



The Impact of Green Advertisements on Green Purchase Decisions in the Home Appliance Market: Green Concern as a Moderating Variable

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Abstract :

This study aims to investigate the impact of Green Advertisements (GA) on Green Purchase Decisions (GPD) in the home appliance market, with green concern (GC) as a moderating variable (a study on clients of Condor Electronics -Ain Temouchent provincial branch). The sample size comprised 114 participants, determined using Zikmund and Babin's formula methodology. Data were collected through an electronic questionnaire. Analysis was conducted via regression analysis utilizing Jamovi statistical software version 2.3. The findings indicate that green advertisements positively influence green purchase decisions. Furthermore, green concern was found to exert a substantial moderating effect, as high green concern enhanced the relationship between green advertisements and green purchasing decisions.

Key Words: Green Advertisements, Green Purchase Decisions, Green Concern, Green Marketing, Condor Electronics.

JEL Classification: M31; Q56; D12

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Introduction

In recent years, environmental sustainability has become a primary focus for businesses and consumers. As ecological challenges intensify globally, companies increasingly employ green marketing strategies to promote eco-friendly products and influence consumer behavior. Green advertising has emerged as an effective method to express a brand's commitment to sustainability. These advertisements typically emphasize a product's ecological benefits, such as reduced carbon emissions and the utilization of sustainable resources.

However, the efficacy of green advertisements in determining consumer behavior varies, and diverse psychological and contextual factors, such as environmental concern, skepticism, and greenwashing, influence this relationship.

Existing research has mainly focused on green concern as a direct or indirect



antecedent to consumers' green purchasing decisions, and few studies explored its moderating effect, especially in the context of the home appliance market.

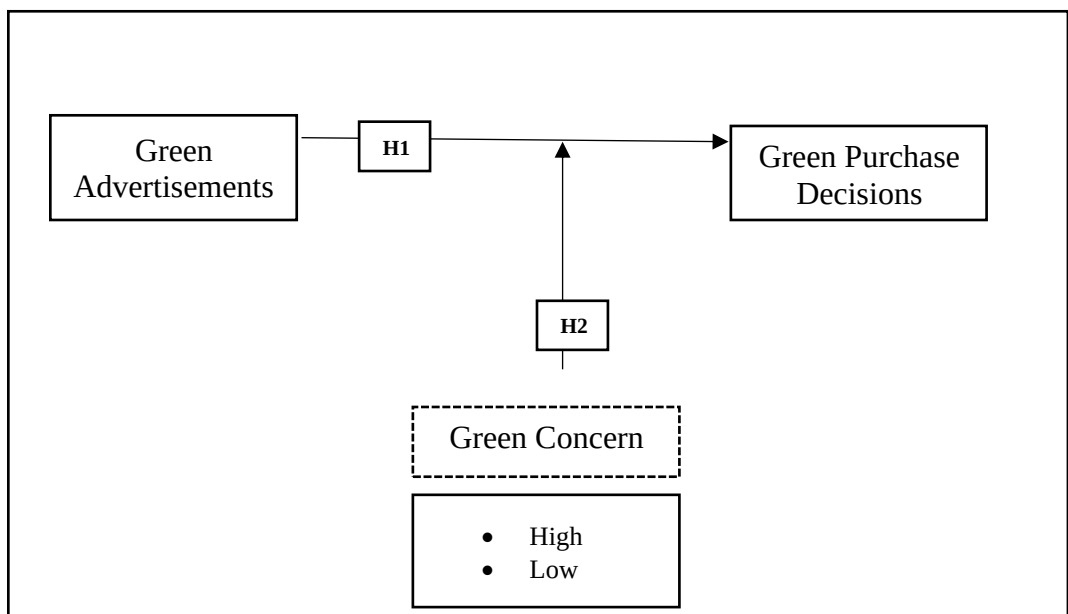
In Algeria, Condor Electronics has established itself as a prominent entity in the home appliance market, offering a range of energy-efficient products. However, the extent to which Condor's green advertising influences consumer green purchasing decisions remains unexplored.

The primary objective of this research is to investigate the influence of environmentally conscious advertising on consumers' purchasing decisions regarding Condor's eco-friendly home appliances. Additionally, the study examines the moderating effect of environmental concern on this relationship. By pursuing these objectives, this investigation contributes to the body of knowledge regarding the efficacy of green marketing strategies in promoting sustainable purchasing behaviors in the Algerian home appliances market.

Research Problematic

How do green advertisements affect the green purchase decisions of Condor clients, considering green concern as a moderating variable?

Conceptual Structure



Source: Prepared by the researchers based on literature review



I. Literature Review and Hypothesis Development

1. Green Advertisements as a Green marketing Tool and Green Purchase Decisions

The interdisciplinary nature of green marketing has resulted in a lack of consensus regarding its definition. Various authors and institutions have attempted to elucidate the concept and its components.

Polonsky defines green marketing as activities designed to facilitate exchanges that satisfy human needs or wants while minimizing environmental impact (Polonsky, 2008).

According to Bhalerao et al., green marketing replaces traditional marketing practices with innovative, environmentally friendly approaches that reduce resource waste (Bhalerao & Deshmukh, 2015).

According to Sharma et al., green marketing tools are strategies and practices that promote products or services while emphasizing environmental sustainability. These tools align marketing efforts with ecological principles, providing businesses with a competitive advantage. Sharma and Trivedi have identified various Green Marketing variables and their effects on consumers' green purchasing behaviors (Sharma & Trivedi, 2016). D. Sewwandi identifies Eco-labeling, Environmental Advertising, and eco-branding as the primary green marketing tools. Green advertising, also known as eco advertisement, is a marketing approach that emphasizes environmental sustainability and promotes eco-friendly products and practices. This strategy aims to inform consumers about the benefits of environmentally responsible choices, fostering a sustainability-oriented culture. The efficacy of green advertisements is contingent upon several factors, including consumers' environmental awareness and emotional connection to ecological issues (Sewwandi & Dinesha, 2022).

In electronic household appliances, eco advertising involves using environmentally safe materials to manufacture devices such as smartphones, computers, televisions, and other electrical equipment.

Rahbar suggests that green marketing can influence consumers' final purchasing decisions towards sustainability. Eco-friendly advertising functions as a catalyst by increasing awareness about environmentally conscious products or services. In other words, Green advertising promotes eco-friendly products by highlighting their benefits (Rahbar & Wahid, 2011).

Green marketing, while aimed at promoting environmentally friendly products, often encounters various factors, such as consumer skepticism. This skepticism arises from concerns about the authenticity of green claims, leading to a complex relationship between consumers and brands. Understanding this dynamic is crucial for effective marketing strategies (Do Paço & Reis, 2016).



According to Pham et al., green skepticism refers to consumers' doubts regarding brands' environmental claims. Experiences with greenwashing influence it, where companies exaggerate or falsify their environmental efforts(Pham & Barretta, 2024).

According to Marbun et al., the act of making a purchasing decision is conceptualized as the cognitive mechanism through which consumers evaluate various alternatives and opt to procure a product or service that fulfills their needs and aspirations. This intricate decision-making process encompasses multiple stages, including evaluating product quality, pricing structures, brand perception, and the influences exerted by promotional activities, which considerably affect consumer behavior at the moment of purchase(Marbun & Khoiri, 2023).

The Green Purchase Decision pertains to the choices made by consumers to acquire environmentally sustainable products. In other words, it denotes consumers' inclination to select environmentally responsible products to address the environmental challenges posed by conventional products(Mahmoud, Tsetse, Tulasi, & Muddey, 2022).

According to Firdaus, the determinants influencing this decision encompass the level of green knowledge, perceived advantages, price sensitivity, readiness to purchase, and the components of the green marketing mix(Firdaus, 2023).

Based on the discussions presented by the aforementioned scholars, the first hypothesis of this study is formulated as follows:

H1. Green Advertisements have a statistically significant positive influence on green purchase decisions made by Condor Clients.

2. The Moderating Effect of Green Concern (GC)

The term “Green Concern” is defined as the propensity of individuals to support initiatives and actions aimed at addressing environmental degradation issues, demonstrating their emotional and intellectual commitment to environmental conservation and sustainability(Ahmad, Syed, Naseer, & Rasool, 2018).

This concept encompasses a spectrum of consumer environmental awareness and action, ranging from minor adjustments such as selecting non-aerosol products to significant shifts in energy resource utilization. These diverse attitudes must be considered when examining consumer behavior about environmental matters(Zhang, Li, Cao, & Huang, 2018).

While prior studies consider this concern a direct or indirect antecedent to consumers' green purchasing decisions(Ahmad et al., 2018), this study explores its moderating effect between green advertisements and consumer buying behavior. Consumers with high levels of green concern are more inclined to experience environmental responsibility and engage in eco-friendly practices(Zhang et al., 2018).



Based on the aforementioned academic literature, the second hypothesis is formulated as follows:

H2. Green Concern exerts a moderating influence on the relationship between Green Advertisements and Green Purchase Decisions.

H2-a. Under High GC, the impact of GA on GPD will be stronger.

H2-b. Under Low GC, the impact of GA on GPD will be weaker.

II. Study Case: Condor Electronics

Condor Electronics, a subsidiary of the Benhamadi Group, is a prominent Algerian enterprise specializing in producing and distributing electronic goods. Established in 2002, Condor has emerged as a significant entity in Algeria's electronics, home appliances, and renewable energy sectors. The Benhamadi Group, Condor's parent company, possesses diverse interests encompassing electronics, construction, and agriculture.(Charad Yacine 2023).

1. Condor Electronics Eco Advertisements

Condor Electronics employs eco-advertising in its marketing strategy to promote its green products. The company's promotional materials emphasize its commitment to sustainability and renewable energy, appealing to environmentally aware consumers. These advertisements frequently incorporate green energy symbols, images of foliage, or solar motifs to reinforce their eco-friendly message. Condor also extensively utilizes social media platforms and television commercials to showcase energy-conserving appliances such as refrigerators and air conditioners. These advertisements highlight the benefits of reduced energy costs and environmental preservation. To further communicate its environmental responsibility, the company integrates environmentally themed taglines and messages into its marketing campaigns, such as "Towards a Sustainable Future" and "Innovating for a Greener World." Additionally, Condor participates in and sponsors environmentally focused exhibitions and events to showcase its sustainable product range. These include renewable energy expositions and green technology fairs in Algeria, typically accompanied by TV advertising initiatives demonstrating Condor's contributions to a more eco-friendly future (Heddad, 2017).

2. Materials and Methods

This research adopts a quantitative methodology to assess theories by examining relationships between variables. It employs survey techniques to rapidly collect specific information from Condor Electronics customers using electronic questionnaires distributed to the study sample.

The questionnaire items are sourced from prior research. Green advertisement elements are based on the framework developed by Amallia, Effendi,



and Ghofar (2021), while Green Purchase Decisions components incorporate the concept proposed by Nataliya and Nuvriasari (2023). Green Concern items are grounded in the concept established by Zhang et al. (2018).

The study population comprises Condor Electronics- Ain Temouchent Provincial branch clients, with an unknown total count. Consequently, the sampling approach utilizes the formula (N) established by Zikmund and Babin (2013).

$$N = \frac{Z^2 c. 1. pq}{E^2}$$

With a 95% confidence level ($Z_{c1} = 1.96$), a maximum sampling error (E) of 4%, an estimated success proportion (p) of 95%, and q equal to 1-p, the calculation results in a total sample size of 114.

This study utilizes Jamovi version 2.3 statistical software for data analysis and comparison. Jamovi is a free, open-source program that facilitates data analysis across various academic disciplines. It offers a user-friendly interface that enables efficient, complex statistical calculations, making it accessible to novice researchers.

The analytical process includes validity and reliability assessments to evaluate the instruments and standard assumption tests such as normality. These tests are essential to ensure the appropriateness of multiple linear regression analysis. The objective of employing multiple linear regression analysis is to develop a model that elucidates the impact of predictor variables on the dependent variable. Furthermore, these analyses are used to test the validity of the hypotheses.

3. Results and Discussion

3.1. Reliability and Validity Analysis

This investigation employed Cronbach's alpha as an evaluative metric for reliability. Following Guilford's recommendations, an elevated Cronbach's alpha signifies enhanced internal consistency. A value that exceeds 0.70 is indicative of substantial measurement reliability (Guilford, 1950). The analysis demonstrated that Cronbach's alpha for each variable exceeded 0.7 during the preliminary testing and the formal examination, as depicted in Table I, thereby underscoring the reliability robustness.

**Table (01): Reliability and Validity Analysis**

Variables	Questions	Factor Loading Range	Cronbach's	Total Cronbach's
GA	3-7	0.925-0.961	0.92	0.87
GC	8-11	0.914-0.976	0.81	
GPD	12-16	0.902-0.981	0.89	

Source: Prepared by the researchers based on Jamovi 2.3 outputs

Validity evaluates a measuring instrument's efficacy in precisely assessing the intended construct. This study employed content and construct validity to evaluate the questionnaire. Content validity was ascertained through the expert judgment of the researchers, who evaluated whether the selected scale accurately represented the intended attribute. The variables and items under investigation were derived from pertinent literature. Moreover, a pre-test was executed, and modifications were made before finalizing the questionnaire, ensuring content validity. Subsequently, confirmatory factor analysis was employed to examine construct validity.

According to Chiou, Factor loadings exceeding 0.4 for all measurements signify the satisfactory overall quality of the questionnaire and enhanced construct validity (Chiou, 2003). In this study, the factor loading for each question surpassed 0.4, with explanatory variables exceeding 60%, which is greater than the 40% benchmark. As a result, the questionnaire exhibited considerable structural validity.

3.2. Correlation Analysis

Pearson's correlation coefficient analysis was utilized to evaluate the correlations among variables, with the results presented in Table (02). The data indicated the strongest correlation between GA and GPD, with a coefficient of 0.885. The second most substantial correlation (0.795) was identified between GC and GPD. Clearly, the relationships among variables in this study display positive correlations.

**Table (02): Correlation Analysis**

	GA	GC	GPD
GA	1		
GC	0.630	1	
GPD	0.885	0.795	1

Source: Prepared by the researchers based on Jamovi 2.3 outputs

3. Hypothesis testing

3.1. The Influence of Green Advertisements on GPD

Table (03) delineated the results of the regression analysis regarding the impact of green advertisements (GA) on green purchase decisions (GPD). The findings revealed that GA accounted for 45.8% of the variance in GPD. Model 1 demonstrated substantial explanatory power, with $F = 168.847$ and $p = 0.000 < 0.001$, indicating statistical significance. The relationship between GA and GPD was statistically significant, substantiated by β value = 0.478, t value = 14.385, and p -value = $0.000 < 0.01$. This indicates that GA exerts a significant positive influence on GPD. **Therefore, H1 is accepted.**

These empirical findings suggest that corporations such as Condor Electronics must continue allocating resources to enhance their green advertising strategies, which is essential for promoting sustainable consumption practices.

Although this study identified a positive influence of green advertising on consumer purchase decisions, previous research demonstrated that consumer skepticism remains a significant factor that can moderate its effectiveness. Consumers with high environmental concerns were found to respond negatively if they perceived misleading sustainability messaging (Albayrak, Caber, Moutinho, & Herstein, 2011).

Companies like Condors must emphasize credibility and transparency in their green marketing strategies to combat consumer skepticism and avoid the negative consequences of greenwashing.

**Table (03): The Impact of Green Advertisements on GPD**

MODEL1					
D. variable	I. variable	Regression coefficient (β)	t	p	VIF
Green Purchase Decisions	Green Advertisements	0.478	14.385	0.000	1.28
Notes: * $p < 0.05$; $\hat{R}^2 = 0.458$; DW = 1.785; F = 168.847 $p = 0.000***$ n = 114					

Source: Prepared by the researchers based on Jamovi 2.3 outputs

3.2. The moderating Impact of GC between the influences of GA on GPD

This study examines how green concerns GC moderates the relationship between Green Advertisements GA and green purchase decisions GPD. Multiple regression analysis was employed to investigate this phenomenon. The findings are presented in Table (04).

Table (04): The Moderating Effect of Green Concerns

MODEL2					
D. variable	I. variable	Regression coefficient (β)	t	p	VIF
Green Purchase Decisions	Green Advertisements (GA)	0.170	3.151	0.045*	4.987
	High GC	0.371	3.914	0.000**	4.231
	Low GC	0.008	0.098	0.714	5.108
Notes: * $p < 0.05$; ** $p < 0.01$; $\hat{R}^2 = 0.478$; $\hat{R}^2 = 0.564$ DW = 2.748; F = 81.401 $p = 0.000***$ n = 114					

Source: Prepared by the researchers based on Jamovi 2.3 outputs

Model 2 in Table (04) explained 47.8% of the variance in GPD, demonstrating its explanatory capability. The statistical significance of the model is corroborated by F value = 81.4 and p-value = 0.000 < 0.001. The moderating effect of high GC on the GA-GPD relationship is statistically significant, with β value = 0.371, t value = 3.914, and p-value = 0.000 < 0.01. This finding indicates that high GC amplifies the influence of GA on GPD, **thereby supporting hypothesis H2-a.**



The acceptance of the H2-a underscores the critical necessity of customizing green advertising methodologies to effectively engage consumers with a heightened concern for environmental issues and sustainability.

The moderating effect of low GC on the GA-GPD relationship is not statistically significant, with β value = 0.008, t value = 0.098, and p-value = 0.714 > 0.01. This finding suggests that low GC does not weaken the impact of GA on GPD as hypothesized, **leading to the rejection of H2-b.**

This outcome suggests that individuals with low green concerns still respond positively to eco-friendly marketing due to factors not examined in this research, such as perceived product quality and societal pressures. This finding has significant practical implications for marketing professionals. While it remains crucial to target environmentally conscious consumers, businesses such as Condor Electronics should also emphasize their products' practical and economic advantages in green marketing campaigns to attract consumers with diverse motivations.

Given that **H2-a is supported** and **H2-b is rejected**, hypothesis **H2 is only partially supported based on these results.**

Conclusion

This research investigated the impact of green advertisements on consumers' green purchase decisions within the home appliance sector, specifically examining Condor Electronics' customer base in Ain Temouchent province. The study also analyzed how green concern moderated this relationship. The outcomes provide valuable insights into the efficacy of green marketing tools in influencing consumer behavior, particularly in developing markets such as Algeria.

The results confirmed a statistically significant positive correlation between green advertisements and green purchase decisions. This finding underscores the increasing relevance of environmentally responsible marketing approaches in the household appliance industry.

The study also demonstrated that the level of green concern significantly affects the strength of the relationship between green advertisements and green purchase decisions. Specifically, the analysis revealed that green advertisements have a stronger impact on green purchase decisions when green concern is high. This suggests that environmentally conscious consumers are more responsive to green marketing messages.

Contrary to expectations, the study did not support H2-b, which proposed that low green concern would significantly weaken the impact of green advertisements on green purchase decisions. This unexpected result implies that even consumers with lower green concerns are influenced by green advertising due to additional



factors not included in this investigation, such as perceived product quality and social pressures.

Practical Applications

These findings have several implications for marketers. Companies such as Condor Electronics should maintain their investment in green advertising strategies, as they have been shown to influence consumer purchasing decisions positively. However, different approaches may be necessary when targeting consumers with varying levels of green concern. For highly environmentally conscious consumers, emphasizing sustainability features and ecological benefits is crucial. For those less concerned about environmental issues, green advertising could focus more on practical advantages, such as long-term cost reductions and product efficiency.

The study also suggests that firms in the home appliance sector must emphasize credibility and transparency in their green marketing strategies to combat consumer skepticism and avoid the negative consequences of greenwashing.

Study Limitations and Future Research Opportunities

While this study provides valuable insights, it has certain limitations. The sample was limited to Condor Electronics' customers, which restricted the generalizability of the findings to other brands or industries. Future studies could broaden the scope to include other sectors or conduct cross-cultural analyses to explore variations in green concerns across different markets.

Potential Bias in Self-Reported Data Consumer survey responses may be influenced by social desirability bias, especially environmental topics. Future studies could incorporate observational or experimental methods.



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