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Obsolescencia programada y marketing verde en el fortalecimiento de los derechos de los consumidores

Planned obsolescence and green marketing in strengthening consumer rights

Obsolescência programada e marketing verde no fortalecimento dos direitos do consumidor

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Resumen

El modelo tradicional de producción ha promovido la vida reducida de los productos como modelo de negocio a pesar de no ser sostenible. El objetivo de la investigación fue analizar los efectos de la obsolescencia programada y el marketing verde en el comportamiento del consumidor y en la sostenibilidad ambiental para generar recomendaciones que promuevan la adopción de estrategias empresariales responsables y sostenibles. La investigación fue de tipo cualitativo y longitudinal; el método empleado fue el análisis de documentos y la técnica utilizada fue el análisis de contenido. Los resultados mostraron que la obsolescencia programada es una práctica tolerada en detrimento del consumidor que puede contrarrestarse a través del marketing verde. Se concluyó que para que el marketing verde prevalezca como práctica empresarial, es necesario que las políticas públicas incluyan incentivos fiscales, se fortalezcan los derechos de los consumidores y se promueva la educación sobre productos y prácticas sostenibles.

Palabras clave: Obsolescencia programada; marketing verde; economía circular, derechos del consumidor; sostenibilidad.

Abstract

The traditional production model has promoted shortening product lifespans as a business model, regardless of not being sustainable. The objective of this research was to analyze the effects of planned obsolescence and green marketing on consumer behavior and environmental sustainability, in order to generate recommendations that promote the adoption of responsible and sustainable business strategies. The research was qualitative and longitudinal; the method used was document analysis and the technique employed was content analysis. Results showed that planned obsolescence is a tolerated practice to the detriment of consumers and can be counteracted through green marketing. It was concluded that for green marketing to prevail as a business practice, public policies must include tax incentives, strengthen consumer rights, and promote education about sustainable products and practices.

Keywords: Planned obsolescence; green marketing; circular economy; consumer rights; sustainability.

Resumo

O modelo de produção tradicional promoveu ciclos de vida de produto mais curtos como modelo de negócio, apesar de sua insustentabilidade. O objetivo desta pesquisa foi analisar os efeitos da obsolescência programada e do marketing verde no comportamento do consumidor e na sustentabilidade ambiental, a fim de gerar recomendações que promovam a adoção de estratégias de negócios responsáveis e sustentáveis. A pesquisa foi qualitativa e longitudinal; o método empregado foi a análise documental e a técnica utilizada foi a análise de conteúdo. Os resultados mostraram que a obsolescência programada é uma prática tolerada em detrimento do consumidor, que pode ser combatida por meio do marketing verde. Concluiu-se que, para que o marketing verde prevaleça como prática comercial, as políticas públicas devem incluir incentivos fiscais, fortalecer os direitos do consumidor e promover a educação sobre produtos e práticas sustentáveis.

Palavras-chave: Obsolescência programada; marketing verde; economia circular; direitos do consumidor; sustentabilidade.

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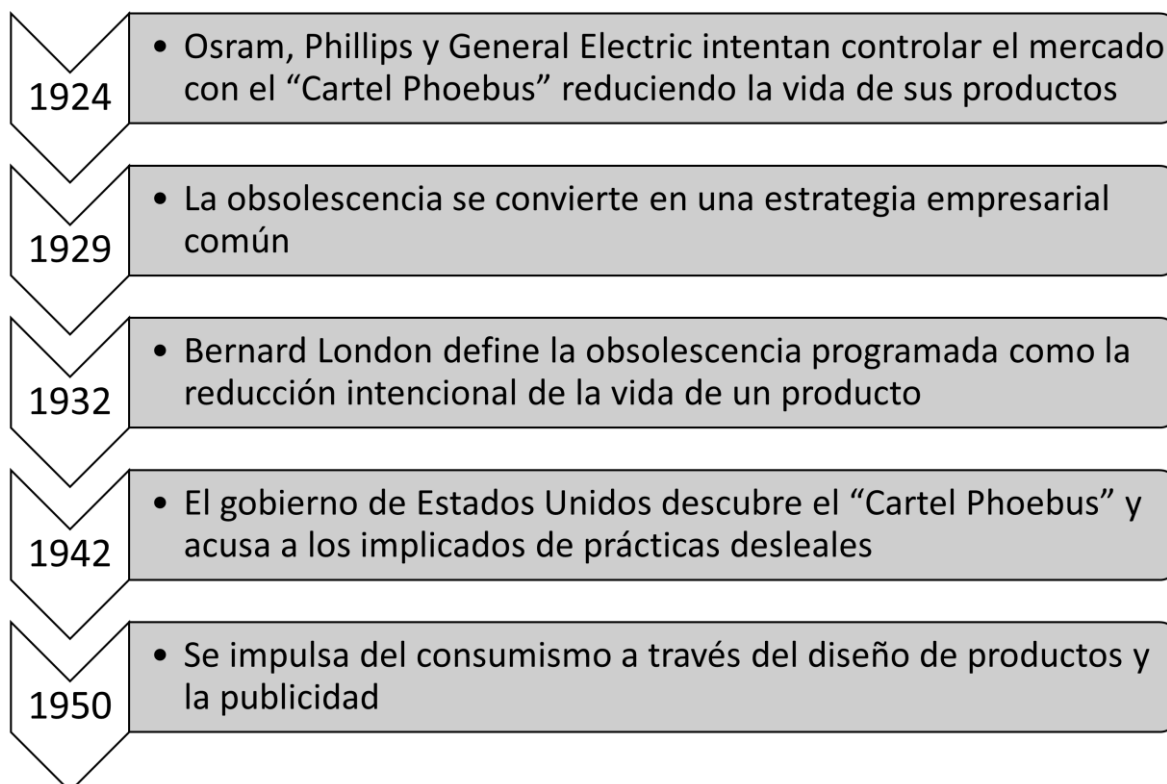
Introduction

General background and context

The traditional production model based on the linear economy has led to an accelerated consumption of natural resources in order to generate products with a short lifespan that quickly satisfy the needs of an increasingly consumerist market. This has fostered planned obsolescence practices, which in turn result in waste generation and a negative environmental impact. Therefore, business strategies in product manufacturing must be evaluated and rethought in light of the scarcity and limited availability of natural resources on our planet, as well as considering consumer behavior as a means to achieve environmental sustainability in accordance with the Sustainable Development Goals of the 2030 Agenda.

Among the various strategies employed by business organizations, two stand out with opposing approaches to both product management and the relationship between companies and consumers. These two strategies are: planned obsolescence (which aims to reduce the lifespan of consumer products to increase sales and thus continue generating profits) and green marketing (which uses marketing strategies to promote environmental awareness and educate consumers about reducing the environmental impact of waste). The figure illustrates the most important background information on planned obsolescence.

Figure 1. Background of planned obsolescence as a business strategy



Source: Own elaboration based on González (2021), Lanux (2023), Moreno et al. (2017), Sánchez & Torregrossa (2024) and Velarde (2018).

Thus, planned obsolescence has historically promoted the constant replacement of goods by deliberately reducing the useful life of the product so that the consumer continues to acquire products and, therefore, continues to generate profits for the company (Ataíde & Barroso, 2023); even, according to Delva (2022), some justify this strategy not only from an economic perspective; but also as a business innovation practice.

In contrast to this business practice, green marketing strategies seek to incentivize sustainable practices by reducing the negative impact of consumerism on the environment, thus promoting social responsibility (Gelderman et al., 2021). This alternative arises for business organizations seeking to differentiate themselves from their competitors through more durable, environmentally friendly products that align with the demands of a market increasingly aware of the environmental crisis and the need for a more sustainable economic model—a circular economy (Sathisha & Sachin , 2023).

Furthermore, it has been shown that green marketing strategies not only promote sustainability but also increase customer loyalty by improving the corporate image of organizations (Hameed et al., 2021). According to Gelderman et al. (2021), recent studies on the impact of green marketing in sectors such as business-to-business (B2B) and the

cleaning industry have demonstrated that customers of these products value eco-certifications and prefer brands that implement sustainable practices.

Therefore, the research is of particular relevance to consumers, who are the main victims of these bad business practices; it is also relevant to decision-makers, legislators, and civil society, as it makes recommendations that can strengthen consumer rights.

From this perspective, the objective of the research was to analyze the effects of planned obsolescence and green marketing on consumer behavior and environmental sustainability in order to generate recommendations that promote the adoption of responsible and sustainable business strategies; for this purpose, both types of strategies are analyzed comparatively, highlighting the benefits that green marketing can generate to mitigate the adverse effects of planned obsolescence, as well as examining the mechanisms that business organizations use to implement each type of strategy.

In a context where climate change and the environmental crisis demand immediate solutions, green marketing is positioned as a key strategy for transforming industry and shifting consumer behavior toward more responsible production and consumption models. Therefore, the findings of this research aim to provide evidence for the formulation of both public and corporate policies that discourage planned obsolescence as a business strategy and, instead, promote practices aligned with sustainable development, contributing to the achievement of Sustainable Development Goal 12 of the 2030 Agenda, which focuses on responsible production and consumption.

Literature review

Planned obsolescence as a business strategy to encourage consumerism

Planned obsolescence, also called programmed obsolescence, is a business strategy that aims to promote the constant consumption of goods since, through it, companies design products with a reduced or limited life cycle in a deliberate way (Munten et al., 2021), causing consumers to replace them even if they are still functional, having serious ecological and social consequences (Bisschop et al., 2022).

This business strategy is used by organizations to increase their sales, thereby generating a greater number of profits in their commercial activities or to increase their market share (Munten et al., 2021).

Table 1. Types of planned obsolescence in consumer products

| Type of obsolescence | Author(s) | Description |
|----------------------|---|---|
| Quality | Yurtsever (2023) | It arises from the use of materials with low durability, leading to greater wear and tear in less time. In this case, planned obsolescence refers to the premature wear of materials resulting from low-quality raw materials or supplies. |
| Ecological | Munten et al. (2021) | It arises due to changes in environmental policies and regulations. Although in this case the producer is not responsible for the regulatory change that causes obsolescence, but rather only experiences its effects, environmental protection is sought, and therefore the use of specific raw materials or processes that could generate environmental damage is discouraged, restricted, or prohibited. |
| Economic | Munten et al. (2021), Sierra-Fontalvo, et al. (2023), Veral, (2022) | It arises due to the cost of repair or maintenance, which is usually very high compared to acquiring a new product; that is, the customer is deliberately made to make it difficult to repair the good or product so that they buy it to encourage consumerism. |
| Physical or design | Bisschop et al. (2022), Munten et al. (2021), Veral (2022) | It arises from the implementation of fragile or irreparable components, which therefore tend to fail quickly. It is similar to quality obsolescence, although, unlike the latter, it involves not only short-lived raw materials or inputs, but also the fragility of the design. |
| Functional | Bisschop et al. (2017), Sierra-Fontalvo et al. (2023), Veral (2022), Yurtsever (2023) | It arises from limitations in its use, whether due to updates, changes in standards, compatibility, or technical failures. |
| Induced or provoked | Ataíde & Barroso (2023) | It arises from the implementation of changes through software updates, shortly after acquisition. It is common in the technology sector. |
| Legal | Ataíde & Barroso (2023) | It arises due to government restrictions, whether environmental or safety-related. It is similar to ecological obsolescence in that it results from a regulatory change; however, in this case, the protection of customer health or safety is also a concern. |
| Of Medicines | Moreno et al. (2017) | This arises because some pharmaceutical companies are shortening the expiration dates on their medications. The shelf life of the medical compound is being deliberately reduced. |

| | | |
|--|--|---|
| Planned or scheduled (traditional) | Ataíde & Barroso (2023), Sierra-Fontalvo et al. (2023) | It arises due to the intentional reduction or limitation of a product's life cycle, encouraging continuous consumption by the market. |
| Due to a shortage of materials (DMSMS) | Sierra-Fontalvo et al. (2023) | It arises from the dependence on components that are no longer manufactured. |
| After-sales | Munten et al. (2021) | This arises from a lack of spare parts or repair services. The product becomes obsolete due to the lack of replacement parts once it is purchased by the customer and malfunctions. |
| Psychological or perceived | Ataíde & Barroso (2023), Bisschop et al. (2022), Munten et al. (2021), Sierra-Fontalvo et al. (2023), Veral (2022), Yurtsever (2023) | This phenomenon arises from consumers' perception of products as outdated, coupled with persuasive marketing strategies or new market trends, regardless of whether they still function correctly. In this scenario, the product remains functional, but the social perception, and specifically the customer's perception, is that it's an obsolete object that needs replacing. |
| Technique | Ataíde & Barroso, (2023), Munten et al. (2021) | It arises from incompatibility with other, older or newer versions of software and/or hardware. This is related to induced or deliberate obsolescence. |
| Technological | Sierra-Fontalvo et al. (2023), Veral, (2022), Yurtsever (2023) | It arises from new technological advances, leading to a search for replacements with more advanced products. Under the guise of innovation, some products are replaced by others that theoretically incorporate technological improvements. |

Source: Prepared by the author based on the cited authors.

As can be seen in the table above, business organizations can apply planned obsolescence in different ways, from the use of low-quality raw materials to the application of new technological advances, all with the purpose of generating in the consumer the prevailing need to replace their products with others, whose perception is more favorable, although these could also be subject to another type of obsolescence, so that consumerism enters into an endless cycle that continues to generate waste in the environment.

For this reason, planned obsolescence has been widely criticized for its negative environmental effects. It generates a high volume of electronic waste, damages ecosystems due to high CO₂ emissions, creates consumer distrust because products have a short lifespan, exacerbates global inequality as developed nations exploit less industrialized countries, and makes it increasingly difficult to repair products manufactured under this business strategy (Bisschop et al., 2022; Delva, 2022). This last practice is evident in studies such as that of Ataíde & Barroso (2023), which demonstrates

the limitations on the right to repair products. Certain barriers prohibit repairs, forcing consumers to purchase new devices instead of extending the lifespan of existing ones.

For his part, Soto-Pineda (2021) highlights the proponents and detractors of this practice based on market demand, while Alincastro (2024) states that this phenomenon goes beyond the company and raises questions about the logic of production and consumerism. Thus, planned obsolescence generates four social behaviors (Sánchez & Torregrossa, 2024), namely:

1. Tolerance, as it is believed to strengthen economic growth.
2. Lesser evil, under the belief that it is inevitably a market phenomenon.
3. I reject it, since it is contrary to ethics.
4. Activism, to promote proposals that counter this strategy.

Sustainability and consumer rights in the face of planned obsolescence

In the words of Velarde (2018), consumers are the main ones affected by the planned obsolescence strategy; since it generates negative feelings in the consumer when buying a product with high expectations and receiving something inferior for the price paid; however, this has not generated a change in their behavior; since, the chain of acquiring a product, throwing it away and acquiring a new one to replace the previous one continues.

Similarly, according to Soto-Pineda (2021), consumer rights that have been violated as a result of planned obsolescence include contractual breaches between the producer and the consumer, as contracts are unclear regarding the conditions under which the product is offered, as well as the product warranty and the conditions for making it valid; fraud, related to the concealment of information regarding the operation of the products; damage to property; negligent practices by producers in resolving product malfunctions, which include high costs exceeding the cost of acquiring new products; deceptive advertising; unjust enrichment; as well as violations of good faith and good practices between the producer and the consumer in the contracts between them.

Despite the efforts of states, it is important to point out that planned obsolescence strategies are difficult to combat because, as Lanux (2023) explains, they are deeply ingrained practices in companies, and national legislation is lax in this regard, having only sought to discourage these practices through the promotion of the circular economy. Table 2 describes the most representative European legislation on planned obsolescence and its scope of application.

Table 2. European legislation on planned obsolescence

| Scope of application | Legislation | Action |
|----------------------|--|--|
| France | Consumer Code | <ul style="list-style-type: none"> It prohibits planned obsolescence and classifies it as a crime. |
| Spain | General Law for the Defense of Consumers and Users | <ul style="list-style-type: none"> It contains the obligation to inform the consumer of the product's useful life. It imposes the obligation to have spare parts and repair the asset for 10 years. |
| Spain | Royal Decree 110/2015, of February 20, on waste electrical and electronic equipment | <ul style="list-style-type: none"> It promotes the reduction of household appliance waste. It promotes the reuse of household appliances and requires maximizing their useful life. |
| European Union | Directive (EU) 2024/1799 of the European Parliament and of the Council of 13 June 2024 establishing common rules for promoting the repair of property and amending Regulation (EU) 2017/2394 and Directives (EU) 2019/771 and (EU) 2020/1828 | <ul style="list-style-type: none"> It considers the relationship with fundamental rights, environmental sustainability, responsible consumption, and the protection of consumer rights. It sets standards for the repair of goods starting in 2027. It promotes responsible consumption, the right to repair, and environmental sustainability. |
| European Union | Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition by better protection against unfair practices and by better information | <ul style="list-style-type: none"> It strengthens the consumer's right to clear, relevant and reliable information. Promotes responsible consumption. It combats unfair practices such as short-life product design and software updates. |

Source: Prepared by the author based on Lanux (2023); Sánchez & Torregrossa (2024) and the aforementioned legislation.

In the case of Latin America, Delva (2022) explains that Mexico has a Federal Copyright Law that limits third-party modifications to products, such as repairs. While this protects copyright, it undermines human rights, such as the right to a healthy environment, by promoting consumerism instead of repair. Similarly, Latin American efforts have focused on regulating waste management (Delva, 2022), neglecting the promotion of changes in business strategies to reduce consumption, encourage repairs, and decrease waste.

Given the permissive European legislation on planned obsolescence, the courts have also been responsible for safeguarding consumer rights, as exemplified by González (2021) in the case of the administrative courts of Italy that confirmed in 2020 the existence of unfair practices by a telephone company that forced the consumer to update the mobile phone, thus violating the consumer's choice.

Similarly, Lanux (2023) highlights that, although the environmental damage generated by this strategy is evident, environmental sustainability has been relaxed in the face of these practices, mainly due to a lack of awareness of their effects; even in the case of France, it went from being a punishable conduct in the environmental protection legislation, to being sanctioned in the Consumer Code.

In this regard, Arcila & Arcila (2022) reflect on how planned obsolescence contradicts the principles of corporate social responsibility by promoting an ecological disaster in production, distribution, and consumption. Furthermore, Truccolo & Calgaro (2021) argue that this practice “has not made, nor does it make, the world a better place; it is an obstacle to the ever-expanding environmental dimension of sustainability” (p. 58). Therefore, to promote sustainability, this business practice must be reversed.

Green Marketing as a business strategy to combat Planned Obsolescence

Marketing, also known as market research or marketing in Spanish, is a scientific discipline within the social sciences and humanities, since it studies the behavior of people as agents that make up the consumer market, seeking to satisfy their needs and/or desires through products (goods and services), generating strategies based on the marketing mix: product, price, place and promotion.

Marketing has various application approaches, resulting in several branches, such as: 1. Traditional Marketing , 2. Digital or Online Marketing, 3. International Marketing , 4. Neuromarketing, and 5. Green Marketing.

Table 3: Marketing Application Approaches

| Approach | Description |
|---------------------------------------|---|
| Traditional marketing | It is based on the generation of market strategies through the marketing mix: product, price, place and promotion, with the aim of generating brand positioning. |
| Digital marketing or online marketing | It is based on generating market strategies through the internet and digital devices, globally expanding a product's market, since virtuality has two key elements: asynchronicity and ubiquity. |
| International Marketing | It is based on the application of marketing strategies in international markets by means of the tropicalization of products (goods and services) according to factors such as: culture, traditions, uses and customs, etc. |
| Neuromarketing | It is based on the study of the neural impulses caused by marketing strategies, resulting in a positive or negative response in the minds of consumers, who must take a rational or emotional stance. |
| Green marketing | It is based on the application of marketing strategies under a circular economy model, that is, through the implementation of eco-design in the marketing mix, resulting in socially and ecologically responsible products. |

Source: Prepared by the author based on García-Machado & León-Santos (2021); Singh, et al., (2021) and Varón et al. (2023) .

It is precisely the study of green marketing that is explored in depth in this research, since it is a strategic approach with the potential to combat planned obsolescence, because while some business organizations seek to make their products have an ephemeral life in order to have more sales (promoting excessive consumerism and, therefore, the increase of waste harmful to the environment); others, on the other hand, seek responsible consumption and protect the environment.

Therefore, “green marketing” refers to the set of marketing strategies that aim to minimize environmental impact through “green” products, which are based on the principles of ecodesign, targeting environmentally conscious consumers, through a “green” marketing mix, that is, through products, prices, distribution and promotion that are framed within the principles of sustainability (Nguyen- Viet , 2023).

Uribe (2023) explains that concern for the environment and environmental deterioration has driven the linking of marketing to sustainability and corporate social responsibility, which in turn responds to the demands of consumers regarding the role they have in business decisions.

This strategic approach to marketing emerged in the seventies (Uribe, 2023), acquiring increasing relevance around the world, as it is emerging as a key element to achieve the Sustainable Development Goals (SDGs), so that organizations must find a

balance between their business objectives and the care of the environment (Thakkar , 2021).

It should be noted that green marketing is closely related to the circular economy, thus providing a new alternative to linear production, which, under a "take, use, and dispose" model, generates a large amount of waste and byproducts that end up polluting ecosystems (Rejeb et al., 2022). Furthermore, green marketing represents a new opportunity to satisfy the desires and needs of environmentally responsible consumers (Mayang , 2014 cited in Kumar & Kushwaha , 2017).

According to Rejeb et al. (2022), green marketing is key to facilitating the transition to sustainability. Thus, Uribe (2023) explains that companies use environmental awareness messages that incorporate environmental responsibility into their production and distribution processes, also as part of external consumer pressure to be more competitive.

Sharma (2021) studied consumer behavior regarding the gap between willingness to buy and purchase of products and green marketing, observing that:

- Environmental awareness is related to the degree of environmental concern of the consumer and the measures that the consumer takes as part of solving the problem.
- Although consumer groups show an affinity for public policies related to purchases with environmental benefits, they do not always acquire the products that represent an environmental benefit.
- Innovations within green marketing are cost-oriented, while consumers take into account financial rather than environmental factors when buying a product.
- The purchase of green products influences consumer satisfaction and attitude.
- Brands with eco-friendly models have a greater influence on attitudes and purchase intentions, which translates into a competitive advantage over companies with traditional processes.
- It is possible to integrate methodologies and processes for greater ecological sustainability.

In the case of India, green marketing policies are related to raising awareness about the efficient use and conservation of energy (Kumar & Kushwaha , 2017) and it should also be considered that gender and age in Indian consumers are not factors for the ecological behavior of the consumer (Mehraj et al., 2023).

According to Kumar & Kushwaha (2017), products with eco-labels and more informative content for consumers promote purchase due to the trust this generates. However, there are also differences among consumers and their ages, as younger consumers demonstrate a more developed environmental awareness. Therefore, companies should focus their green marketing strategies on this target audience (Mehraj et al., 2023).

In the opinion of Mendoza et al. (2017), green marketing is a fundamental tool for entrepreneurs to be aware of their social responsibility towards society; therefore, green marketing is an opportunity for strategies to generate a competitive advantage, create value and promote sustainable profitability to ensure their competitiveness and permanence.

However, on the other hand, one must be wary of *greenwashing*. or "greenwashing", since some organizations use environmental issues that are not actually put into practice in their production and commercial operations, deceiving the consumer into thinking that their products are sustainable and environmentally friendly, when in reality they are not (Rahman & Nguyen - Viet , 2023).

At the regulatory level, in contrast to planned obsolescence and in relation to green marketing, Sánchez & Torregrossa (2024) present the New Action Plan for the Circular Economy: For a Cleaner and More Competitive Europe of 2020 as a basis for sustainability based on the circular economy, products or goods with better designs for greater durability and usability that reduce resource consumption and biodiversity. Also noteworthy is *Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024, which establishes a framework for setting ecodesign requirements for sustainable products, amends Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repeals Directive 2009/125/EC*. While focused on energy-efficient products, it also incorporates repairability and durability to extend the product lifecycle.

In this regard, decision-makers and legislators should continue focusing their efforts on incentivizing eco-friendly purchases through economic incentives so that companies adopt more sustainable practices (Baca & Reshidi , 2025; Mehraj et al., 2023), with a greater likelihood of success if they target the millennial age group (Mehraj et al., 2023). If the government establishes these tax incentives, according to Baca & Reshidi (2025), it is possible that producers will lower their costs and the adoption of sustainable practices will be promoted, while also educating consumers about the benefits of green products.

An integrated view of Green Marketing strategies to attract consumers

The main strategies identified in the literature on Green Marketing to attract consumers were identified in Table 4.

Table 4. Green marketing strategies

| Green Marketing Strategy | Author(s) | Description |
|---|--------------------------|---|
| Promoting the environmental commitment of the business organization | Alraja et al. (2022). | The company makes its environmental commitment public and advertises it to the customer through campaigns that maximize the sustainable tasks it undertakes. |
| Green marketing mix | Sathisha & Sachin (2023) | Marketing strategies have an ecological component through the promotion of green products, green pricing, green production, green promotion, green packaging or use of green containers, green logistics, and green partnerships. |
| Eliminating greenwashing | Hameed et al., (2021). | Companies seek to avoid bad practices of false sustainability that erode consumer trust and diminish their loyalty and green brand image. |
| Staff training and green seller experience | Gelderman et al. (2021). | Companies train their sales teams on environmental issues, so that environmental care is reciprocal between the company and the salesperson under a sustainable work philosophy. |
| Emotional and educational segmentation of the consumer | Machová et al. (2022) | Green marketing is central to the sales strategy, aiming to segment the market and target consumers according to their values through campaigns with emotional or informative content involving green labeling or the prevention of environmental damage. |
| Sustainable brand positioning | Ho et al. (2021) | The pillars of the brand's sustainable positioning are based on corporate social responsibility and the product's ecological and functional value. This becomes particularly relevant in uncertain times, such as the COVID-19 pandemic. |
| Fair price and perceived quality | Lopes et al. (2024). | The goal is for the higher cost of a product to reflect the company's ecological responsibility based on quality, sustainability, and price. |
| Green lifestyle | Khayru et al. (2021) | Brands link healthy lifestyles with responsible consumption and production habits, so that individual consumer behavior transcends into caring for the environment and promoting the circular economy. |

Source: Prepared by the author based on the consulted authors.

As can be seen in the table above, green marketing strategies are varied and seek to integrate the environmental sustainability of the company's raw materials, supplies, processes and products, to a market and a consumer with environmental awareness who

seeks to balance responsible consumption with environmental, economic and social sustainability.

Based on the above, the research question posed was: how can green marketing combat the business strategy of planned obsolescence to promote socially responsible and sustainable consumption?

Materials and methods

The research was qualitative (Creswell & Creswell, 2018) because it sought to understand the qualities and characteristics of the phenomenon in depth in order to analyze the effects of planned obsolescence and green marketing on consumer behavior and environmental sustainability, justifying this choice based on the interpretive nature of the phenomenon studied.

Additionally, the justification for the methodological choice was based on the work of Ataíde & Barroso (2023), Bisschop et al., (2022), Gelderman et al., (2021) and Hameed et al., (2021) which address Planned obsolescence is examined from a critical and normative perspective, considering the social impacts, legal frameworks, and environmental consequences of the phenomenon. These works stand out for their comparative documentary and legal analysis, which aligns with the approach of this research to describe and analyze regulatory patterns, discourses on business practices, and public policies based on social contexts according to the research variables.

In this line of thought, the method used was the analysis of documents proposed by Bowen (2009) in order to identify the mechanisms used in the strategies of planned obsolescence and green marketing, as well as the legal frameworks that regulate or discourage obsolescence, as has been documented in France, Spain, Italy and the European Union (Ataíde & Barroso, 2023; González, 2021).

of Information databases as parameters of information reliability Science , Wiley, and Google Scholar. Finally, as a research technique, the content analysis technique according to Krippendorff (2019) was chosen to produce valid inferences on the analyzed topic.

Results

Planned obsolescence can occur as a consequence of the actions of:

- a) The producer or manufacturer, which has three aspects: the first, depending on the components it uses (quality, physical or design, functional, induced or provoked, planned or programmed, of medicines or of scarcity); the second, depending on the cost generated by the repair (economic, after-sales and due to scarcity of materials) or the third, under the argument of innovation, in which, the new versions replace the existing ones under the argument of improvement (technical and technological).
- b) The consumer, since it is the consumer who perceives the product as outdated (psychologically or perceived) even though it remains functional.
- c) Third parties, it may arise from a regulatory change beyond the control of the producer or the consumer and generally occurs in response to environmental protection or security (ecological and legal).

Regardless of the cause of planned obsolescence, it affects consumer rights and even the environment, as it generates negative environmental impacts such as increased electronic waste and resource depletion. Therefore, this business practice is perceived as a violation of consumer rights, including breaches of good faith in contracts and the right to repair, which generates distrust.

It was found that, just as regulations can cause an object to become obsolete, legislation can also combat this practice and strengthen consumer rights. Proof of this is the directives issued in 2024 by the European Union, which, although recent, provide an operational framework for the legislation of European countries to act and adapt their standardized internal frameworks.

Another factor observed that fosters tolerance of planned obsolescence as a business practice was the lack of a unified global public policy that penalizes producers or manufacturers who continue with this practice; it was found that only in the case of France has planned obsolescence been classified as a crime; the rest of the European countries have opted to promote the adoption of the circular economy as a counterproposal to planned obsolescence; while in Latin America waste management predominates over the regulation of the business model.

Faced with this paradigm shift that involves containing and penalizing planned obsolescence as a business practice and empowering the consumer, it was found that green strategies have proven effective in counteracting the effects of planned obsolescence by extending the useful life of products and promoting repair, reuse, and

recycling; among these, green marketing was identified as a business practice that fosters sustainable behaviors while improving the corporate image and promoting customer loyalty.

Effective practices include the use of the *green marketing mix*, staff training, eco-certifications, and transparent communication of environmental commitment. Finally, while these practices may have a moderate effect on reducing planned obsolescence, they are indicative of a shift in the consumerism paradigm.

Furthermore, a key finding was that green marketing, beyond its commercial dimension, is closely linked to the green economy, particularly the transition to a circular economy, as well as to corporate social responsibility. Consequently, this strengthens the argument that green strategies can progressively reverse the harmful effects of planned obsolescence by promoting the manufacture of durable, repairable, and environmentally responsible products.

Likewise, it is important to eradicate unfair practices such as *greenwashing*, where business organizations pretend to apply green marketing strategies to generate a socially and ecologically responsible image, which is an act of bad faith towards consumers who seek to contribute to the care of the environment by purchasing green products.

Discussion

The results obtained demonstrate that there is a clear contrast between the consequences of planned obsolescence as a business strategy that promotes accelerated consumption of products and the benefits that arise from the implementation of green marketing, reaffirming the urgent need to move towards more sustainable business models.

First, the research confirmed that planned obsolescence remains a widely used strategy among some business organizations, especially those in the technology sector, as demonstrated by Ataíde & Barroso (2023) and Bisschop et al. (2022). Consequently, this practice generates a negative perception among consumers, who face obstacles in exercising their right to repair products manufactured under planned obsolescence schemes. These obstacles include a shortage of spare parts, the requirement to have repairs done at specific workshops, and a lack of after-sales service for warranty coverage, among others. This leads to distrust of brands and a negative impact on the environment and its ecosystems due to the increase in electronic waste.

In this context, the results obtained show a coincidence with the studies of Lanux (2023), who states that current legislation is insufficient to stop this type of practice, except in some cases such as France, where more rigorous measures have been adopted.

In contrast to the above, green marketing has begun to position itself as a more effective alternative, not only from an environmental perspective but also as a strategy that enhances brand positioning and fosters customer loyalty. This finding can be interpreted, according to Alraja et al. (2022) and Gelderman et al. (2021), as indicating that business organizations that implement sustainable practices, such as reusing recycled materials, training their staff on sustainability issues, and implementing digital campaigns to eliminate paper waste, are able to establish better relationships with their customers and generate a positive and strengthened corporate image.

These findings are consistent with the results obtained in the studies by Hameed et al., (2021), where they point out that green brand loyalty, brand love and positive image are elements that act as fundamental mediators of purchasing behavior in environmentally responsible people.

It should be noted that, although studies such as that of Kaur et al., (2022) indicate that price can be an obstacle in the purchase decision of green products, the results obtained show that the perceived value in terms of sustainability, durability and environmental responsibility can have a significant weight in the purchase intention of consumers, especially those who wish to lead an ecological lifestyle as argued by the study of Khayru et al. (2021).

Furthermore, the study's limitations included the availability of literature in the consulted databases; the study could be expanded to include other databases for a broader understanding of the phenomenon. The study period may also be a limitation, as the phenomenon could undergo significant changes after 2027 as a result of the adoption of European Union Directive 2024/1799, which warrants further investigation and in-depth research in future studies.

Finally, the results point to an urgent need to integrate stricter public policies that contribute to regulating harmful business practices and actively promote responsible consumption models, as established by Sustainable Development Goal 12 of the 2030 Agenda. Thus, the evidence presented here supports the argument that green marketing plays a transformative role if implemented correctly, authentically, and in alignment with sustainability principles.

Conclusions

Planned obsolescence has been a widespread business strategy since the last century that has brought great profits to producers, as well as the formation of monopolies or oligopolies to the detriment of consumer rights and the environment.

While France is a unique case that criminalizes planned obsolescence, other countries have tolerated this business practice under the guise of innovation and economic growth. Furthermore, governments have sought to promote the circular economy as part of a sustainable business model to counteract this corporate strategy, focusing their efforts primarily on energy and secondarily on the production of goods.

At the same time, consumers have raised their voices not only because of the environmental damage caused by planned obsolescence, but also because of violations of their rights when the possibility of repairing goods is denied under multiple arguments, among which the protection of intellectual property stands out; thus, this practice continues to the detriment of consumer rights and environmental sustainability.

In response to the research question, it is concluded that green marketing is a branch of traditional marketing that adheres to the fundamental principles of the circular economy. It emerged as a counterproposal to planned obsolescence, bridging the gap between sustainability and consumer rights. On the one hand, it strengthens customer loyalty, and on the other, it promotes effective practices for protecting the environment and the consumer. Competitive advantages can be achieved through green marketing, provided that sustainable strategies are adopted that genuinely connect with the market's ecological values.

Therefore, to integrate this strategy into the public policies of States, it is necessary to start from solid foundations such as Directive 2024/825 and Directive 2024/1799 in the European case, accompanied by tax incentives that are attractive to companies, so that the change towards the circular economy is gradual but constant; although, it may also be effective to include sanctions, even criminal ones, for those companies that promote planned obsolescence and deliberately deceive consumers.

Similarly, within the business sector, it is essential that companies' strategies and policies regarding business sustainability are consistent in both words and actions. A company cannot claim to be socially responsible simply because it possesses an eco-label or certification if its products and services are designed to become obsolete or constantly require consumers to upgrade their products and services to ensure continued functionality. Therefore, a socially responsible company also demonstrates clarity in customer warranty agreements, offers repair, maintenance, and replacement services at

affordable costs that do not exceed the price of a new item, and continuously innovates its products, striving for greater efficiency rather than simply replacing them due to lack of updates or obsolescence.

Additionally, both public and business policies should seek to strengthen consumer rights, including the right to accurate, complete, and relevant information about the products and services offered, and the right to have purchased goods repaired, ensuring the availability of parts and replacements for a period of 10 years after the production of a good or service has been discontinued. This ensures that consumers know the useful life of the product they are purchasing, its energy efficiency, the warranty conditions, and other aspects clearly, without concealing hidden defects or fraud.

Consequently, public policies should also include educating the population about sustainable business models and consumer rights as a key element in strengthening green marketing; because, on the one hand, it educates and prepares future entrepreneurs to manage sustainable businesses, and on the other hand, an informed consumer is one who identifies, chooses, and acquires products and services that clearly present their price, energy efficiency, quality, durability, usability, and sustainability.

Finally, the following is suggested as part of future lines of research:

1. Analysis of the effects of national regulations in each of the countries seeking to combat excessive consumption generated by practices such as planned obsolescence;
2. Comparative legal analysis of consumer rights regarding product lifecycles; and
3. Analysis of internal policies adopted at the level of national and local development plans for sustainable development.

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