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Egypt's Hotel Revolution: Unlocking Sustainable Success in Egyptian Hotels via Reverse Marketing and Guests

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ABSTRACT

Reverse marketing is one of the most important modern and contemporary marketing concepts in the hotel industry; it is an inventive marketing strategy. This research examines the effect of reverse marketing (RM) dimensions on sustainable development (SD) in hotel contexts. Additionally, this research highlights the boundary effect of customer behavior (CB) in the reverse marketing-sustainable development linkage. A descriptive-analytical method was employed to reach the findings using both online and paper surveys; a questionnaire form with four axes was chosen and given to a random sample of customers of five-star hotels in Cairo. The number of questionnaires distributed was 500, and (326) were valid for analysis. Using SPSS version 25, the influence was examined using Pearson correlation and linear regression and analyzed using Smart PLS v.4.4. The results confirmed that six key drivers of reverse marketing positively affected sustainable development through customer behavior. Multi-group analysis findings proved that customer behavior was positively affected by price, service, promotion, products, distribution, and counter advertising in hotels. The study came out with a set of conclusions, the most important of which was the existence of a significant correlation and impact between variables. Regarding the study's recommendations, the study recommends the need to develop and adopt reverse marketing strategies in the research sample hotels. Additionally, the organization must focus on using reverse marketing tactics and strategies among employees and customers across many divisions and offer training courses that enhance the professional abilities of Egypt's hotel industry.

1. Introduction

In the context of the hotel industry, reverse marketing can play a crucial role in promoting sustainable development by utilizing customer behavior. Reverse marketing is one of the most important contemporary concepts in the field of marketing as an innovative marketing tool, but in the opposite direction, where reverse marketing seeks to regulate consumption to the extent possible, directing consumers towards responsible consumption and encouraging sustainable development patterns that have become the language of the times. It is essential to ensure the survival of the organizations and to enhance the competitive advantage (Elsetouhi et al., 2024). Therefore, understanding the dynamics of reverse marketing and customer behavior is essential for hotels aiming to differentiate themselves in a crowded marketplace and build long-term relationships with their guests, Since the topic of reverse marketing has been crucial to its novelty and its effects on the reality of this department both now and in the future, this study aims to clarify these dynamics and stimulate creative approaches that promote sustainable growth and competitive advantage in the hotel industry(Lindberg and Seeler, 2021).

Additionally, in the competitive landscape of the hotel industry, understanding customer behavior and employing innovative marketing strategies are crucial for success. One such strategy gaining traction is reverse marketing, which flips traditional marketing approaches by focusing on attracting customers who are already interested in the product or service. This method saves resources and enhances customer satisfaction by aligning offerings with their preferences (Orchiston and Higham, 2016; Raab et al., 2023). Where, Kotler and Armstrong (2016) shown that in the past, the majority of companies were using marketing that focused on the features in the functionality and performance of products or services; it considers customers as logical decision-makers (Dzhangazova et al., 2015). According to Nasermoadeli et al. (2013), traditional marketing emphasizes selling the final product rather than the overall product experience; the result is a limitation of the product and service choices to what the customer sees rather than what he feels (Ballantyne et al., 2011; Yu, 2011). These days, many businesses are actively looking for ways to reduce their costs while also trying to raise the quality of their goods and services in order to satisfy customer demand (Hultén, 2011). Additionally, consumer behavior in the hotel sector is very complicated and impacted by a number of variables, including brand loyalty, price sensitivity, expectations for service quality, and the impact of social media and internet reviews. Hotels must modify their marketing tactics to better suit the changing tastes and demands of their target market in order to accommodate these habits. (Magalhães, M.J. and Marques, S. 2022).

According to Salem et al. (2018) and Liu (2023), Reverse marketing is a marketing technique that focuses on reevaluating our interactions with customers and the impact on their behavior and performance in a sustainable manner. Where reverse marketing represents a process with marketing dimensions, but in the opposite direction. It frequently concentrates on any or all of the marketing mix's components, and when used properly and sensibly, it can temporarily or permanently lower demand for a product. Therefore, the use of reverse marketing strategies can enhance sustainable development on various environmental, social, and economic levels. By aligning reverse marketing strategies with insights into customer behavior and a commitment to sustainable performance, hotels can enhance their competitive advantage while contributing positively to the environment and society. It is also called negative or de-marketing (Dwyer, 2023). Therefore, the use of reverse marketing strategies can enhance sustainable development at

various environmental, social, and economic levels. This research will establish a conceptual and cognitive framework for reverse marketing and sustainable development (Raab et al., 2023). From this perspective, this paper seeks to highlight two-fold objectives as follows: 1) Determine the pivotal role of reverse marketing in achieving sustainable development in the hotel industry 2) recognize the boundary role of customer behavior as an essential tool in gaining sustainable development if hotels have high levels of reverse marketing inside five-star hotels in Cairo.

First: The research problem

Despite the importance of reverse marketing in the field of sustainable tourism, it has not been applied effectively, as it requires a complete and strategic vision to recognize its effective role in the hotel sector (Hall, C.M. and Wood, K.J. 2021). The world is currently facing problems such as scarcity of natural resources, environmental hazards such as pollution, and social problems such as poverty and health. Consequently, the concept of sustainable development came to confront these problems and achieve development in the world. To face these changes, reverse marketing was presented as a marketing strategy aimed at preserving scarce resources for future generations by sacrificing consumption in the short term (Kodaş, B. and Kodaş, D. 2021). Reverse marketing is utilized economically to create alternate options for consumption and to lessen waste from the usage of natural resources like energy and water. On the social side, reverse marketing can be used to reduce the demand for products through advertising and educational campaigns to reduce the consumption of these products, temporarily or permanently. On the environmental front, reverse marketing has gained popularity in conferences about rising temperatures, and it is the most efficient strategy to reduce harmful emissions by changing customer trends towards rational consumption of energy and reducing the use of products whose waste causes harm to the environment (Sadiq et al., 2014; Lawrence, J. and Mekoth, N. 2023). Where the results of the questionnaire with many customers of the hotel sector showed, it was found that a lack of knowledge and weakness in adopting reverse marketing methods and a lack of awareness of its importance as an important way with the possibility of achieving sustainable development requirements. Based on the above, the problem of the study includes A number of both intellectual and practical problems, The problem of the study can be formulated using the following key question: Does reverse marketing affect sustainable development through customer behavior? The study uses a collection of scholarly and scientific materials in addition to the descriptive analytical approach in an effort to address the primary topic and its sub-questions. The primary question leads to the following sub-questions: How interested is the hotel sector in implementing reverse marketing?

- What is the level of interest in implementing sustainable development in the hotel industry?
- Is there a relationship between reverse marketing and sustainable development through customer behavior?
- Do reverse marketing dimensions affect sustainable development through customer behavior?

Second: Research objectives

- Focusing on the concept of reverse marketing and its methods, as it is one of the modern and indicative methods regulated and directed towards individuals.

- Drawing attention the concept of sustainable development in order to help the orientation of global organizations and the hotel industry focus on reaching their objectives.
- Knowing the extent of application of reverse marketing methods and the level of the hotel's interest in achieving sustainable development through customer behavior.
- Determine the peculiarity of the statistical relationship between reverse marketing and sustainable development through customer behavior.
- Determine the level of impact of reverse marketing on sustainable development through customer behavior in the hotel industry.

Third: The significance of research: The research derives it's from the following aspects:

- The scarcity of studies that dealt with study variables, according to the knowledge of researchers in the Egyptian hotel industry) Hall, C.M. and Wood, K.J. 2021).
- By determining the correlation and impact between the study variables (sustainable development as a dependent variable and reverse marketing as an independent variable) using consumer behavior as a mediator, the study has scientific significance because it addresses relatively recent topics (Shao, X., et al., 2023).
- Explaining the extent to which reverse marketing methods contribute to the Egyptian hotel industry.
- The importance of the study emerged through its analytical examination of the opinions of a random sample of five-star hotel guests, the useful ideas and opinions they provide, and the results and proposals that the study can explain that benefit the hotel sector.
- Recent empirical studies have not examined customer behavior as a mediator between reverse marketing and sustainable development in the Egyptian hotel sector.

2. Theoretical framework - Reverse Marketing

First: the concept of reverse marketing

Reverse marketing is a marketing strategy used to control customer behavior or reduce their interaction with a product (Baker, 2013). The term reverse marketing was coined by Kotler & Levy in 1999, and since then it has been used as a marketing strategy for a shift in social and cultural values and consumption patterns toward limited and rational consumption (Cintron et al., 2017). Reverse marketing is an essential part of social marketing, as Kotler explained that the marketing function at present is not to increase the demand for the product, but rather the main purpose of marketing is to manage demand, as reverse marketing balances demand and supply (Ghadeer and Mohammed, 2019). The intellectual philosophy of reverse marketing lies in encouraging the consumer to legalize the consumption of the product or service on a temporary or permanent basis, based on the elements of the marketing mix, including increasing the price or increasing the costs of promotion and distribution (Walle, 2010). Organizations adopt a reverse marketing strategy for several reasons, including (1) incapacity or unwillingness to supply large amounts of the product. (2) Guidance on the consumption of some products that are deemed harmful to public or personal health. (3) The organization’s desire to have a role in social responsibility. (4) Improving the product's perceived quality and worth in the eyes of the general public (Seeletse, 2016).

One of the marketing strategies used to regulate consumer behavior or lessen how they deal with the product is reverse marketing. The marketing mix's elements—product, pricing, promotion, and distribution—were used to design this approach, but in reverse—that is, by increasing prices

or removing products from the market (Baker, 2013). So, reverse marketing is a strategy used to limit and reduce demand to match supply through rationalization and short-term strategies (Chakravarti, D. (1991); Day, 2018). Reverse marketing is a modern term in marketing management. It is called “negative marketing” or “de-marketing.” It relies on the alternative policy of “don’t do it.” It refers to marketing efforts that call on others to give up and not act, as the marketer needs to have sufficient knowledge of reverse marketing. Is an inevitable necessity often, the most important of which are the following: (Gummesson, 2019): Therefore, reverse marketing is a controversial concept, as for the definition of reverse marketing, there is a difference in the views of researchers. Reviewing the literature on reverse marketing and customer behavior in the hotel industry provides insights into how hotels strategically engage customers through innovative marketing approaches. Reverse marketing, sometimes referred to as inverse marketing or pull marketing, involves tactics where customers seek a product or service rather than the business actively promoting it to them (Dwyer, 2023).

Kotler and Levy (1999) defined the marketing strategy known as "reverse marketing" aims to deter consumers from using particular items for either a short-term or long-term length of time. It is the adoption of several marketing strategies through a set of tools to convince consumers of the need to reduce their consumption of a particular product (Sadiq and others, 2014). Finally, Slaem et al. (2018) defined it: "It is one of the types of marketing that seeks to change consumer attitudes and behaviors towards the consumption of certain products because of the health and environmental harms they reflect. Here, the researchers see that reverse marketing is a major marketing tool in influencing the level of demand by reducing the demand partially or completely. Consequently, the researcher defined reverse marketing: it is a major marketing tool to manage the demand for products, either decreasing or increasing, to address problems faced by organizations, society, or the environment.

According to Pallavi (2016) and Shapiro (2018), the importance of reverse marketing lies in the following points: The importance of reverse marketing lies in achieving a balance between supply and demand so that excess demand does not encourage competitors to enter the same industry, as follows: It is an effective policy to confront and reduce excessive demand for some products (Sadiq et al., 2014); enhancing the product's quality, as some organizations work to reduce the supply of goods, as the scarcity of the product usually signifies high quality in the minds of people and customers (Alsamydai & Yousif, 2018); Reducing the consumption of some high-priced products or some endangered products (Sadiq, 2009); The institution's inability to provide or prepare large quantities of products or services to meet permanent demands.

Second: The reverse marketing strategy

1. General reverse marketing strategy: The organization adopts this strategy when it wants to reduce the level of total demand for its products, for several reasons, including the size of the demand, i.e., exceeding the supply, or the organization may not want to deal with that product (Mahmood AL-Samydai, 2015; Seeletse, 2016).

2. Ostensibly reverse marketing strategy: supposedly decreasing the need for a good or service. However, it increases the demand and price in the future to attract more customers when the consumer perceives that the product is available in limited quantities, which generates an impression in the customer's buying mind of the high quality of the product, which leads to an increase in the demand for its acquisition (Alsamydai and Yousif, 2018).

3. Selective reverse marketing strategy: This type is used when organizations seek to reduce the demand in certain sectors of the market or specific types of consumers because those sectors or these consumers are relatively unprofitable (Ratiba, R., & Faiza, B. (2024) ; Delgado, F. et al., 2023).

Third: Dimensions and tools of reverse marketing

1. Reverse price: price is regarded as one of the most crucial considerations for the marketing function, since pricing strategy directly affects purchasing behavior, positively or negatively (Sadiq et al., 2014). The reverse price is determine by a set of steps that are applied (physical, psychological) to reduce the demand for the product or service, and the procedures include the following: Increasing prices, imposing additional taxes and fees, imposing fines for misuse of the service, and stopping discounts in prices (Weilier et al., 2019). Price increase: A set of measures applied to price to reduce demand for a product (Ghadeer and Muhammad 2019).
2. The service: This element aims to help consumers reduce service consumption since the level of demand for service exceeds the organization's ability to provide it or increase its consumption, causing harm to the consumer and society. Among the measures taken to reduce the demand for service are offering the service in a limited way, informing consumers of the risks and harms of the excessive level of service, limiting the permissible activities seasonally, and providing suitable alternatives (Walsh et al., 2009).
3. Promotion: The promotional process followed in reverse marketing may change to enhance the positive attitudes of the consumer. The procedures followed include increasing advertisements that highlight the negatives and harms that result from consuming the service. It may also include digital advertisements to direct members of society towards rational consumption, and one of the other promotional means is distributing brochures and posters to educate consumers on the environmental and social aspects of preserving natural resources (Shiu et al., 2009).
4. Limited product: A product within the concept of reverse marketing is one whose marketing efforts focus on reducing the amount of its sales because failure to rationalize its consumption will generate great harm to the individual, society, and economy (Hasnain 2020).
5. Counter-advertising: Counter-advertising is used to reduce demand and shift it to slow business periods. Then, organizations will change advertising policies in a way that is consistent with the reverse marketing policy (Sadiq et al., 2014).
6. Limited distribution: works to limit the distribution of the product to reduce its offer and make the customer make a great effort to obtain it in addition to reducing its supply (Suhila and Sabrina, 2018).

Customer Behavior

Understanding customer behavior is essential for tailoring services and marketing efforts effectively. In the context of sustainable performance: Through their various plans and activities, organizations seek to develop their products and services effectively, the customer's desires and satisfy their needs, to reach their satisfaction, as the customer has become the main focus of marketing activities, and studying his behavior and providing what is compatible with him is the basic key for the organization to achieve its sales and profitability goals (Yassin, 2018).

Table 1: Definition of customer behavior

Source	Definition
Abdul Razzaq, 2016	The behaviors and actions that individuals take include planning and purchasing the product and then consuming it.
Saeed,2019	Obtaining goods, services, ideas, and experiences through exchange processes and then consuming and disposing of them. A group of behaviors is carried out by individuals who are affected by a group of internal and external factors, and these behaviors can be changed through external stimuli.
(Researchers,2024) definition of customer behavior	Internal considerations and marketing stimuli influence every action and activity a consumer takes to find goods and services that meet his many and evolving wants, acquire them through exchange procedures, and then use, assess, and discard them.

Source: Prepared by the researchers, 2024

Fahd and Abdul Amir (2019) believe that studying customer behavior shows its importance in the following:

- The customer's success is significantly impacted by how he handles the hotel industry's policies. To satisfy the customer's needs, the organization must identify the most important factors about: What? Where? When? How does an individual consume
- Some experts, such as,(Yassin,2018) also believe that studying customer behavior is one of the matters that requires general and broad knowledge regarding customers' behaviors and studying their habits, preferences, income, culture, and other determinants; the more they are identified, the stronger the connections between customers' behavior and their attitudes toward goods and services.
- Modern marketing focuses on the customer and marketing operations begin with the customer, after knowing his needs and desires, the organization produces products that satisfy these needs and desires, and this does not happen until after studying the customer's behavior in an accurate and in-depth manner. And studying all the motives and influences that affect him and move him toward the correct purchasing decision that benefits the customer and the organization (Hadiyati, Ernani, 2016).
- The pricing strategies that the organization relies on to set prices for its products require knowing the customers deeply and accurately, and this is done through studying customer behavior (Sadiq et al., 2014).
- Choosing the appropriate promotional method that is compatible with customer behavior and then convincing the customer that these products are the ones that they need, and this requires studying the customer's behavior.
- Identifying the contributes role of customer behavior in highlighting the connection between reverse marketing strategy and sustainable development.

Second: Dimensions of customer behavior

There are many models used to measure customer behavior, and each model goes through several successive stages until it finally reaches action (purchase), which (actual purchase) is considered the basic goal that all organizations seek to reach the customer.

- Attention: The marketer must be able to create information media to attract the attention of customers. He can make a statement that shows people's interest or create powerful words or an image that can make people notice and understand the message conveyed (Hadiyati, 2016). It should be noted that these behavioral reactions may differ when using different factors in the attention-getting phase. When customers take action and make

their decisions, they enter the experience phase, where they can also evaluate their responses to internal stimuli (Montazeribarforoushi et al., 2017).

- Attracting interest: The customer appears when he actively expresses it with a product or service (Ahmad, 2020; Ghirvu, 2013).
- Desire: the desire of the recipient of the advertisement to obtain the product. This stage must be linked to the previous two stages (attracting attention and arousing interest) in providing accurate and correct information about the product being advertised (Sulaitin, 2016).
- Action: In the fourth stage of the hierarchy of influences, a typical action is taken by the customer, i.e., purchasing the product (Rehman, Fazal Ur, et al., 2014).

Sustainable development

First: The concept of sustainable development

The roots of sustainability extend from Aristotle's concept through the production and reproduction of everything necessary for life (Stankeviciute and Savaneviciene, 2013). The creation of sustainable development in its contemporary form is the result of the outcome of the United Nations General Assembly (UN), a committee on environment and development that got to know the prime minister of Norway, Brundtland, whereby the committee established a definition for sustainable development in its report, "Our Common Future.": it is development that meets current wants without compromising the capacity of future generations to meet their own (Paul, 2008). Sustainable development is also defined from the point of view of organizations as a continuous commitment on the part of the organization to act ethically and contribute to economic and environmental development by renewing assets, preserving resources, and supplying and delivering products and services that satisfy the standards of society (Radu, 2012). Sustainable development is represented by the multi-objective nature that is based on the triple basic line, which is the economic, environmental, and social aspects, which aims to achieve a balance in terms of the need for financial growth, environmental protection, and social justice (Arulrajahand Senthinlnathau, 2014). In order to provide added value, inform interested parties, and represent the reporting of sustainable performance, businesses engaged in sustainable operations must therefore give careful consideration to the effects of environmental, social, and economic aspects. According to Kuo et al. (2022), sustainability is a general term that encompasses metrics for hotel and travel agency performance that are social, economic, and environmental. Malesios et al., (2021) identified three patterns of sustainable performance related to organizational performance toward attaining sustainability: social, environmental, and economic performance. These groups can cooperate by highlighting the importance of social cohesiveness, economic progress, and environmental conservation (Rehman et al., 2023). In competitive circles, hotel firms' pursuit of sustainability is considered a survival strategy when their employees possess special skills that enable them to do jobs correctly and the possibility to work toward better health with lower stresses. Thus, sustainable performance involves creating and maintaining favorable circumstances in which employees can co-exist in productive harmony for current and future generations (Elshaer et al., 2023).

Second: dimensions of sustainable development

a. Economic dimension

The economic aspect related to sustainability measures is how to maintain low levels of consumption of natural resources from the governmental, regulatory, and societal sides. A sustainable economy improves the standard of living of individuals, ensures the continuous production of goods and services, improves production methods to stop the depletion of natural resources, and works to reduce environmental risks and environmental scarcity to increase

wealth (Krstic and Avramovic, 2018). All facets of the organization's economic contacts are included in the economic performance, including intangible components that are typically absent from financial situations as well as the conventional accounting indicators.

b. **Environmental dimension**

Sustainable development is related to environmental issues mainly because development is linked to the environment, as the environment may provide opportunities and threats to development. An environmentally sustainable system consists of preserving natural resources (water, energy, land, etc.), optimal use of renewable and non-renewable resources, and protecting ecosystems. As such, the environmental aspect focuses on reducing the negative productive activities of organizations as a major component in resource depletion and a major source of pollution (Klarin, 2018). Environmental performance refers to the influence of the organizations on the natural resources, including the ecosystems, earth, air, and water, the activity of most of the organizations that present social and environmental reporting is certified by environmental management issues.

c. **Social dimension**

The social aspect is also a major component in sustainable development, which is based on social justice and equality in terms of a fair distribution of resources and full and equal access to them for all. The social dimension also includes fighting poverty, providing health services, and education and training to achieve social welfare (Bjoern et al., 2017). The social element of sustainable development mentions to the influence of the entity's impact on the social systems in which it operates. Social performance can be measured by analyzing the effect of the organizations on the stakeholders on a local, national, and global level. Social performance metrics can influence the intangible assets of the organization, like human capital and reputation (Cimpoeru et al., 2011). Because of this, putting effective strategies into practice combines the economic, social, and environmental elements as integrated systems for long-term performance and as a new organizational change issue. As a result, Figure 1 looks at the crucial role that consumer behavior plays in evoking the relationship between reverse marketing and sustainable growth in the Egyptian hotel setting:

Figure 1: the study's theoretical framework and formulation of the hypotheses

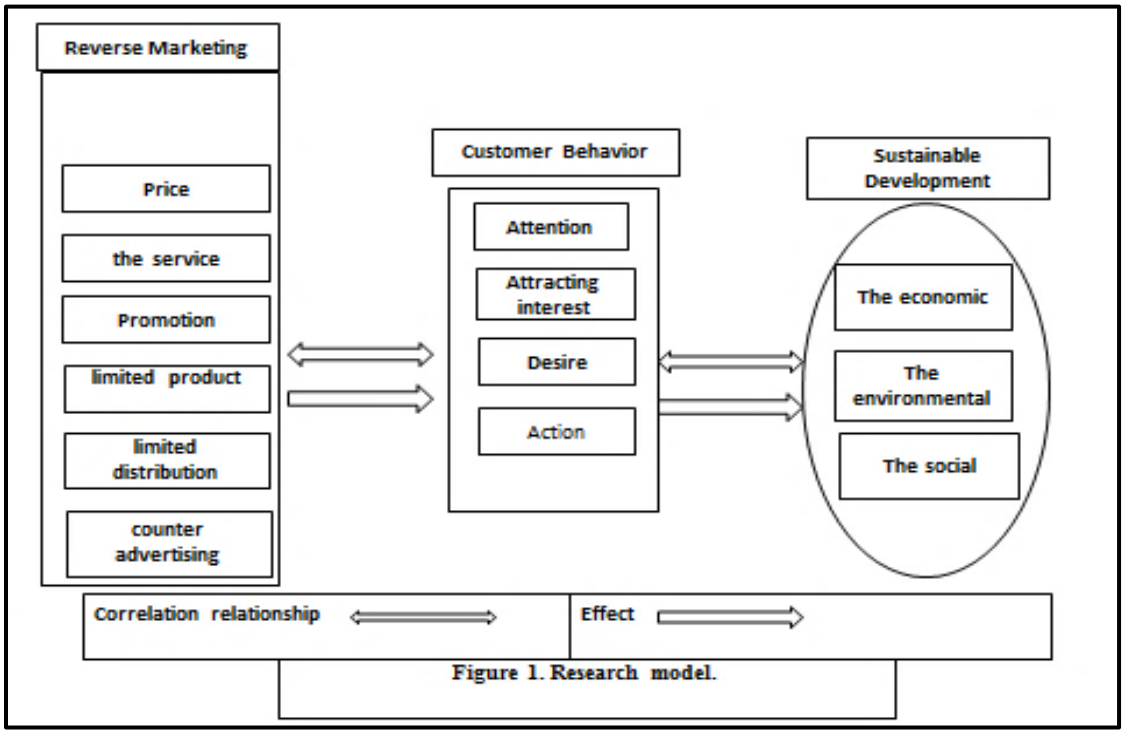

Figure 1. Research model.

Source: prepared by the researchers,2024

3. The research hypotheses

H1: There is a significant link between reverse marketing and its dimensions on customer behavior, and the following sub-hypotheses stem from that:

H1.1. Price and consumer behavior are significantly correlated.

H1.2. There is a significant correlation among the service and customer behavior.

H1.3. There is a significant link between promotion and customer behavior.

H1.4. Limited products and consumer behavior have been significantly correlated.

H1.5. Limited distribution and consumer behavior are significantly linked.

H1.6. There is a significant correlation connectedcounter-advertising and customer behavior.

H2: There is a significant influence among reverse marketing and its dimensions on customer behavior, and the following sub-hypotheses are derived from it:

H2.1. Price availability has a big effect on how customers behavior.

H2.2. the availability of services has a big influence on how customers behavior.

H2.3. Promotion has an important effect on how customers behavior.

H2.4. Limited products have an immense effect on how customers behavior.

H2.5. Limited distribution has a major effect on how customers behavior.

H2.6. Counter-advertising has an enormous effect on consumer behavior.

H3: Sustainable development and consumer behavior have a substantial relationship and impact.

H4: There is a correlation and effect between reverse marketing and its dimensions on sustainable development in its dimensions through customer behavior.

H5: Customer behavior mediates the nexus of reverse marketing and sustainable development.

4. The research methodology

4.1. Population and sample

This research aims to explore the effect of reverse marketing dimensions on sustainable development in the hotel context. Besides, it highlights the boundary effect of customer behavior in the reverse marketing-sustainable development linkage in Egyptian hotels. , The research population consists of perceptions of customers in Cairo five-star hotels; as such, respondents were selected via a simple random technique. According to Chaokromthong and Sintao (2021), in this paper, a hypothetical sample size of 500 cases was determined to be representative of the research population. The total of questionnaires distributed was 500, and 258 questionnaires were retrieved from them. (326) were suitable for analysis and (89) questionnaires were included because they were damaged or were not suitable for analysis. The Egyptian Hotel Association's guidelines were followed in the selection of the targeted hotels, as there are five-star hotels in Cairo (19) and five-star hotels in Giza (11). Customers of Cairo City, Egypt's five-star hotels of which there were 19 are the only focus of this study (EHA, 2018; 2024). So, the following formula is used to compute the sample of five-star hotel patrons.:

$$n = \frac{N \times p(1-p)}{\left[\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

The sample size formula shows 326 customers as a sample size.

4.2. Questionnaire design and pre-test

The questionnaire was employed to measure the focal role of reverse marketing dimensions in sustainable development. Through customer behavior in hotels through a set of questions that included four sections. The first section was devoted to collecting respondents' information with seven phrases (i.e., gender, age, highest educational qualifications, nationality, visit hotel with, average stay, and source of information about hotels). The second section focused on assessing reverse marketing's six dimensions (i.e., price with five items, service with five items, promotion with five items, limited product with five items, limited distribution with five items, and counter-advertising with five items), which developed from Hasnain (2020) and Suhila and Sabrina (2018). The third section was dedicated to assessing customer behavior with four items, cited from Hadiyati (2016), Ahmad (2020), and Ghirvu (2013). The last section was dedicated to assessing sustainable development and consisted of three items, modified from Klarin (2018) and Bjoern et al. (2017). The researchers relied on creating a questionnaire form to accomplish the study's goals and evaluate the conceptual model. A systematic questionnaire with all measurement items measured was used to gather study data on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Accordingly, questionnaires were validated

through a pilot study on 50 academics and experts (i.e., 30 of those were within the stay in the target hotels and 20 of whom were academics and experts). They examined the content and informed researchers to attempt to improve the second item of customer behavior and the third item of sustainable development. Hence, participant observation was employed to determine the validity of the questionnaire content in this regard; two linguistic auditors were called to review the extent to which the translated content matches the original text. Accordingly, these proofreaders confirmed that the translated questionnaire content was highly suitable for the potential sample after making minor improvements to the translated content. The questionnaire form was generated using the online survey services of Google Forms; the targeted participants received the survey link through group pages, WhatsApp, Facebook accounts, and emails.

4.3. Data collection process and analysis technique

A questionnaire was used as a data collection method in this study, which took a quantitative approach. Therefore, the study relied on utilizing primary data, as the aim of the quantitative research approach is to test a predetermined hypothesis and produce generalizable results by using statistical methods. Therefore, to get at the study's findings and conclusion, the field survey approach was used. The primary data was collected through a structured questionnaire from 326 customers of five-star hotels in Cairo. Statistical analyses were done by using SPSS version 25 software. At $p < 0.01$ the study's findings are deemed significant, Random sampling, the sample chosen randomly to be an unbiased population representation, was employed to collect data from hotels' customers situated in Cairo. Data was distributed from March 2024 to August 2024, both online and manually, to investigate hotels. The total of questionnaires distributed was 500, and 58 questionnaires were retrieved from them. (326) were valid for analysis and (89) questionnaires were excluded because they were damaged or were not suitable for analysis. To extract sample characteristics, SPSS version 25 was used to determine the highest frequencies and the percentages of these frequencies (Selem et al., 2023). This study created partial least squares structural equation modeling, or PLS-SEM, was established in this paper (Memon et al., 2021). Prior to doing a two-phase analysis of potential correlations, the measurement and structural models of the two groups were assessed using SmartPLS4. (Cheah et al., 2023; Guenther et al., 2023). Moreover, PLS-SEM facilitates the estimation of the measurement model and multi-group analysis (MGA) (Henseler et al., 2016). Lastly, this paper employed R^2, Q^2, and f^2 to assess the goodness-of-fit model, along with a PLS-bootstrapping approach using confidence intervals (CIs) to test indirect paths, while t-values and beta values gauge direct paths.

Table 2: illustrates the description and coding of the research variables to ensure accuracy and ease of statistical analysis as shown below (Questionnaire components).

Paragraph	Main variables	Dimensions	Code	Phrases Number	Source
1	Personal Information	Sample data	SD	7	questionnaire form
2	Reverse Marketing (RM)	Price	P	5	Sadiq, 2009
		The service	T	5	Fahd and Abdul Amir, 2019
		Promotion	Pr	5	Chaudhy et al., 2019 Hussein, 2019

		Limited Product	Lp	5	Sadiq et al., 2014
		Limited Distribution	Ld	5	
		Counter Advertising	Ca	5	
3	Customer Behavior (CB)	Arouse interest	Ai	5	Hadiyati, 2016 Ahmad, 2020; Ghirvu, 2013 Sulaitin, 2016 Rehman, Fazal Ur, et al., 2014
		Get interested	Gi	5	
		Create desire	Cd	5	
		Action	A	5	
4	Sustainable development (SD)	The Economic dimension	Te	5	Krstic and Avramovic, 2018 Klarin, 2018 Bjoern et al., 2017
		The Environmental dimension	Ed	5	
		The Social dimension	Sd	5	

Source: Organized by the researchers based on the questionnaire, 2024

5. Results and discussion

5.1 Response Rate

The level of response rate is a significant and sometimes considered a crucial factor. When evaluating the significance of study findings (Baruch and Holtom, 2008). It examined 1607 studies published in 17 peer-reviewed scholarly journals to study the response rate in those studies; the average response rate was 52.7%. 40.1% Respondent profile. In the current research, the total number of questionnaires distributed was 500 forms, distributed to a random sample of customers in five-star hotels in Cairo, as shown in Table 3. (85) Questionnaires were retrieved from them. (326) were valid for analysis, and (89) questionnaires were excluded because they were damaged or were not suitable for analysis, so the number of valid forms was 326 with a 65.2% response rate, considered an acceptable response rate.

Table 3: Distributed and retrieved survey list valid for statistical analysis (Response Rate)

City	No. of Distributed /sample size	No. of Missed	No. of Invalid	No. of Valid Returned	Response rate	Margin of error
Five–star hotel in Cairo	500	85	89	326	65.2%	34.8%

Source: Organized by the researchers based on the questionnaire, 2024

5.2 Questionnaire reliability and validity

The degree to which scale items are significant and appear to represent the concept being assessed is reflected in the particular principle of face validity. Hotel managers, customers, and

academic experts in the sector reviewed the survey. Subsequently, minor changes concerning vocabulary and design are made to enhance questionnaire flow, clarity, and validity. Questionnaire validity investigations: This test is known as apparent validity, which is founded on the opinions of experts in the hotel sector and academics, as a number of statements were modified according to their various opinions and suggestions. To evaluate the construct and their indicator's validity, corrected item-total correlations were used, which are between 0.30 and 0.80 (Netemeyer et al., 2003). Corrected item-total correlations are considered to show that the taken indicators are valid for measuring the one construct in question. In addition, construct reliability was tested by running Cronbach's alpha coefficient. It was calculated and exceeded 0.70 for all constructs, indicating dependable results (Hair et al., 2010). Additionally, for validity concerns, the survey was piloted on a sample of 50 customers in five-star hotels to check its face and content validity. The comments of respondents related to the language and design of the questionnaire were considered in the final form. For the reliability of constructs, Cronbach's alpha coefficient was calculated and exceeded 0.70 for all constructs, meaning that the questionnaire results are reliable.

Reliability discusses the degree of internal consistency of the scale, which indicates that all the questions are aimed at a general purpose to be measured, the likelihood of obtaining the same outcomes when repeating the same measurement (Oppenheim, 1992). The Cronbach's Alpha Coefficient is used to measure the internal consistency of the scale paragraphs, its dimensions, its variables, and the scale as a whole (DeVaus, 2002). The value of Cronbach's Alpha ranges between 0 and 1, and it should be equal to or higher than 0.70 to be considered as having acceptable internal consistency (Hair et al., 2019), while Sekaran & Bougie (2016) indicated 290 (if Cronbach's Alpha is equal to or higher than 0.60, it is considered an acceptable value). If it is less than that, its internal consistency is considered weak and does not bear an acceptable level of stability. As shown in Table 4, sustainable development and reverse marketing, then customer behavior, have a high-reliability value of (0.70).

Table 4: Validity Analysis for Questionnaire.

Variables	Constructs	Part/code	Corrected Item-Total Correlation	Cronbach's alpha
Reverse Marketing (RM)	Price	P1	0.785	0.910
		P2	0.847	
		P3	0.834	
		P4	0.894	
		P5	0.982	
	The service	T1	0.853	0.841
		T2	0.859	
		T3	0.940	
		T4	0.819	
		T5	0.831	
	Promotion	Pr1	0.720	0.779
		Pr2	0.631	
		Pr3	0.698	
		Pr4	0.894	
		Pr5	0.743	
	Limited Product	Lp1	0.894	0.811

		Lp2	0.634	
		Lp3	0.594	
		Lp4	0.747	
		Lp5	0.585	
	Limited Distribution	Ld1	0.377	0.789
		Ld2	0.632	
		Ld3	0.698	
		Ld4	0.520	
		Ld5	0.594	
	Counter Advertising	Ca1	0.542	0.820
		Ca2	0.605	
		Ca3	0.654	
		Ca4	0.641	
		Ca5	0.684	
Customer Behavior (CB)	Arouse interest	Ai1	0.697	0.780
		Ai2	0.707	
		Ai3	0.724	
		Ai4	0.715	
		Ai5	0.642	
	Get interested	Gi1	0.588	0.822
		Gi2	0.772	
		Gi3	0.650	
		Gi4	0.494	
		Gi5	0.579	
	Create desire	Cd1	0.585	0.887
		Cd2	0.747	
		Cd3	0.634	
		Cd4	0.594	
		Cd5	0.482	
	Action	A1	0.728	0.857
		A2	0.714	
		A3	0.657	
		A4	0.686	
		A5	0.697	

Sustainable development (SD)	The Economic dimension	Te1	0.301	0.792
		Te2	0.569	
		Te3	0.617	
		Te4	0.508	
		Te5	0.577	
	The Environmental dimension	Ed1	0.588	0.983
		Ed2	0.772	
		Ed3	0.650	
		Ed4	0.494	
		Ed5	0.579	
	The Social dimension	Sd1	0.521	0.883
		Sd2	0.632	
		Sd3	0.698	
		Sd4	0.678	
		Sd5	0.494	

Source: Program, SPSS V.23, Statistical Analysis Data 2024

5.3 Descriptive Statistics Analysis

5.3.1 Respondents profile

Table 5 shows the demographic details of participants in the sample, where there were 56.4% of males in the hotel. The majority of participants were between 25 and less than 40 years old. Moreover, the educational qualifications of the participants were based on a bachelor's degree, at a rate of 61.3% for the sample of hotels. Additionally, the nationality of participants is Egyptian with 70.5%. Finally, most participants visit a hotel with friends (64%), the average stay in a hotel is 1-3 days (75.4%), and participants get information about hotels through word of mouth (26.2%).

Table 5: Descriptive statistics of the profile (Demographic characteristics) n=326

Sample of customers Details(N=326) Items	Classification	Frequency(s)	Percentage (%)
Gender	Male	270	56.4
	Female	46	40.1
	Missing	10	3.5
Age	Less than 25	50	14.4
	25 less than 40	190	59.3
	40 less than 60	65	15.9
	60 and above	20	5.9
	missing	6	4.5
Highest Educational	High schools/institute education	15	6.5
	Bachelor degree	224	61.3
	Master degree	51	20.8

qualifications	PhD Degree	28	8.4
Nationality	Missing	8	3.0
	Egyptian	162	70.5
	English	30	40.4
	Canadian	28	3.9
	French	20	6
	German	19	4
	Spanish	21	5.4
	Italian	35	7.8
	American	11	2.4
You always visit hotel with	Alone	32	13.4
	Family	80	20.8
	Friends	195	64
	Missing	9	1.8
Your average stay in hotel	1:3 days	240	75.4
	4:7 days	35	9.6
	8:11days	25	6.9
	More than 11 days	17	4.1
	Missing	9	4
Sources of Information About hotels	Word of mouth	93	26.2
	Magazine articles	6	1.0
	Friends/relatives	53	20.3
	Social media	73	17.0
	hotel Website	37	16.2
	Personal experience	64	19.3

The following sections of the research provide descriptive statistics from the 326 respondents First, the reverse marketing dimension; second, the customer behavior dimension; and third, the sustainable development dimension.

Table 6: Summary statistics about all variables and constructs

Reverse Marketing (RM)	Percentage					Mean	S.D	N	Rank	Attitude
The price	SD	D	N	A	SA					
P1	0	1.5	22.2	48.0	28.3	3.95	.89	326	4	Agree
P2	0	0	7.8	44.2	48.8	4.08	.84	326	3	Agree
P3	0	3.0	13.9	42.6	40.5	4.22	.79	326	2	Agree
P4	0	2.1	22.7	38.6	36.6	4.40	.65	326	1	Agree
P5	1.1	1.5	25.2	35.2	37.0	4.01	.78	326	5	Agree

Grand mean						4.13				Agree
The service										
T1	0	3.0	20.2	40.6	36.2	3.91	.89	326	2	Agree
T2	0	4.0	25.5	44.1	26.4	3.90	.86	326	3	Agree
T3	.5	7.4	20.2	47.1	42.8	3.83	.87	326	5	Agree
T4	0	4.4	22.6	43.5	29.5	3.89	.85	326	4	Agree
T5	1.0	4.0	20.3	47.6	27.1	3.96	.82	326	1	Agree
Grand mean						3.89				Agree
Promotion										
Pr1	0	5.7	23.3	44.1	26.9	3.66	.95	326	5	Agree
Pr2	0	1.0	14.3	45.6	39.1	4.00	.83	326	2	Agree
Pr3	0	2.4	20.3	48.0	29.3	4.19	.75	326	1	Agree
Pr4	1.5	7.4	25.7	44.6	20.8	3.88	.89	326	3	Agree
Pr5	0	5.9	20.3	45.1	28.7	3.61	.78	326	4	Agree
Grand mean						3.86				Agree
Limited Product										
Lp1	0	2.0	20.2	48.0	29.8	3.50	.97	520	5	Agree
Lp2	0	1.0	22.7	44.1	32.2	3.76	.78	520	4	Agree
Lp3	0	3.5	30.5	44.6	21.4	3.79	.89	520	3	Agree
Lp4	1.0	5.4	25.2	40.6	27.8	3.99	.77	520	1	Agree
Lp5	0	3.3	26.4	41.1	29.2	3.94	.76	520	2	Agree
Grand mean						3.83				Agree
Limited Distribution										
Ld1	.5	4.9	25.2	45.6	23.8	3.92	.85	326	2	Agree
Ld2	0	.5	28.2	41.2	30.1	3.56	.88	326	4	Agree
Ld3	0	2.5	30.7	41.1	25.7	3.85	.84	326	3	Agree
Ld4	.5	9.4	38.6	34.2	17.3	3.99	.82	326	1	Agree
Ld5	0	3.5	25.2	43.3	28.0	3.79	.86	326	5	Agree
Grand mean						3.66				
Counter Advertising										
Ca1	.5	8.4	28.1	39.3	23.7	3.79	.85	326	4	Agree
Ca2	1.5	6.9	30.7	38.3	22.6	3.99	.83	326	1	Agree
Ca3	0	.5	28.2	39.6	31.7	3.85	.84	326	3	Agree
Ca4	0	2.5	32.7	38.1	26.7	3.56	.89	326	5	Agree
Ca5	0	3.5	26.2	42.2	28.1	3.93	.86	326	2	Agree
Grand mean						3.77				Agree
Customer Behavior (CB)										
Arouse interest										
Ai1	.5	8.4	28.2	38.3	24.6	3.50	.93	326	4	Agree
Ai2	1.5	5.9	28.7	39.7	42.3	3.48	.95	326	5	Agree

Ai3	.5	2.3	25.7	42.1	29.4	3.86	.85	326	1	Agree
Ai4	0	1.5	20.6	44.7	33.2	3.54	.88	326	3	Agree
Ai5	0	2.4	16.7	46.3	34.6	3.85	.98	326	2	Agree
Grand mean						3.75				Agree
Get interested										
Gi1	0	2.4	5.6	40.7	51.3	4.44	.81	326	1	Agree
G2	0	1.3	7.6	51.1	40	4.35	.92	326	2	Agree
Gi3	.2	0.8	10.8	49.3	38.8	4.24	.78	326	4	Agree
Gi4	0.3	3.1	9.3	42.3	45.0	4.30	.85	326	3	Agree
Gi5	0.1	5.1	13.1	40.3	41.4	4.20	.90	326	5	Agree
Grand mean						4.30				Agree
Create desire										
Cd1	0	1.3	7.6	53.1	38.0	4.30	.79	326	2	Agree
Cd2	0.2	0.5	12.8	48.2	38.3	4.25	.78	326	3	Agree
Cd3	0.3	4.1	9.3	43.3	43.0	4.34	.86	326	1	Agree
Cd4	0.1	5.1	13.1	35.3	46.4	4.24	.92	326	4	Agree
Cd5	0.3	4.2	10.0	44.0	41.5	4.23	.93	326	5	Agree
Grand mean						4.35				Agree
Action										
A1	0	2.1	11.7	35.6	50.6	4.30	.85	326	1	Agree
A2	1.7	4.2	13.8	44.5	35.8	4.16	.90	326	4	Agree
A3	0.3	3.8	11.9	45.6	38.4	4.18	.87	326	3	Agree
A4	0.2	4.5	14.8	54.6	25.9	4.00	.88	326	5	Agree
A5	2.1	6.2	10.1	52.3	29.3	4.20	.91	326	2	Agree
Grand mean						4.19				Agree
Sustainable development (SD)										
The Economic dimension										
Te1	0.2	3.7	14.9	50.6	30.6	4.13	.85	326	4	Agree
Te2	0.3	4.5	11.8	55.1	28.3	4.11	.87	326	5	Agree
Te3	2.1	4.2	10.1	50.6	33.0	4.17	.92	326	3	Agree
Te4	1.0	5.2	14.9	44.8	34.1	4.19	.91	326	2	Agree
Te5	.0	2.3	7.6	40.7	48.9	4.22	.87	326	1	Agree
Grand mean						4.09				Agree
The Environmental dimension										
Ed1	.0	2.1	11.7	37.6	48.6	4.33	.87	326	1	Agree
Ed2	1.5	5.4	12.8	44.8	35.5	4.13	.91	326	2	Agree
Ed3	3.1	14.3	14.9	49.6	18.1	3.62	.81	326	5	Agree
Ed4	1.4	12.1	15.6	48.6	22.3	3.72	.86	326	4	Agree
Ed5	1.5	11.1	22.0	40.7	24.7	3.74	.88	326	3	Agree
Grand mean						4.05				Agree
The Social dimension										
Sd1	.0	2.8	6.2	48.8	42.2	4.13	.84	326	5	Agree
Sd2	.0	1.0	7.6	49.6	41.8	4.41	.69	326	2	Agree
Sd3	.0	2.1	9.7	36.9	51.3	4.14	.88	326	3	Agree
Sd4	1.1	0.7	6.2	50.0	42.0	4.23	.85	326	4	Agree
Sd5	.0	1.1	3.1	48.0	47.8	4.43	.79	326	1	Agree

Grand mean		4.33		Agree

Table 7 illustrates the overall mean for the first, second, and third axes, which evaluate the degree of responses, relative importance, customer behavior, sustainable development, and reverse marketing, respectively.

Construct Reverse Marketing (RM)	N	Mean	Degree of response	Rank	Relative importance
Price	326	4.13	Agree	1	The third
The service	326	3.89	Agree	2	
Promotion	326	3.86	Agree	3	
Limited Product	326	3.83	Agree	4	
Limited Distribution	326	3.66	Agree	6	
Counter Advertising	326	3.77	Agree	5	
Valid N (listwise)	326	3.76	Agree		
Construct Customer Behavior (CB)	N	Mean	Degree of response	Rank	The first
Arouse interest	326	3.75	Agree	1	
Get interested	326	4.30	Agree	3	
Create desire	326	4.35	Agree	2	
Action	326	4.19	Agree	4	
Valid N (listwise)	326	4.33	Agree		
Construct Sustainable development (SD)	N	Mean	Degree of response	Rank	The second
The Economic dimension	326	4.09	Agree	2	
The Environmental dimension	326	4.05	Agree	3	
The Social dimension	326	4.33	Agree	1	
Valid N (listwise)	326	4.19	Agree		

- **Testing model of the research**

To test the suggested model, a regression analysis was performed using SPSS version 25. The first section was between the reverse marketing dimensions and the customer behavior dimensions. The second division was amongst the customer behavior variables and sustainable development variables as follows:

Table 8: R M and CB (Determination Coefficient)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.762a	.556	.542	.48191	2.151

Shown in Table 8 above, the R and R-square values, represents the correlation coefficient between the reverse marketing dimensions and customer behavior (R = 0.762). It indicates a strong positive correlation between them. The coefficient of determination, or R2 value, shows

how much of the overall variation in consumer behavior can be accounted for by counter-advertising, limited product, limited distribution, price, service, and promotion. In this case, 55.6% of customer behavior can be explained by the reverse marketing dimensions. This finding shows that reverse marketing dimensions have a positive impact on consumer behavior, and 44.4% of the data is residual or unexplained, supporting the idea that the degree of change in reverse marketing dimensions as independent variables influences or changes consumer behavior. The F-test, as indicated in Table 9, can be used to determine whether the (linear) relationship between reverse marketing variables and customer behavior is significant.

Table 9: R M and CB

Model	Sum of Squares	DF	Mean Square	F	Sig
Regression	60.374	7	10.239	43.289	.000a
Residual	46.165	196	.232		
Total	106.539	203			

The ANOVA shows if the regression model predicts customer behavior significantly; from Table 9, it is clear that F6, 196 = 43.289 and P < P<0.01, and indicating a significant link between consumer behavior and reverse marketing variables.

Table 10: Multi-regression analysis for all revers marketing Dimensions

Revers marketing dimensions	B	Std. Error	Beta	T	T-Sig.
Constant	-.782			-2.004	0.36
Price	.132	.043	.165	.3.223	.001
The service	.189	.056	.172	3.126	.003
Promotion	.182	.074	.187	2.481	.013
Limited Product	.326	.086	.294	3.409	.001
Limited Distribution	.371	.085	.291	4.301	.000
Counter Advertising	.173	.057	.187	2.691	.003

Table 10 makes it evident that all β coefficients are not equal to zero, which means we still can reject the null hypothesis where t for x1 = 3.223, x2 = 3.126, x3 = 2.481, x4 = 3.409, x5 = 4.301, and x6 = 2.691 P<0.01 for all x variables. It is evident also that α = -.782 and β1 = .132, β2 = .189, β3 = .182, β4 = .326, β5 = .371 and β6 = .173, so:

Customer behavior =-.782+.132 price+.189the service+.182promotion+.326 Limited Product+.371 Limited Distribution+.173Counter Advertising

As of Table 10, the regression model illuminates that there was a significant effect of all reverse marketing dimensions (price, service, promotion, limited product, limited distribution, and counter-advertising) by customer behavior. Also, the table illuminates why and how the reverse marketing dimensions had a positive effect on customer behavior in Egyptian hotels.

4.4.2 Customer behavior and sustainable development

The following part of this research shows the result of testing, that there is a significant influence of customer behavior on sustainable development.

Table 11: CB and SD (R2 value)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848a	.701	.700	42787

As shown in Table 11, the R and R-square values, represents the correlation coefficient among customer behavior and sustainable development (R = 0.848). It shows a strong positive correlation between customer behavior and sustainable development. The R^2 value refers to the coefficient of determination, which indicates how much of the total variation in sustainable development can be explained by variables of customer behavior. In this case, 70.1% of the sustainable development can be explained by customer behavior. This outcome reflects the good influence of customer behavior on sustainable development, and 29.9% is residual or unexplained, leading to the assumption that sustainable development is changed/affected by the level of changes in customer behavior. To examine the significance of the (linear) relationship between customer behavior and sustainable development, an F-test can be used as shown in Table 12.

Table 12: CB and SD

Model	Sum of Squares	DF	Mean Square	F	Sig
Regression	89.205	2	89.205	41.289	.000a
Residual	37.348	203	.182		
Total	126.553	205			

The ANOVA illustrations show whether the regression model significantly forecasts sustainable development; from Table 12, it is clear that F1, 203 = 41.289 and P<0.01, and this means that there is a significant relationship between customer behavior dimensions and sustainable development.

Table 13: Regression analysis for customer behavior

Customer behavior dimensions	B	Std. Error	Beta	T	T-Sig.
Constant	.381	.175		2.126	0.35
Customer behavior	.921	.041	.848	21.790	.000

From Table 13, it is evident that all β coefficients are not equal to zero, which means we still can reject the null hypothesis where t for x1 = 21.790 P < 0.01 for all x variables, so:

Sustainable development=.381+.921 customer behavior

From Table 13, the regression model explains that there were significant effects of customer behavior dimension by sustainable development dimensions. Also, the table describes why and how the customer

behavior dimensions had a positive effect on the sustainable development in Egyptian hotels. Then the hypothetical model testing can be summarized in the following Figure 2:

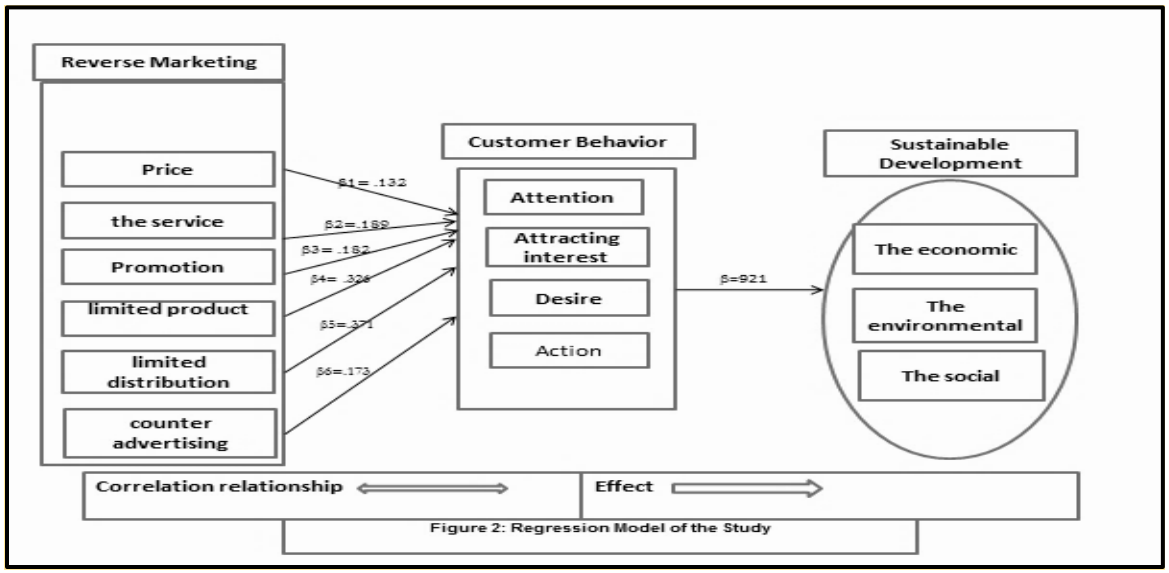

Figure 2: Regression Model of the Study

- **Test the research hypotheses (correlation analysis between variables)**

The data in Table (14) clearly shows the Pearson Correlation values between the reverse marketing factors and their dimensions (price, service, promotion, limited product, limited distribution, and counter-advertising) and sustainable development through the role of customer behavior. There is a major and positive correlation among the reverse marketing variables and the customer behavior variables with a correlation value of (0.778**) and a calculated significance level of (0.05), It demonstrates that these two variables have a positive link, which in turn indicates that the better the requirements for applying reverse marketing, the more it helps to improve customer behavior levels. Based on this result, the primary correlation hypothesis can be accepted, according to which there is a significant and statistically significant link between reverse marketing and customer behavior at a significance level of 0.05. As the correlation coefficient between reverse marketing and sustainable development is (0.876 **) at the level of significance (0.000). This means that there is a good level of correlation with significance, and this indicates that reverse marketing has an active and vital role in achieving sustainable development through customer behavior.

A. Analysis of the Initial Sub-hypothesis: The price dimension and the variables pertaining to client behavior have a strong and positive link, with a correlation coefficient of (0.356**) and a significance level of (0.01), this shows that the price and the consumer behavior variable have a positive link. This means that the better the pricing specifications, the higher the customer behavior levels. These findings are consistent with (Sadiq et al., 2014; Ghadeer and Muhammad 2019). The first sub-hypothesis of correlation, according to which there is a significant and statistically significant connection between price and consumer behavior at a significance level of 0.000, can be accepted in light of this finding. As the correlation coefficient between the price dimension and sustainable development reached (0.785**) at a significance level (0.000), this implies a good level of correlation, and it has a significance.

b. Verification of the second A sub-hypothesis the customer behavior variable and the service dimension have a strong and positive link, with a correlation coefficient of (0.535**) and a significance level of (0.01), this shows that the customer behavior variable and the service dimension have a positive link. This suggests that the better the service levels, the more that gives to improving the customer behavior levels and this result agree with (Walsh et al., 2009). This finding supports the second sub-hypothesis of correlation, which holds that there is a substantial and statistically significant relationship between consumer behavior and the service. At a significance level of 0.05, as the correlation coefficient amongst the service dimension and sustainable development reached 0.698** at a significance level of 0.000. This implies a good level of correlation, and it has significance.

C. Confirmation of the third sub-hypothesis: The customer behavior variable and the promotion dimension have a substantial and positive link, with a correlation coefficient of (0.358**) and a significance level of (0.01), It demonstrates that the promotion dimension and the customer behavior variable have a positive link, which in turn indicates that the better the promotion methods are, the more this pays to successful the customer behavior levels and this results approve with (Shiu et al.,2009). Based on this result, the third sub-hypothesis of correlation can be accepted, which states that there is a significant and statistically significant correlation between promotion and customer behavior at a significance level of 0.05, because, at a significance level of 0.000, the correlation coefficient between the promotion factor and sustainable development was 0.702**. This has relevance a good level of correlation, and it has significance.

D. The fourth sub-hypothesis's test: The variable of client behavior and the factor of limited product have a strong and positive link, as indicated by the correlation coefficient of (0.412) and a significance level of (0.01), which indicates that there is a positive correlation between the dimension of Limited Product and the variable of customer behavior, which in turn indicates that the better the means of Limited Product, the more this contributes to improving the levels of customer behavior and these results agree with (Hasnain 2020). Based on this result, the fourth sub-hypothesis of correlation can be acknowledged, which claims that (at a significance level of), there is a substantial and statistically significant association between Limited Product and consumer behavior 0.05), as the correlation coefficient between the dimension of Limited Product and sustainable development reached (0.688**) at a significance level (0.000). This implies a good level of correlation, and it has significance.

E. Evaluation of the fifth sub-hypothesis: The variable of consumer behavior and the dimension of limited distribution have a strong and positive correlation, as indicated by the correlation coefficient. of (0.435**) and a computed significance level of (0.01), which indicates that there is a positive correlation between the dimension of limited distribution and the variable of customer behavior, which in turn indicates that the better the means of limited distribution, the more this contributes to improving the levels of customer behavior and this results agree with (Suhila and Sabrina, 2018). Based on this result, the fourth sub-hypothesis of correlation can be accepted, which claims that (there is a significant and statistically significant correlation between limited distribution and customer behavior at a significance level of 0.05), as the correlation coefficient between the dimension of limited distribution and sustainable development approached (0.764**) at a significance level (0.000). This has significance and suggests a high degree of correlation.

F. Assessment of the sixth sub-hypothesis: The variable of customer behavior and the counter-advertising dimension have a significant and positive correlation, with a correlation coefficient of (0.524**) and a determined level of significance of (0.01), which suggests that the variable of customer behavior and the counter-advertising dimension are positively correlated, which consequently suggests that the more effective counter-advertising strategies are, the more they enhance consumer behavior, and these findings are consistent with (Sadiq et al., 2014). This finding supports the acceptance of the fourth sub-hypothesis of correlation, This claims that, at a significance level of, there is a substantial and statistically significant relationship between counter-advertising and consumer behavior 0.05, as the correlation coefficient stuck between the dimension of counter-advertising and sustainable development reached 0.772** at a significance level of 0.000. This suggests a good level of correlation, and it has significance.

Table 14: shows a correlation between the dimensions of (RM), (CB) and SD).

Dimensions of reverse marketing	Correlation value and level of significance	Customer behavior	Sustainable development
Price	Correlation	0.356**	0.785**
	Sig	0.000	0.000
The service	Correlation	0.535**	0.698**
	Sig	0.000	0.000
Promotion	Correlation	0.358**	0.702**
	Sig	0.000	0.000
Limited Product	Correlation	0.412**	0.688**
	Sig	0.000	0.000
Limited Distribution	Correlation	0.435**	0.764**
	Sig	0.000	0.000
Counter Advertising	Correlation	0.524**	0.772**
	Sig	0.000	0.000
Reverse marketing	Correlation	0.778**	0.876**
	Sig	0.00	0.000
**Correlation is significant at the 0.01 level (2-tailed)			

Source: Program, SPSS V.25

- **Effect analysis between variables**

This measure is concerned with testing the influence hypotheses that were identified in the study to decide the possibility of judging them to accept or reject the influence analysis test between the independent variable dimensions of reverse marketing and represented in (price, service, promotion, limited product, limited distribution, counter-advertising) and the variable (sustainable development), as the following hypothesis will be tested. (There is a significant influence connection between the dimensions of reverse marketing in sustainable development), and (a) symbolizes the consistent quantity, and this connection denotes sustainable development. (Y) Is determined by the real value of the reverse marketing dimensions represented in (price, service, and promotion). Regarding these values' estimates and statistical indicators, they were

computed at the level of the 326 hotel patrons that made up the study sample, the statistical indications between the aspects of reverse marketing in sustainable development through consumer behavior are shown in Table 15.

A. The second significant hypothesis test for the study: Which states (there is a significant influence between reverse marketing and sustainable development) as the worth of (F) computed between reverse marketing and sustainable development reached (81.558), which exceeds the tabular value of (F) of (4.02) at the importance level (0.000) and is smaller than the level of significance at (0.05). This means that there is a significant effect between reverse marketing in sustainable development, when the impact value was attained 0.767 Indicates that increasing reverse marketing by one unit will lead to an increase in sustainable development by 76%. Its coefficient of determination (R^2) reached 0.614, meaning that reverse marketing can explain what percentage (61%) of the sustainable development variable, and these results agree with (Baker, 2013), as is evident in Table 15.

B. The first sub-hypothesis's check: (the price dimension has a major impact on sustainable development?) as a value of (F) computed between the price dimension and sustainable development is (50.254), which is more than the tabular value of (F) of (4.02) at its significance level (0.000), which is less than the significance level at (0.05), This means that there is a significant impact between the price dimension in sustainable development, when the effect value was attained (0.601), and this indicates that an increase in the price dimension by one unit will lead to an increase in sustainable development by (60%), as the determination coefficient reached (R^2) for it (0.482); that is, the price dimension can explain what percentage (48%) is of the sustainable development variable, and this results approve with (Weilier et al., 2019). as is clear in Table (15).

C. The second sub-hypothesis's confirmation: (In terms of sustainable development, the service dimension has a big impact) as the value of (F) computed between the dimension of service and sustainable development is (51.534), which surpasses the tabular value of (F) of (4.02) at the crucial level (0.000), which is smaller than the significance level at (0.05), It indicates that the service component has a major impact on sustainable development, as the effect value is (0.689). this indicates that, there is a significant effect between the service and sustainable development, as the impact value reached (0.689), and This suggests that if the price dimension is raised by one unit, sustainable development will rise by (68%), as the determination coefficient reached (R^2) for it (0.477) That is, the price dimension can explain what percentage (47%) of the sustainable development variable is, and these results agree with (Walsh et al., 2009), as is shown in Table (15).

D. The third sub-hypothesis's verification: (there is a significant effect between the promotion dimension in sustainable development), as the value of (F) computed between the dimension promotion and sustainable development (53.245) is more than the tabular value of (F) of (4.02) at an enormous level (0.000). It is less than the 0.05 significance level which means that there is a significant effect between the dimensions promoting and sustainable development, as the impact Value reached (0.784). This This indicates that there is a major impact between the promotion dimension in sustainable development, as the effect's value approached (0.701), and this shows that an increase in the dimension promotion by one unit will lead to an increase in sustainable development by (70%), as the determination coefficient reached (R^2) has (0.492), meaning that the dimension promotion can explain what percentage (49%) of the variable is

sustainable development, and these results agree with (Shiu et al., 2009), as is evident in Table (15).

E. Test of the Fourth Sub-hypothesis: Which states (there is a significant effect between the limited product dimension in sustainable development), as the value of (F) computed between the limited product dimension and sustainable development (80.326) is bigger than the tabular value of (F) of (4.02) at the level of significance (0.000). It is smaller than the significance level at (0.05), which means that there is a significant effect between the dimension promoting sustainable development, as the impact value reached (0.684). This means that there is a significant effect between the dimension promotion in sustainable development, as the value of the effect reached (0.684), and this indicates that an increase in the dimension promotion by one unit will lead to an increase in sustainable development by (68%), as the determination coefficient reached (R^2) has (0.624), meaning that the dimension promotion can explain what percentage (62%) of the variable is sustainable development, and these results agree with (Hasnain 2020), as is evident in Table (15).

F. The fourth sub-hypothesis's proof: Which states (there is a significant impact concerning the limited distribution dimension in sustainable development), as the value of (F) computed between the limited distribution dimension and sustainable development (60.876) is grander than the tabular value of (F) of (4.02) at its significance level (0.000). It is smaller than the significance level at (0.05), which means that there is a significant effect between the dimensions promoting sustainable development, as the impact value reached (0.695). Given that the effect's value attained, this indicates that there is a substantial relationship between sustainable development and the promotion dimension (0.695), and this indicates that an rise in the dimension promotion by one unit will lead to an increase in sustainable development by (69%), as the determination coefficient reached (R^2) has (0.545), meaning that the dimension promotion can explain what percentage (54%) of the variable is sustainable development, and these results agree with (Suhila and Sabrina, 2018), as is evident in Table (15).

G. Test of the fourth sub-hypothesis: Which states (there is a significant effect between the Counter Advertising dimension in sustainable development), as the value of (F) computed between the dimension Counter Advertising and sustainable development (65.654) is better than the tabular value of (F) of (4.02) at the level of significance (0.000). It is smaller than the significance level at (0.05), which means that there is a significant effect between the dimensions promoting sustainable development, as the impact value reached (0.677). This means that there is a significant effect between the dimension promotion in sustainable development, as the value of the effect reached (0.677), and this indicates that an increase in the dimension promotion by one unit will lead to an increase in sustainable development by (67%), as the determination coefficient reached (R^2) has (0.563), meaning that the dimension counter advertising can explain what percentage (56%) of the variable is sustainable development, and these results agree with (Sadiq et al., 2014), as is evident in Table (15).

Table 15: shows the effect of reverse marketing on Sustainable development

	Dimensions of reverse marketing	Fixed Limit A	Marginal propensity	R2	F Test	Sig	Significance
Sustainable	Reverse marketing	0.829	0.767	0.614	81.558	0.000	Signified

Development	Price	1.123	0.601	0.482	50.254	0.000	Signified
	The service	1.477	0.689	0.477	51.534	0.000	Signified
	Promotion	1.132	0.701	0.492	53.245	0.000	Signified
	Limited Product	0.813	0.684	0.624	80.326	0.000	Signified
	Limited Distribution	0.798	0.695	0.545	60.876	0.000	Signified
	Counter Advertising	1.102	0.677	0.563	65.654	0.000	Signified

Table 15: shows the influence of reverse marketing on customer behavior

	Dimensions of reverse marketing	B0	B1	R2	F- test	F	Sig.
Customer behavior	Reverse marketing	0.546	0.672	0.448	215.643	3.975	0.000
	Price	1.746	0.525	0.264	10.122	1.650	0.000
	The service	2.383	0.367	0.135	6.637		0.000
	Promotion	2.177	0.534	0.285	10.627		0.000
	Limited Product	2.916	0.357	0.127	6.422		0.000
	Limited Distribution	1.176	0.545	0.275	9.623		0.000
	Counter Advertising	2.536	0.534	0.264	10.221		0.000

Source: Program. SPSS V.23

The statistical software tools used to test the hypotheses were employed in the research (PLS-SEM) using Warp-PLS software version 4.0 to evaluate the research hypotheses and examine the measurement and structural model of the study, while partial least squares structural equation modeling, or PLS-SEM, was established in this paper (Memon et al., 2021). Before conducting a two-phase analysis of possible correlations, SmartPLS-4 was used to assess the measurement and structural models of the groups (Cheah et al., 2023; Guenther et al., 2023). Moreover, PLS-SEM facilitates the estimation of the measurement model and multi-group analysis (MGA) (Henseler et al., 2016). Lastly, this paper employed R^2, Q^2, and f^2 to assess the goodness-of-fit model, along with the PLS-bootstrapping approach using confidence intervals (CIs) to test indirect paths, while t-values and beta values gauge direct paths.

First: Outer model

Table 16 proves that all indicator loadings for the hotel sample were greater than 0.708, suggesting strong indicator reliability (Cheah et al., 2023). Minimum composite reliability values for the sample were more than 0.70, and the average variance extracted (AVE) was better than 50% of the total variance (Guenther et al., 2023). First: Description and coding of search variables As a result, the model exhibits good construct reliability and convergent validity for the sample. Utilizing the heterotrait-monotrait (HTMT) ratio, discriminant validity was examined

(Selem et al., 2023). Table 3 indicates satisfactory discriminant validity as it does not display any construct correlations for any group-generated value that is more than 0.85, the conservative criterion (Schuberth et al., 2023).

Table 16: The Measurement Model's Outcomes

Variables	constructs	Code/ Indicators	Item loading	CR	CA	AVE	VIF
Reverse Marketing	Price	P1	0.784	0.927	0.910	0.795	1.128
		P2	0.817				
		P3	0.895				
		P4	0.911				
		P5	0.917				
	The service	T1	0.843	0.967	0.841	0.758	1.213
		T2	0.845				
		T3	0.844				
		T4	0.846				
		T5	0.842				
	Promotion	Pr1	0.847	0.933	0.779	0.748	1.224
		Pr2	0.864				
		Pr3	0.844				
		Pr4	0.892				
		Pr5	0.868				
	Limited Product	Lp1	0.752	0.922	0.811	0.764	1.328
		Lp2	0.845				
		Lp3	0.825				
		Lp4	0.843				
		Lp5	0.875				
	Limited Distribution	Ld1	0.805	0.904	0.789	0.643	1.332
		Ld2	0.776				
		Ld3	0.769				
		Ld4	0.783				
		Ld5	0.789				
	Counter Advertising	Ca1	0.822	0.911	0.820	0.778	1.412
		Ca2	0.794				
		Ca3	0.780				
		Ca4	0.778				
		Ca5	0.765				
Customer Behavior	Arouse interest	Ai1	0.785	0.856	0.780	0.590	1.124
		Ai2	0.788				
		Ai3	0.765				
		Ai4	0.708				
		Ai5	0.775				
	Get interested	Gi1	0.823	0.934	0.822	0.698	1.115
		Gi2	0.838				
		Gi3	0.864				
		Gi4	0.844				
		Gi5	0.824				
	Create desire	Cd1	0.867	0.958	0.887	0.778	1.243
		Cd2	0.866				
		Cd3	0.875				
		Cd4	0.865				
		Cd5	0.883				

	Action	A1 A2 A3 A4 A5	0.833 0.876 0.877 0.876 0.877	0.926	0.857	0.620	1.435
Sustainable development	The Economic dimension	Te1 Te2 Te3 Te4 Te5	0.790 0.778 0.833 0.824 0.785	0.916	0.792	0.630	1.113
	The Environmental dimension	Ed1 Ed2 Ed3 Ed4 Ed5	0.813 0.845 0.864 0.842 0.841	0.965	0.983	0.723	1.226
	The Social dimension	Sd1 Sd2 Sd3 Sd4 Sd5	0.838 0.862 0.844 0.881 0.866	0.921	0.883	0.703	1.137

Note: RM (Reverse Marketing), CB (Customer Behavior), and SD (Customer Behavior) variance inflation factors (VIFs), average variance extracted (AVE), Cronbach's alpha (CA), and composite reliability (CR) ** P value for loading items (<.001).

Table 17: The Discriminant Validity

Constructs	Fornell-Larcker Crite			Heterotrait-Monotrait Ratio (HTMT)		
	1	2	3	4	5	6
Hotel customer sample						
Price						
The service	0.490					
Promotion	0.385	0.430				
Limited Product	0.411	0.532	0.467			
Limited Distribution	0.462	0.476	0.437	0.381		
Counter Advertising	0.356	0.512	0.424	0.530	0.396	

Second: Inner model

According to Cheah et al., (2023) Table 17 demonstrated that the sample f1 values had medium and large effect sizes and their Q1 values had non-zero scores, suggesting that endogenous components had a respectable degree of predictive accuracy. Additionally, R^2 values showed that the structural model had a modest level of predictive power because these values were greater than 10% (Guenther et al., 2023). In other words, this value indicates that reverse marketing dimensions explained 46.6% and 45.1% of the variance in customer behavior, while customer behavior explained 52.8% and 58.4% of the variance in sustainable development. The permutation test was run to see if the two samples differed in any method (Cheah et al., 2023). Using the same markers and processing methods, data were evaluated consistently between groups to test for configuration invariance (Henseler et al., 2016). Since c values varied substantially from 1, these conceptions showed compositional invariance. Moreover, there was

only partial measurement invariance, meaning that certain constructs had unequal means and variances (Guenther et al., 2023).

Besides, price positively affected customer behavior (hotel sample: $\beta = .489$, $t = 23.718$, $p < .001$; these outcomes agreed with Sadiq et al., (2014); Weiler et al., (2019) and Ghadeer and Muhammad (2019); thereby, H2.1 was accepted. Further, the service positively affected customer behavior (hotel sample: $\beta = .433$, $t = 21.677$, $p < .001$; this result agreed with the results of (Walsh et al. (2009), thereby H2.2 was accepted; and promotion positively affected customer behavior (hotel sample: $\beta = .386$, $t = 20.577$, $p < .001$); these findings agreed with the results of Shiu et al. (2009). Thereby, H2.3 was accepted. Further, limited products positively affected customer behavior (hotel sample: $\beta = .453$, $t = 20.787$, $p < .001$). These findings agreed with the results of Hasnain (2020); thereby, H2.4 was accepted, and limited distribution positively affected customer behavior (hotel sample: $\beta = .375$, $t = 20.565$, $p < .001$). These findings agreed with the results of (Suhila and Sabrina (2018); thereby, H2.5 was accepted. Lastly, counter-advertising positively affected customer behavior (hotel sample: $\beta = .413$, $t = 19.644$, $p < .001$). This outcome was consistent with the research of (Sadiq et al. (2014). Thus, the capacity to respond is directly related to competence, which enhances employee performance toward sustainability; therefore, H2.6 was accepted.

However, Table 17 results demonstrated that customer behavior positively affected sustainable development (hotel sample: $\beta = .392$, $t = 11.374$, $p < .001$). The current investigation concurred with the results of achieving enhanced performance and a competitive edge by utilizing organizational excellence as a strategic tool. The nexus between sustainable development and customer behavior was investigated (Al-Dhaafri & Alosani, 2021). They saw the nexus as productive, where hotel customers may attain sustainable development and a greater appreciation for their hotels through reverse marketing. Thereby, H5 was accepted.

To check for indirect effects, the mediation role of customer behavior was examined between sustainable development and dimensions of reverse marketing. As such, confidence interval (CI) values were extracted using the PLS-bootstrapping approach (i.e., zero values did not fall between upper and lower bounds). Hence, Table 4 results showed that price positively affected sustainable development through customer behavior (hotel sample: $\beta = 0.156$, $t = 4.895$, $p < .01$, CI = .093; 0.215thereby H6a was accepted. Besides, Table 17 results showed that the service positively affected sustainable development through customer behavior (hotel sample: $\beta = .192$, $t = 6.355$, $p < .00$, CI = .131; .242), thereby H6b was accepted. Further, Table 17 results showed that promotion positively affected sustainable development through customer behavior (hotel sample: $\beta = .170$, $t = 5.549$, $p < .01$, CI = .109; .230), thereby H6c was accepted. Lastly, Table 17 results showed that limited product positively affected sustainable development through customer behavior (hotel sample: $\beta = .188$, $t = 5.626$, $p < .01$, CI = .118; .239), thereby H6d was accepted, and limited distribution positively affected sustainable development through customer behavior (hotel sample: $\beta = .177$, $t = 5.726$, $p < .01$, CI = .119; .249), thereby H6d was accepted. Lastly, Counter advertising positively affected sustainable development through customer behavior (hotel sample: $\beta = .174$, $t = 5.766$, $p < .01$, CI = .129; .259), thereby H6d was accepted.

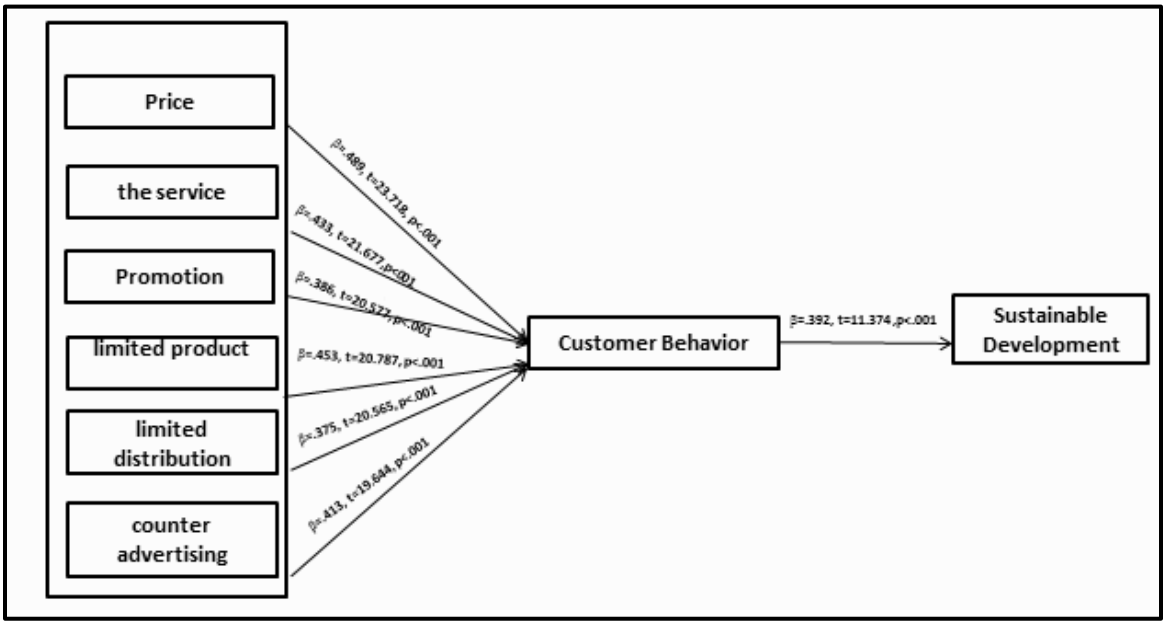

Figure 3: Direct paths' findings

Third: Multi-group analysis

The significance of the relevant path coefficients differs slightly, as Table 17 illustrates; thus, PLS-MGA was utilized to determine if they were significant for the sample. Hence, the nexus between price and customer behavior was significantly different, favoring the hotel sample (Diff = .145, t = 3.756, p < .05). Conversely, the association between the service and customer behavior was significant in favor of the hotel sample (Diff = .102, t = 2.879, p < .05). Besides, promotion was associated with customer behavior in favor of the hotel sample (Diff = .048, t = 2.101, p < .05). and limited product was associated with customer behavior in favor of the hotel sample (Diff = .083, t = 5.340, p < .05). where limited distribution was associated with customer behavior in favor of the hotel sample (Diff = .038, t = 2.201, p < .05). Moreover, counter advertising was associated with customer behavior in favor of the hotel sample (Diff = .073, t = 4.340, p < .05). Additionally, customer behavior was associated with sustainable development in favor of the hotel sample (Diff = .094, t = 3.328, p < .05).

Table 17: Paths testing and PLS multi-group analysis (MGA)

Hypotheses	Paths	Original Sample	B	t-value	P –value	F1	Supported/Hypothesis
	Price⟶ customer behavior	hotel sample	0.489	23.718	0.001	0.356	Accepted and Confirmed
	The service⟶ Customer behavior	hotel sample	0.433	21.677	0.001	0.431	Accepted and Confirmed
	Promotion ⟶ Customer behavior	hotel sample	0.386	20.577	0.001	0.143	Accepted and Confirmed
	Limited Product ⟶ Customer behavior	hotel sample	0.453	20.787	0.001	0.439	Accepted and Confirmed
	Limited Distribution⟶ Customer behavior	hotel sample	0.375	20.565	0.001	0.317	Accepted and Confirmed
	Counter Advertising⟶	hotel sample	0.413	19.644	0.001	0.346	Accepted and

	Customer behavior						Confirmed
	Customer behavior → Sustainable development	hotel sample	0.392	11.374	0.001	0.366	Accepted and Confirmed

	Paths	Sample	B	t-value	P -value	CI	Accepted and Confirmed
	Prrice → customer behavior → Sustainable development	hotel sample	0.156	4.895	0.01	0.093; 0.215	Accepted and Confirmed
	The service → customer behavior → Sustainable development	hotel sample	0.192	6.355	0.00	0.131; 0.242	Accepted and Confirmed
	Promotion → Customer behavior → Sustainable development	hotel sample	0.170	5.549	0.01	0.109; 0.230	Accepted and Confirmed
	Limited Product → Customer behavior → Sustainable development	hotel sample	0.188	5.626	0.01	0.118; 0.239	Accepted and Confirmed
	Limited Distribution → Customer behavior → Sustainable development	hotel sample	0.177	5.726	0.01	0.119; 0.249	Accepted and Confirmed
	Counter Advertising → Customer behavior → Sustainable development	hotel sample	0.174	5.766	0.01	0.129; 0.259	Accepted and Confirmed

Overall model assessment	Customer behavior	Sustainable development
R1 for hotel sample	.452	.528
Q1 for hotel sample	.342	.484

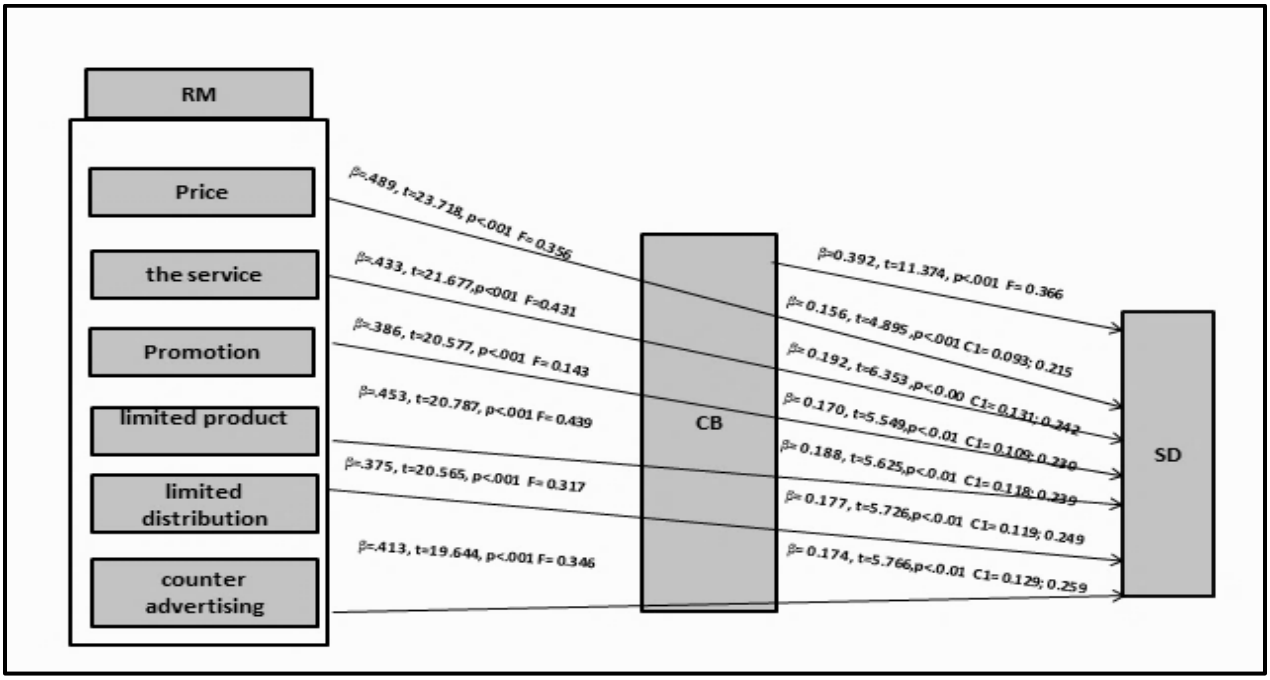

Figure 4: Multi-group analysis

6. Conclusion and discussion

Reverse marketing is one of the most important contemporary concepts in the field of marketing as an innovative marketing tool, but in the opposite direction, it aims to reduce the demand for harmful products and products that suffer from relative scarcity. Additionally, the intersection of reverse marketing, customer behavior, and sustainable development is crucial for strategic success and long-term viability. This study concentrated on investigating the linkage between reverse marketing dimensions and sustainable development through customer behavior in the context of five-star hotels whereas this research has used a descriptive, quantitative methodology as a method to test the hypothesis of the study. Using the survey list, 326 participated in the survey method utilized in this study, all of them a sample of customers for Cairo's five-star hotels. Data was analyzed by IBM SPSS Version 25.0 software, which was tested for validity and reliability. Then, Pearson correlation was used to show the relationship between variables in the study, Smart PLS v.4.4. Results confirmed that six key drivers of reverse marketing positively affected sustainable development through customer behavior. Multi-group analysis findings proved that customer behavior was positively affected by price, service, promotion, limited product, limited distribution, and counter-advertising in hotels. Further, customer behavior positively affects sustainable performance.

Regarding our results, they are in harmony with several well-established theories and empirical studies within the reverse marketing literature in hotel settings. Initially, affirmative associations were identified between reverse marketing dimensions (i.e., price, service, promotion, limited product, limited distribution, and counter-advertising) and customer behavior. These findings align with the perspectives of Chaokromthong and Sintao (2021), Walter (2021), and Ishaq et al. (2023). These studies highlight the pivotal role of reverse marketing in effectively responding to environmental changes and achieving sustainable results.

The outcomes underscore the significance of fostering reverse marketing as a crucial factor for customer behavior, consequently paving the way for sustainable development. It is clear from the results that adopting the concept of reverse marketing in the hotel sector, intensifying marketing efforts, and employing its dimensions can achieve sustainable development for this industry. It was found that there is an active and essential role for reverse marketing in achieving sustainable development through customer behavior, and this indicates that the research variables have a high link with one another. Furthermore, the findings demonstrated that reverse marketing in its various dimensions is one of the methods that lead to achieving sustainable development. The findings show that, among the marketing variable's other dimensions, the pricing dimension is the most crucial. The findings demonstrated that the environmental dimension is the most crucial of the sustainable development variable's other dimensions. They also demonstrated that reverse marketing significantly influences sustainable development through consumer behavior, suggesting that the hotel industry should focus on reverse marketing by increasing consumer awareness if it wishes to achieve sustainable development.

Based on the results of the research and discussion described above, it can be concluded that reverse marketing dimensions have a positive and significant effect on customer behavior and sustainable development in the hotel sector.

Limitations, Recommendations, and Future Research

Despite the above keen insights, this study has certain shortcomings; this study was conducted on customers of five-star hotels in Cairo, Egypt. The research was completed in 6 months; data was collected from March 2024 to August 2024. This paper was confined to a specific

geographical scope (Egypt) and centered on five-star hotels. Consequently, the generalizability of findings to diverse regions and industries may be restricted. Between its limitations is the fact that this study was limited to five-star hotels in Cairo. As a result, the findings would vary if the research had been done in a different type of hotel, in a different industry related to hospitality, or in another city. Furthermore, to completely comprehend the study's issue, the qualitative approach will be useful in subsequent research. This recommends adopting reverse marketing in organizations and agencies, conducting more research studies, and increasing importance in reverse marketing because of its positive reflection on achieving sustainable development and preserving scarce resources in public and private organizations. Through the results that have been reached, some recommendations can be drawn up as follows: The study suggests that organizations and academic body's alike search for more research and field research on reverse marketing. Work on developing strategies and methods of reverse marketing and adopting technological development in the renewal of means and influence and applying the reverse marketing strategy to other organizations and products because of their positive role in these organizations and their products. The institution has to be mindful of how customers in reverse marketing dimensions are offering a variety of training courses that support the growth and improvement of customer's professional abilities.

Future research can examine how purchase decisions and brand perception are impacted by reverse marketing. In addition to researching The Role of Reverse Marketing Strategies in the Factors Affecting Consumer Behavior—A Field Study in the Restaurants, the organization must focus on promoting reverse marketing concepts among staff members in different departments and customers, it is possible to build a proposed vision about the requirements of reverse marketing in developing the Egyptian hospitality industry. Future research might examine how reverse marketing affects brand equity and consumer loyalty over the long run in the hotel sector. Additional insights may be obtained by examining how cutting-edge technology like artificial intelligence and virtual reality influence consumer behavior and marketing tactics. In summary, comprehending reverse marketing and customer behavior in the hotel industry necessitates a nuanced exploration of how hotels attract and retain guests through innovative marketing strategies and by aligning services with evolving customer preferences and behaviors.

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