamics in the relationship between social media's ability to change behavior and increase environmental awareness. Social media as a reliable information tool can be demonstrated through information seeking-sharing behavior (Li et al., 2022) especially in pressing situation (Bukar et al., 2022; Kim et al., 2022; Zhao and Basnyat, 2022).

Table 1. Data mining Step-1: information seeking-sharing and social media (Mills et al., 2014).

No.	Author/Year	Findings
1	Li et al. (2022)	Social media can be accessed as a reliable source of information
2	Zhao & Basnyat (2022)	Pressing situation that impact on social isolation resulting in informational challenges where social media becomes an alternative means of fulfilling information needs.
3	Kim et al. (2022)	In pressing situation that demand practical-economic oriented action, the legitimacy of social media becomes a consideration when the need arises to obtain information. The context of cross-cultural differences causes social media to be able to change individual behavior through news content, images or shows in it. The information-seeking behavior through social media is influenced by: (1) Individual cultural differences; (2) Perceived legitimacy of social media as a provider of credible and situational information.
4	Clayton et al. (2018)	The strength of an informative message's influence on an individual's attitude. This context explains information-seeking behavior as either a defensive responsive action, or a withdrawal responsive action, especially in situations where informational messages are perceived as interfering with individual freedom and autonomy.
5	O'Hara (2022)	Social media is the first choice of information seekers. However, social media still has the potential to provide manipulative information. The need for information literacy.
6	Stewart & Clayton (2021)	Social media trends are inseparable from the issue of social relations, and self-recognition. Social media becomes a means of seeing oneself and others.
7	Delle et al. (2022)	The use of social media to build relational power as a new phenomenon of interpersonal communication. Specifically, social media can be differentiated according to "brand popularity" i.e., Facebook, Twitter, Instagram. Each of these social media entities has features that are differentiated according to the characteristics and needs of its users.
8	Pedalino & Camerini (2022)	The use of social media as a means of self-recognition. Various forms of social media use behavior can be seen as facilities provided by social media, as well as how they impact the quality of social relationships.
9	Goldberg et al. (2022)	Dimensions in the ability of social media to be a means to build social relationships.
10	Tukachinsky Forster (2022)	Social media's ability to create various forms of "imaginative" relational experiences through individuals or reference figures for specific behaviors.
11	Bukar et al. (2022)	Social media can be used to respond to immediate need, become a strategic tool for shaping the quality of resilience.

Trust in social media in this context is the legitimacy of social media where the format is determined by user characteristics and the perceived credibility of social media as an information provider (Clayton et al., 2019; O'Hara, 2022).

Social media can fulfil its function as a means of exploring the experience of curiosity in the format of social relations. Through this function, it can be shown how social media can represent one's identity. Technological advances also make social media a branded product that is able to adopt every form of social needs of its users (Delle et al., 2022; Goldberg et al., 2022; Pedalino and Camerini, 2022; Stewart and Clayton, 2022; Tukachinsky Forster, 2023).

From the description above, three themes related to information seeking in the use of social media can be identified, namely: (1) Trustworthiness in responding to immediate need; (2) The nature of creative independence (autonomy); and (3) Credibility as an information provider. In the following **Table 2** data mining Step-1 with keyword "social media use and green awareness" is performed.

Table 2. Data mining Step-1: social media use and green awareness (Xie and Madni, 2023).

No.	Author/Year	Findings
1	Sari et al. (2022)	The existence of social media reconstructs communicative messages that were limited to open, multi-step flow that affects the legitimacy of social media. The existence of social media reconstructs communicative messages that were previously limited to open, multi-step flow that affects the legitimacy of social media. The intensity of information sharing activities often does not consider the vulnerable and doubtful character of social media due to unrestricted access and absent authority.
2	Bullock et al. (2022)	Social media as a contextualised learning tool, a motivator of curiosity, providing exposure to social issues and its ability to form relational attachments
3	Singla & Agrawal (2021)	Study of constraints and triggers for social media use using the context of disaster management. Barriers on the use of social media include regulation, software, physicality, authenticity, and culture and demographics. Meanwhile, social media triggers include trends in the need for portable tools, demographic participation, rising living standards, two-way communication, global reach, decision-making tools, infinite space-time characteristics, and relatively cheap sources of information.
4	Ngwainmbi (2022)	The trend towards the formation of global networking communities exposes the operational differences of media products and tools.
5	Ch'ng & Hoo (2022)	Overuse of social media that has a negative impact on personality development.
6	Armutcu et al. (2023)	Using the theory of planned behavior, it is known that attitude and perceived behavioral control influence consumer green purchasing behavior. Social media use and digital marketing interactions have a positive and significant impact on green purchasing behavior.
7	Raza Ch et al. (2021)	A study on the role of green marketing and social media marketing on green purchasing behavior. There is an influence of attitude, eco-label and green advertising on green product purchasing behavior. Peers do not have a moderating role in the relationship between green purchasing behavior and environmental awareness.
8	Aimiuwui (2018)	Assessment of green technology's contribution to environmental sustainability i.e., the use of social media to increase the use of green technology. The need for business innovation to create green cultural values to customers, covering green practices in business processes, and increasing green market share.

Table 2 presents review of social media that opens up opportunities for openness to social issues. The acceptance of the openness of information shared through social media legitimises the formation of social networks. Findings in the study of social media use and digital marketing interactions show the influence of social media use on behavior change (Ch'ng and Hoo, 2022) and environmental awareness (Aimiuwu, 2018; Ch et al., 2021).

Social media has become an interactive platform capable of opening up and disseminating information (Bullock et al., 2022; Sari et al., 2022). This context becomes the foundation for the formation of relational attachments (Ngwainmbi, 2022). Through the dynamics of information disclosure and relational attachment, it leads to the exchange of actual information, as well as the exchange of attention to actual social issues including environmental issues (Armutcu et al., 2023; Singla and Agrawal, 2022).

The argument emphasises three themes in the context of social media use and green awareness, namely: (1) Information exposure; (2) Responsiveness capacity; and (3) Unfavourability.

4.2. Quantitative cross-tabulation Chi-Square test

The following **Table 3** presents findings based on eight hypotheses theoretically

developed in this research. The table shows values of Chi-Square (CS), Significance (Sig.), and the proposed variables X1 (Green Information Seeking in Social Media Use), X2 (Green Information Sharing in Social Media Use), X3 (Non-Green Information Seeking in Social Media Use), X4 (Non-Green Information Sharing in Social Media Use), Y1 (Green Product Perceived-price), and Y2 (Green Product Buying Intention).

Table 3. Hypothesis testing results

H	CS	Sig.	X1	X2	X3	X4	Y1	Y2
H1	54.862**	0.000	35.5% (N)				36.6%(N)	
H2	56.026**	0.000	35.5% (N)					47.7%(A)
H3	24.079	0.200		42.2% (N)			36.6% (N)	
H4	18.674	0.097		42.2% (N)				47.7% (A)
H5	12.635	0.699			41.1% (A)		36.6% (A)	
H6	20.934	0.181			41.1% (A)			47.7% (A)
H7	36.711*	0.002				35.5% (A)	36.6% (A)	
H8	22.550	0.126				35.5% (A)		47.7% (A)

Source: SPSS output; **Significance at 0.01; *Significance at 0.05; N = Neutral; A = Agree.

The correlation between the level of frequency of using social media to find information about environmental issues and the view that pro-environmental products are usually expensive (Hypothesis-1) shows that the majority of respondents were neutral in responding to statements about using social media to find information on environmental issues (35.5%) and statements about the high price of green products (36.6%).

There is an influence between the level of frequency of using social media to find information about environmental issues (X1) and the perception that pro-environmental products are usually expensive (Y1). The significance level of the Chi-Square value is smaller than 0.05 (0.00; H0 can be rejected). The level of frequent use of social media to search for environmental issues provides insight into expensive green products. Searching for information through social media opens new insights with the proposition "pro-environmental products are usually expensive". Social media can be used as an effective means of accessing information, giving conclusions about the high economic value of pro-environmental products. The high cost of green products indicates high economic value, which has consequences for actions and purchases of green products. High economic value for green action i.e., the purchase of pro-environmental products that are relatively expensive, provides knowledge about the risks in green product consumption decisions. The green awareness that is formed is the acceptance of risk, which is the consequence of the high price of green products.

In the level of frequency of using social media to find information about environmental issues and the desire to buy pro-environmental products (Hypothesis-2) the findings indicate a neutral response (35.5%) to the statement "social media is used as a means of sharing information related to environmental issues". Additionally, it shows that 47.7% of the respondents agree to the statement "I am interested in

buying environmentally friendly products". This context is also followed by influence on the level of frequency of using social media to search for information about environmental issues (X1) and the desire to buy pro-environmental products (Y2). The significance level of the Chi-Square value of 0.00 is smaller than 0.01 or 0.05 (H0 can be rejected).

Hypothesis-3 is proposed for the correlation between the level of frequency of using social media to share information about environmental issues (X2) and the perception that pro-environmental products are usually expensive (Y1). The percentages of the majority of respondents who are neutral to the statement are: (1) Social media as a means of sharing information on environmental issues (42.2%); and (2) High prices for environmentally friendly products (36.6%). It shows no influence between the level of frequency of using social media to share information about environmental issues (X2) on the perception that pro-environmental products are usually expensive (Y1). The significance level of the Chi-Square value is greater than 0.05 (0.20; cannot reject H0). The use of social media to share information about environmental issues is able to accumulate knowledge as well as provide conclusions about expensive pro-environmental products.

The intensity of social media access in information sharing activities results in a perceived view of green products as expensive. Information sharing activities involve the act of exchanging information between social media users triggered by curiosity, actualization for recognition and social acceptance. This intensity then extends to responsiveness and concern for practical issues, including environmental issues.

In the level of frequency of using social media to share information about environmental issues (X2) and the intention to buy pro-environmental products (Y2) (Hypothesis-4) it presents the "neutral" response (42.2%) to the statement that social media is used as a means of sharing information related to environmental issues, and the "agree" response (47.7%) to the statement of interest in buying environmentally friendly products. There is no influence on the level of frequency of using social media to share information about environmental issues (X2) and the desire to buy pro-environmental products (Y2). The significance level of the Chi-Square value of 0.097 is greater than 0.01 or 0.05 (0.097; cannot reject H0).

Hypothesis-5 is proposed to present the level of frequency of using social media to find information other than about environmental issues (X3) and the perception that pro-environmental products are usually expensive (Y1). **Table 3** shows the percentage of respondents who agree in response to the statements: (1) Social media as a means of accessing information on issues not related to the environment (41.1%); and (2) The high price of green products (36.6%).

The significance level of the Chi-Square value of 0.699 (greater than 0.05; cannot reject H0) indicates that there is no influence of the level of frequency of using social media to find information other than about environmental issues (X3) and the view that pro-environmental products are usually expensive (Y1). The effectiveness of social media as a means of accessing information is demonstrated through its ability to provide a public space for more diverse information. The collective knowledge that is built is able to form a belief in the need to care for the environment. The price factor of environmentally friendly products is no longer a barrier.

The level of frequency of using social media to find information other than about environmental issues (X3) and the intention to buy pro-environmental products (Y2) is proposed in Hypothesis-6. There is no influence between the level of frequency of using social media to find information other than about environmental issues (X3) and the intention to buy pro-environmental products (Y2). The significance level of the Chi-Square value is greater than 0.05 (0.181; cannot reject H0). Next, the research proposes Hypothesis-7 to measure the correlation between the level of frequency of using social media to disseminate information unrelated to environmental issues(X4) and the perception that pro-environmental products are usually expensive (Y1). As shown by **Table 3** the respondents agree with the statement "Social media is a means to share information that is not related to environmental issues" (35.5%) and "Green products are expensive" (36.6%). There is an influence of the level of frequency of using social media to disseminate information unrelated to environmental issues(X4) and the view that pro-environmental products are usually expensive (Y1). The significance level of the Chi-Square value of 0.002 is smaller than 0.01 or 0.05 (H0 can be rejected). The level of frequent use of social media to share information on environmental issues can form beliefs, concerns and attention. The belief, concern and attention to the environment that is formed can refer to action where the price of environmentally friendly products is no longer a barrier.

Finally, Hypothesis-8 is developed to measure the degree of frequency of using social media to disseminate information unrelated to environmental issues(X4) and the intention to buy pro-environmental products (Y2). There is no influence between the frequency of using social media to share information other than environmental issues (X4) and the intention to buy pro-536 environmental products (Y2). The significance level of the Chi-Square value is greater than 0.05 (0.126; cannot reject H0).

4.3. Integration

In the integration section, the qualitative-exploratory data mining approach (Step-1 and Step-2) is integrated with the quantitative cross-tabulation approach using Chi-Square test as presented in the following **Figure 5**.

Information-seeking activities in using social media are developed on the belief that social media are reliable and credible tools, especially in immediate need (Bukar et al., 2022; Kim et al., 2022; Li et al., 2022; O'Hara, 2022; Zhao and Basnyat, 2022). Previous research has indicated the information seeking activity in the social media use as the beginning process leading into the exploration of curiosity. In the process of satisfying the curiosity and fully internally controlled by willingness; the social media users keep looking for any information relevant to their needs. This process allows social media users to make sense of what they think as valuable information relevant to their present values. (Belcastro et al., 2022; Zhao and Shi, 2022).

This trustworthiness is a key characteristic of social media in the role of an information-seeking tool that can be employed, operated autonomously under the authority of its users (Clayton et al., 2018; Delle et al., 2022; Goldberg et al., 2022; Pedalino and Camerini, 2022; Stewart and Clayton, 2021; Tukachinsky Forster, 2023), and to give benefit as well (Aimiuwu, 2018; Armutcu et al., 2023; Baharuddion and

Mazlan, 2018; Edeh, 2020; Ganesh and Chatterjee, 2021; Khan et al., 2022; Noor et al., 2023; Raza Ch et al., 2021).
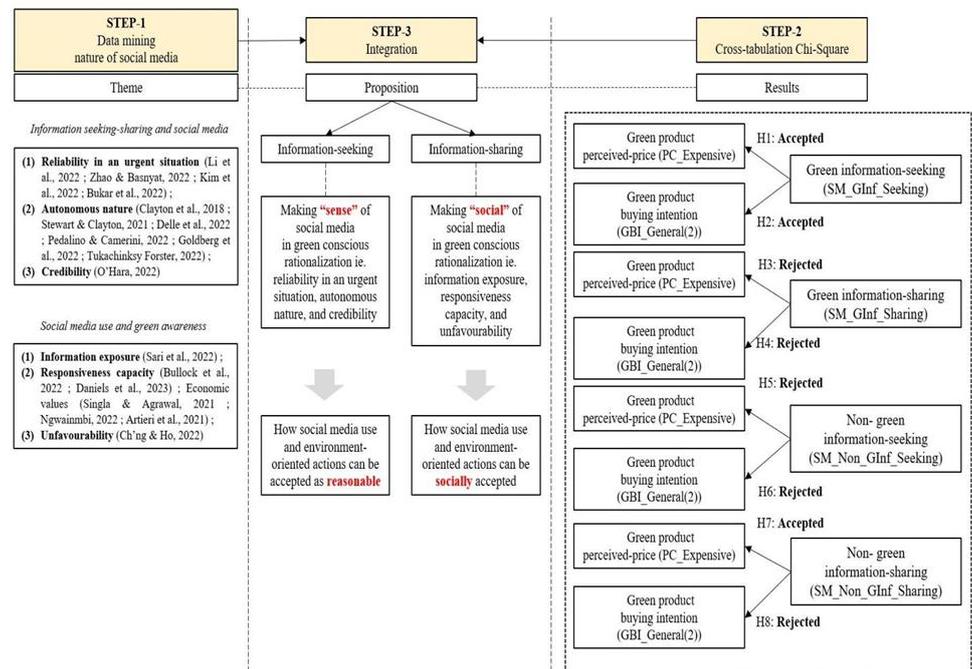

Figure 5. Integration (2).

Trustworthiness and autonomy as the main characteristics of social media use are shown through the significant impact of green information-seeking on green product buying intention. Green information-seeking activities through the perceived credibility of social media are able to create price perceptions and to lead green product purchase intention. This conclusion is confirmed by the finding that non-green information-seeking activities are not related to perceived price leading to green products buying intention.

The capacity of social media as information-seeking tools is perceived as trustworthy, credible and autonomous under the authority of its users. It reflects the ability of social media to produce new knowledge. This also indicates that information-seeking activities indirectly involve individual learning capacity. The process of information-seeking that begins with curiosity could efficiently be facilitated by social media, accumulating knowledge, providing new insights, changing mindsets and pro-environmental behavior.

This argument confirms the information-seeking process, as a process of perception development of the trustworthiness, autonomy and credibility of social media, triggered by green conscious rationalisation i.e., how environmental values could be accepted as reasonable and be implemented in a practical basis.

Social media information-sharing activities are based on the situation of information openness, responsive capacity, and the possibility of dis-information. Information disclosure provides a space for "transactional" exchange i.e., information that could be interactively accessed. This space of exchange is also a social space where social bonds are created and have consequences for various specific behaviors. In this social space comes the need for social recognition and acceptance. Therefore,

in this context, environmentally friendly behavior are basically the manifestation of social recognition and acceptance. In other words, individuals begin to engage in information-sharing activities due to social pressure. Accumulated knowledge from information-sharing activities influences specific behavior.

The contribution of this research is to study the phenomena of social media interactivity in information seeking and sharing behavior that can accumulate knowledge, form new insights and change behavior. The increasing trend in the number of social media users has shown the increasingly major presence of social media in human life. The role of social media is a potential market for the implementation of social media marketing strategies targeting market segments that have concerns about environmentally friendly global norms.

Meanwhile, previous studies have focused more on: (1) The function of social media as a means of communication (Bukar et al., 2022; Li et al., 2022; O'Hara, 2022); (2) The pragmatic principle of social media as a means of information exchange (Zhao and Basnyat, 2022): (3) The ability of social media as a means of information exchange that changes behavior (Clayton et al., 2018; Delle et al., 2022; Goldberg et al., 2022; Pedalino and Camerini, 2022; Stewart and Clayton, 2021); (4) The use of social media as a means of information exchange determined by the characteristics of its users (Kim et al., 2022).

There is a gap where the market segment that pays attention to green global norms has not been managed into a potential market using a social media marketing strategy approach. Therefore, this research is expected to fill the opportunity by complementing existing studies and adding the concept of consumer behavior through information seeking-sharing interactivity in the social media space.

5. Conclusion

This research investigates the dual role of Generation Z's information seeking-sharing behavior in a green context. A space of social media interactivity that can shape two kinds of behavior was identified. First, information-seeking behavior where social media users rationalise green awareness. Second, information-sharing behavior where social media users perform social openness for green awareness. The formation of information seeking-sharing behavior in this social media interactivity space is a reference for marketing strategies to improve business competitiveness.

Therefore, the following conclusion is proposed. First, the function of information-seeking is determined by green awareness rationalisation process, which is how environmental values can be accepted as reasonable. Second, the presence of social acceptance and recognition in the function of sharing information, which is how environmental values can be socially accepted.

The role of information seeking-sharing in the use of social media is able to create the value of interactivity and engagement, where the bonds of social relations provide experiences and change behavior that produce social benefit. This indicates the formation of green consciousness that begins with the process of internalising beliefs through the rationalisation of environmental values i.e., making sense of environment-oriented actions that might be able to provide economic value.

6. Implication

The findings in this study of social media interactivity space of information-seeking and information-sharing behavior in shaping green awareness can be contributed to social media marketing strategies through the key value of interactivity that provides a relational bonding experience (engagement). Furthermore, business could maximize efforts to develop green-oriented mindset through co-creation space leading to excel green marketing performance.

By looking at trends in the popularity and familiarity of social media use, the findings of this study also confirm the effectiveness of the implementation and contribution of social media marketing strategies in their involvement in solving problems mandated by green global norms. The effectiveness of the implementation and contribution of social media can be broken down into two parts: (1) Environmental advocacy. The research findings show that there are important stages in the interactivity of social media seeking information-sharing as an opportunity for marketing communication strategies to form a green market. (2) Social media marketing. Social media marketing strategy can fill the opportunity of information-sharing social media interactivity using the issue of green global norms to bind solidarity of care and attention to form long-term customer relationships.

7. Limitation

This research is limited to one of the dimensions of social media, namely the role of information seeking and sharing behavior, which does not fully explain its relationship with green awareness. Further research needs to be conducted through the discussion of various dimensions in social media to get a more holistic of green awareness, as well as to provide a new perspective of barriers in green consumption.

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References

Abbas, A. F., Jusoh, A., Mas'od, A., et al. (2022). Bibliometrix analysis of information sharing in social media. Cogent Business & Management, 9(1). https://doi.org/10.1080/23311975.2021.2016556

Afifi, W. A., & Weiner, J. L. (2004). Toward a Theory of Motivated Information Management. Communication Theory, 14(2), 167–190. https://doi.org/10.1111/j.1468-2885.2004.tb00310.x

Agrawal, M., Kalia, P., Nema, P., et al. (2023). Evaluating the influence of government initiatives and social platforms on green practices of Gen Z: The mediating role of environmental awareness and consciousness. Cleaner and Responsible Consumption, 8, 100109. https://doi.org/10.1016/j.clrc.2023.100109

Aimiuwu, E. E. (2018). Using Social Media to Target Customers for Green Technology Use. International Journal of Virtual Communities and Social Networking, 10(2), 41–61. https://doi.org/10.4018/ijvcsn.2018040103

Amer, E. (2023). Internationalization, institutional pressures in foreign markets, and environmental sustainability. Journal of International Management, 29(1), 100974. https://doi.org/10.1016/j.intman.2022.100974

Armutcu, B., Ramadani, V., Zeqiri, J., et al. (2023). The role of social media in consumers' intentions to buy green food: evidence from Türkiye. British Food Journal. https://doi.org/10.1108/bfj-11-2022-0988

Baharuddin, F., Mazlan, A. Y. U. (2018). A Propositional Logic With Subjunctive Conditionals For Social Media Framework To Empower The Endowment Of Green Library Technology Sustainability. Journal Of Theoretical and Applied Information Technology, 96(21).

Belcastro, L., Cantini, R., & Marozzo, F. (2022). Knowledge Discovery from Large Amounts of Social Media Data. Applied Sciences, 12(3), 1209. https://doi.org/10.3390/app12031209

Boccia Artieri, G., García-Bilbao, P. A., & La Rocca, G. (2021). Rethinking affective polarization and sharing of emotions in digital platform ecosystems. Theories and research practices. International Review of Sociology, 31(2), 223–230. https://doi.org/10.1080/03906701.2021.1947949

Bukar, U. A., Sidi, F., Jabar, M. A., et al. (2022). A Multistage Analysis of Predicting Public Resilience of Impactful Social Media Crisis Communication in Flooding Emergencies. IEEE Access, 10, 57266–57282. https://doi.org/10.1109/access.2022.3176963

Byrum, K. (2017). "Hey Friend, Buy Green": Social Media Use to Influence Eco-Purchasing Involvement. Environmental Communication, 13(2), 209–221. https://doi.org/10.1080/17524032.2017.1308404

Canova, L., Paladino, G. (2023). Gen Z, Personality Traits and Sustainability Awareness: An Econometric Investigation. Available online: https://mpra.ub.uni-muenchen.de/115960/ (accessed on 18 January 2024).

Carmichael, D., Archibald, J., & Lund, G. (2015). Social Capital Theory in Social Media Research. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2612872

Ceja, M. A., & Pérez, P. A. (2010). Educational Opportunity and Latino/Chicano College Choice: New Findings, and Theoretical Perspectives. International Encyclopedia of Education, 610–615. https://doi.org/10.1016/b978-0-08-044894-7.00131-7

Ch, T. R., Awan, T. M., Malik, H. A., et al. (2021). Unboxing the green box: an empirical assessment of buying behavior of green products. World Journal of Entrepreneurship, Management and Sustainable Development, ahead-of-print(ahead-of-print). https://doi.org/10.1108/wjemsd-12-2020-0169

Ch'ng, L. T. X., & Soo Hoo, P. Y. (2022). Relationship between Social Media Addiction Levels and Academic Procrastination among Undergraduate Students in Malaysia: Grit as the Mediator. Advanced Journal of Social Science, 11(1), 13–27. https://doi.org/10.21467/ajss.11.1.13-27

Chang, H. H., Lu, Y.-Y., & Li, P. R. (2022). The Yale model of green message sharing and environmental consciousness on social media platforms. Online Information Review, 47(2), 333–355. https://doi.org/10.1108/oir-04-2021-0200

Clayton, R. B., Lang, A., Leshner, G., et al. (2018). Who Fights, Who Flees? An Integration of the LC4MP and Psychological Reactance Theory. Media Psychology, 22(4), 545–571. https://doi.org/10.1080/15213269.2018.1476157

Daniels, C., Erforth, B., & Teevan, C. (2022). Digitalisation for Transformation. Africa–Europe Cooperation and Digital Transformation, 1–16. https://doi.org/10.4324/9781003274322-1

de Oliveira Santini, F., Ladeira, W. J., Pinto, D., et al. Customer engagement in social media: a framework and meta-analysis. J. of the Acad. Mark. Sci. 48, 1211–1228 (2020). https://doi.org/10.1007/s11747-020-00731-5

Delle, F. A., Clayton, R. B., Jordan Jackson, F. F., et al. (2023). Facebook, Twitter, and Instagram: Simultaneously examining the association between three social networking sites and relationship stress and satisfaction. Psychology of Popular Media, 12(3), 335–343. https://doi.org/10.1037/ppm0000415

Dragolea, L.-L., Butnaru, G. I., Kot, S., et al. (2023). Determining factors in shaping the sustainable behavior of the generation Z consumer. Frontiers in Environmental Science, 11. https://doi.org/10.3389/fenvs.2023.1096183

Edeh, M. B. (2020). Green marketing as a marketing tool and consumer purchase behavior. Journal of Global Social Sciences, 1(3), 37–54. https://doi.org/10.31039/jgss.v1i3.77

Eweje, G. (2020). Proactive environmental and social strategies in a small- to medium-sized company: A case study of a Japanese SME. Business Strategy and the Environment, 29(7), 2927–2938. Portico. https://doi.org/10.1002/bse.2582

Fauzi, M. A., Md Haron, N. R. H., Ramli, F. I., et al. (2020). Theories and antecedents of knowledge sharing behaviour in virtual community: A Systematic Review. Journal of Content, Community and Communication, 11(10), 32–51. Internet Archive. https://doi.org/10.31620/jccc.06.20/04

Genoveva, G., & Tanardi, J. (2022). Green Entrepreneurship: A New Paradigm for Millennials in Indonesia. International Journal of Sustainable Development & Planning, 17(4).

Goldberg, S., Yeshua-Katz, D., & Marciano, A. (2022). Online construction of romantic relationships on social media. Journal of

Social and Personal Relationships, 39(6), 1839–1862. https://doi.org/10.1177/02654075211067814

Gomes, S., Lopes, J. M., & Nogueira, S. (2023). Willingness to pay more for green products: A critical challenge for Gen Z. Journal of Cleaner Production, 390, 136092. https://doi.org/10.1016/j.jclepro.2023.136092

Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. Journal of Consumer Marketing, 26(6), 376–391. https://doi.org/10.1108/07363760910988201

Guralnick, D., Auer, M. E., Poce, A. (2023). Innovative Approaches to Technology-Enhanced Learning for the Workplace and Higher Education. In: Lecture Notes in Networks and Systems. Springer International Publishing. https://doi.org/10.1007/978-3-031-21569-8

Han, R., & Xu, J. (2020). A Comparative Study of the Role of Interpersonal Communication, Traditional Media and Social Media in Pro-Environmental Behavior: A China-Based Study. International Journal of Environmental Research and Public Health, 17(6), 1883. https://doi.org/10.3390/ijerph17061883

Hu, C., & Huang, J. (2023). An Exploration of Motivations for Online Identity Reconstruction from the Perspective of Social Learning Theory. International Journal of Human–Computer Interaction, 1–13. https://doi.org/10.1080/10447318.2023.2212215

Johnson, J. D., & Meischke, H. (1993). A Comprehensive Model of Cancer-Related Information Seeking Applied to Magazines. Human Communication Research, 19(3), 343–367. https://doi.org/10.1111/j.1468-2958.1993.tb00305.x seeking applied to magazines. Human Communication Research, 19(3), 343-367.

Khan, S., Jamil, S., & Khan, U. R. (2022). How Green Psychological Capital and Green HRM Can Lead to Long-Term Sustainability in Organizations. International Journal of Management Research and Emerging Sciences, 12(4). https://doi.org/10.56536/ijmres.v12i4.350

Kim, S., Sheng, X., & Ketron, S. C. (2022). The Roles of Legacy Versus Social Media Information Seeking in American and Chinese Consumers' Hoarding During COVID-19. Journal of International Marketing, 30(2), 38–55. https://doi.org/10.1177/1069031x221089347

Li, F., Larimo, J., & Leonidou, L. C. (2022). Social media in marketing research: Theoretical bases, methodological aspects, and thematic focus. Psychology & Marketing, 40(1), 124–145. Portico. https://doi.org/10.1002/mar.21746

Li, S.-C. S., Wu, T.-Y., Zeng, H.-K., et al. (2022). Channels Adopted for Information Seeking during COVID-19: Comparing Social Media with News Media and Interpersonal Communication in Taiwan. International Journal of Environmental Research and Public Health, 19(15), 9321. https://doi.org/10.3390/ijerph19159321

Machalek, R., & Martin, M. W. (2015). Sociobiology and Sociology: A New Synthesis. International Encyclopedia of the Social & Behavioral Sciences, 892–898. https://doi.org/10.1016/b978-0-08-097086-8.32010-4

Mansoor, M., & Paul, J. (2021). Consumers' choice behavior: An interactive effect of expected eudaimonic well-being and green altruism. Business Strategy and the Environment, 31(1), 94–109. Portico. https://doi.org/10.1002/bse.2876

Méndez-León, E., Reyes-Carrillo, T., & Díaz-Pichardo, R. (2021). Towards a holistic framework for sustainable value analysis in business models: A tool for sustainable development. Business Strategy and the Environment, 31(1), 15–31. Portico. https://doi.org/10.1002/bse.2871

Mills, L. A., Knezek, G., & Khaddage, F. (2014). Information seeking, information sharing, and going mobile: Three bridges to informal learning. Computers in Human Behavior, 32, 324-334. https://doi.org/10.1016/j.chb.2013.08.008

Mokhtar, N. F., & Hasan, Z. R. A. (2023). Exploring the success factor of social media marketing strategies among micro-enterprises in Malaysia. International Journal of Electronic Business, 18(3), 249–268. https://doi.org/10.1504/ijeb.2023.132184

Ngwainmbi, E. K. (2022). Dismantling Cultural Borders Through Social Media and Digital Communications. Springer International Publishing. https://doi.org/10.1007/978-3-030-92212-2

Noor, N. H. M., Puteh, K. N. A. K., et al. (2023). Effectiveness of Traditional Media and Social Media Sustainability Communication in Influencing Green Consumption Intention. Journal of Media and Information Warfare Vol, 16(1), 14-27.

O'Hara, I. (2022). Automated Epistemology: Bots, Computational Propaganda & Information Literacy Instruction. The Journal of Academic Librarianship, 48(4), 102540. https://doi.org/10.1016/j.acalib.2022.102540

Palomo-Domínguez, I., Elías-Zambrano, R., & Álvarez-Rodríguez, V. (2023). Gen Z's Motivations towards Sustainable Fashion and Eco-Friendly Brand Attributes: The Case of Vinted. Sustainability, 15(11), 8753. https://doi.org/10.3390/su15118753

Pedalino, F., & Camerini, A.-L. (2022). Instagram Use and Body Dissatisfaction: The Mediating Role of Upward Social Comparison with Peers and Influencers among Young Females. International Journal of Environmental Research and Public

Health, 19(3), 1543. https://doi.org/10.3390/ijerph19031543

Prakash Yadav, G., & Rai, J. (2017). The Generation Z and their Social Media Usage: A Review and a Research Outline. Global Journal of Enterprise Information System, 9(2), 110. https://doi.org/10.18311/gjeis/2017/15748

Reinikainen, H., Kari, J. T., & Luoma-aho, V. (2020). Generation Z and Organizational Listening on Social Media. Media and Communication, 8(2), 185–196. https://doi.org/10.17645/mac.v8i2.2772

Saraf, N., Bharati, P., & Ravichandran, T. (2022). Does Social Capital Arise from Enterprise or Public Social Media Use? A Model of Social Media Antecedents and Consequences. Information Systems Frontiers, 25(6), 2353–2375. https://doi.org/10.1007/s10796-022-10359-1

Sari, A. H., Sugihartati, R., Wulan, N., et al. (2022). Health Communication Revolution Through Content: Multi-Step Flow and More Spill Over of Communication. Nyimak: Journal of Communication, 6(2), 251. https://doi.org/10.31000/nyimak.v6i2.6430

Shen, J., Liang, H., Zafar, A. U., et al. (2023). Influence by osmosis: Social media green communities and pro-environmental behavior. Computers in Human Behavior, 143, 107706. https://doi.org/10.1016/j.chb.2023.107706

Singla, A., & Agrawal, R. (2022). Social media and disaster management: investigating challenges and enablers. Global Knowledge, Memory and Communication, 73(1/2), 100–122. https://doi.org/10.1108/gkmc-12-2021-0206

Steiner, E., Pittman, M., & Boatwright, B. (2023). When Sports Fans Buy: Contextualizing Social Media Engagement Behavior to Predict Purchase Intention. International Journal of Sport Communication, 16(2), 136–146. https://doi.org/10.1123/ijsc.2022-0158

Stewart, V. T., & Clayton, R. B. (2022). Achieving the ideal-self while harming my relationship: Examining associations between self-discrepancy, instagram photo manipulation, and romantic relationship outcomes. Psychology of Popular Media, 11(2), 208–216. https://doi.org/10.1037/ppm0000344

Taghvaee, V. M., Nodehi, M., Arani, A. A., Jafari, Y., & Shirazi, J. K. (2023). Sustainability spillover effects of social, environment and economy: mapping global sustainable development in a systematic analysis. Asia-Pacific Journal of Regional Science, 7(2), 329-353. https://doi.org/10.1007/s41685-022-00231-0

Tukachinsky Forster, R. (2023). The green side of parasocial romantic relationships: An exploratory investigation of parasocial jealousy. Psychology of Popular Media, 12(3), 279–293. https://doi.org/10.1037/ppm0000413

Xie, S., & Madni, G. R. (2023). Impact of social media on young generation's green consumption behavior through subjective norms and perceived green value. Sustainability, 15(4), 3739. https://doi.org/10.3390/su15043739

Yang, J. Z., & Huang, J. (2018). Seeking for Your Own Sake: Chinese Citizens' Motivations for Information Seeking About Air Pollution. Environmental Communication, 13(5), 603–616. https://doi.org/10.1080/17524032.2017.1397041

Zhao, H., & Shi, Q. (2022). Accessing the Impact Mechanism of Sense of Virtual Community on User Engagement. Frontiers in Psychology, 13. https://doi.org/10.3389/fpsyg.2022.907606

Zhao, X., & Basnyat, I. (2022). Online information and support seeking during COVID-19 lockdown in Wuhan: implications for health promotion. Health Promotion International, 37(3). https://doi.org/10.1093/heapro/daac057