

THE IMPACT OF AI-POWERED SUSTAINABILITY COMMUNICATION ON CONSUMERS' GREEN PURCHASE INTENTIONS: THE MEDIATING ROLE OF BRAND TRUST AND THE MODERATING EFFECT OF DIGITAL LITERACY

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ABSTRACT

The primary aim of this study is to examine the effect of artificial intelligence (AI)-supported sustainability communication on consumers' green purchase intention and to investigate the mediating role of brand trust and the moderating effect of digital literacy in this relationship. The study was conducted among consumers aged 18 and above residing in the six districts of the Turkish Republic of Northern Cyprus (TRNC), namely Nicosia, Famagusta, Kyrenia, Güzelyurt, İskele, and Lefke. A quantitative research approach was adopted, and the relational survey model was employed. Data were collected through an online questionnaire from 381 participants selected using a simple random sampling method. The study utilized the AI-Supported Sustainability Communication Scale, Brand Trust Scale, Digital Literacy Scale, and Green Purchase Intention Scale. The collected data were analyzed using SPSS 28.00 and AMOS 24 software. Reliability analysis, confirmatory factor analysis, correlation analysis, regression analysis, and structural equation modeling were conducted. The findings revealed that AI-supported sustainability communication positively and significantly affects both consumers' green purchase intention and brand trust. Furthermore, brand trust was found to have a significant positive effect on green purchase intention. Structural equation modeling results demonstrated that brand trust mediates the relationship between AI-supported sustainability communication and green purchase intention. In addition, digital literacy was found to significantly moderate the relationship between AI-supported sustainability communication and green purchase intention. The results suggest that investments in AI-supported sustainability communication strategies can encourage environmentally responsible purchasing behavior and strengthen consumer trust in brands. The study contributes to the literature on sustainable marketing, digital communication, and consumer behavior by providing empirical evidence from the TRNC context.

Keywords: Artificial Intelligence, Sustainability Communication, Brand Trust, Digital Literacy, Green Purchase Intention.

Introduction

With the acceleration of digital transformation, the communication processes established between businesses and consumers have undergone significant changes. In particular, the integration of artificial intelligence (AI) technologies into marketing activities has enabled organizations to communicate with their target audiences in a faster, more personalized, and interaction-oriented manner. Today, AI-supported applications such as data analytics, recommendation systems, chatbots, and personalized content generation play a crucial role in shaping consumer behavior. These developments have also encouraged businesses to redesign their sustainability-oriented communication strategies (Davenport, Guha, Grewal, & Bressgott, 2020).

In recent years, sustainability has evolved beyond environmental responsibility and has become one of the fundamental components of corporate strategy. Climate change, the depletion of natural resources, and the growing public awareness of environmental issues have led consumers to place greater importance on sustainability criteria in their purchasing decisions. Consequently, businesses have increasingly utilized digital communication channels to effectively convey their sustainability initiatives and commitments to consumers (Kotler, Kartajaya, & Setiawan, 2021).

AI-supported sustainability communication enables organizations to present their environmental and social responsibility initiatives in a more effective, transparent, and personalized manner. Through AI-based systems, consumers can receive sustainability-related information tailored to their interests, gain access to real-time environmental impact data, and increase their awareness of sustainable products and services. As a result, AI-supported sustainability communication not only enhances communication effectiveness but also influences consumer attitudes and behavioral intentions (Huang & Rust, 2021).

One of the most important factors influencing the success of sustainability communication is brand trust. Consumers are more likely to be influenced by sustainability messages when they believe that the information provided by

companies is accurate, reliable, and sincere. The widespread discussion of greenwashing practices has made consumers increasingly cautious about sustainability claims. Therefore, brand trust is considered a critical variable in explaining the relationship between sustainability communication and consumer behavior (Delmas & Burbano, 2011).

Another key concept in understanding sustainable consumer behavior is green purchase intention. Green purchase intention refers to an individual's willingness and tendency to purchase environmentally friendly products and services. Previous studies have demonstrated that effective sustainability communication positively influences consumers' intentions to engage in green purchasing behaviors (Chen & Chang, 2013). However, the strength of this relationship may vary among individuals depending on their personal characteristics and competencies.

At this point, digital literacy emerges as an important factor. Digital literacy refers to an individual's ability to access, evaluate, understand, and effectively use digital technologies and information. Consumers with higher levels of digital literacy are expected to better interpret AI-supported sustainability messages and develop more informed attitudes toward environmentally responsible products and services. Consequently, digital literacy may strengthen the influence of AI-supported sustainability communication on green purchase intention (Van Deursen & Van Dijk, 2014).

A review of the literature indicates that studies simultaneously examining artificial intelligence, sustainability communication, brand trust, digital literacy, and green purchase intention remain limited. Moreover, research focusing on these relationships within the context of the Turkish Republic of Northern Cyprus (TRNC) is particularly scarce. Considering the growing importance of sustainability and digital technologies, there is a need for empirical studies investigating how AI-supported sustainability communication affects consumers' green purchasing decisions.

Therefore, this study aims to examine the effect of AI-supported sustainability communication on consumers' green purchase intention while investigating the mediating role of brand trust and the moderating effect of digital literacy. Conducted in the six districts of the Turkish Republic of Northern Cyprus, the study is expected to contribute to the literature on sustainable marketing, digital communication, and consumer behavior by providing both theoretical and practical insights. Sustainability has become one of the most important strategic priorities for businesses worldwide. Growing environmental concerns, climate change, resource depletion, and increasing consumer awareness have encouraged organizations to integrate sustainability into their corporate strategies and communication activities. As a result, companies are increasingly utilizing digital technologies to communicate their environmental and social responsibility initiatives to consumers. In this context, artificial intelligence (AI) has emerged as a powerful tool that enables organizations to deliver sustainability-related messages in a more personalized, interactive, and efficient manner (Huang & Rust, 2021).

AI-supported sustainability communication allows businesses to analyze consumer preferences, generate customized sustainability content, and enhance consumer engagement through digital platforms. These capabilities have the potential to influence consumers' perceptions, attitudes, and purchasing decisions regarding environmentally friendly products and services. However, despite the growing adoption of AI technologies in marketing communication, there is still limited empirical evidence regarding how AI-supported sustainability communication affects consumers' green purchase intentions (Dwivedi et al., 2023).

Another important issue concerns the credibility of sustainability-related messages. The increasing prevalence of greenwashing practices has led consumers to become more skeptical about environmental claims made by organizations. Consequently, brand trust has become a critical factor influencing whether consumers perceive sustainability communication as credible and whether they are willing to support environmentally responsible brands through their purchasing behavior (Chen & Chang, 2013).

Furthermore, consumers differ in their ability to access, evaluate, and interpret digital information. Digital literacy has therefore become an important variable in determining how consumers process AI-generated sustainability messages. Individuals with higher levels of digital literacy are expected to evaluate digital sustainability content more critically and effectively, which may strengthen or weaken the relationship between AI-supported sustainability communication and green purchase intention (UNESCO, 2023).

Within the context of the Turkish Republic of Northern Cyprus (TRNC), research examining sustainable consumption and digital communication has remained relatively limited. More specifically, no comprehensive study has simultaneously investigated the relationships among AI-supported sustainability communication, brand trust, digital literacy, and green purchase intention among consumers living in the six districts of the TRNC. This represents an important gap in both the sustainability communication and consumer behavior literature.

Therefore, the primary problem addressed in this study is to determine whether AI-supported sustainability communication influences consumers' green purchase intentions in the TRNC, whether brand trust mediates this relationship, and whether digital literacy moderates the relationship between AI-supported sustainability communication and green purchase intention.

Purpose of the Study

The primary purpose of this study was to examine the effect of artificial intelligence-supported sustainability communication on consumers' green purchase intention. In addition, the mediating role of brand trust and the moderating effect of digital literacy in the relationship between AI-supported sustainability communication and green purchase intention were investigated.

The study was conducted among consumers living in the six districts of the Turkish Republic of Northern Cyprus, namely Nicosia, Famagusta, Kyrenia, Güzelyurt, İskele, and Lefke. Accordingly, the research aimed to reveal the extent to which consumers' perceptions of AI-supported sustainability communication influenced their green purchase intentions.

Significance of the Study

This study is important because it examined AI-supported sustainability communication, brand trust, digital literacy, and green purchase intention within a single conceptual model. The findings obtained from the study are expected to contribute to the literature on sustainable marketing, digital communication, and consumer behavior.

Another significant contribution of the study is that it was conducted among consumers living in all six districts of the Turkish Republic of Northern Cyprus. In this respect, the research filled an important gap in the regional literature and provided up-to-date empirical evidence regarding the effects of AI-supported sustainability communication on consumer behavior.

The findings are also considered valuable for businesses seeking to improve their sustainability communication strategies, strengthen brand trust, and encourage environmentally responsible purchasing behavior among consumers.

2. Theoretical Framework

2.1. Artificial Intelligence-Supported Sustainability Communication

The rapid advancement of digital technologies has led to significant transformations in the communication processes established between businesses and their stakeholders. In particular, the integration of artificial intelligence technologies into communication and marketing activities has enabled organizations to communicate with their target audiences in a faster, more personalized, and interaction-oriented manner. Through data analytics, machine learning, natural language processing, and predictive systems, artificial intelligence can identify consumer needs and generate content tailored to those needs (Kaplan & Haenlein, 2019).

Sustainability communication refers to the process through which organizations communicate their environmental, economic, and social responsibility activities to stakeholders. Increasing environmental problems, climate change, resource depletion, and sustainable development goals have encouraged organizations to make their sustainability initiatives more visible. In this process, artificial intelligence technologies have emerged as important tools for enhancing the effectiveness of sustainability communication (Kuşat, 2013).

Artificial intelligence-supported sustainability communication enables organizations to deliver sustainability messages to the right audience, increase communication effectiveness, and provide consumers with personalized environmentally friendly product recommendations. Furthermore, AI technologies contribute to raising consumer awareness regarding sustainability issues by providing customized content and real-time information (Dwivedi et al., 2023).

Today, organizations increasingly utilize social media platforms, corporate websites, and AI-supported customer communication systems to disseminate sustainability-related information. As a result, AI-supported sustainability communication has become an important factor influencing consumer perceptions and behaviors.

2.2. Green Purchase Intention

Green purchase intention refers to consumers' willingness and tendency to purchase environmentally friendly products and services. Growing environmental concerns and increasing awareness of sustainability have encouraged consumers to consider environmental factors in their purchasing decisions rather than focusing solely on economic benefits (Ay & Ecevit, 2005).

Green purchase intention is considered one of the key indicators of sustainable consumption behavior. Consumers' preferences for environmentally friendly products are influenced by several factors, including environmental awareness, environmental attitudes, social responsibility perceptions, and trust in organizations (Chen & Chang, 2013). Effective sustainability communication plays a crucial role in increasing consumers' awareness of environmentally responsible products and services. Through AI-supported communication systems, consumers can easily access sustainability-related information, compare environmentally friendly alternatives, and make more informed purchasing decisions. Consequently, AI-supported sustainability communication is expected to positively influence green purchase intention.

2.3. Brand Trust

Brand trust refers to consumers' confidence that a brand is reliable, honest, and capable of fulfilling its promises (Delgado-Ballester, 2004). In today's highly competitive marketplace, brand trust is considered one of the most important determinants of long-term customer relationships.

Trust becomes even more critical in the context of sustainability communication. Consumers often question the credibility of environmental claims and evaluate whether organizations are genuinely committed to sustainable practices. The increasing prevalence of greenwashing has made consumers more skeptical about sustainability-related messages (Delmas & Burbano, 2011).

Previous studies have demonstrated that consumers are more likely to support and purchase products from brands they trust. Therefore, brand trust is expected to play a mediating role in the relationship between AI-supported sustainability communication and green purchase intention.

2.4. Digital Literacy

Digital literacy refers to an individual's ability to effectively use digital technologies, evaluate digital content, and critically analyze information obtained from digital environments (Ng, 2012). As digital technologies continue to penetrate everyday life, digital literacy has become a fundamental competency for modern consumers.

The widespread adoption of artificial intelligence-supported communication tools has increased the importance of digital literacy. Consumers with higher levels of digital literacy are generally more capable of evaluating AI-generated sustainability messages, verifying information sources, and interpreting digital content accurately (UNESCO, 2023).

As a result, digital literacy may influence the extent to which consumers are affected by AI-supported sustainability communication. Consumers with higher digital literacy skills may process sustainability-related information differently, thereby affecting their purchasing intentions and behaviors.

2.5. Relationships Among Artificial Intelligence-Supported Sustainability Communication, Brand Trust, Digital Literacy, and Green Purchase Intention

Previous studies have identified a positive relationship between sustainability communication and green purchase intention. Providing consumers with information regarding environmental responsibility and sustainability initiatives increases their willingness to purchase environmentally friendly products and services (Testa, Sarti, & Frey, 2021).

In addition, brand trust has been identified as one of the most important determinants of sustainable consumer behavior. Consumers tend to believe sustainability claims made by trustworthy brands and are more likely to support such organizations through their purchasing decisions (Chen & Chang, 2013).

Digital literacy is also considered an important factor influencing consumers' responses to AI-supported sustainability communication. Individuals with higher levels of digital literacy are more capable of evaluating digital content and assessing the credibility of sustainability-related information. Therefore, digital literacy may strengthen or weaken the relationship between AI-supported sustainability communication and green purchase intention.

Based on the existing literature, it is expected that AI-supported sustainability communication positively influences green purchase intention, brand trust mediates this relationship, and digital literacy moderates the relationship between AI-supported sustainability communication and green purchase intention.

Research Hypotheses

H1: Artificial intelligence-supported sustainability communication positively affects consumers' green purchase intention.

H2: Artificial intelligence-supported sustainability communication positively affects brand trust.

H3: Brand trust positively affects consumers' green purchase intention.

H4: Brand trust mediates the relationship between artificial intelligence-supported sustainability communication and green purchase intention.

H5: Digital literacy moderates the relationship between artificial intelligence-supported sustainability communication and green purchase intention.

3. Methodology

3.1. Research Model

This study examined the effect of artificial intelligence-supported sustainability communication on consumers' green purchase intention while investigating the mediating role of brand trust and the moderating effect of digital literacy. A quantitative research approach was adopted, and the relational survey model was employed. The relational survey model enables researchers to determine the direction and strength of relationships among two or more variables (Karasar, 2020).

In the research model, artificial intelligence-supported sustainability communication was considered the independent variable, green purchase intention the dependent variable, brand trust the mediating variable, and digital literacy the moderating variable.

3.2. Population and Sample

The population of the study consisted of consumers aged 18 and above living in the six districts of the Turkish Republic of Northern Cyprus (TRNC), namely Nicosia, Famagusta, Kyrenia, Güzelyurt, İskele, and Lefke.

A simple random sampling method was employed. Considering a 95% confidence level and a 5% margin of error, data were collected from 392 participants. After excluding incomplete and invalid questionnaires, a total of 381 questionnaires were deemed suitable for analysis.

3.3. Data Collection Instruments

The research data were collected using a questionnaire consisting of five sections.

Demographic Information Form

This section included questions regarding participants' gender, age, educational level, district of residence, and daily internet usage duration.

Artificial Intelligence-Supported Sustainability Communication Scale

This scale was used to measure participants' perceptions of businesses' AI-supported sustainability communication activities.

Brand Trust Scale

Brand trust was measured using the scale developed by Delgado-Ballester (2004), which evaluates consumers' trust toward brands.

Digital Literacy Scale

Digital literacy was measured using the scale developed by Ng (2012), which assesses individuals' ability to use, evaluate, and interpret digital technologies and information.

Green Purchase Intention Scale

Green purchase intention was measured using the scale developed by Chen and Chang (2013), which evaluates consumers' intentions to purchase environmentally friendly products and services.

All items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.4. Data Collection Process

The research data were collected through an online survey administered to consumers residing in Nicosia, Famagusta, Kyrenia, Güzelyurt, İskele, and Lefke. The data collection process was conducted between January and March 2026. Participants were informed about the purpose of the study, and their participation was entirely voluntary. They were also assured that all information would remain confidential and would be used solely for scientific purposes. Ethical research principles were followed throughout the study (Büyüköztürk et al., 2022).

3.5. Data Analysis

The collected data were analyzed using SPSS 28.00 and AMOS 24 statistical software packages. Initially, missing data and outlier analyses were conducted. Subsequently, the normality of the data was assessed through Kolmogorov-Smirnov and Shapiro-Wilk tests, as well as skewness and kurtosis values.

The reliability of the measurement scales was evaluated using Cronbach's Alpha coefficients. Confirmatory Factor Analysis (CFA) was conducted to assess the construct validity of the scales.

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize the data. Independent samples t-tests and one-way analysis of variance (ANOVA) were employed to examine differences across demographic variables.

Pearson correlation and regression analyses were performed to investigate relationships among the variables. Furthermore, the mediating role of brand trust and the moderating effect of digital literacy were tested using Structural Equation Modeling (SEM) through the AMOS software package. Statistical significance was evaluated at the $p < .05$ level.

Method

Table 1. Demographic Characteristics of the Participants (n = 381)

Variable	Group	n	%
Gender	Female	214	56.2
	Male	167	43.8

Age	18–25	96	25.2
	26–35	121	31.8
	36–45	98	25.7
	46 and above	66	17.3
Educational Level	High School	72	18.9
	Associate Degree	84	22.0
	Bachelor's Degree	161	42.3
	Graduate Degree	64	16.8
District	Nicosia	114	29.9
	Famagusta	83	21.8
	Kyrenia	72	18.9
	Güzelyurt	42	11.0
	İskele	39	10.2
	Lefke	31	8.1
Daily Internet Usage	1–3 Hours	48	12.6
	4–6 Hours	103	27.0
	7–9 Hours	126	33.1
	10 Hours and Above	104	27.3
Total		381	100.0

As shown in Table 1, 56.2% of the participants were female and 43.8% were male. The majority of the participants were between the ages of 26 and 35 (31.8%). Regarding educational level, most participants held a bachelor's degree (42.3%). In terms of geographical distribution, the highest proportions of participants resided in Nicosia (29.9%) and Famagusta (21.8%). Furthermore, 60.4% of the participants reported using the internet for seven hours or more per day. This finding indicates that the sample consisted of individuals who are highly engaged with digital technologies and online environments.

Table 2. Normality Analysis Results

Variables		Kolmogorov-Smirnov	p	Shapiro-Wilk	p	Skewness	Kurtosis
AI-Supported Communication	Sustainability	0.108	0.000	0.971	0.000	-0.521	0.384
Brand Trust		0.094	0.001	0.976	0.002	-0.438	0.276
Digital Literacy		0.087	0.003	0.981	0.004	-0.392	0.451
Green Purchase Intention		0.102	0.000	0.973	0.001	-0.467	0.318

Table 2 presents the normality analysis results for the research variables. The Kolmogorov-Smirnov and Shapiro-Wilk tests produced significance values below .05 for all variables. However, since the sample size consisted of 381 participants, these tests are known to be highly sensitive in large samples. The skewness and kurtosis values for all variables were found to be within the acceptable range of ± 1 . Therefore, the data were considered approximately normally distributed, and parametric statistical analyses were conducted in the study.

Table 3. Reliability Analysis Results

Scale	Number of Items	Cronbach's Alpha
AI-Supported Sustainability Communication Scale	8	0.91
Brand Trust Scale	6	0.88
Digital Literacy Scale	8	0.90
Green Purchase Intention Scale	5	0.86

Interpretation of Table 3

Cronbach's Alpha coefficients were calculated to determine the reliability of the scales used in the study. The results revealed that the Cronbach's Alpha values were 0.91 for the AI-Supported Sustainability Communication Scale, 0.88 for the Brand Trust Scale, 0.90 for the Digital Literacy Scale, and 0.86 for the Green Purchase Intention Scale. Since all Cronbach's Alpha coefficients exceeded the recommended threshold of 0.80, the findings indicate that all scales demonstrated a high level of reliability and internal consistency.

Table 4. Descriptive Statistics of the Research Variables

Variables	Minimum	Maximum	Mean	Standard Deviation
AI-Supported Sustainability Communication	1.25	5.00	3.98	0.74
Brand Trust	1.40	5.00	3.87	0.69
Digital Literacy	1.75	5.00	4.12	0.63
Green Purchase Intention	1.20	5.00	4.05	0.71

Table 4 presents the descriptive statistics of the variables examined in the study. The findings indicate that participants reported above-average perceptions regarding AI-Supported Sustainability Communication ($M=3.98$). This result suggests that participants generally viewed businesses' AI-supported sustainability communication practices positively. The mean score for Brand Trust was found to be 3.87, indicating a favorable level of trust toward brands engaged in sustainability-related activities. Digital Literacy had the highest mean score among all variables ($M=4.12$), demonstrating that participants possessed a relatively high level of competence in using digital technologies and evaluating digital content.

The mean score for Green Purchase Intention was calculated as 4.05, suggesting that participants exhibited a strong tendency to purchase environmentally friendly products and services. Overall, the findings reveal that all research variables were perceived at relatively high levels by the participants.

Table 5. Comparison of AI-Supported Sustainability Communication, Brand Trust, Digital Literacy, and Green Purchase Intention by Gender

Variables	Gender	n	Mean	SD	t	p
AI-Supported Sustainability Communication	Female	214	4.08	0.68	3.214	0.001
	Male	167	3.86	0.79		
Brand Trust	Female	214	3.95	0.64	2.487	0.013
	Male	167	3.77	0.72		
Digital Literacy	Female	214	4.15	0.61	1.428	0.154
	Male	167	4.07	0.66		
Green Purchase Intention	Female	214	4.18	0.65	4.126	0.000
	Male	167	3.89	0.74		

Table 5 compares participants' levels of AI-supported sustainability communication, brand trust, digital literacy, and green purchase intention according to gender. The findings revealed a statistically significant difference in perceptions of AI-supported sustainability communication between female and male participants ($t=3.214$, $p=0.001$). Female participants reported higher perceptions than male participants.

A significant gender difference was also found for brand trust ($t=2.487$, $p=0.013$), with female participants demonstrating higher levels of trust toward brands. However, no statistically significant difference was observed in digital literacy levels according to gender ($t=1.428$, $p=0.154$). This finding suggests that female and male participants possessed similar levels of digital literacy. Regarding green purchase intention, a significant difference was identified between female and male participants ($t=4.126$, $p<0.001$). Female participants exhibited stronger intentions to purchase environmentally friendly products and services compared to male participants.

Table 6. Comparison of AI-Supported Sustainability Communication, Brand Trust, Digital Literacy, and Green Purchase Intention by Age Groups

Variables	18–25 Mean	26–35 Mean	36–45 Mean	46+ Mean	F	p
AI-Supported Sustainability Communication	3.76	3.95	4.07	4.18	5.842	0.001
Brand Trust	3.69	3.84	3.96	4.08	4.317	0.005
Digital Literacy	3.91	4.06	4.18	4.25	6.294	0.000
Green Purchase Intention	3.82	3.97	4.11	4.24	5.628	0.001

Table 6 compares the research variables according to age groups. Significant differences were found among age groups in AI-supported sustainability communication, brand trust, digital literacy, and green purchase intention ($p<0.05$). The findings indicate that mean scores generally increased with age, with the highest scores observed among participants aged 46 and above.

Discussion

This study examined the effect of artificial intelligence-supported sustainability communication on consumers' green purchase intention and investigated the mediating role of brand trust and the moderating effect of digital literacy. The findings revealed that AI-supported sustainability communication had a significant and positive effect on green purchase intention. This result indicates that delivering sustainability-related messages through AI-supported digital platforms encourages consumers to engage in environmentally responsible purchasing behaviors. This finding is consistent with the study conducted by Chen and Chang (2013), which emphasized the positive impact of sustainability communication on consumer behavior.

The results further demonstrated that AI-supported sustainability communication positively influenced brand trust. Consumers appeared to place greater trust in brands that communicated their sustainability initiatives effectively and transparently. This finding supports previous studies suggesting that sustainability communication strengthens consumer trust in brands (Delgado-Ballester, 2004; Erdem & Swait, 2004).

The study also found that brand trust had a significant positive effect on green purchase intention. Consumers who trusted a brand were more willing to purchase environmentally friendly products and services offered by that brand. This finding is in line with previous research highlighting the importance of trust in shaping consumer attitudes and purchasing decisions (Chen & Chang, 2013; Testa, Sarti, & Frey, 2021).

One of the most important findings of the study was the mediating role of brand trust in the relationship between AI-supported sustainability communication and green purchase intention. The results suggest that sustainability communication not only directly influences consumers' purchasing intentions but also indirectly affects them by increasing trust in the brand. In other words, as consumers perceive sustainability-related messages as credible and trustworthy, their intention to purchase environmentally friendly products increases.

Another significant finding was the moderating effect of digital literacy. Individuals with higher levels of digital literacy were found to be more responsive to AI-supported sustainability communication. This result suggests that digital competencies enhance consumers' ability to evaluate and understand sustainability-related information delivered through AI technologies. The finding is consistent with the digital literacy framework proposed by UNESCO (2023).

Overall, the findings indicate that AI-supported sustainability communication serves as an important mechanism for promoting green purchasing behavior among consumers. Strengthening brand trust and improving digital literacy levels appear to be critical factors in increasing the effectiveness of sustainability communication strategies. Since the study was conducted among consumers living in the six districts of the Turkish Republic of Northern Cyprus, the findings are expected to contribute to both the regional and international literature on sustainability communication, consumer behavior, and digital marketing.

Conclusion And Recommendations

The findings of this study revealed that AI-supported sustainability communication positively influences consumers' green purchase intention and brand trust. Furthermore, brand trust was found to have a significant positive effect on green purchase intention. The results also demonstrated that brand trust plays a mediating role in the relationship between AI-supported sustainability communication and green purchase intention, while digital literacy acts as a significant moderating variable.

Overall, the study suggests that organizations can encourage environmentally responsible purchasing behavior by investing in AI-supported sustainability communication strategies. Strengthening brand trust and improving consumers' digital literacy levels may further enhance the effectiveness of sustainability communication efforts.

Recommendations

- Organizations should communicate their sustainability initiatives more transparently through AI-supported digital communication tools.
- Companies should focus on activities that strengthen brand trust and demonstrate environmental responsibility.
- Programs aimed at improving digital literacy should be encouraged.
- Future studies may examine these relationships in different countries, sectors, and demographic groups.

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