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**The Mediating Role of Green Trust in the Effect of Green Brand Image on
Green Purchase Behavior: A Generational Comparison**

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Abstract: Consumer behavior changing in response to global environmental policies is compelling businesses to develop sustainability strategies. This study examines the mediating role of green trust in the effect of green brand image on green purchasing behavior in a generational comparison. The study, conducted with 1,123 participants aged 18 and over in Turkey, used an online survey as a data collection tool and conducted mediation analyses using the PROCESS Macro Model 4 developed by Hayes. The findings show that green brand image has a significant and positive effect on green trust across all generations. Green trust also had a significant impact on green purchasing behavior in all generations. However, the direct effect of green brand image on green purchasing behavior was only found to be significant in Generation X ($\beta=0.1456$, $p=0.033$). In contrast, this effect was found to be statistically insignificant in Generations Y and Z. The mediating effect of green trust was found to be strongest in Generation X ($\beta=0.3410$) and weakest in Generation Z ($\beta=0.1896$). The results highlight the necessity of generation-specific green marketing strategies and underscore the critical importance of building trust.

Keywords: *Green brand image, Green purchasing behavior, Green trust, Mediation analysis, Intergenerational comparison.*

Introduction

Nowadays, green product consumption, green marketing strategies, and green brand image concepts are frequently discussed. This strategic transformation requires interconnected

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processes that differ from the efficient usage of natural resources to green marketing applications (Maylan and Duhan, 2000, p.192). Chen's (2010, p.312) green brand equity model provides a theoretical framework for understanding these developments and changes, and it identifies green brand image as consumers' perception of environmental commitments. Green trust is a measurement of confidence in a brand's environmental reliability and intentions.

Applying this theoretical framework uniformly across all generational cohorts may be misleading. Conley (2025, p.117) found that Generation Z consumers doubt what companies say about sustainability and rely on digital verification in channels. Baby Boomers place greater trust in traditional brand reputation. Karaman (2021, p.169-170) examined Turkish consumers and found that green marketing knowledge has no effect on Generation Y's purchase intention but has an effect on purchase intention for Generations X and Z. These divergent findings suggest that different generations evaluate environmental brand information through different perspectives.

These generational differences pose a significant challenge to the effectiveness of marketing strategies. The challenge is both theoretical in terms of developing better models of how green branding mechanisms work across generations and practical in terms of needing actionable insights to target different generations. This study provides answers to both questions. It examines whether green trust has a mediating effect between green brand image and green purchasing behavior and whether this mediation differs across generational cohorts. This study applied an online survey method to gather data from 1,123 people. The collected data analyzed using SPSS 29 for descriptive statistics, correlation analysis, and normality tests, while mediation effects were examined through Hayes PROCESS Model 4.

Literature Review

Chen's (2010, p.313) green brand equity model used as the theoretical base for this research. Chen conceptualizes green brand image as a set of consumer perceptions regarding a brand's environmental commitments and concerns (Chen, 2010, p.309). Green trust, in parallel, captures how much confidence consumers place in a brand's environmental reliability and intentions. The validity of this model has been confirmed by studies in different geographical and economic contexts, including developed economies (Chang and Fong, 2010, p.2841; Kang and Hur, 2011, p.4; Martínez, 2015, p.902; Guerreiro and Pacheco, 2021, p.1,3; Watson et al., 2024, p.811) and developing economies (Chen and Chang, 2013, p.69; Huang et al., 2014, p.257; Chen et al., 2020, p.201; Akturan, 2018, p.817; Nguyen et al., 2023, p.1293; Salehzadeh et al., 2023, p.259; Tran, 2023, p.1011).

Green Brand Image

Green brand image refers to consumer perceptions of a brand's environmental commitments and performance (Keller, 1993, p.1; Cretu and Brodie, 2007, p.232). Chen (2010, p.312) measures this through brand professionalism in environmental issues, performance credibility, and strategic positioning. Zameer et al. (2020, p.3) consider this concept consists of two components, namely functional attributes which provide tangible benefits and psychological dimensions encompassing emotional and symbolic associations. This image also functions as a key signal for evaluating a company's sustainability performance (Nguyen-Viet et al., 2024, p.1293; Cho et al., 2023, p.634). Chen et al. (2020, p.196) suggest that consumers use green brand image as a decision-making tool. Thao and Tran (2023, p.273) show that it helps companies stand apart from competitors.

Green Trust

Green trust can be expressed as consumers' desire to trust green products when they accept a brand's environmental claims based on product characteristics and health expectations (Román-Augusto et al., 2023, p.1; Chauhan and Goyal, 2024, p.460). Lin et al. (2021, p.2) and Shah et al. (2023, p.6) define green trust as an influencer that helps consumers move from their general environmental attitudes to actually purchasing sustainable products. Consumers stay away

from purchasing green products even when their environmental attitudes are positive, but they have some negative attitudes to trust (Sh. Ahmad et al., 2022, p.72). A positive green brand image is a precursor to facilitating the establishment of trust, which is important for maintaining sustainable consumer-company relationships (Sharma, 2024, p.1129).

Green Purchasing Behavior

Green purchasing behavior is a tendency to prefer purchasing environmentally friendly products and avoiding purchasing environmentally detrimental products (Sousa et al., 2022, p.5). It happens when social norms, perceived effectiveness, and environmental responsibility awareness interact (Lee, 2008, p. 580). According to Galeazzo et al. (2021, p.703), consumers evaluate costs and benefits when making these choices. Eco-labels and environmental advertising play a role in these decisions (Patwary et al., 2022, p.549).

However, when examined through generations, these dynamics reveal a paradox. Watson et al. (2024, p.812) found that Generations Y and Z, higher environmental concern correlates with lower trust in brand green claims and weaker green brand image perceptions. The way image perceptions connect to purchasing behavior probably differs across age cohorts

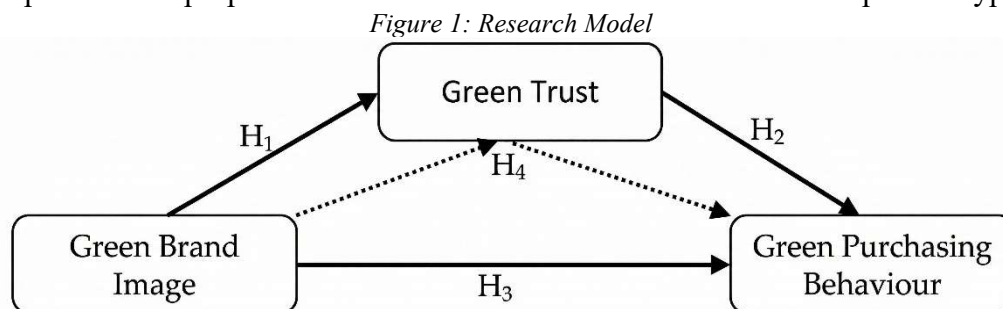
Methodology

Research Model and Hypotheses

The research model includes the variables of green brand image, green trust, and green purchasing behavior. The model tests a mediation model in which green brand image as the independent variable, green trust as the mediating variable, and green purchasing behavior as the dependent variable. Generational differences (Generations X, Y, and Z) were used as group variables, and separate mediation analyses were conducted for each generation.

Intergenerational comparisons face the problem of researchers use inconsistent birth year boundaries for Generations X, Y, and Z, which narrows the generalisability of findings (Taylor and Keeter, 2010; Twenge et al., 2012, p.1045; Dimock, 2019, p.3; Twenge, 2023, pp.27-30; Watson et al., 2024, p.814). This study adopts generational definitions appropriate to Turkey's socio-cultural context. Additionally, analytical choices matter. Hayes and Rockwood (2017, p.43) propose a bootstrap-based mediation approach that evaluates indirect effects through confidence intervals rather than sequential significance tests (the Baron and Kenny method). This approach has become standard in mediation research because it does not depend on model fit indices and avoids measurement invariance problems in multi-group analyses (Preacher and Hayes, 2008, pp.883, 887). This method used to test whether trust mediates the image-behavior relationship similarly or differently across generations.

Figure 1 presents the proposed research model. The list below details the specific hypotheses.



H₁: Green brand image has an effect on green trust.

H_{1a}: Green brand image has an effect on green trust for Generation X.

H_{1b}: Green brand image for Generation Y has an effect on green trust.

H_{1c}: Green brand image has an effect on green trust among Generation Z.

H₂: Green trust has an effect on green purchasing behavior.

H_{2a}: Green trust has an effect on green purchasing behavior among Generation X.

- H_{2b}: Green trust has an effect on green purchasing behavior among Generation Y.
 H_{2c}: Green trust has an effect on green purchasing behavior among Generation Z.
 H₃: Green brand image has an effect on green purchasing behavior.
 H_{3a}: Green brand image has an effect on green purchasing behavior for Generation X.
 H_{3b}: Green brand image has an effect on green purchasing behavior for Generation Y.
 H_{3c}: Green brand image has an effect on green purchasing behavior for Generation Z.
 H₄: Green trust has a mediating effect on the impact of green brand image on green purchasing behavior.
 H_{4a}: Green trust has a mediating effect on the impact of green brand image on green purchasing behavior among Generation X.
 H_{4b}: Green trust has a mediating effect on the impact of green brand image on green purchasing behavior among Generation Y.
 H_{4c}: Green trust has a mediating effect on the impact of green brand image on green purchasing behavior among Generation Z.

Sampling and Data Collection

The idea that findings in the existing literature on green marketing and intergenerational differences may have limitations specific to the cultural and economic context is the underlying decision to conduct this study in Turkey (Muralidharan et al., 2023, p.126, 128). As a developing economy, Turkey has socio-economic dynamics that influence green marketing and sustainable consumption behaviors. Additionally, the generational diversity in its population structure enables the representation of the X, Y, and Z generations. Thus, Turkey provides a suitable sample and basis for comparative intergenerational analyses.

According to Turkey's foreign trade data for June 2025 show exports of \$20.5 billion and imports of \$28.7 billion (TURKSTAT, 2025). The agriculture, food and beverage sector run a deficit of \$850 million. Non-energy imports increased by 16.9%. These figures create a macroeconomic context that influences consumer behavior and preferences (TGDF, 2025).

To examine this context, the main body of the research consists of consumers aged 18 and over who shop in Turkey. Krejcie and Morgan (1970, p.608) and Altunışık et al. (2023, p.146) specify that populations exceeding 1,000,000 need a minimum sample of 384. This assumes a 5% margin of error and 95% confidence interval. An online survey gathered data from 1,123 individuals for this study. The online method enabled researchers to reach participants from different generations efficiently. The sample for this study was structured according to a generational classification based on Turkey's socio-cultural dynamics.

Demographically, Turkey's youth population ratio (14.9%) is higher than that of many European Union countries (TURKSTAT, 2024). Generations have been defined as follows, taking into account the Turkish context: Generation X (born between 1965 and 1979) accounts for approximately 22% of the population, Generation Y (born between 1980 and 1999) accounts for 31%, and Generation Z (born in 2000 and after) accounts for 24%. This balanced distribution enables reliable intergenerational comparative analyses to be conducted. The numerical distribution of participants by generation and other demographic characteristics is summarised in Table 1.

Furthermore, previous studies on environmental awareness and purchasing behavior among consumers in Turkey (Karaman, 2021, p.169; Akturan, 201, p.812) support the potential contribution of this context to the literature. Therefore, the Turkish sample was considered an appropriate research area for examining the relationship between green brand image, trust and purchasing behavior from a generational perspective.

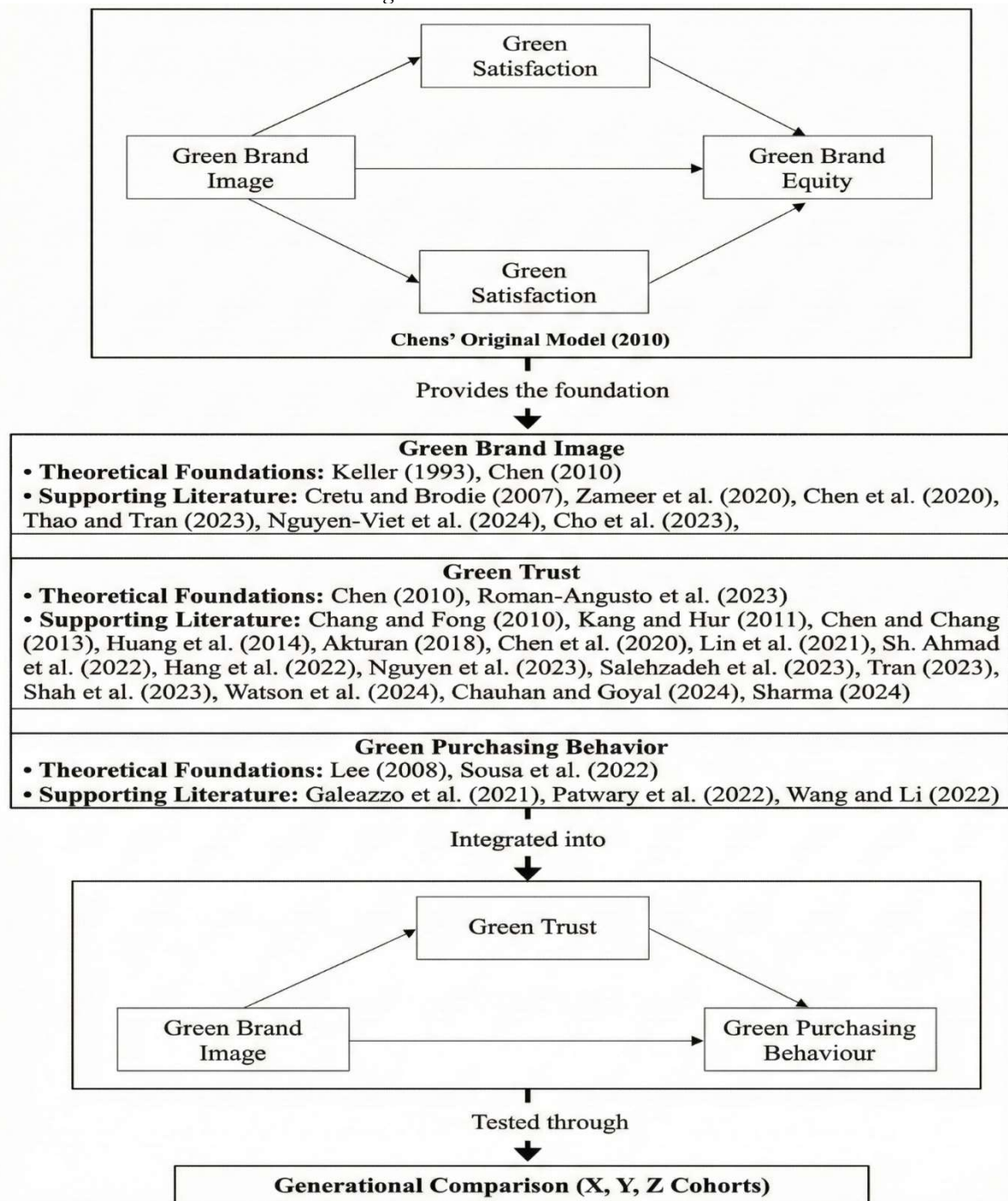
Data Collection Tools and Analysis Methods

Green brand image, green trust, and green purchasing behavior scales were used to collect data for the study. The green brand image and green trust scales used in Chen's (2010, p.313) study consist of five items and a single dimension. The green purchasing behavior scale, developed

by Lee (2008, p.580) consist of four items and a single dimension. A 5-point Likert scale (1- Strongly disagree, 5- Strongly agree) used.

Comprehensive statistical analyses performed on data from 1,123 individuals. First descriptive analyses and correlation analysis were conducted to understand data structure and relationships. Then Confirmatory factor analysis (CFA) used to test the validity of measurement models in cross-sectional comparisons. Lastly, the mediation analyses handled via Hayes PROCESS Model 4. Preacher and Hayes (2008, p.883, 887) established it as working without model fit indices and avoids measurement invariance problems in multi-group comparisons. It enables direct testing of generational differences. These features allow for direct testing of generational differences where measurement inconsistencies might occur (Hayes and Rockwood, 2017, p.6, 8).

Figure 2: Theoretical Framework



Findings

Demographic Findings

The data is balanced enough that generational differences can be reliably analyzed. 30.4% of participants represent Generation X, 35.3% Generation Y, and 34.4% Generation Z.

Table 1: Demographic Distribution of Participants

| | Variable | N | (%) | | Variable | N | (%) |
|-----------------------|------------------------|-----|------|---------------------------|-------------------------------|---------|------|
| Gender | Woman | 540 | 48.1 | Educational Status | Primary school | 98 | 8.7 |
| | Man | 583 | 51.9 | | Middle school | 139 | 12.4 |
| Age | Born between 1965-1979 | 341 | 30.4 | | High school | 209 | 18.6 |
| | Born between 1980-1999 | 396 | 35.3 | | Vocational College | 162 | 14.4 |
| | Born in 2000 and later | 386 | 34.4 | | Bachelor's degree | 484 | 43.1 |
| Marital Status | Married | 540 | 48.1 | | Postgraduate | 31 | 2.8 |
| | Single | 583 | 51.9 | | Average Monthly Income | \$278.1 | |
| | Student | 388 | 34.6 | | | | |
| Occupation | Civil servant | 216 | 19.2 | | | | |
| | Private Sector | 195 | 17.4 | | | | |
| | Retired | 78 | 6.9 | | | | |
| | Housewife | 167 | 14.9 | | | | |
| | Freelance | 79 | 7.0 | | | | |

Measurement Model Assessment

The cohorts were analyzed separately using CFA, helping to identify measurement invariance and cohort-specific issues.

Table 2 presents the model fit indices, reliability coefficients, and validity statistics. Generation X and Generation Y showed acceptable fit indices. Generation Z displayed weaker model fit ($\chi^2/df=4.340$, RMSEA=0.093). Complex response patterns of this younger cohort may cause this difference. The theoretical model fits their data structure less effectively than it fits older groups.

Table 2: Model Fit Indices, Reliability and Validity Statistics by Generation

| Generation | χ^2/df | CFI | RMSEA | Cronbach's Alpha | Variable | CR | AVE |
|------------|-------------|-------|-------|------------------|----------|--------------|--------------|
| X | 3.245 | 0.892 | 0.085 | 0.847 | GT | 0,900 | 0,644 |
| | | | | | GBI | 0,872 | 0,580 |
| | | | | | GPB | 0,876 | 0,640 |
| Y | 2.948 | 0.960 | 0.070 | 0.891 | GT | 0,894 | 0,628 |
| | | | | | GBI | 0,890 | 0,619 |
| | | | | | GPB | 0,873 | 0,632 |
| Z | 4.340 | 0.906 | 0.093 | 0.823 | GT | 0,857 | 0,546 |
| | | | | | GBI | 0,848 | 0,531 |
| | | | | | GPB | 0,691 | 0,403 |

GT=Green Trust, GBI=Green Brand Image, GPB=Green Purchasing Behavior

Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) was assessed to examine the internal consistency of the model. All generations have acceptable reliability coefficients (Cronbach's Alpha >0.80, George and Mallery, 2020, p.244). CR values exceeded 0.70, and AVE values exceeded 0.50. for Generations X and Y. So they met standard thresholds (Hair et al., 2019, p.663).

The GPB variable yielded a CR of 0.691<0.7 and an AVE of 0.403<0.5 for Generation Z. So, this scale shows a lack of consistency. Future interpretations of the structural model for this group must take into account these measurement constraints.

Descriptive analysis findings revealed that mean scores ranged from 3.80 to 3.85 for green brand image, green trust, and green purchasing behavior. These findings show positive tendencies across all variables. Intergenerational comparisons also revealed certain patterns. Generation Z had the highest mean in green brand image and green trust than other generations (Z > Y > X). Generation Y had the highest mean in green purchasing behavior (Y > Z > X). A correlation analysis was conducted to examine the relationship levels between variables.

Table 3: Correlation Analysis Related to Research Variables

| Variables | GBI | GT | GPB | Mean | S.Deviation | Skewness | Kurtosis |
|------------|-------|-------|-----|--------|-------------|----------|----------|
| GBI | 1 | | | 3.8191 | 0.78185 | -0.842 | 1.060 |
| GT | 0.683 | 1.00 | | 3.8085 | 0.82829 | -0.974 | 1.093 |
| GPB | 0.333 | 0.418 | 1 | 3.8511 | 0.91721 | -0.784 | 0.144 |

p<.001

The results of the correlation analysis indicates that the relationships between the variables are suitable for generational comparison. The strong positive correlation between green brand

image and green trust ($r=0.683$) supports Chen's (2010, p.315) model. The moderate correlation between green trust and green purchasing behavior ($r=0.418$) confirms the appropriateness of the mediation analysis. Normality values (between -2 and +2) indicate the applicability of parametric tests (George and Mallery, 2020, p.114-115).

Mediation Analysis Results

Analyses conducted separately for the general sample and generational cohorts to determine the mediating role of green trust in the effect of green brand image on green purchasing behavior. The results are presented in Tables 4, 5, 6 and 7.

Table 4: The Mediating Role of Green Trust in the Effect of Green Brand Image on Green Purchasing Behavior (Overall Sample)

| Effect | Hypothesis | Relationship | β | p-value | LLCI(95%) | ULCI(95%) |
|-----------------|----------------|--------------|---------|---------|-----------|-----------|
| | H ₁ | GBI→GT | 0.7240 | 0.0000 | 0.6787 | 0.7693 |
| Direct | H ₂ | GT→GPB | 0.3947 | 0.0000 | 0.3141 | 0.4753 |
| | H ₃ | GBI→GPB | 0.1048 | 0.0162 | 0.0194 | 0.1902 |
| Indirect | H ₄ | GBI→GT→GPB | 0.2858 | — | 0.1995 | 0.3738 |
| Total | | GBI→GPB | 0.0000 | 0.3906 | 0.3258 | 0.4554 |

LLCI: Lower Level Confidence Interval, ULCI: Upper Level Confidence Interval

Green brand image has a significant positive effect on both green trust ($\beta=0.7240$, $p<0.05$) and green purchasing behavior ($\beta =0.1048$, $p<0.05$). Furthermore, green trust influences green purchasing behavior ($\beta =0.3947$, $p<0.05$). The mediation analysis yielded an indirect effect coefficient of $\beta =0.2858$. The determination of significance for this indirect path relies on the 95% bias-corrected confidence intervals rather than a p-value. As the calculated interval (0.1995 to 0.3738) excludes zero, the results confirm the mediating role of green trust in the relationship between green brand image and green purchasing behavior (Hayes, 2018, p.101). Thus, hypotheses H₁, H₂, H₃, and H₄ are supported.

The conducted mediating analysis with the general sample revealed that green trust partially mediates. Green brand image influences green purchasing behavior directly ($\beta=0.1048$, $p<0.05$). This direct effect exists alongside trust's mediating role. Green brand image works both through trust and independently. Traditional marketing approaches still matter, but trust plays a critical role.

Table 5: The Mediating Role of Green Trust in the Effect of Green Brand Image on Green Purchasing Behavior (Generation X)

| Generation | Effect | Hypothesis | Relationship | β | p | LLCI(95%) | ULCI(95%) |
|------------|---------------|-----------------|--------------|---------|--------|-----------|-----------|
| | | H _{1a} | GBI→GT | 0.7000 | 0.0000 | 0.6071 | 0.793 |
| X | Direct | H _{2a} | GT→GPB | 0.4871 | 0.0000 | 0.3672 | 0.607 |
| | | H _{3a} | GBI→GPB | 0.1456 | 0.0331 | 0.0118 | 0.2795 |

| | | | | | |
|---------------------------------|------------|--------|--------|--------|--------|
| Indirect H _{4a} | GBI→GT→GPB | 0.341 | — | 0.1939 | 0.5042 |
| Total | GBI→GPB | 0.4866 | 0.0000 | 0.3731 | 0.6002 |

Green brand image has a significant positive effect on both green trust ($\beta = 0.7000$, $p < 0.05$) and green purchasing behavior ($\beta = 0.1456$, $p < 0.05$). Green trust, in turn, influences green purchasing behavior ($\beta = 0.4871$, $p < 0.05$). Moreover, the bootstrap confidence interval for the indirect effect does not include zero, confirming that green trust mediates the relationship between green brand image and green purchasing behavior ($\beta = 0.3410$). Therefore, hypotheses H_{1a}, H_{2a}, H_{3a}, and H_{4a} are supported. for Generation X.

The most substantial mediating effect ($\beta = 0.3410$) was observed in Generation X. The fact that both the direct and mediating effects are significant in this generation demonstrates the effectiveness of traditional marketing approaches. This finding suggests that for Generation X, traditional marketing signals related to brand image retain a direct influence on purchasing decisions, alongside the strong mediating role of trust.

Table 6: The Mediating Role of Green Trust in the Effect of Green Brand Image on Green Purchasing Behavior (Generation Y)

| Generation | Effect | Hypothesis | Relationship | β | p | LLCI(95%) | ULCI(95%) |
|------------|-----------------|-----------------|--------------|---------|--------|-----------|-----------|
| | | H _{1b} | GBI→GT | 0.7774 | 0.0000 | 0.7087 | 0.8461 |
| Y | Direct | H _{2b} | GT→GPB | 0.3869 | 0.0000 | 0.236 | 0.5377 |
| | | H _{3b} | GBI→GPB | 0.1301 | 0.1044 | -0.027 | 0.2873 |
| | Indirect | H _{4b} | GBI→GT→GPB | 0.3008 | — | 0.1445 | 0.4697 |
| | Total | | GBI→GPB | 0.4309 | 0.0000 | 0.3231 | 0.5387 |

Green brand image has a significant positive effect on green trust ($\beta = 0.7774$, $p < 0.05$), and green trust influences green purchasing behavior ($\beta = 0.3869$, $p < 0.05$). However, the direct effect of green brand image on green purchasing behavior is not statistically significant ($p > 0.05$). Importantly, the bootstrap confidence interval for the indirect effect does not include zero, confirming the mediating role of green trust in this relationship ($\beta = 0.3008$). Thus, hypotheses H_{1b}, H_{2b}, and H_{4b} are supported. for Generation Y, while H_{3b} is rejected.

A moderate mediating effect ($\beta = 0.3008$) was observed in Generation Y. The fact that the effect of green brand image on green trust is highest in this generation ($\beta = 0.7774$) indicates the importance Generation Y places on brand image. However, the fact that the effect of trust on purchasing behavior is lower than in other generations reveals that this generation adopts a more critical approach.

Table 7: The Mediating Role of Green Trust in the Effect of Green Brand Image on Green Purchasing Behavior (Generation Z)

| Generation | Effect | Hypothesis | Relationship | β | p | LLCI(95%) | ULCI(95%) |
|---------------|-----------------|-----------------------|--------------|---------|---------------|-----------|-----------|
| | | H _{1c} | GBI→GT | 0.658 | 0.0000 | 0.5809 | 0.7352 |
| Direct | | H _{2c} | GT→GPB | 0.2881 | 0.0002 | 0.1354 | 0.4408 |
| | Z | H_{3c} | GBI→GPB | 0.0611 | 0.4376 | -0.0935 | 0.2156 |
| | Indirect | H _{4c} | GBI→GT→GPB | 0.1896 | — | 0.0696 | 0.3243 |
| | Total | | GBI→GPB | 0.2507 | 0.0000 | 0.1313 | 0.37 |

Green brand image has a significant positive effect on green trust ($\beta = 0.6580$, $p < 0.05$), and green trust influences green purchasing behavior ($\beta = 0.2881$, $p < 0.05$). In contrast, the direct effect of green brand image on green purchasing behavior is not statistically significant ($p > 0.05$). Additionally, the bootstrap confidence interval for the indirect effect does not include zero, confirming that green trust mediates the relationship between green brand image and green purchasing behavior ($\beta = 0.1896$). Thus, hypotheses H_{1c}, H_{2c}, and H_{4c} are supported. for Generation Z, while H_{3c} is rejected.

The lowest mediation effect ($\beta=0.1896$) was observed in Generation Z. The fact that the effect of green brand image on green trust is lower in this generation than in other generations indicates that Generation Z is more sceptical about brand image. This finding aligns with the 'digital generation paradox', where high environmental concern coexists with a heightened skepticism towards brand claims, making trust both more difficult to establish and more crucial for this cohort. This situation indicates that trust building should be at the centre of marketing strategies for the Z generation. The fact that the direct effect is non-significant in Generations Y and Z reveals that the trust factor is essential in their purchasing decisions.

Hypothesis Test Results

Based on the findings, the hypothesis test results are as follows: H₁ hypothesis and all sub-hypotheses have been supported, so green brand image affects green trust in all generations. The H₂ hypothesis and all sub-hypotheses have been supported, and green trust influences green purchasing behavior in all generations. H₃ hypothesis has been supported only for the X generation and not supported for the Y and Z generations. The direct effect of green brand image on green purchasing behavior is significant only in the X generation. This situation shows that the X generation is more sensitive to traditional marketing approaches and that brand image can directly affect purchasing behavior. In Generations Y and Z, the presence of the trust factor becomes mandatory. Hypothesis H₄ and all sub-hypotheses were supported, thus the mediating effect of green trust is significant across all generations, but the magnitude of the effect varies across generations.

Results and Discussion

Discussion of Findings

Generational variations emerge in how green brand image translates into green purchasing behavior through green trust. Chen's (2010, p.315) model receives support. Green brand image enhances green trust among all generations. Environmental brand associations build consumer confidence.

Green brand image affects purchasing behavior directly, but only for Generation X. Older consumers still depend on conventional brand cues when they make environmentally conscious

purchases. Generations Y and Z show no significant direct effect. Brand image alone does not drive behavior for these groups. Digital-native generations approach corporate claims with skepticism and criticism (Karaman, 2021, p.170). Green trust fully mediates the relationship for these cohorts.

The strength of the mediation effect reveals a decrease from Generation X ($\beta=0.3410$) to Generation Z ($\beta=0.1896$). Demir and Toraman Turk (2023, p.142) called this as “digital generation paradox” and investigated this pattern within educational contexts. Although Generation Z cares about the environment and shows high purchase intentions for environmentally friendly products, they remain the most challenging demographic group to convince. They are constantly exposed to digital information streams, peer evaluations, and greenwashing examples. These exposures make them selective about brand claims and lead to low brand trust. However, once trust is obtained, it has a substantial effect on their behavior. Brand image is less effective on purchasing behavior for this group. Guzel (2020, p.213) and Forrester (2023) explain how this creates a gap between environmental attitudes and actual consumption preferences.

Generation X shows a different response pattern by easily trusting established reputational authority and experiential cues. The absence of direct effects in Generations Y and Z shows how much trust matters in their consumer decisions.

Theoretical Contributions

This study provides three main contributions to green marketing literature.

First, although Chen's (2010, p. 313) green trust model has been accepted in the literature for nearly fifteen years, this study provides important findings that reveal the generational limitations of the model. The research results show that this approach falls short because the same stimulus elicits different responses across generations. In this context, Dragolea et al. (2023, p. 3) found that Generation Z's attitudes and behaviors toward green products differ significantly from those of previous generations.

Second, these findings support the notion that the same marketing stimuli elicit different responses across generations and that generational differentiation is not merely a demographic category but also a critical factor determining the effectiveness of marketing strategies (Squires, 2019, p. 1, 13). This underscores the need to integrate generational dynamics into marketing models.

Third, this study applies the concept of the 'digital generation paradox' to green marketing, a concept previously examined in educational contexts (Demir and Toraman Turk, 2023, p. 142). Although Generation Z has the highest scores in terms of environmentally friendly purchasing intentions, their trust in green marketing messages is at the lowest level. Dragolea et al. (2023, p. 13) note that Generation Z prioritizes information from social media and digital channels for green purchases but finds no strong link between corporate green marketing practices (GMKP) and sustainable consumption, primarily due to trust-eroding green information gaps. This aligns with findings from Guzel (2020, p. 5-10), whose research provides a concrete illustration of the paradox: despite Gen Z's pronounced pro-environmental attitudes and purchase intentions, factors like price sensitivity and insufficient information often hinder the consistent translation of these intentions into actual purchasing behavior. The ECC CLUB study (2022) conducted in Germany further clarifies this paradox: while 85% of Generation Z individuals state that they want stricter measures for environmental protection, 72% consider price to be more important than sustainability. An empirical analysis conducted by Forrester (2023) on a European sample highlights the inconsistency between this generation's level of environmental awareness and their purchasing behavior.

Managerial Implications

The traditional 'one-size-fits-all' marketing approach no longer works. Strategies must target generation-specific traits:

- Generation X considers established authority. Marketers should use official certifications and scientific test results. Traditional reputation drives their decisions.
- Generation Y demands transparency. Companies should offer QR code tracking and detailed sustainability reports. They want to verify information personally.
- Generation Z seeks social validation. Brands should rely on micro-influencer stories and user-generated content. Corporate messages fail with this group. Authentic peer experiences work best.

Methodological Contributions

Hayes PROCESS Model 4 proves superior for generational comparisons. SEM approaches rely on model fit indices such as CFI and RMSEA. Hayes does not require these. SEM demands separate model fit for each generation. This requirement fails in some generations. Our study encountered this problem. Measurement model results could not be presented for Generation X because factor loadings were very low. Hayes allows direct comparisons without this test. It uses the bootstrap method to provide reliable results. This methodological advantage offers guidance for future studies.

Conclusion

This study investigated how green trust mediates the relationship between green brand image and green purchasing behavior across generational cohorts. Green brand image influences green trust strongly among all generations. Its direct impact on green purchasing behavior appears only for Generation X. Generations Y and Z show no such direct effect.

Green trust mediates this relationship significantly in all cohorts. The strength of mediation decreases progressively from older to younger generations. Generation X demonstrates both direct and mediating effects. Generations Y and Z show only the mediating effect via green trust. Marketing strategies need a paradigm shift based on these findings.

Businesses need green marketing strategies that account for generational differences. Trust formation and decision-making processes vary across age cohorts. Strategies must reflect these variations.

Limitations

The main limitations of the study can be evaluated in five categories. First, in terms of scale validity, the factor loadings of some items measuring green purchasing behavior in Generation Z fell below the threshold value. Additionally, the model fit indices did not meet the accepted criteria ($\chi^2/df=4.340>3.0$, CFI=0.906<0.95, RMSEA=0.093>0.08). This situation indicates that the scales developed for Generation Z do not exhibit sufficient psychometric properties and highlights the need for generation-specific scale development in future studies.

Secondly, the sample is limited in its representativeness. The use of convenience sampling in the study and the online survey method creates digital access bias, limiting the generalisability of the results. Additionally, there is a high level of educational bias (43.1% bachelor's degree holders) and a student bias (34.6%).

Thirdly, there are geographical and cultural limitations. Only a Turkish sample was used, and caution is required when generalizing the findings to other countries. In particular, results may vary in developed countries and different cultural contexts.

Fourthly, there are methodological design limitations. The cross-sectional research design makes it difficult to draw causal inferences, and purchase intention was measured instead of actual purchase behavior. This overlooks the possible differences between attitude and behavior.

Fifth, the study's scope is limited in terms of certain control variables. Factors such as price, income level, regulatory influences, brand size, and sectoral differences were not controlled for. The effects of these factors on green purchasing behavior should be examined in future studies.

Future Research

Future research should focus on five main areas. First, generation-specific scale development studies should be conducted. A 'Digital Green Trust Scale' should be developed for Generation Z, and dimensions such as social media trust, influencer effect, and peer validation should be added.

Second, longitudinal studies should be conducted. The longitudinal transition of the same individuals over time should be tracked, and the effect of technological evolution on trust mechanisms should be analysed using time series analysis.

Third, neuromarketing integration should be ensured. EEG should be used to measure intergenerational differences in brain activation, and fMRI should be used to conduct neurological comparisons of trust processing mechanisms.

Fourthly, sectoral expansion studies should be conducted. The analysis of generational trust mechanisms in the financial services, healthcare, and technology sectors, as well as the examination of the impact of generational decision-maker differences in B2B (business-to-business) markets, is required.

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