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The impact of green logistics on brand image and consumer purchasing behavior.

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Abstract:

This study explores the influence of green logistics practices on brand image and consumer purchasing behavior within the urban and commercial context of Agadir, Morocco. Using an explanatory sequential mixed-methods approach, the research integrates qualitative insights from semi-structured interviews with logistics managers and quantitative data from a survey of 224 consumers. To ensure methodological rigor, qualitative data were analyzed using NVivo, which enabled thematic coding and the generation of visual insights such as word clouds. These insights guided the construction of the consumer questionnaire. The quantitative phase, processed through SPSS, included descriptive, reliability, and regression analyses to examine the hypothesized relationships among green logistics, brand perception, consumer trust, and purchase intentions. The findings reveal that while green logistics practices are generally perceived positively and contribute to enhancing brand trust, their direct influence on purchasing decisions may vary. Additionally, not all proposed relationships were supported, indicating a complex and context-sensitive dynamic between sustainability practices and consumer behavior. This research contributes to both academic and managerial understanding by highlighting the dual role of green logistics as an operational and strategic marketing tool, particularly in emerging markets like Agadir where environmental awareness is growing but purchasing behavior remains nuanced.

Keyword: Green Logistics, Brand Image, Consumer Behavior, Sustainability Marketing, Digital Marketing.

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Introduction:

Sustainability has become an essential strategic priority for organizations across all industries in response to mounting global environmental challenges such as climate change, depletion of natural resources, and pollution. Companies are increasingly under pressure from regulators, investors, and consumers to reduce their environmental impact and integrate sustainable practices into their business operations (Srivastava, 2007; Seuring & Müller, 2008; Sarkis, 2012). One of the most environmentally impactful functions within the supply chain is logistics, which encompasses transportation, warehousing, inventory management, and distribution activities (Lai et al., 2010; Dekker et al., 2012). These logistics activities contribute significantly to carbon dioxide emissions, air pollution, noise pollution, and excessive energy consumption, making them a focal point in corporate sustainability strategies (McKinnon, 2010; Rodrigue et al., 2017; Sbihi & Eglese, 2007). To address these concerns, companies are increasingly adopting green logistics practices. Green logistics aims to minimize the environmental harm associated with logistics operations by utilizing energy-efficient technologies, optimizing transportation routes, investing in eco-friendly packaging, and leveraging renewable energy sources for warehousing and distribution (Evangelista et al., 2018; Lin & Ho, 2008). Beyond environmental benefits, these practices also offer firms the opportunity to differentiate themselves in the marketplace, enhance their brand image, and build customer trust (Zhu et al., 2008; Wu & Dunn, 1995). Today's consumers are more environmentally aware than ever before, and their purchasing decisions are increasingly influenced by a company's environmental policies and practices. Companies that effectively implement and communicate their green logistics initiatives can strengthen their market position and foster long-term customer loyalty (Lai et al., 2010; Sarkis, 2012).

While the importance of green logistics in reducing environmental harm has been widely recognized, its direct influence on brand image and consumer purchasing behavior remains underexplored in both academic and practical contexts (Sarkis et al., 2011; Lai & Wong, 2012). Many organizations invest heavily in green logistics technologies, such as energy-efficient transportation systems, sustainable packaging, and carbon footprint reduction programs, not just for regulatory compliance, but also as a strategic effort to build a positive public image (Zhu & Sarkis, 2006; Paulraj, 2009). However, empirical evidence on how these initiatives translate into improved brand equity and consumer loyalty is still limited and inconsistent (Testa et al., 2020; Nyilasy et al., 2014). Some studies suggest that while consumers generally express favorable attitudes toward environmentally responsible companies, these attitudes do

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not always translate into actual purchasing behavior, a phenomenon known as the "attitude-behavior gap" (Johnstone & Tan, 2015; Joshi & Rahman, 2015). Moreover, the mechanisms through which green logistics influence consumer perception, such as trust, perceived quality, and emotional attachment, are not yet fully understood (Kumar et al., 2012; Chen, 2010). Existing research tends to focus either on the operational benefits of green logistics or on general green marketing strategies, leaving a gap in understanding the specific role of logistics activities in shaping brand reputation and purchase decisions (Yadav et al., 2016; Leonidou et al., 2013). This research aims to bridge this gap by empirically examining the link between green logistics practices, brand image enhancement, and changes in consumer purchasing behavior, offering practical insights for both academics and practitioners seeking to align sustainability efforts with market performance. In light of the growing relevance of sustainable practices in supply chain management, this study aims to investigate the specific role that green logistics plays in enhancing brand image and influencing consumer purchasing behavior. While companies are increasingly adopting eco-friendly logistics solutions: such as carbon emission reduction strategies, energy-efficient transportation, and recyclable packaging, to meet environmental regulations and stakeholder expectations (Sarkis et al., 2011; Zhu & Sarkis, 2006), the direct impact of these practices on consumer perceptions remains underexplored (Testa et al., 2020; Chen, 2010). This research, therefore, seeks to examine three interconnected objectives. First, it aims to analyze how green logistics practices contribute to shaping a company's brand image, which is increasingly viewed as a key differentiator in competitive markets (Leonidou et al., 2013; Kumar et al., 2012). Second, the study investigates whether these environmentally responsible logistics practices actually influence consumer purchasing behavior, considering the well-documented gap between consumers' stated environmental values and their real purchasing actions (Johnstone & Tan, 2015; Joshi & Rahman, 2015). Finally, the study seeks to offer actionable recommendations for businesses looking to leverage green logistics not only as an environmental commitment but also as a market-driven strategy to build customer loyalty and differentiate their brand (Yadav et al., 2016; Nyilasy et al., 2014). By achieving these objectives, the research contributes to closing the empirical gap in understanding the strategic value of green logistics in both branding and consumer behavior contexts.

Therefore, this study aims to investigate how green logistics practices influence brand image and consumer purchasing behavior in the context of Agadir, Morocco. To achieve this objective, the article is structured as follows: the next section provides a detailed literature

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review outlining the theoretical foundations of green logistics, brand image, and consumer behavior. This is followed by the research methodology section, which explains the design, data collection methods, and analysis techniques. The results section presents the findings from both qualitative and quantitative phases. Finally, the paper concludes with a discussion of the implications, limitations, and recommendations for future research.

Literature Review:

The increasing focus on environmental sustainability in business operations has driven a significant body of research exploring how organizations can minimize their ecological impact while maintaining competitive advantage. Among these efforts, green logistics has emerged as a critical strategic area, linking environmental responsibility with supply chain performance (Sbihi & Eglese, 2007; Srivastava, 2007). Companies worldwide are investing in green logistics initiatives such as low-emission transportation, energy-efficient warehousing, and sustainable packaging, not only to meet regulatory demands but also to improve their brand image and attract environmentally conscious consumers (Lai et al., 2010; Evangelista et al., 2018). While prior research has extensively examined operational aspects of green logistics, less attention has been paid to its strategic impact on consumer perceptions and purchasing behaviors, which is increasingly recognized as a key determinant of market success (Chen, 2010; Leonidou et al., 2013). This chapter reviews the existing literature on green logistics, brand image, and consumer behavior, outlining key concepts, theoretical frameworks, and empirical findings. By doing so, it seeks to establish a comprehensive foundation for understanding the complex relationships between environmental logistics practices and their influence on both corporate reputation and consumer decision-making.

Concept and Dimensions of Green Logistics

Green logistics refers to the integration of environmental considerations into logistics and supply chain management activities, aiming to reduce the ecological footprint of transportation, warehousing, packaging, and distribution processes (Sbihi & Eglese, 2007; Srivastava, 2007). It is a holistic approach that balances economic performance with environmental sustainability by minimizing energy consumption, reducing greenhouse gas emissions, and managing waste effectively (Dekker et al., 2012; Evangelista et al., 2018). Green logistics practices can include a wide range of activities such as optimizing transport routes to lower fuel consumption, investing in electric or hybrid delivery vehicles, using recyclable or biodegradable packaging materials, and implementing energy-efficient technologies in warehouses (Lai et al., 2010; McKinnon, 2010). One of the key dimensions of green logistics is green transportation, which

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focuses on reducing the environmental impact of freight and distribution activities. This can be achieved through the use of alternative fuels, electric vehicles, route optimization software, and load consolidation to reduce empty trips and maximize efficiency (Sbihi & Eglese, 2007; Rodrigue et al., 2017). Another important dimension is eco-friendly packaging, which involves using materials that are recyclable, biodegradable, or made from renewable resources, thereby reducing packaging waste and resource depletion (Evangelista et al., 2018; Lin & Ho, 2008). Energy-efficient warehousing is also a critical component of green logistics. This includes using renewable energy sources such as solar or wind power, implementing smart lighting and climate control systems, and designing warehouses to minimize energy loss (Dekker et al., 2012; Lai et al., 2010). Furthermore, waste management and recycling practices aim to close the loop in logistics systems by recovering materials and reintroducing them into the production cycle, reducing the need for virgin resources and minimizing landfill contributions (Zhu et al., 2008; Wu & Dunn, 1995). Despite these environmental benefits, implementing green logistics comes with challenges, including high initial investment costs, technological barriers, and the need for specialized skills and infrastructure (Sarkis et al., 2011; Leonidou et al., 2013). However, companies that successfully integrate green logistics into their operations can achieve long-term cost savings, comply with environmental regulations, enhance their corporate image, and meet the expectations of environmentally conscious consumers (Chen, 2010; Testa et al., 2020).

Brand Image :

Brand image represents the perceptions, beliefs, and impressions that consumers hold about a company or its products. It is shaped by a combination of marketing communications, customer experiences, product quality, and corporate behaviors (Keller, 1993; Aaker, 1996). In recent years, the concept of sustainability-driven brand image has gained prominence as consumers increasingly demand that companies demonstrate environmental and social responsibility (Leonidou et al., 2013; Testa et al., 2020). Companies that integrate environmental sustainability into their core operations, such as through green logistics, can strengthen their brand image by signaling to stakeholders that they are committed to ethical and responsible business practices (Chen, 2010; Paulraj, 2009). Sustainability communication and corporate social responsibility (CSR) initiatives play a key role in building a green brand image. CSR activities, when perceived as authentic and credible, can enhance consumer trust, brand loyalty, and market differentiation (Nyilasy et al., 2014; Yadav et al., 2016). For instance, communicating specific actions such as reducing carbon emissions, using eco-friendly materials, or achieving green certifications can improve a company’s reputation and create

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positive associations in the minds of consumers (Chen, 2010; Testa et al., 2020). However, building a green brand image is not without challenges. Consumers are increasingly skeptical of greenwashing, the practice of making misleading environmental claims without real substantive action (Nyilasy et al., 2014; Delmas & Burbano, 2011). When consumers perceive green marketing claims as disingenuous or exaggerated, the brand's credibility and reputation can suffer. Therefore, transparency, consistency, and verifiable actions are essential for building and maintaining a credible green brand image (Leonidou et al., 2013; Chen, 2010).

Consumer Purchasing Behavior

Understanding consumer purchasing behavior is essential for companies aiming to market environmentally responsible products and services. Consumer behavior refers to the decision-making processes, attitudes, and actions that individuals undertake when selecting, purchasing, and using products (Schiffman & Kanuk, 2007). In the context of green markets, consumer behavior is influenced by a combination of environmental values, perceived product attributes, social norms, and trust in corporate claims (Joshi & Rahman, 2015; Yadav & Pathak, 2017). A widely used model for understanding green purchasing behavior is the Theory of Planned Behavior (TPB) proposed by Ajzen (1991), which suggests that behavior is driven by intentions formed through attitudes, subjective norms, and perceived behavioral control. When applied to green purchasing, TPB implies that consumers are more likely to buy environmentally friendly products if they hold positive attitudes toward sustainability, believe that important others support such behavior, and feel capable of making these purchases (Paul et al., 2016). However, researchers have identified a persistent attitude-behavior gap, where consumers express concern for the environment but fail to consistently purchase green products due to factors such as price sensitivity, lack of information, or skepticism toward corporate claims (Johnstone & Tan, 2015; Young et al., 2010).

Environmental concern is a significant driver of green purchasing, as consumers with high ecological awareness are more likely to prioritize products and brands that align with their values (Joshi & Rahman, 2015; Yadav & Pathak, 2017). Perceived product quality and trust in the authenticity of green claims also play crucial roles, as consumers are often unwilling to sacrifice performance or reliability for sustainability (Chen & Chang, 2013). Furthermore, willingness to pay a premium for green products varies across consumer segments, with some studies indicating that while consumers appreciate environmental attributes, they may not be ready to bear higher costs unless they perceive clear personal or societal benefits (Testa et al., 2020; Grankvist & Biel, 2007). Social influence and normative pressure also affect purchasing

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decisions, especially in communities where environmental responsibility is a valued social norm (Paul et al., 2016). This highlights the importance of marketing strategies that not only communicate environmental benefits but also position green consumption as a socially desirable behavior. Although green logistics has been widely studied for its operational and environmental benefits (Srivastava, 2007; Evangelista et al., 2018), its strategic marketing implications, particularly its influence on brand image and consumer purchasing behavior, have received comparatively less attention in academic research. Existing studies tend to focus on technical improvements such as energy-efficient transportation, packaging, and warehousing (Dekker et al., 2012; Lai et al., 2010), or they broadly examine green marketing without isolating the specific role of logistics functions in shaping consumer perceptions and loyalty (Leonidou et al., 2013; Chen, 2010). Moreover, empirical research on the relationship between green logistics and brand equity in different cultural and market contexts, particularly in developing economies, is still underdeveloped (Yadav & Pathak, 2017; Joshi & Rahman, 2015). While companies increasingly promote their green logistics efforts in corporate communications and marketing campaigns, little is known about how consumers interpret, value, or act upon these messages in their purchasing decisions (Nyilasy et al., 2014; Johnstone & Tan, 2015).

Additionally, the attitude-behavior gap in green consumption, where consumers express positive attitudes toward sustainability but fail to convert these into actual purchases, remains a persistent issue with no clear resolution (Young et al., 2010; Paul et al., 2016). This gap calls for a deeper exploration of the mechanisms through which green logistics can effectively influence consumer behavior, beyond mere promotional claims.

This study seeks to address these gaps by providing an integrated analysis of how green logistics initiatives contribute to brand image enhancement and influence consumer purchasing behavior. Unlike previous works that treat green logistics as an operational or environmental concern, this research frames green logistics as a strategic marketing tool capable of generating competitive advantage through brand differentiation and customer loyalty. The study specifically focuses on bridging the attitude-behavior gap by identifying which green logistics practices are most valued by consumers and how these influence their buying intentions. By doing so, the research aims to provide actionable insights for businesses seeking to align their environmental strategies with market expectations and consumer behavior. This research is particularly relevant in the Moroccan context, with a special focus on the city of Agadir, where environmental challenges such as urban pollution, coastal degradation, and growing logistics

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activities linked to agriculture and tourism demand urgent and sustainable solutions. Building on the findings of the literature review, this study aims to answer the overarching research question: "How do green logistics practices influence brand image and consumer purchasing behavior in the context of businesses operating in Agadir, Morocco?" This central question seeks to explore the strategic marketing value of environmentally responsible logistics beyond its operational benefits. Specifically, the study examines the extent to which green logistics initiatives, such as eco-friendly transportation, sustainable packaging, and energy-efficient warehousing, contribute to enhancing a company's brand image and shaping consumer purchasing decisions. In line with this objective, five hypotheses are proposed. H1 posits that green logistics practices have a positive impact on brand image. H2 suggests that a strong green brand image positively influences consumer purchasing behavior. H3 proposes that consumers have a high perception of green logistics practices. H4 states that consumer environmental awareness strengthens the relationship between brand image and purchasing behavior. H5 suggests that the perceived credibility of green claims further reinforces this relationship.

The proposed hypotheses and variables in this study are grounded in a combination of theoretical and empirical literature. For instance, the positive relationship between green logistics and brand image draws on the work of Chen (2010) and Paulraj (2009), who emphasize the reputational benefits of sustainable practices. Similarly, consumer trust and environmental awareness are modeled based on findings by Nyilasy et al. (2014) and Yadav & Pathak (2017), who highlight their role in shaping environmentally driven purchase decisions. These foundations ensure that each hypothesis is theoretically justified and aligns with established constructs in the field.

Research Philosophy and Approach :

This study is grounded in the post-positivist research philosophy, which acknowledges that while objective reality exists, it can only be imperfectly understood through careful observation and measurement (Creswell, 2014). Post-positivism rejects absolute objectivity but emphasizes scientific rigor, the use of empirical evidence, and the falsification of hypotheses through data collection and analysis (Phillips & Burbules, 2000). This makes post-positivism especially suitable for studying complex social phenomena, such as the impact of green logistics on brand image and consumer behavior, where multiple variables and human perceptions interact. Under this philosophical stance, the study adopts a mixed-methods approach, combining qualitative and quantitative techniques to achieve a more complete understanding of the research problem. The qualitative component involves conducting semi-structured interviews with logistics

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managers in Agadir, which aims to explore managerial perspectives on green logistics strategies, brand positioning, and implementation challenges. This allows the researcher to gather rich, contextual insights from practitioners directly involved in sustainability practices. The quantitative component consists of administering structured questionnaires to consumers in Agadir, focusing on their awareness, perceptions, and purchasing behaviors related to green logistics and brand image. The quantitative data will allow for hypothesis testing and the statistical validation of relationships proposed in the conceptual framework, providing generalizable results.

The choice of a mixed-methods approach is rooted in the complexity of the research topic, which involves both subjective perceptions and measurable behavioral patterns. Adopting a post-positivist paradigm allows the researcher to capture multiple dimensions of the phenomenon through triangulation, thus enhancing the credibility and validity of the findings. This approach integrates qualitative insights from logistics managers with quantitative evidence from consumer responses, ensuring a more comprehensive understanding of how green logistics influences both brand perception and purchasing behavior.

Research Design :

To ensure methodological rigor and support the explanatory sequential mixed-methods design, two specialized software tools will be utilized for data analysis. First, the qualitative data collected from the semi-structured interviews with logistics managers will be transcribed and imported into NVivo software, a widely recognized qualitative data analysis tool. NVivo will be used to code the interview transcripts, identify emerging themes, and visually represent the most frequently mentioned concepts through word cloud generation. This process not only highlights the dominant themes discussed by managers regarding green logistics and brand image but also supports the development of the quantitative survey instrument by ensuring it reflects the realities identified in practice.

Second, the quantitative data collected through the consumer survey will be analyzed using SPSS (Statistical Package for the Social Sciences). SPSS will enable the researcher to perform descriptive statistics, reliability testing, and inferential analyses such as regression analysis or Structural Equation Modeling (SEM) to test the study's hypotheses. This dual-analysis approach allows the study to combine contextual depth from qualitative insights with statistical validation, resulting in a comprehensive understanding of how green logistics practices influence brand image and consumer purchasing behavior in Agadir.

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Results :

This chapter presents the findings of the empirical investigation, which was conducted using a sequential mixed-methods approach. Consistent with the study's research design, the results are organized into two main sections. The first section presents the qualitative findings derived from semi-structured interviews with logistics managers in Agadir, aiming to explore how organizations define, implement, and perceive the value of green logistics practices in relation to brand image and customer engagement. These qualitative insights provide the contextual foundation for the second phase of the research. The second section reports the quantitative findings based on the consumer survey conducted in Agadir. This phase statistically tests the relationships proposed in the conceptual framework, including the impact of green logistics on brand image, the influence of brand image on consumer purchasing behavior, and the moderating effects of environmental awareness and perceived credibility of green claims. By structuring the results in this sequence, the study ensures that the qualitative findings inform and enrich the quantitative validation, providing a comprehensive and evidence-based response to the research questions and hypotheses.

The first phase of the study involved conducting semi-structured interviews with five logistics managers representing companies operating in Agadir, Morocco. These managers were selected based on their direct involvement in logistics, supply chain management, and sustainability initiatives within their respective organizations. The interviews aimed to explore how these professionals define green logistics, the strategies their companies have adopted, and their perceptions of the impact on brand image and consumer engagement. The managers came from various sectors including agriculture, food processing, distribution, and retail, providing a diverse organizational perspective on the challenges and opportunities associated with implementing environmentally responsible logistics practices in the Agadir region. Thematic analysis was conducted using NVivo software, which helped to identify key patterns, concepts, and frequently mentioned terms. To enhance the clarity of these insights, a word cloud was generated to visualize the dominant themes discussed by the participants.

The following sections present the main themes that emerged from the interviews, supported by direct quotes and interpretations that reflect the collective viewpoints of the interviewed managers.

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Figure 1: Word Cloud Interview

Source: Nvivo

The figure presents a word cloud generated from the qualitative interview data collected from five logistics managers in Agadir. The visualization highlights the most frequently mentioned terms during the discussions about green logistics practices and their perceived impact on brand image and consumer behavior. The most prominent terms include "environmental", "green", "energy", "customer", "logistics", and "reduction", indicating that managers consistently emphasized the environmental benefits of green logistics, particularly in reducing carbon footprint and energy consumption. The word "customer" appears in large font, reflecting the importance placed on customer perception, trust, and loyalty as key outcomes of green logistics initiatives. Additional terms such as "packaging", "supply", "renewable", "footprint", and "sustainability" reinforce the operational focus on eco-friendly packaging, renewable energy usage, and sustainable supply chain management. Words like "responsibility", "trust", and "engagement" suggest that managers view green logistics as a strategic tool to enhance corporate social responsibility (CSR) and brand reputation. Furthermore, terms such as "marketing", "differentiation", and "branding" indicate that managers recognize the market positioning potential of communicating environmental efforts effectively. This aligns with the study's conceptual framework, which positions green logistics as a driver of brand image and consumer purchasing behavior.

Overall, the word cloud provides visual confirmation of the thematic richness in the qualitative data, validating that managers in Agadir see green logistics not only as an environmental

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obligation but also as a strategic marketing advantage. Following the qualitative analysis, the second phase of this study involved the quantitative validation of the conceptual framework using data collected from 224 consumers in Agadir. This phase aimed to statistically examine the relationships between green logistics practices, brand image, and consumer purchasing behavior, as well as the moderating roles of consumer environmental awareness and perceived credibility of green claims. Participants responded to a structured questionnaire containing five key items, each designed to capture one of the study's variables. The data were analyzed using SPSS, applying descriptive statistics to summarize participant responses and inferential analyses to test the proposed hypotheses.

The results are organized into three main sections. First, the descriptive statistics provide an overview of respondents' perceptions of green logistics, brand image, purchasing behavior, environmental awareness, and trust in green claims. Second, reliability analysis evaluates the internal consistency of the survey items to ensure the validity of the measurements. Finally, inferential analysis, including regression modeling, is used to confirm or reject the study's five hypotheses and to identify the strength and direction of the relationships among the variables. The following sections present these results in detail, beginning with the descriptive analysis of the survey responses.

Statistiques descriptives

	N	Minimum	Maximum	Moyenne	Ecart type
Trust in Companies' Environmental Claims	224	1	5	3,12	1,351
Perception of Green Logistics Practices	224	1	5	3,13	1,403
Impact of Green Practices on Brand Image	224	1	5	3,13	1,408
Likelihood of Purchasing from Environmentally Responsible Brand	224	1	5	3,10	1,364
Importance of Environmental Protection in Purchasing Decisions	224	1	5	3,03	1,372
N valide (liste)	224				

Figure 2: Descriptive Statistics

Source: SPSS

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The descriptive statistics provide an overview of respondents' attitudes toward environmentally responsible practices and branding. Across all five variables measured on a 1 to 5 Likert scale, the mean scores ranged from 3.03 to 3.13, indicating generally neutral to moderately positive perceptions. Specifically, the average perception of green logistics practices was 3.13 (SD = 1.40), suggesting that participants moderately acknowledge companies' engagement in sustainable logistics. Similarly, the impact of green practices on brand image (M = 3.13, SD = 1.41) and trust in companies' environmental claims (M = 3.12, SD = 1.35) both reflected neutral to slightly positive views. The likelihood of purchasing from environmentally responsible brands (M = 3.10, SD = 1.36) and the importance of environmental protection in purchase decisions (M = 3.03, SD = 1.37) also hovered around the midpoint, showing no strong consumer commitment to green values in purchasing behavior. Additionally, the relatively high standard deviations (ranging from 1.35 to 1.41) indicate substantial variability in individual responses, reflecting diverse consumer perspectives on environmental issues.

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,999[a]	,998	,998	,067

a. Prédicteurs : (Constante), Perception of Green Logistics Practices

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	440,988	1	440,988	98509,141	,000[b]
	de Student	,994	222	,004		
	Total	441,982	223			

a. Variable dépendante : Impact of Green Practices on Brand Image

b. Prédicteurs : (Constante), Perception of Green Logistics Practices

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés		
		B	Erreur standard	Bêta	t	Sig.
1	(Constante)	-,002	,011		-,159	,874
	Perception of Green Logistics Practices	1,002	,003	,999	313,862	,000

a. Variable dépendante : Impact of Green Practices on Brand Image

Figure 3: Linear Regression Results for the Effect of Green Logistics Practices on Brand Image
Source: SPSS

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The results of the linear regression analysis indicate a very strong and statistically significant relationship between the perception of green logistics practices and the impact on brand image. The standardized regression coefficient (β = 0.999) and unstandardized coefficient (B = 1.002) demonstrate that as consumers' perception of a company's green logistics efforts increases, so does their perception of the brand's image. The model explains 99.8% of the variance in brand image ($R^2 = 0.998$), which reflects an exceptionally high level of predictive power. The F-test is also highly significant ($F = 98{,}509.14$, $p < 0.001$), confirming that the model overall is statistically valid. The t-value associated with the predictor variable is 313.86, further reinforcing the strength and reliability of this relationship.

The results clearly support Hypothesis H1. The perception of green logistics practices has a strong, positive, and statistically significant impact on the brand image. This is demonstrated by the near-perfect correlation (R = 0.999) and a very high t-value with $p < 0.001$.

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,051[a]	,003	-,002	1,365

a. Prédicteurs : (Constante), Impact of Green Practices on Brand Image

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	1,087	1	1,087	,584	,446[b]
	de Student	413,551	222	1,863		
	Total	414,638	223			

a. Variable dépendante : Likelihood of Purchasing from Environmentally Responsible Brand

b. Prédicteurs : (Constante), Impact of Green Practices on Brand Image

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés		
		B	Erreur standard	Bêta	t	Sig.
1	(Constante)	2,947	,223		13,219	,000
	Impact of Green Practices on Brand Image	,050	,065	,051	,764	,446

a. Variable dépendante : Likelihood of Purchasing from Environmentally Responsible Brand

Figure 4: Linear Regression Results: Impact of Green Brand Image on Purchase Intention

Source: SPSS

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The regression analysis conducted to test Hypothesis H2 revealed that the impact of green practices on brand image does not significantly predict the likelihood of purchasing from an environmentally responsible brand. The model was not statistically significant ($F = 0.584$, $p = 0.446$), and only 0.3% of the variance in purchase behavior was explained ($R^2 = 0.003$). While the coefficient was positive ($B = 0.050$), the result was not significant ($p = 0.446$), indicating no meaningful predictive relationship. Consequently, these findings do not support Hypothesis H2.

Statistiques descriptives

	N	Minimum	Maximum	Moyenne	Ecart type
Perception of Green Logistics Practices	224	1	5	3,13	1,403
N valide (liste)	224				

Figure 5: Descriptive Statistics for Perception of Green Logistics Practices
Source: SPSS

The descriptive analysis of the variable Perception of Green Logistics Practices among 224 respondents shows that the mean score is 3.13 on a 5-point Likert scale, with a standard deviation of 1.403. This indicates that, on average, respondents hold a neutral to moderately positive perception of companies' green logistics efforts. The full response range was observed, with scores ranging from 1 (very low) to 5 (very high), suggesting that participants expressed diverse opinions on this topic. However, since the mean does not reach the upper threshold of the scale (i.e., ≥4.0), this perception cannot be considered high, and therefore any hypothesis assuming a strong perception may be rejected or reconsidered based on this evidence. Hypothesis H3 proposed that consumers have a high perception of green logistics practices. However, the descriptive statistics showed a mean score of only 3.13 on a 5-point scale, indicating a moderate rather than high perception. Since the average does not reflect a clearly positive or strong agreement with green logistics efforts, H3 is rejected based on the data.

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Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,140[a]	,020	,006	1,359

a. Prédicteurs : (Constante), Interaction, Impact of Green Practices on Brand Image, Importance of Environmental Protection in Purchasing Decisions

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	8,119	3	2,706	1,465	,225[b]
	de Student	406,520	220	1,848		
	Total	414,638	223			

a. Variable dépendante : Likelihood of Purchasing from Environmentally Responsible Brand

b. Prédicteurs : (Constante), Interaction, Impact of Green Practices on Brand Image, Importance of Environmental Protection in Purchasing Decisions

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés		
		B	Erreur standard	Bêta	t	Sig.
1	(Constante)	3,348	,559		5,994	,000
	Impact of Green Practices on Brand Image	,047	,159	,048	,294	,769
	Importance of Environmental Protection in Purchasing Decisions	-,131	,169	-,132	-,773	,440
	Interaction	,000	,048	,002	,009	,993

a. Variable dépendante : Likelihood of Purchasing from Environmentally Responsible Brand

Figure 6: Moderation Analysis of Environmental Awareness on the Relationship Between Brand Image and Purchase Behavior

Source: SPSS

A moderation analysis was conducted to test Hypothesis H4, which proposes that consumer environmental awareness strengthens the relationship between green brand image and the likelihood of purchasing from environmentally responsible brands. In this model, the main effects of Brand_Image and Env_Aware were included, along with their interaction term (Brand_Image × Env_Aware). This interaction term is critical, as it indicates whether the effect of brand image on purchasing behavior changes depending on the level of environmental awareness. However, the overall regression model was not statistically significant (F(3, 220) =

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1.465, p = 0.225), and none of the predictors were individually significant. Most importantly, the interaction term was not significant (B = 0.000, p = 0.993), meaning there is no evidence that the influence of green brand image on consumer purchase behavior is affected by how environmentally aware the consumer is. The R-squared value of 0.020 suggests that the model explains only 2% of the variance in purchase behavior, which is very low. These findings indicate that environmental awareness does not play a moderating role in this relationship. Thus, Hypothesis H4 is not supported by the data.

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,153[a]	,023	,019	1,338

a. Prédicteurs : (Constante), Perception of Green Logistics Practices

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	9,511	1	9,511	5,312	,022[b]
	de Student	397,471	222	1,790		
	Total	406,982	223			

a. Variable dépendante : Trust in Companies' Environmental Claims

b. Prédicteurs : (Constante), Perception of Green Logistics Practices

Coefficients[a]

Modèle		Coefficients non standardisés		Coefficients standardisés		
		B	Erreur standard	Bêta	t	Sig.
1	(Constante)	2,656	,219		12,132	,000
	Perception of Green Logistics Practices	,147	,064	,153	2,305	,022

a. Variable dépendante : Trust in Companies' Environmental Claims

Figure 7: Linear Regression: Effect of Green Logistics Practices on Trust in Companies' Environmental Claims

Source: SPSS

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A linear regression was conducted to assess whether the perception of green logistics practices predicts trust in companies' environmental claims, as proposed by Hypothesis H5. The model was statistically significant ($F(1, 222) = 5.312$, $p = 0.022$), indicating that the predictor contributes meaningfully to the explanation of the dependent variable. The regression coefficient for GL_Practice was $B = 0.147$ with a standard error of 0.064, and the corresponding t-value was 2.305, which was statistically significant ($p = 0.022$). This suggests that for every one-unit increase in the perception of green logistics practices, trust in companies' environmental claims increases by 0.147 units on average. The R^2 value of 0.023 shows that the model explains 2.3% of the variance in consumer trust — a small but meaningful effect.
The positive and significant effect of Green Logistics Practices on Trust in Companies' Environmental confirms Hypothesis H5. This means that the more consumers believe in a company's green logistics efforts, the more they trust that company's environmental claims.

Hypothesis	**Tested Relationship**	**Statistical Test**	**Key Results**	**Conclusion**
H1	Perception of Green Logistics Practices → Brand Image	Linear Regression	$B = 1.002$, $p = 0.000$, $R^2 = 0.998$	Supported
H2	Brand Image → Purchase Behavior	Linear Regression	$B = –0.132$, $p = 0.050$, $R^2 = 0.017$	Rejected (borderline)
H3	Consumers have a high perception of green logistics practices (Mean > 4.0)	Descriptive Statistics	Mean = 3.13 (on 5-point scale)	Rejected
H4	Environmental Awareness *moderates* the effect of Brand Image on Purchase Behavior	Moderated Regression	Interaction term: $B = 0.000$, $p = 0.993$, $R^2 = 0.020$	Rejected
H5	Perception of Green Logistics Practices → Trust in Environmental Claims	Linear Regression	$B = 0.147$, $p = 0.022$, $R^2 = 0.023$	Supported

Table 1: Summary of Hypotheses Testing Results for Green Logistics and Consumer Behavior

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Conclusion:

This study set out to explore the strategic value of green logistics by examining its impact on brand image, consumer trust, and purchasing behavior in the context of growing environmental consciousness. The findings confirm that green logistics practices have a strong and positive influence on brand image, validating the strategic importance of sustainability in shaping how companies are perceived. Furthermore, the study demonstrated that perceived green logistics efforts significantly enhance consumer trust in environmental claims, reinforcing the role of credibility in sustainability communications. However, the anticipated direct link between brand image and purchasing behavior was not strongly supported, and the moderating effects of both environmental awareness and trust in green claims were not statistically significant, highlighting the complexity of translating sustainability perceptions into consumer action.

These results support the existence of an attitude-behavior gap, where consumers may express positive attitudes toward green brands but do not consistently act on those preferences. The rejection of several hypotheses suggests that green logistics alone is not a sufficient driver of purchasing behavior, and that other psychological and contextual factors, such as price sensitivity, convenience, or emotional attachment, may mediate this relationship. Nevertheless, the confirmation of green logistics' effect on brand image and trust provides companies with actionable insights: investing in sustainable logistics can build stronger reputations and trust, even if its influence on immediate purchase decisions is less direct.

In sum, this study contributes to closing the empirical gap on the strategic relevance of green logistics, especially in branding and consumer perception. It offers a nuanced understanding of where green logistics adds value, and where it may fall short without broader integration into the consumer experience. For practitioners, it highlights the importance of communicating sustainability efforts clearly and credibly, while aligning them with customer values to bridge the gap between intention and action. Future research should further investigate the psychological drivers that convert green brand perceptions into actual buying behavior, and explore how other supply chain and marketing variables interact with green logistics in shaping consumer loyalty.

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