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ECOSYSTEM OF GOODS AND VALUE CREATION

ECOSSISTEMA DE BENS E CRIAÇÃO DE VALOR

ECOSISTEMA DE BIENES Y CREACIÓN DE VALOR

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ABSTRACT

This paper investigates how goods assembled form ecosystem that determines their values independently of the price system. While this aspect has roots in old classical economic theory, it has periodically been overlooked in the development of consumer theory. It draws inspiration from the assertions by M. Douglas and B. Isherwood that nothing possesses inherent value and focuses on approaches of making correct choices by G. Gigerenzer, as well as examples drawn from the marketing systems of supermarkets, superstores, hypermarkets, and mega malls, where a diverse array of products is made available to buyers. The findings of this study suggest that interconnected goods within an ecosystem establish standards of exchange-values that significantly contribute to consumer choice.

Keywords: Ecosystem of Goods. Exchange Value. Value Creation. Value Of Goods.

RESUMO

Este artigo investiga como os bens, quando reunidos, formam um ecossistema que determina seus valores de forma independente do sistema de preços. Embora esse aspecto tenha raízes na antiga teoria econômica clássica, ele tem sido periodicamente negligenciado no desenvolvimento da teoria do consumidor. O estudo inspira-se nas afirmações de M. Douglas e B. Isherwood de que nada possui valor inerente e foca nas abordagens de tomada de decisão correta propostas por G. Gigerenzer, bem como em exemplos extraídos dos sistemas de marketing de supermercados, superlojas, hipermercados e megacentros comerciais, onde uma ampla variedade de produtos é disponibilizada aos consumidores. Os resultados desta pesquisa sugerem que bens interconectados dentro de um ecossistema estabelecem padrões de valores de troca que contribuem significativamente para a escolha do consumidor.

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Palavras-chave: Ecossistema de Bens. Valor de Troca. Criação de Valor. Valor dos Bens.

RESUMEN
Este artículo investiga cómo los bienes, al ser reunidos, forman un ecosistema que determina sus valores de manera independiente del sistema de precios. Aunque este aspecto tiene raíces en la antigua teoría económica clásica, ha sido periódicamente pasado por alto en el desarrollo de la teoría del consumidor. El estudio se inspira en las afirmaciones de M. Douglas y B. Isherwood de que nada posee valor inherente y se centra en los enfoques de toma de decisiones correctas propuestos por G. Gigerenzer, así como en ejemplos extraídos de los sistemas de mercadotecnia de supermercados, grandes tiendas, hipermercados y megacentros comerciales, donde se pone a disposición de los compradores una amplia variedad de productos. Los resultados de este estudio sugieren que los bienes interconectados dentro de un ecosistema establecen estándares de valores de intercambio que contribuyen significativamente a la elección del consumidor.

Palabras clave: Ecosistema de Bienes. Valor de Intercambio. Creación de Valor. Valor de los Bienes.

1 INTRODUCTION

The role of goods in consumer choice has been consistently overlooked in consumer theory. Goods assembled together within either a marketing or use system, form a physical and visible statements about hierarchy of values that through consumer subscriptions, affect choices (Douglas y Isherwood 1996). This aspect suggests that goods are intricately linked to consumer decisions and can provide insight into the state of the world (Dholakia 2012, 1-14). For example, when we think about bread, we associate it with a bakery, and similarly, fruits are associated with fruit shops. This perspective offers consumers a representative and descriptive map of goods, forming an ecosystem within physical store formats. Goods assemblage present a set of characteristics and meanings that are less communicated when goods are separately presented (Lancaster 2008). To get this information, customers use a simple diagnostic system like that of supermarket system which helps to establish hierarchy of value.

Ignoring this role of goods in consumer decisions results in a partial analysis. Therefore, this study explores how goods, both in conceptual and physical assemblages, form an ecosystem that establishes a hierarchy of values influencing consumer choices without solely relying on the price system. Based on the hypothesis of that goods form Ecosystem which displays a hierarchy of values that serve customers to make choice, it aims to answer the research question of how does the conceptual and physical ecosystem of goods contribute to the creation and shaping of hierarchical values, influencing consumer choices beyond the conventional price-centric framework? To achieve this objective, the focus is put on basic goods to which any consumer is experienced with to understand interconnectedness embedded in their use.

This conceptual framework helps to recognize that goods are not merely standalone items; they are integrated into an ecosystem of features that guide preferences beyond price considerations. The most preferred goods are those that are most utilitarian and hence relatively priced. The paper is organized into the following sections: i) a literature review on the nature of goods, the ecosystem of goods, and consumer choice within the ecosystem of goods; ii) methodology; iii) results; iv) discussion and conclusion.

1.1 OBJECTIVES

This paper has two main objectives:

i. To demonstrate that when goods are assembled, they form a complex system of physical and visible statements that reflect a hierarchy of values.
ii. To establish that, when confronted with this complex system, customers employ a simplified representation of subscriptions to make informed choices without necessarily referring to the price system.

2 LITERATURE REVIEW

2.1 THE NATURE OF GOODS

Goods, whether produced or not, new or used, inherently possess value, and quantifying this value proves challenging (Berndt y Hulten 2007). It is challenging because most of the products are complex. This complexity is due for example to product variants, technology, functionality (Lindemann, Maurer y Braun 2009). The primary mechanism for measuring this value has consistently been the market price system, which holds varying contextual meanings and applications across different economic theories, primarily dominated by the principles of supply and demand. This system has been elucidated in various well-known economic theories, including but not limited to mercantilism, classical, and neoclassical theories.

According to mercantilists, value is created through the exchange of goods within a trade system. In this system, goods are introduced, presented, and compared to other goods, represented by prices paid in the form of monetary instruments (Aspers y Beckert 2011). This theory is predominantly centered around international trade, where the value is determined by comparative advantages. However, when considering the determination of the value of goods through a system of interactions, there are limitations primarily caused by time and space. To address these limitations, trade tended to be conducted within neighboring countries, with value expressed in terms of the quantity of money. Zooming into the contemporary trade system, where goods from all over the world are amassed in superstores within standardized marketing systems, the interrelations of goods that create value were not necessarily important to mercantilists.

Other approaches to the determination of the value of goods include the classical and neoclassical perspectives. In the classical approach, value is determined by labor, and some goods are recognized for their role in facilitating exchange and production systems (Sraffa 1960). In these systems, the intrinsic properties of goods as determinants of value were acknowledged. However, they were ignored as a determinant of consumer

choice. This oversight has persisted and deepened in the neoclassical approach, where value determination has been entirely monetized into factors of production such as capital and labor, primarily aimed at profit maximization. Consumers are described as maximizing their utility, or as commonly expressed, their happiness through rational decision-making. This creates a dualism between production and consumption systems.

The production system supports the idea that the value of goods results from the transformation of inputs into outputs, with the objective of cost reduction and profit maximization. This involves a strategic consideration of where and when to offer products, known as a market study. While this system represents a significant development in determining the value of goods, it exhibits diagnostic limitations in the face of the complexity within this system. The production system is a complex network of interactions among inputs to produce intricate goods, such as drugs (Hickey y Smyth 2020). This complexity arises from market processes that embed increased product functionalities, leading to market diversifications and resulting in a structured system of complex products (Lindemann, Maurer y Braun 2009). Although producers have some control over the complexity of these processes, the primary focus of this work is to understand how consumers respond to and analyze this complexity.

To diagnose this complex system, consumers are expected to be rational within the established market framework where predetermined rules facilitate choices. In this concept, products are not neutral. Recent studies highlight that goods play a significant role in determining their value and influencing customer choice decisions. Goods possess intrinsic properties that distinguish them as unique items (Lancaster 2008). For example, bananas can be differentiated from beans, soap, gold, etc. However, these characteristics not only indicate the value of goods in isolation but also in relation to other goods within an interconnected system.

The interrelated system of goods can also be observed through the product life cycle. Products undergo stages of creation, growth, and decline. The value of a product can be influenced and can, in turn, influence the values of other products (Giudice, Rosa y Risitano 2006), extending even to international markets (Griffin y Pustay 2020). Most products experience a decrease in value at the point of transfer to customers. This marks a simple disconnection from market ecological patterns and signals the initiation of proprietorship advantages.

This point introduces a breach or interconnection between market goods value and utility, the most used concept to indicate that goods are desired and, consequently, paid for. However, this theory fails to answer why people want goods and does not suffice to develop a theory of economic value (Aspers and Beckert 2011). Moreover, in many products, there is a breach between expected utility and utility derived from product use. In this context, expected utility is based on timely and spatial connections to the market ecological value of the goods. It is developed by experts in manufacturing and distribution processes, tightly bound to the value of the product. On the other hand, consumption utility presents more variability depending on the circumstances and conditions of product use. For instance, a car purchased and involved in an accident within two weeks automatically loses its expected utility. Similarly, someone buying food for lunch and receiving an invitation to dine at a restaurant before having lunch renders the reserved food less useful.

A well-known term appears on each invoice or receipt: "the goods bought do not return to the store." This phrase signifies that returned goods do not possess the same value as those still in the store. It underscores the crucial role of the marketplace in determining the value of goods, stemming from the ecological display generated by technological networks associated with goods. The complexity of this system hinges on whether preferences are independent, complementary, or substitutive.

Understanding the intrinsic properties of goods is crucial in the realm of consumer choice theory. Consumers make decisions based on their preferences, considering complementarity and substitution. In elementary demand theory, it is taught that goods are complementary if they have a direct consumption association, for example, coffee and sugar, and become substitutes when honey is used in place of sugar. However, this framework extends beyond simple pairings to scenarios such as diet prescriptions, restaurant and party banquets, basic baskets, investment portfolios, and more (Lancaster 2008). If consumer choice depends on utility, considerations for new commodities entering the market based on their properties and variations in quality also play a role (Ibidem).

Value is not solely created by organizations; it is also shaped through networks. Economic value is intertwined with social values and can be established independently of any intention to exchange a good in the market (Aspers and Beckert 2011). This understanding of goods leads to the exploration of their status, interactions with other

goods, their importance, and their impact on satisfying human needs. Goods, equipped with significant technological means to fulfill needs, generate intricate interactions within ecological systems.

2.2 ECOSYSTEM OF GOODS

Products reside in supermarkets and stores as their destination before being exchanged for use. This point encapsulates the value of each and every product, resulting from global production and distribution, forming intricate consumption constellations through consumer choices. These choices, however, cannot be easily identified solely through pure utilitarian assumptions and calculations (Dholakia 2012, 40).

In this perspective, traditional economic factors such as price, income, taste, and future expectations, which have traditionally been key determinants in influencing consumption choices and increasing quantity demanded (Mankiw 2006), lose some of their significance for consumer choice. As it can be observed in the following figure 1, it is difficult to refer to the mentioned economic factors as mentioned by Mankiw at the moment of realizing choice consciousness. Product network attributes is the most influencing factor.

Figure 1

Products network system

Source: Authors' proper design (2024).

Products are observed through a system of interrelated features that establish a hierarchy of values. A product comes into existence with a life cycle, creating an ecosystem that reflects its value through features acquired during this process (Shirunda, Kanyimba y Musti 2023). New goods face challenges when attempting to be introduced into this system and establish their position and value. This value is dynamic and is analogous to the product life cycle. This goods system establishes a conceptual framework of exchange, where a hierarchy of value is assigned based on the most experienced attributes and search attributes. This determination helps identify how the most experienced goods become the most demanded, with these goods driving the search attributes through network externalities. This relationship is evident in the structural organization of supermarkets like Walmart, Costco, Soriana, etc. The importance drawn from choice phenomena is minimal compared to the insights provided by the ecological system behavior of related products within a supermarket.

Choice is utilized as a metaphor (Dorman 2014). Many actions undertaken are governed by processes distinct from conscious choice, and in some instances, certain activities are not choices at all. For instance, the purchase of school utilities, gifts for parties, medical facilities, etc. The traditional method of classifying the determinants of demand (Mankiw 2006) involves considering a single product with factors such as price, income, price of related goods, tastes, and expectations. While these factors determine how markets function, they can be seen as metaphors when attempting to understand the genuine impulses that drive consumers to make decisions to buy specific products.

Using the metaphor of choice directs attention to discrete moments when consumers decide whether to buy a particular good or not. It steers attention away from the ongoing interactions with various goods in the market, such as Walmart (Dorman 2014). Through experience, it is evident that certain goods and services, due to their complexity, necessitate intermediaries for consumers to make informed choices. Examples include pharmaceutical products (Hickey y Smyth 2020), financial services, accounting, legal services, etc.

"Goods assembled together in ownership make physical, visible statements about the hierarchy of values to which their chooser subscribes. Goods can be cherished or judged inappropriate, discarded, and replaced. Unless we appreciate how they are used to constitute an intelligible universe, we will never know how to resolve the contradictions of our economic life" (Douglas y Isherwood 1996).

To illustrate the impact of this characteristic of goods on consumer choice, this paper focuses its analysis on classical theory to determine how goods' network externalities affect overall demand in the market. Let's consider goods x, one of the most purchased items in Walmart, which has an influence on other less-wanted goods. This conceptualization of the relationship among goods traded in both common and specialized markets differ from the traditional determinants of quantity demanded, which classify goods into normal, inferior, and Giffen. However, this typology does not significantly impact the choice of products in a market.

This concept introduces a novel structural conception of the market. In this type of market, a commodity functions as an agent of its own position in the market and its relationship with other goods. Depending on its placement, it can either lose or increase its preference or choice. This relationship differs from that of complements, normal, inferior, or Giffen forms. This concept offers a new perspective on viewing goods in an ecosystem, where goods are considered interrelated elements.

The ecosystem of goods should not be regarded merely as artifacts or things that surround us, with humans at the center, and the relationship limited to consumption, while the economic process involves production, distribution, and consumption. Instead, in the market concept, goods are representative artifacts with characteristics that can influence the alternatives of other goods (Vizer and Carvalho 2015). This reflects a classical view of products where certain items were seen as determinants of good value (Sraffa 1960). The concept of commodities presents physical characteristics that are attributes of complex and integrative systems of products in markets. This viewpoint was abandoned by economists in favor of a simpler presentation of goods relationships in the market, facilitated by a price framework. This method helps establish a structured and organized market.

2.3 CONSUMER CHOICE UNDER ECOSYSTEM OF GOODS

The ecosystem of goods constitutes a complex system within the market where consumer choice is inherently uncertain. In this system, each product gains value through its comparative attributes, and customers employ mental accounting based on their experiences and choice values (Kahneman y Tversky 2017). To navigate these intricate processes, customers seek simple representations that can facilitate decision-making (Gigerenzer 2014).

According to Gigerenzer, simplicity is applied when there is more uncertainty, a greater number of alternatives, and no available historical data. In contrast, complex models can be employed in cases where these conditions are not met. To make optimal choices, consumers utilize heuristic rules (Gigerenzer 2014). Decision-making becomes more challenging when considering the future of consumption trends. To cope with this complexity, customers strive to adhere to simple rules for better decision outcomes (Ibidem). This does not imply a lack of information but rather an exercise in dealing with uncertainty rather than pure risk. The market system operates within this context by compiling and presenting information about goods to facilitate the formulation and utilization of rules of thumb. The presentation of goods in the market takes the form of predetermined rules that are justified by customer decisions (Sunstein 2015).

In summary, according to the literature review, each product possesses distinguished features that are directly linked to consumer needs. The assembly of goods into a market system facilitates the creation of interconnectedness among these features. Consequently, the arrangement of goods establishes a communication system, forming a hierarchy of values that is coded and interpreted by experienced customers.

This results in the formation of an ecosystem of goods, contributing to a complex system of value creation. To make informed choices, customers employ simplified mental computations to navigate through this hierarchy of values. Roughly, the literature suggests that the structured arrangement of goods in a market system allows for the development of a hierarchy of values. Customers, in turn, utilize mental processes to navigate this hierarchy, ensuring that their choices align with their needs and preferences.

Hypothesis (Ho): Assembled goods form an ecosystem of interconnected values to which customer prescriptions establish a hierarchy of values, aiding customers in making choices.

3 METHODOLOGY

To achieve its objectives, this study employs the methods of an integrative literature review and a questionnaire for data collection from customers. The literature review describes how assembled goods form ecosystem that on how consumers of the basic products view goods to make choices. The questionnaire is utilized to address the research question of whether products remain neutral in the system of consumer choices.

The literature review aims to identify whether current market systems for general commodities, catering to basic needs, exhibit a diagnostic system of values for consumers. This analysis is complemented by a questionnaire of only four questions addressed to respondents expected to have experience using the marketing systems of supermarkets, superstores, hypermarkets, and mega malls, where a variety of products is made available to buyers. A total of 384 respondents was collected, and the collected data are analyzed using descriptive statistical methods.

4 RESULTS AND DISCUSSION

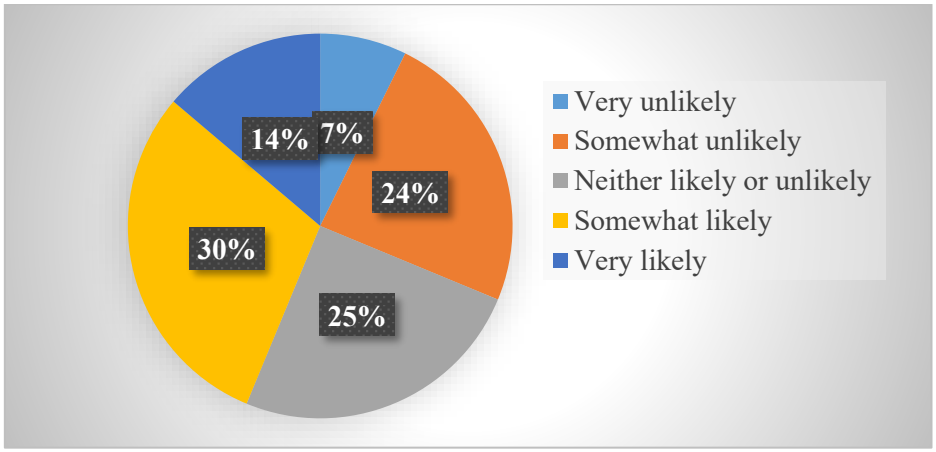
Based on the literature review reveals, it was identified that goods inherently possess codified intrinsic values, forming a system of communicated values. The organized arrangement of goods within a market system leads to the establishment of a hierarchy of values. Customers, in response, employ mental processes to navigate this hierarchy, ensuring their choices align with personal needs and preferences.

The analysis of the data collected by using a questionnaire brought to the following results:

Regarding the question of whether consumers would be willing to buy a product they have never used before, the responses presented in the figure 2 below indicate that 30% of the respondents mentioned they are somewhat likely to purchase it, 25% stated that they are neutral, 24% expressed being somewhat unlikely to buy it, 14% does not have a problem to buy it, and 7% are very unlikely to buy product without prior experience. These figures underscore the significance of the experiential value of products in influencing consumer choices. Experience value plays a crucial role in determining whether consumers stick with the same product or consider shifting to alternatives. Consequently, the marketing systems of these shops provide a platform for the comparison of products that can be a means of moving forwards to adopting news product.

Figure 2

Acceptance of product without experience value

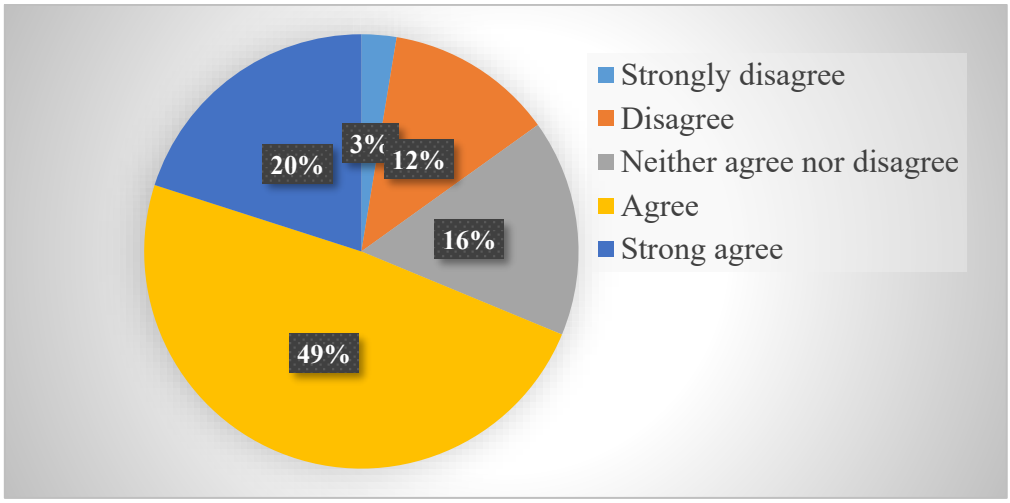


Source: Authors contribution.

The figure 3 below shows the information got from a question of whether consumer choices exclusively rely on the price system. The data reveals that 49% of respondents indicated their choices are influenced by the price system. Additionally, 20% strongly use the price system as a reference for value, 16% remain neutral, 13% do not make explicit reference to prices, and 2% completely ignore prices. These findings suggest that, beyond prices, there exist other criteria that significantly impact consumer choices, with one such factor being the intrinsic features of related products.

Figure 3

Impact of price system on product value determination and preferences

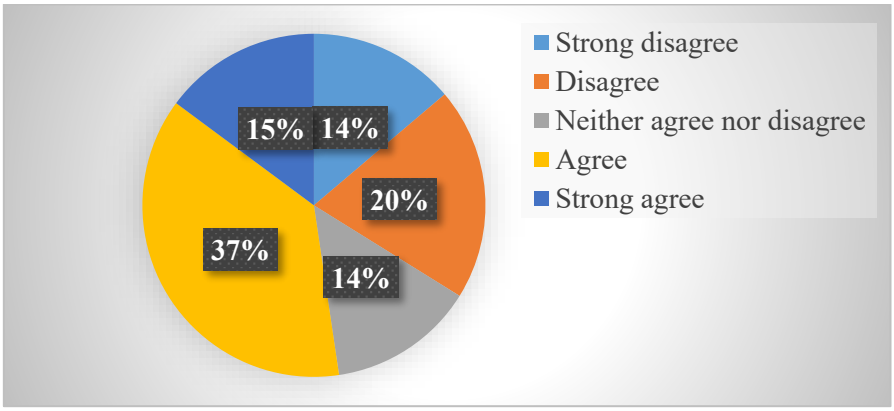


Source: Authors' proper design.

According to the figure 4 below, that contains responses to the question of whether the marketing systems of supermarkets, superstores, hypermarkets, and mega malls provide a perception that aids in the mental calculation of product value, the survey results indicate that 37% of respondents agree with this statement, 20% disagree, 15% strongly agree, 14% are neutral, and 14% strongly disagree. There seems to be a correlation with consumers who still strongly believe in the price system; however, a growing majority of consumers are recognizing that product networks, through the ecosystem of intrinsic values, play an essential role in consumer decisions.

Figure 4

Impact of marketing systems of supermarkets, superstores, hypermarkets, and mega malls on product value

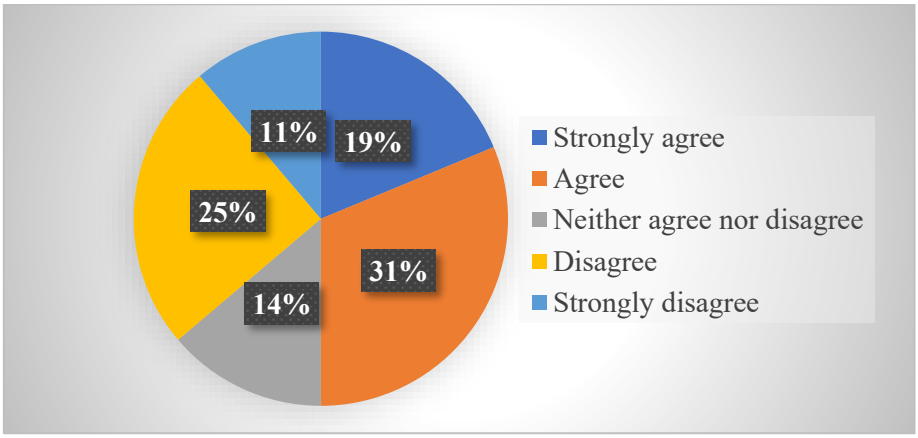


Source: Authors' proper design.

Regarding the question of whether the displacement of a product from its original place or the act of returning products negatively impacts the value of products, according to the figure 5 below, most respondents agree that a product removed from its ecosystem of interrelations does have a negative effect on its value. Specifically, 19% strongly agree, 31% agree, 14% remain neutral, 25% disagree with the idea that such changes affect value, and 11% strongly disagree with this statement.

Figure 5

Impact of product displacement on value perception



Source: Authors' proper design.

The significance of intrinsic value in consumer choice is not a new topic in economic theory. This idea was initially introduced and developed in classical economic theory, primarily with the objective of determining exchange value. However, this concept was not further pursued due to its limitations in supporting the exchange system and consequently was dominated by the price system used as a denominator to determine the value of goods. Even if this system marked an important development in consumer theory, the present work identified that goods are not neutral, they form a system of hierarchical and structured information of values that affect consumer choices.

5 CONCLUSION

This work investigates how assembled goods possess inherent intrinsic values that form ecosystem of hierarchy of values. The interconnectedness of this ecosystem is displayed by physical and visible statements which affect customer choices. Simple mental calculations are used by customers to make choices. Therefore, goods are not neutral in the consumer decision making process as it has been usually described by consumer theory. The understanding of ecological system of goods helps to understand how values are created which contribute to sustainability development.

6 CONTRIBUTIONS

The contribution of this work is as follows:

- This paper helps to understand how goods are interconnected and form an ecosystem that determines values, which can be referred to in determining the

price system. Understanding this process aids in the analysis of value determination, pricing, and choice decisions.

- It provides a system thinking approach of goods, aiding in the understanding of their complexity.
- By comprehending the functionality of this ecosystem and how value is created, certainty in consumer choices is established.
- It contributes to sustainable development by connecting goods to their intrinsic and real value through the interconnectedness of goods, which attributes to achieving balanced, equitable, and healthy sustainable development.

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DECLARATIONS

Competing interests: The authors declare no conflict of interests.

Availability of data and materials: The data analyzed and presented in this study are available on request from the corresponding author.

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