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Green Consumers' Responses to Integrated Digital Communication in the Context of Multichannel Retail

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Abstract: Because of the fast rise of Internet commerce, a firm now has access to a plethora of new communication channels in addition to conventional ones and the problem is determining the best balance of physical and online channels. Due to the fact that their role in the value chain is to be close to green consumers, these businesses can effectively implement multichannel communication strategies. The purpose of this study is to determine how the use of integrated digital communication could change how green customers act in multichannel retail. The data from 396 respondents with multichannel retailing experience were collected to conduct an empirical investigation on social media platforms, i.e., Twitter, Facebook, and Instagram, which was then analyzed using structural equation modeling (SEM). The study's findings emphasized the significance of planning, implementing, and regulating multichannel communication on the one hand and the impacts of recognizing the unique demands of integrated information and communication of green customers in multichannel retail on the other. The relevance of this study is that it provides insights into green consumer decision-making research and integrated digital communication to manage consumer relationships.

Keywords: integrated digital communication; green consumer behavior; multichannel retailing; green advertising



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1. Introduction

Human society looks with increasing concern at the current state of environmental problems that negatively affect human activities in any field of activity [1]. Consumer thinking regarding the elimination and depletion of environmental resources through irresponsible activities has extended beyond the typical perceptions of environmental protection and consumption patterns [2,3]. Consumer requirements must be met by retail companies that become aware and responsible because consumers' purchasing decisions are influenced by the ecological value that they bring [4].

From the point of view of retail practice, ensuring a uniform appearance in all points of contact with green customers, the integration of new interactive environments, and their oriented design of processes in multichannel systems to increase the effectiveness and efficiency of communication play an important role [4,5]. Therefore, a sustainable communication design necessitates that the requirements resulting from the dynamic and increasing complexity of the relevant market are correctly perceived in their importance and interpreted.

In addition to competition, retail companies face numerous challenges in the digital age (the high level of sensory information, and credibility overload) that affect green consumer behavior [3–5]. The opportunities to reach a growing number of different customer segments with different distributions and communication channels through

digital channels lead to changes in the breadth and depth of the range of products, as well as services, adapted to target groups or individual channels [4–6].

In addition, multichannel retailers have developed methods and algorithms for themselves, with which they adjust their prices repeatedly in a short time according to the current situation [7,8]. This situation in turn contributes to uncertainty among consumers [9,10]. Thus, by using multichannel systems, green consumers should be presented with the appropriate offer at the appropriate time and should be able to choose [11–13].

A key issue in green marketing is distribution [14]. Experience indicates that products should be distributed through regular outlets so that they are not only available to a small niche market of organic consumers. If products are traded across borders, distribution can become an environmentally sensitive issue. In addition to this, ecological logistics represents the effort to reduce externalities and achieve a sustainable balance between environmental, economic, and social objectives. In the field of green logistics, the main goal is to contribute to environmental sustainability [14]. According to specialists [14,15], ecological promotion involves (a) explicitly or implicitly addressing the relationship between a product or service and the bio-physical environment and (b) promoting a green lifestyle, with or without highlighting a product or service or presenting a corporate image of environmental responsibility. In the same way, green marketing strategies seek to encourage people to purchase items that are beneficial for society and resist the urge to take advantage of humans' natural desire for pleasure. Thus, most retailers have started using digital marketing as a solution for sustainable development, by promoting and using green products/services among consumers.

When sales channels expand and communication channels increase in complexity, far-reaching new interactions also appear in all other processes of the value chain [11,14,16,17]. Regardless of the industry, type of business, and variety of the multichannel system, this results in achieving central requirements for the management of different channels [15–17]. The prerequisite for success in multichannel retail is to capture the core needs of green customers in order to create an unmistakable shopping experience and brand [2,15,18–20]. In addition, production and logistics processes must be optimized and simplified and warehousing must be minimized in order to compete with the cost and time advantages of vertical and pure online retailers [7]. However, numerous studies [8,10,12,19,21,22] demonstrate the positive effects of the use of new interactive media on sales in the classic operating and sales channels of retail trade. They offer a number of methods to track and analyze green customer behavior in order to build long-term relationships and use the potential of these relationships in a value-driven way.

According to Kim and Wansink [23], the object of retail communication is all the communication tools and measures that are used to present the retail company and its services to the relevant internal and external target groups. Concerning the topic of interactive retail media integration in multichannel systems, there are very few scientific studies that examine how well-integrated communication concepts work in retail or how well different communication channels can be used for the design of communication in multichannel retail [24–26].

To fill this gap, in terms of applied business management, the objectives of this study are, first, to verify the concepts of integrated digital communication for their suitability to the specifics of the multichannel approach and, second, to identify the impact of the implementation of communication on the behavior of green buyers in multichannel retail. Moreover, branding in multichannel retail is a major focus of this study. Based on this, the branding policy of a retail company must be understood at the level of its stores or digital distribution channels. The goal is anchoring in an integrated multichannel digital communication to be able to guarantee the context-appropriate management of green customer contact points and situational control of these contacts while maintaining a uniform appearance.

The research question that will be explored in this study is based on this background and the purpose of the study. The research question is as follows: What are the conse-

quences of integrated digital communication on green customer behavior when it comes to multichannel retail? In answering this question, in the formulation of the research hypotheses, two central research perspectives for integrated digital communication were followed: the analysis and management of relations with green consumers in multichannel retail. In addition to this, green consumer behavior in multichannel retailing is influenced by factors such as information quality and collaboration quality, customer satisfaction, the use of digital channels, brand image, interactive engagement, technology characteristics, the promotional strategy, and trust, according to the study's conceptual model. There are other effects of age and gender that act as moderators.

Structural equation modeling (SEM) was used to examine data from 396 respondents on social media platforms, i.e., Twitter, Facebook, and Instagram, with previous experience in multichannel retailing. The results of this study should be seen as a contribution to applied digital marketing research. The goal of this research is to solve real-world problems with integrated communication in order to help retailers to make better decisions and provide them with better strategies to work with green customers in multichannel retail.

At the same time, it is shown that the differences in the structures and behaviors of retailers are based on the respective framework conditions in which they operate. In this way, a match is sought between specific retail situations, green consumer behavior situations, and relevant strategies, tools, and media, to ensure that communication is as effective as possible. In addition, the conclusions of the study highlight the fact that retailers must be particularly concerned with optimizing and innovating their relationship with the green consumer, with integrated communication as a central tool in their digital marketing strategy.

This study also adds to what is known about the relationship between retailers and green customers by determining the main factors that allow them to interact with digital environments when they wish to use or simply recommend a multichannel. The goal of the needs-oriented development of communication processes ultimately requires the ability to dynamically and flexibly adapt integrated digital communication regarding the dialogue with green customers in different situations. It is therefore necessary to develop policy-elastic approaches to problem solving that ensure the compatibility of uniformity and integration, as well as flexibility and adaptability in reaction behavior.

The rest of the paper is structured as follows. The literature review and the creation of the hypothesis are presented in the second section of the paper. The research model and methodology are presented in the third section. The empirical results and the implications for the discussions are described in the following sections. The conclusions of the study are presented in the final section.

2. Literature Review and Hypothesis Development

In the retail business, multichannel retailing systems have been present for a very long time [27]. Some examples of multichannel retailing systems include the combination of mail order and omnichannel sales [27–30]. In multichannel management, only channels inside the retailer's sphere may be directly controlled or managed, thus representing this definition's premise. The terms "channels" and "media", which are sometimes used synonymously or interchangeably, were delimited after customer touchpoints and channels [8]. The concept of interactivity rose to prominence in green marketing research, particularly with the introduction of the Internet, and largely encompasses the intended effect of green customers on the type of information and services supplied, which is enabled by the use of technology [31,32]. However, the retail industry is also experimenting with additional self-service choices, such as information terminals that provide information about green products or services.

2.1. Need for Integrated Digital Communication in Green Consumer Behavior in Multichannel Retail

Differing essentially from one-way forms of communication without a return channel, integrated digital communication can be conceived of as a two-way exchange that implies the observability of communication in social media to exchange points of view and arguments between those involved in communication and to realize joint negotiations of solutions. From a scientific point of view [32], the practical relevance of the application of new information and communication technologies in the field of communication between retail and green consumer companies cannot be denied. The goal is to find solutions to real problems so that the actors can make better decisions and work more efficiently.

While some authors [33–36] present the aspects related to relationship orientation in digital marketing and communication as a paradigm shift in the context of online interactivity, there are also critical articles [37,38] that question this. However, there is still no consensus in evaluating the state of development of integrated communication in multichannel retailing [39]. A major reason that integrated communication is important is that green consumers in multichannel retail make decisions about what to buy based on how they piece together the information that they obtain [13,24,40].

Depending on the channel offer of the respective retailer, both online and offline green consumer segments are formed who wish to use different channels before, during, and after the purchase decision and appreciate the advantages of the options that they prefer [40]. For online-savvy green customers, convenience is the priority [13,41]. However, the expansion of electronic information and shopping opportunities must not lose sight of green customers, who, in certain situations, traditionally or again, value the advantages of multichannel businesses [11,41]. The focal points of using online touchpoints also differ significantly across green product lines. Therefore, emerging opportunities for Internet users to self-publish knowledge and personal information on digital channels and share content with the Internet community have transformed the contact between retailers and green consumers in multichannel retailing [13,42–44].

However, green consumer behavior itself is also subject to change [31,44–46]. Offline and online sales channels are linked to multichannel communication channels and search engine optimization is a central task of corporate communication [5,47]. Communication is rarely presented as an independent tool in the retail mix. Most of the time, younger target groups do not even know or care whether they are currently online or offline [31,48–50]. To achieve green customer satisfaction, it is imperative to adapt the channels to each other in terms of content and design and to create an unmistakable corporate identity. Therefore, integrated digital communication thus becomes part of integrated relationship marketing in multichannel retail. The following hypothesis in this study is in line with the above:

Hypothesis 1 (H1). *Integrated digital communication has a positive effect on green consumer behavior in multichannel retail.*

2.2. Information Quality

The quality of the information plays an essential role in building a brand image and can reflect its accuracy, completeness, timeliness, and relevance [51,52]. While accuracy has been defined as the extent to which information is correct, unambiguous, objective, meaningful, or credible, timeliness and relevance are ways to improve the quality of information [51,53]. Goodwill toward the quality of information can be expressed in social networks by appreciating, commenting, or forwarding the content [51,52]. Moreover, the informative content of the brand in multichannel retailing combines the functional value proposition (the retailer's perspective) with the information (the green consumer's perspective). Together, all these attributes constitute the key elements of information quality and the direct green consumer perception of integrated digital communication [54]. Since information is always linked to the user, it is likely that these benefits can also be shown with brand content. As a result, the study hypothesizes the following:

Hypothesis 2 (H2). *The quality of the information has a positive effect on the attitude toward the brand image, contributing to the influence of green consumer behavior in multichannel retailing.*

2.3. Collaboration Quality

The quality of collaboration in the form of a reaction, response to performance expectations, and empathy affect the long-term value of the brand image [54,55]. The response can be explained by retailers' abilities to understand green consumer problems and provide accurate services; the performance expectation response measures retailers' knowledge and friendliness, which generate consumer trust and brand confidence [56,57]. Collaboration in multichannel retailing refers to the coordination between retailers and consumers in the process of implementing integrated digital communication [58]. Consumers have always appreciated a friendly environment and a real-time response with serious consideration of their needs [54,57]. Thus, this study suggests that the quality of collaboration can have a positive effect on brand image, which can then have an effect on how green consumers act. In terms of collaboration quality, this study hypothesizes the following:

Hypothesis 3 (H3). *Maintaining collaboration quality has a positive impact on brand image, contributing to the influence of green consumer behavior in multichannel retail.*

2.4. Communication Control

With the optimal control of brand content and communication, the consumer can be brought to the desired behavior [54,59]. In the digital space, only relevant content is considered and disseminated. It is suggested that the existing procedures are not adequate for efficiency control from the point of view of the retail practice [56]. Moreover, the loss of information control by the retail company has been increasing for several years, since green consumers have been given free access to the information that they seek with the use of new information and communication technologies and, thus, the system of controlled message distribution has been replaced. A series of studies [39,54,60] have shown that analyses of the links between the degree of cross-channel interconnection and communication success on the one hand and the use of individual control procedures on the other hand are intended to provide indications for brand image improvement efforts. However, retailers use several methods or a mixture of methods to control multichannel communication. As a consequence, the following hypothesis has been proposed for this study:

Hypothesis 4 (H4). *Communication control significantly affects the brand image, contributing to the influence of green consumer behavior in multichannel retail.*

2.5. Customer Satisfaction

Customer satisfaction shows to what extent the offeror's promises and achievements overlap with the customer's expectations. Customer satisfaction can reflect the real perceptions of green consumers in multichannel retailing [61–64]. Birgelen, Jong, and Ruyter [63] also show that satisfaction is a decisive factor that can influence consumers' continued behavioral intentions. Satisfaction expectations for future behavior are constantly updated through analysis and active learning, on the one hand, and through the behavior of others, on the other hand [64]. Equally, digital channels can be classified and differentiated according to satisfaction expectations, which causes it to be possible to examine the effect of multichannel retail on the perception of brand content [63]. Based on the above discussion, this research formulates the following hypothesis:

Hypothesis 5 (H5). *Customer satisfaction has a positive influence on the brand image, contributing to the influence of green consumer behavior in multichannel retail.*

2.6. Use of Digital Channels

Digital channels will continue to intensify with ever-increasing Internet speeds, the continued increase in the quality and quantity of online offerings, and the further development and spread of disruptive technologies [63,65]. Online retailers are increasingly recognizing and responding to the importance of the real-world shopping experience and green consumers' willingness to switch between the two worlds [1,43,46]. In addition, interactive engagement on digital channels serves different purposes in different situations, which leads to different levels of participation. This study hypothesizes the following to further highlight this relationship:

Hypothesis 6 (H6). *The use of digital channels in multichannel retailing has a significant influence on the brand image.*

Hypothesis 7 (H7). *The use of digital channels in multichannel retailing has a positive effect on interactive engagement.*

2.7. Brand Image

Brand managers in multichannel retail also have to deal with external communicative influences, be it reviews in portals, reports, or rumors, which are spreading faster and faster due to increasing digitization [66]. The specialized literature [54,66–68] also discusses consumer–brand relationships, which, as already mentioned, are largely congruent with the consumer/company relationship in retail due to the focus on the retail brand. The brand–consumer relationship is much more exposed to external influences. This communication with the company must be properly filtered, analyzed, and used for the company [68]. External criticism is now one of the most important sources of information for the successful development of a brand image [66]. In this way, the focus of this study is on the relationships between a retail company (including its employees) and its customers, since green customer behavior has a considerable impact on how well retail communication works in the end. This leads us to the next hypothesis, which is as follows:

Hypothesis 8 (H8). *Brand image in multichannel retailing positively affects integrated digital communication and green consumer behavior.*

2.8. Interactive Engagement

“Interactivity” in the context of media communication refers to the ability to have a conversation with a machine on an equal level. According to researchers [53,69], interactive involvement involves taking into account some cognitive, behavioral (e.g., attachment), and emotional (e.g., activation) characteristics. Based on these factors, green consumer engagement is thought to depend on the connections between the engagement subject and the engagement object, even if the previous studies have only examined personal interactive engagement in digital channels [70–72]. For the purpose of confirming the existence of this connection, we propose the following:

Hypothesis 9 (H9). *Interactive engagement can play a good role in integrated digital communication, contributing to the green consumer behavioral influence in multichannel retailing.*

2.9. Technology Characteristics

A good technology fit can encourage consumers to adopt multichannel retail, while a lack of technology fit could reduce integrated digital communication and the intention to continue using multichannel retail [73,74]. In addition to the information technology and system requirements for the cross-channel coordination of all communication measures, they must offer a wide range of options to support communication throughout the green customer relationship and to implement mass personalized communication. As a result,

technological characteristics are regarded as a predictor of integrated digital communication and continuous multichannel green consumer behavior. In light of this, the following hypothesis has been formulated:

Hypothesis 10 (H10). *Technology characteristics affect integrated digital communication, contributing to the green consumer behavioral influence in multichannel retailing.*

2.10. Promotional Strategy

Consumers have access to a variety of price points for the same product due to retail prices that increase at predetermined times throughout the day or on certain days of the week as a part of a multichannel offer architecture. As more customers are able to budget their spending in advance thanks to more consistent discounts, firms' volume-weighted profitability has inevitably declined. However, when calculating the predictability of the offer price, ambiguity is linked to profitability. Companies use a promotional strategy as a plan of action to determine the best ways to inform green consumers about their products and encourage them to become users [7,75]. Some authors [75–77] are of the opinion that, due to the comparability and universal availability of most products and services, there is an increasing risk that customers will continue to buy from another retailer depending on the situation and that customer loyalty cannot be achieved. In addition, the cost pressure that can be observed not only in the retail sector also forces retail companies to focus on green consumer and value-oriented communication activities [7]. Moreover, increased price transparency in the digital world is detrimental to green customer loyalty and leads to price wars and price cuts [7,78]. Therefore, the challenge in multichannel retail is to prevent the departure of profitable customers or to recover green customers who have already left through promotional strategies and adopting appropriate measures [78]. Further analysis of this relationship brings us to the following hypothesis:

Hypothesis 11 (H11). *The promotional strategy significantly affects integrated digital communication, contributing to the green consumer behavioral influence in multichannel retailing.*

2.11. Trust

Previous empirical studies [37,53,70] have particularly used the trust construct in the context of Internet-based services and found that trust has a significant direct influence on consumer behavior. Other authors [62,67] have stated that neutral sources, such as discussion forums and information blogs, and experiential sources, such as online demonstrations of technology products through review websites, can help to create trust. If a retailer is able to gain confidence that intensive and demanding search processes are not required but that they are in good hands with them in all situations and channels, they are better able to stand out from the crowd of suppliers, to become a major brand in the eyes of their green consumers, and to win regular consumers who no longer wish to perform extensive comparisons. As a consequence, the following hypothesis has been developed:

Hypothesis 12 (H12). *Trust significantly affects integrated digital communication, contributing to the green consumer behavioral influence in multichannel retailing.*

Control variables are demographic characteristics (gender and age) that have a significant impact on integrated digital communication and green consumer behavior in multichannel retailing [31,50,79]. The applied conceptual framework is presented in Figure 1.

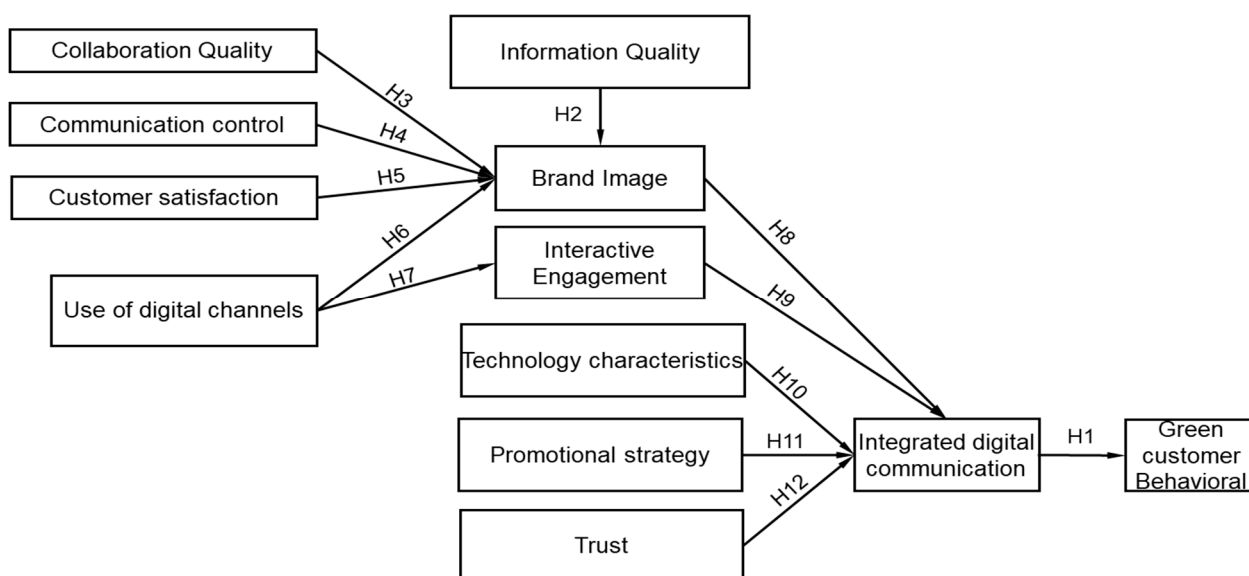


Figure 1. The proposed research structure.

3. Research Methodology

A survey in the form of an online questionnaire was the main research method that was used for this study. This study used a literature review and the opinions of experts to devise the questions, method, validity, reliability, and weight of the dimensions for the questionnaire. The research model was tested using structural equation modeling (SEM) and included twelve influencing factors (information quality, collaboration quality, communication control, customer satisfaction, use of digital channels, brand image, interactive engagement, technology characteristics, promotional strategy, trust, integrated digital communication, and consumer behavior) with multiple items. The study constructs were developed from a critical literature review and applicable theoretical frameworks, as listed in Table 1.

Table 1. The descriptive items for all constructs and sources.

Construct	Items	Sources
Information Quality (IQ)	(IQ 1) The information is communicated in a transparent manner (IQ 2) Information is delivered immediately, as far as I am concerned (IQ 3) Retailers provide up-to-date information	[51–54]
Collaboration Quality (CQ)	(CQ 1) Green customers' expectations are prioritized by multichannel retail (CQ 2) Retailers keep their commitments (CQ 3) Retailers can soon respond to the requests	[55–57]
Communication Control (CC)	(CC 1) A multichannel retailer is not attempting to take control of the green customer (CC 2) I think that all the participants in the decision-making process have equal rights (CC 3) When it comes to making decisions, I feel that the input is taken into consideration	[34,59,60]
Customer Satisfaction (CS)	(CS 1) Most green consumers, including myself, are happy with their interaction with this retailer (CS 2) I am content with using several channels (CS 3) The experience in multichannel retailing has been excellent so far	[61–64]
Use of Digital Channels (UDC)	(UDC 1) A retailer's digital image and positioning should be reflected in the site's design (UDC 2) Using digital channels causes my life to be more convenient (UDC 3) The digital channel system performance is consistent	[43,63,65]
Brand Image (BI)	(BI 1) Associations with brands are obvious and distinct (BI 2) The importance of the green customer's opinion is acknowledged (BI 3) The green products that the brand offers that are recognizable to me	[66–68]
Interactive Engagement (IE)	(IE 1) This multichannel retailer clearly wants to keep a relationship with me (IE 2) This multichannel retailer and I are strongly intertwined (IE 3) I am interested in participating in social media initiatives that have been conducted by retailers	[69–72]
Technology Characteristics (TC)	(TC 1) I know that the retailer provides real-time accurate communication (TC 2) Other channels for personal information can be accessed by green customers (TC 3) When accessing digital channels during the shopping process, assistance is available	[73,74]
Promotional Strategy (PS)	(PS 1) It is common practice for multichannel retailers to participate in the promotion of imported green products (PS 2) There are many methods of promotion accessible on multichannel retail (PS 3) The discount prices offered for green products are attractive	[75–78]
Trust (TR)	(TR 1) As far as I know, the retailer is also being honest with the green customer (TR 2) I used the multichannel purchasing option but was certain about the delivery of my item (TR 3) I believe the retailer delivers through on its commitments	[37,53,70]
Integrated Digital Communication (IDC)	(IDC 1) Using social media, I am able to share my thoughts and ideas (IDC 2) I start conversations with other green customers on social media and then regulate those conversations (IDC 3) When the retailer from a multichannel is the target of Internet messages, I successfully reply	[37,39]

To establish the questions in the questionnaire, 20 interviews were organized with experts in digital marketing and communication who had extensive experience in multi-channel retail. Based on their suggestions, some questions were changed to ensure that the questionnaire was accurate and easy to understand. The responses were evaluated using a 7-point Likert scale on an interval level ranging from “strongly agree” to “strongly disagree”, with the individual as the unit of analysis.

The selection of the sample was based on the tendencies of the digital native, who focuses on building and personalizing relationships through integrated digital communication, since technology is the real world. By using snowball sampling, the authors were able to avoid data biases and offer each respondent an equal chance to participate. The questionnaire was developed and an online campaign on social media platforms, i.e., Twitter, Facebook, and Instagram, was carried out between April 2022 and June 2022, through which 400 people were asked to participate in the survey. Only 396 people in total completed the questionnaire to provide information for the study. The questionnaire also contained two demographic questions about gender and age. While age was represented in years, gender was represented by a 1 or 2 dummy variable, where 1 represented male responses. The demographic information of respondents is presented in Table 2, organized in terms of gender and age.

Table 2. Respondent demographic profile.

Demographics		Frequency	Percentage (%)
Gender	Male	214	54.04
	Female	182	45.96
Age	20–30	240	60.60
	31–40	88	22.22
	41–50	46	11.62
	Above 50	22	5.56

The measurement model was initially assessed to determine the constructs’ reliability and validity, followed by the structural model’s examination of the hypothesized links in the research model.

4. Results

A conformity analysis test was performed to evaluate the validity of the measurement model, which included both convergent and discriminant validity. Moreover, the convergent validity of the items and constructs was examined by analyzing the factor loadings, AVE, and CR, which refer to average variance extracted and composite reliability, respectively. Based on the evaluation of all the values presented in Table 3, the items investigated under the proposed model of this study effectively reflected their respective constructs and thus presented a satisfactory level of internal consistency.

Table 3. Factor loadings, composite reliability, and average variance estimates.

Construct	Items	Factor Loading	Composite Reliability	AVE
Information Quality (IQ)	IQ 1	0.817	0.934	0.726
	IQ 2	0.893		
	IQ 3	0.852		
Collaboration Quality (CQ)	CQ 1	0.812	0.846	0.657
	CQ 2	0.863		
	CQ 3	0.751		
Communication Control (CC)	CC 1	0.836	0.893	0.725
	CC 2	0.858		
	CC 3	0.866		
Customer Satisfaction (CS)	CS 1	0.767	0.821	0.569
	CS 2	0.743		
	CS 3	0.758		
Use of Digital Channels (UDC)	UDC 1	0.865	0.918	0.786
	UDC 2	0.836		
	UDC 3	0.847		
Brand Image (BI)	BI 1	0.818	0.931	0.682
	BI 2	0.859		
	BI 3	0.863		
Interactive Engagement (IE)	IE 1	0.879	0.918	0.787
	IE 2	0.887		
	IE 3	0.834		
Technology Characteristics (TC)	TC 1	0.835	0.937	0.695
	TC 2	0.845		
	TC 3	0.853		
Promotional Strategy (PS)	PS 1	0.787	0.906	0.696
	PS 2	0.888		
	PS 3	0.829		
Trust (TR)	TR 1	0.926	0.858	0.705
	TR 2	0.899		
	TR 3	0.838		
Integrated Digital Communication (IDC)	IDC 1	0.879	0.933	0.745
	IDC 2	0.884		
	IDC 3	0.835		

The bootstrapping method from the PLS path-modeling methodology was applied in this study to evaluate the structural paths of the proposed research model. The confidence intervals and R^2 values were used in the study to validate the structural paths of the conceptual model. Table 4 shows the t -statistics obtained from the path coefficients and bootstrapped standard errors for each construct.

Table 4. The results of path coefficients, t -statistics, and hypotheses.

	Path Coefficient	Standard Deviation	t -Statistic	Result
H1	0.255	0.032827	8.722896	Supported
H2	0.140	0.038690	2.901376	Supported
H3	0.142	0.034654	4.268836	Supported
H4	0.172	0.043242	2.192887	Supported
H5	0.113	0.039366	2.079849	Supported
H6	0.161	0.040753	3.271335	Supported
H7	0.281	0.057025	4.521727	Supported
H8	0.193	0.038337	3.927511	Supported
H9	0.175	0.034456	2.667474	Supported
H10	0.171	0.042308	4.280631	Supported
H11	0.274	0.075623	6.997615	Supported
H12	0.218	0.410575	2.115641	Supported

The findings of the PLS analyses of the moderating effects of age and gender on the eight dimensions related to integrated digital communication are presented in Table 5.

Table 5. PLS results with moderators.

	Dependent Variable	
	Integrated Digital Communication (IDC)	Customer Behavioral (CB)
R ²	0.428	0.622
Brand Image (BI)	0.174 *	
Technology Characteristics (TC)	0.187 *	
Interactive Engagement (IE)	0.153 *	
Promotional Strategy (PS)	0.254 *	
Trust (TR)	0.218 *	
Gender	0.069 *	
Brand Image (BI) × Age	0.067 *	
Technology Characteristics (TC) × Age	0.078 *	
Interactive Engagement (IE) × Age	0.036 *	
Promotional Strategy (PS) × Gender	0.079 *	
Technology Characteristics (TC) × Gender	0.070 *	
Trust (TR) × Gender	0.051 *	
Integrated Digital Communication (IDC)		0.271 *

* Significant at 0.05.

Consequently, it can be concluded that either the suggested model or the structural model results of this study are legitimate from a nomological perspective. Figure 2 also shows the path coefficients and significance levels in the structural model.

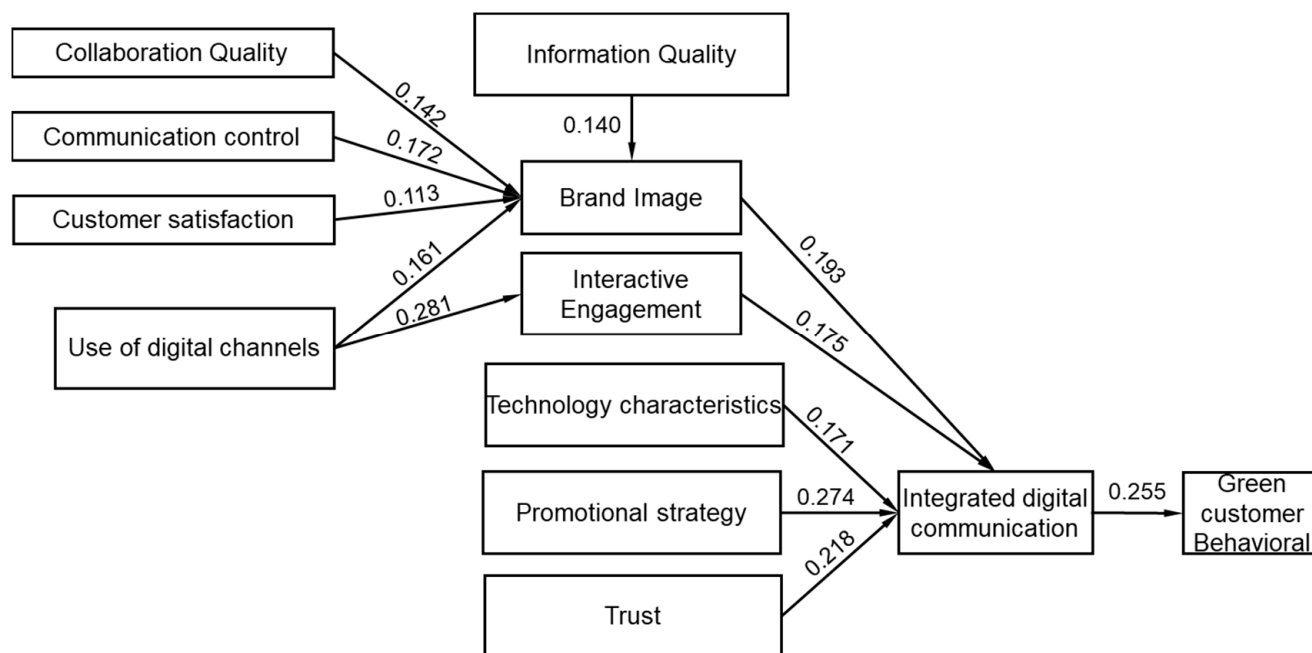


Figure 2. Structural equation modeling results.

After further investigation, technology characteristics, enabling conditions, and promotional strategy were found to be more relevant to respondents between the ages of 31 and 40, but the brand image was more essential to respondents aged between 41 and 50. In spite of this, the concept of interactive engagement had a tendency to exert a greater impact on the responders who were between the ages of 21 and 30.

5. Discussion

The use of innovative information and communication technologies and new media allows retail companies to use completely new forms of communication, whose defining characteristics are interactivity, digital integration, and multimodality [8,15,24]. However, because the definition of integrated communication work is known and accepted across green industries, it is likely that most people in retail have a similar idea of what it means.

A central objective of digital relationship marketing is to individualize the relationship with green customers [2,4]. Implementing a comprehensive personalization strategy for all green customers is problematic, especially in retail, for efficiency reasons, as the cost of implementing a high degree of personalization is usually not covered by the increase in revenue. In this way, one interesting approach that emerges from the results of this study is the transfer of mass customization or mass personalized marketing to communication in the sense of green-consumer-specific mass communication (personalized mass communication), which also opens up interesting possibilities for the design of dialogue-oriented integrated communication.

Every trading activity involves conscious or unconscious communication, which is a comprehensive component of market-oriented action parameters. The findings of the present study at least underline the need to adopt a broader view of communication to account for the multifaceted nature and complexity, as well as the increased importance, of communication activities in retail. Therefore, it brings into discussion the role of integrated digital communication as an independent tool in the retail mix. The operational aspects of a retail company's various distribution and communication channels are equally as important as strategic–conceptual decisions.

Regarding the success of interchannel measures, the specialized literature [8,48,80] from green sectors, but also the results of the present research (see Table 5), refer to deficits that must be compensated for by appropriate decision-making models depending on the demographic profile. When considering options for the design of policies and strategies for integrated digital communication in retail, the green marketer should take into account not only knowledge about individual purchase decision processes but also newer explanations to build lasting relationships with green customers. To this end, the connections and influences between the success of the communication and the individual elements must be taken into account in the data analysis. In this way, the study examines methods to combine a focus on relationships with the idea of integrated multichannel communication.

In order to achieve the relevant objectives with selected stakeholder groups, retail companies have at their disposal numerous communication policy measures. The findings of this study underline how much the logic of integrated digital communication is based on the mechanisms and assumptions of interpersonal communication. Consequently, the information directed by the green marketer to the outside about the products and services of the retail trade is the main task for integrated digital communication and is the center of all communication policy measures. In relation to this, the tasks, goals, and tools of communication policy, as well as approaches to planning, implementing, and controlling specific measures, are a central part of integrated digital communication. Because there is a significant disparity between action oriented toward understanding (communicative) and action oriented toward success (instrumental/strategic), a psychological differentiation of the channel and profiling in the sense of retail branding should be achieved first and foremost through this communication of clearly distinguished performance characteristics in policies.

The results indicate that factors such as collaboration quality, communication control, and green customer satisfaction significantly influence the brand image but also represent tools through which green consumer behavior can be influenced. Taking into account the specific aspects, the use of digital channels influences green consumers' perceptions regarding the brand image. These results indicate that buyers with strong conscientiousness are restrictive with themselves and encourage interactive engagement activities. Therefore, interactive engagement is a significant concept in this study's findings. In their research,

Schrotenboer et al. [78] discovered results that were quite comparable to these. Thus, the idea is strengthened that the decrease in the communication effect of classical media and the performance potential of new interactive media for dialogue-oriented communication indicate that these communication channels will become more and more important in the future.

In the same line, technology characteristics and trust have a significant influence on the effectiveness of integrated digital communication. These findings are in line with those of Bauerová and Bracíníková [54], who indicated the positive relationship between the use of as many communication channels as possible and the success of communication. In addition, Birgelen, Jong, and Ruyter [63] support the idea that consumers' perceptions of the ease of use and adaptability of channels influence buyers' motives and behavioral intentions. As the survey results show, a significant increase in the importance of interactive communication and the appropriate communication channels used for it in multichannel retail is expected in the next few years. Ultimately, the green customer experience in multichannel retail depends on retailers and their commitment.

The main limitation of the present study is that it focused specifically on a reduced combination of distribution channels that is theoretically conceived in multichannel retailing. In practice, a series of aspects regarding integrated communication appear, depending on the type and number of channels used. Future research can explore the behavioral intentions of green consumers from other countries but also a differentiation based on the defining characteristics of these types of businesses and sales. Secondly, in order to investigate and compare the research trends over time and develop a further understanding, a longitudinal study can be used in future research. Knowledge of green consumers' responses to integrated digital communication is also of particular importance for further investigation regarding the planning and implementation of multichannel strategies in communication. In this case, the communication measures of successful multichannel retailers also help to confirm theoretical ideas. Finally, in addition to the constructs used in this study, there may be other factors influencing green customer behavior in multichannel retail.

6. Conclusions

In the future, commercial companies will have to consider not only classical but also interactive communication tools when planning and implementing integrated communication [11]. This refers in particular to aspects of dialogue communication supported by the media and, at the same time, to the new possibilities of supporting a personal dialogue with green customers at the point of sale. The challenge of commercial communication is to find and evaluate the most important touchpoints in the life cycle of the relationship and then connect the information and communication processes in a way that makes sense.

Especially in multichannel retailing, it is therefore important to provide relevant stakeholder groups and communication partners with a coherent picture of the retail company at all touchpoints in the sense of an integrated multichannel communication strategy. In this context, it is also clear that internal communication in retail will be even more important in the future, due to direct contact with green customers at the point of sale and the increasing proportion of personal interactions, supported by the media, between the retail company and the green consumer.

The results of the survey show that in order to avoid content contradictions between dialogue-oriented forms of communication and mass communication tools, it is necessary to develop comprehensive control and organization systems for internal communication. One way to consider the individual needs of the green consumer is to involve them in the design of integrated communication in the sense of the concept of green consumer integration. This research also concludes that more external and efficiency-oriented objectives are currently being pursued within multichannel integrated communication. The criterion of effectiveness is choosing the appropriate way to communicate, while the

criterion of efficiency is the cost–benefit ratio of the different means of communication within the channel.

This study has both theoretical and managerial implications. Considering the theoretical implications, the study contributes significantly to the available literature [27,42,54,73] on the development of the concept of integrated digital communication in multichannel retail on the one hand and, on the other hand, it investigates the gap between integrated digital communication and green consumer behavior in multichannel retail. As highlighted in the literature, there is little existing knowledge about the topic considered in this study. Likewise, the conclusions based on the theoretical foundations highlight the importance of considering the interdependencies between decisions to ensure the integrative use of communication policy tools in all communication channels and relevant means of communication of a retail company. This perspective approaches problem-solving behavior in communication practice and underlines the applied orientation of this study. Lastly, the results of this study are in line with behavioral science findings that explain the effects of the implementation of integrated digital communication by retail companies.

Regarding the implications for managers, this study suggests that the greater the degree of integration and networking of multichannel communication, the greater the importance given to brand image and economic objectives oriented toward the relationship and process (green promotional strategies). The analysis carried out regarding the links between the degree of interchannel interconnection and the success of communication on the one hand and the use of individual control procedures on the other hand is intended to provide indications regarding challenges and trends in multichannel retailing that require in-depth analysis. At the same time, it is found that although increasing communication efficiency could be identified as an essential objective of integrated multichannel communication, decision makers pay little attention to efficiency controls in retail practice. Based on digital marketing theory, the research results can also assist retailers responsible for making decisions in the selection of tools for the integration of different holistic communication channels into multichannel retail. Despite all the above, a major problem with integrated multichannel communication is that there are insufficient control tools.

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