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# REVERSE MARKETING AND ITS EFFECT ON SUSTAINABLE DEVELOPMENT

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# Abstract

This research aims to identify reverse marketing as a major variable and its impact on achieving sustainable development. The research was applied to a sample of employees of the Ministry of Water Resources, As the topic of reverse marketing has been of great importance to its novelty and its repercussions on the reality of these department at the present and future time.

The research is based on the dimensions of the independent variable of reverse marketing (price, service, promotion) and the dimensions of the dependent variable, sustainable development (economic, environmental, and social).

The research consisted of four sections, the first of which dealt with the research methodology, The second talked about the theoretical framework, As for the third, it contained the practical aspect, And the fourth touched on the most important conclusions and recommendations that were reached. A questionnaire was designed to collect data and distributed to a sample of (55) employees, where the answers were analyzed under the statistical program spss. The research has reached the most important conclusions that came out, and the most important of them are: There is an active and essential role of reverse marketing in achieving sustainable development, in addition reverse marketing seeks to regulate the consumption of harmful products, direct the consumer, raise awareness and limit the use of such products. On the results of the conclusions, a number of recommendations were made, the most important of which were: It recommends adopting reverse marketing in organizations and agencies, conducting more research studies and increasing interest in reverse

marketing because of its positive reflection in achieving sustainable development and preserving scarce resources in public and private organizations.

#### Rte

Keywords: reverse marketing - sustainable development.

#### Introduction:

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 such as (electricity, water, oil products, etc.), Where reverse marketing seeks to regulate its consumption to the extent possible and directing consumers towards responsible consumption and encouraging sustainable development patterns that have become the language of the times and It is essential to ensure the survival of the organizations and to enhance the competitive advantage.

The current research consists of four sections. The first section included research methodology and previous studies, Either the second section dealt with the theoretical aspect, As for the third section, it includes the practical aspect of the research, Finally the fourth sections, the conclusions and recommendations reached by the research.

### **The First Section**

#### **Research Methodology**

This section includes identifying the research problem, the most important objectives, the hypothetical scheme, and the most important areas of study for variables.

**First: The research problem:-** The problem can be framed from an intellectual and practical point of view.

A- Iraq is currently witnessing an unprecedented water crisis fueled by several factors such as high temperatures with a continuous decrease in the rate of rainfall, In addition the countries riparian with Iraq on the Tigris and Euphrates rivers (Turkey, Syria, Iran) are promoting irrigation projects and building dams in addition to the excessive consumption of water by members of society due to all cultural factors that have caused economic and environmental damage to the country, Either on the practical level, the problem materialized through the exploratory study conducted by the researcher to identify the extent to which the Ministry of Water Resources implemented reverse marketing methods, Where the results of the interviews with a number of department chairmen in the ministry showed a lack of knowledge and weakness in adopting reverse marketing methods and lack of awareness of its importance as an important way to rationalize water consumption with the possibility of achieving sustainable development requirements through it and as an attempt to address the problem of study.

\*The problem is embodied by a number of the following questions:

- 1. What is the level of interest in adopting reverse marketing in the departments of the Ministry of Water Resources?
- 2. What is the level of interest in adopting sustainable development in the departments of the Ministry of Water Resources?
- 3. Is there a relationship between reverse marketing and sustainable development?

4. Does reverse marketing (price, service, promotion) affect sustainable development (economic, environmental, and social aspect).

# Second: Research objectives

- 1. 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 to rationalize consumption and reduce demand, Highlighting the concept of sustainable development towards the orientation of global organizations towards achieving their goals.
- 2. Knowing the level of application of reverse marketing methods and the level of the ministry's interest in achieving sustainable development.
- 3. Determine the peculiarity of the statistical relationship between reverse marketing methods and sustainable development.
- 4. Determine the level of impact of reverse marketing methods on sustainable development in the ministry.

# Third: The importance of research

- 1. The importance of the study is highlighted by the importance of reverse marketing, being the most effective strategy for rationalizing water consumption, as the application of its methods contributes to solving the water demand crisis, even partially because the random application of these strategies may lead to negative results.
- 2. The importance of the study is evidenced by the necessity of rational consumption of water, as excessive consumption of it causes social, environmental and economic damages, in addition to the necessity to keep pace with global developments by moving

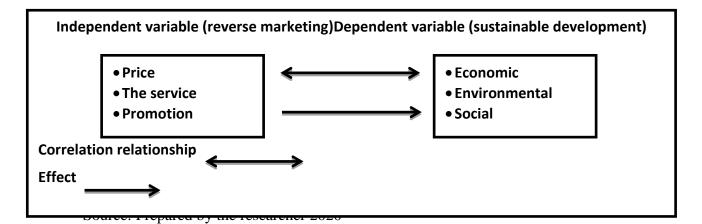
towards achieving sustainable development requirements and making the country a primary partner in development.

3. The current study is expected to present important findings and recommendations to the Ministry of Water Resources to advance the governmental reality regarding the water crisis.

# Fourth: The hypothetical chart of the research

The hypothetical chart was formulated based on the study problem and its objectives, where the chart was from the independent variable opposite marketing with its dimensions (price, service, promotion), The dependent variable is sustainable development in its dimensions (economic, environmental, and social).

# Figure (1) the hypothesis study outline



# Fifth: the study hypotheses

- 1. There is a significant correlation between reverse marketing and its dimensions on sustainable development in its dimensions.
- 2. There is a significant impact of significant significance between reverse marketing and its dimensions on sustainable development in its dimensions.

# Sixth: The fields and the most important previous studies

# Table (1) Areas of Reverse Marketing and Sustainable Development Research

Researcher	Study Title	Target	Results
1-Kotler and Levy	Reverse Marketing,	Definition and	Classification and
, (1971)	Yes to Reverse	characterization	employment of
	Marketing	of reverse	administrative work
		marketing	on the basis of
			unconfirmed evidence

		<b>T</b> • • <b>(T</b>	
2-Samydai and yousif , (2017)	The role of reverse marketing in reducing electricity demand	Examining the role of reverse marketing to reduce electricity demand in the Jordanian capital	There is a positive relationship between the study variables that are included in the model, as these results have a significant impact on business organizations if they are included within the business.
3-Hussein, (2017)	Attitudes of officials in the industrial company towards practicing methods of reverse marketing	Highlight some practices that reflect reverse marketing	The lack of inclination and acceptance of the officials in the researched company towards practicing reverse marketing methods.
4- Abboud and Ayez (2019)	The effect of reverse marketing in reducing the consumption of medicinal products.	Knowing the level of effect of reverse marketing in reducing or reducing the consumption of medicinal products in health organizations in Babil Governorate.	The reverse marketing is done against the trend of traditional marketing to achieve benefits and goals that serve the individual, the organization and society.
5- Ghadeer and Mohammed (2019)	The role of reverse marketing in the consumption of tobacco products	A study of the reality of (Hookah tobacco) consumption in Lattakia governorate by linking (Hookah tobacco) to the reverse price	The presence of a significant effect of the reverse price on (Hookah tobacco) consumption for the sample, with a weak degree
Researcher	Study Title	Target	Results
1- Abdul-Rahman Muhammad Al- Hassan (2011)	Sustainable development and the requirements for its achievement	Attention to environmental issues and sustainable development by holding conferences and seminars, emphasizing environmental awareness and interest in	There are many foundations and indicators For sustainable development and its achievement requires the will and willingness of societies and individuals, and to achieve sustainable development, all groups and groups

		sustainable development	must participate in it in a coordinated manner.
2- Elham Halaby (2014)	The role of the comprehensive quality strategy in achieving sustainable development in economic institutions.	Highlighting how to achieve sustainable development for economic institutions and highlighting the issue of total quality.	The role of the comprehensive quality strategy in achieving the (economic, social and environmental) dimension of sustainable development.
3- Mutasim Muhammad Ismail (2015)	The role of investments in achieving sustainable development	Determine the role of investment in achieving sustainable development (economic, social and environmental)	The existence of a great relationship between investment and achieving sustainable development goals and the government's role in directing these
			investments to sectors that contribute to achieving those Target.

Source: Prepared by the researcher 2020, depending on the literature mentioned in the table.

# The Second Section Theoretical framework - reverse marketing and sustainable development.

#### **Reverse marketing**

#### First: the concept of reverse marketing

The term reverse marketing was coined by (Kotler & Levy) in 1971 and since then it has been used as a marketing strategy towards a shift in social and cultural values and consumption patterns towards limited and rational consumption (Cintron etal, 2017: 79).

Reverse marketing is an essential part of social marketing, as Kotler explained that the marketing function at the present time 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: 393).

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, depending on the elements of the marketing mix, such as raising the price or increasing the costs of promotion and distribution. (Walle, 2010: 63).

Organizations adopt a reverse marketing strategy for several reasons, including:-

- 1. Inability or unwillingness to supply large quantities of the product.
- 2. Guidance on the consumption of some products that are considered to be dangerous to public or personal health.
- 3. The organization's desire to have a role in social responsibility.
- 4. Enhancing the value and quality of the product in the eyes of the public (Seeletse, 2016: 230).

(Kotler and Levy) defined the reverse marketing:- It is that aspect of marketing that deals with discouraging consumers in general towards consuming certain products for a temporary or permanent period (Kotler and Levy, 1971: 75).

Either Sadiq and others defined it: - It is the adoption of several marketing strategies through a set of tools in order to convince consumers of the need to reduce their consumption of a particular product, (Sadiq and others, 2014: 131).

Finally, (Slaem etal) 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, such as smoking, alcohol, etc. (Slaem etal, 2018: 299).

Here, the researcher sees 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 the reverse marketing as a procedure: it is a major marketing tool to manage the demand for products, either decrease or increase, to address problems faced by organizations, society or the environment.

# Second: The reverse marketing strategy.

(Kotler and Levy) offer three types of strategies:-

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 (Seeletse, 2016: 231).

2. Ostensibly reverse marketing strategy:

Ostensibly reducing the demand for a product or service. However, it actually increases the demand and price in the future with the intention of attracting more customers when the customer feels that the product is available in limited quantities, which creates an impression in the customer's buying mind with the high quality of the product, which leads to an increase in the demand for its acquisition (Alsamydai and Yousif, 2018: 211).

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 due to the fact that those sectors or these consumers are relatively unprofitable. (Atrous and Atros, 2016: 109).

# Third: Dimensions of reverse marketing.

1. Reverse price:

Price is considered one of the most important decisions critical to the marketing function, as the pricing policy has a direct impact on purchasing behavior, positively or negatively, (Sadiq et al., 2014: 151), The reverse price is defined by a set of procedures that are applied to the price (physical, psychological) in order 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, stopping discounts in prices (Weilier etal, 2019: 123).

2. The service:

This element aims to help consumers to 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, including offering the service in a limited way, informing consumers of the risks and harms in the excessive level of service, limiting the permissible activities seasonally, and providing suitable alternatives (Walsh etal, 2009: 270).

3. Promotion:

The promotional process followed in reverse marketing may change with the aim of enhancing 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 etal, 2009: 272).

#### The 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: 839). Either the emergence of sustainable development and in its contemporary form, it is the result of the formation of the United Nations General Assembly (UN) a committee on environment and development that got to know the Prime Minister of Norway Brundtland, where the committee published its report entitled Our Common Future, which set a definition for sustainable development:- It is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Paul, 2008: 57), Sustainable development is also defined from the point of view of organizations as a continuous commitment on the part of the organization to act in an ethical manner and contribute to economic and environmental development by renewing assets, preserving resources and providing and delivering products and services that meet the expectations of society (Radu, 2012: 455), Sustainable development is represented by the multi-objective nature that is based on the triple basic line, which is the economic, environmental, and social aspect, which aims to achieve a balance in terms of the need for financial growth, environmental protection and social justice (Arulrajahand Senthinlnathau, 2014: 1).

## Second: the dimensions of sustainable development

#### a. The 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 side, 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: 199-200).

# b. The 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 in 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: 77).

#### c. The 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, education and training to achieve social welfare (Bjoern etal: 2017: 66-67).

#### **Reverse Marketing and Sustainable Development**

The world is currently facing problems such as scarcity of natural resources and 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, In order 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. Economically, reverse marketing is used to reduce waste from the consumption of natural resources such as water and energy and to provide alternative opportunities for consumption, On the social side, reverse marketing can be used to reduce the demand for products that harm health, such as alcohol and smoking, 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 such as oil derivatives (Sadiq et al. 2014: 120 - 121).

# The third section The Practical aspect

This research aims to find results through statistical analysis of the opinions of the research sample, descriptive analysis of research variables, and testing of its hypotheses.

#### First: Description and coding of search variables

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

variable	The dimension	No. of paragraphs	code
Reverse	price	5	Q
marketing	the service	4	W
	Promotion	5	R
	The economic dimension	5	S
sustainable development	The environmental dimension	5	А
	The social dimension	5	0

#### Table (2) Description and coding of the study variables

Source: Prepared by the researcher 2020

#### Second: The consistency and stability of the tool

#### 1- The structural stability of the search measurement tool:

Reliability refers to the extent of the internal consistency of the scale, which means that all the questions are aimed at a general purpose to be measured, Likelihood of obtaining the same results when repeating the same measurement again (P: 144, Oppenheim,  $(1992)^1$ , As consistency is used to determine (to what extent it is possible to repeat the use of the scale and the results remain the same, and the stability of the scale over time, and the results are similar for the scale for a different period of time), 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 (184: Devaus, 2002). The value of Cronbach's Alpha) ranges between (0-1), and it should be equal to or higher than (0.70) to be considered as having acceptable internal consistency (Hair et al. (2019, P: 775)) while Sekaran & Bougie, 2016 indicated 290 (if Cronbach's Alpha is equal to or higher than 0.60 is considered an acceptable value, If it is less than that, its internal consistency is considered weak and does not bear the acceptable level of stability. The stability test of the measuring instrument (Questionnaire) can be clarified as shown in Table (3).

# Table (3) reliability coefficients for the study measure tool

<sup>&</sup>lt;sup>1</sup>A.N. Oppenheim "Questionnaire Design,Interviewing And AttitudeMeasurement" ContinuumLondon And New York, New Edition,1992

Study variables	Cronbach Alpha Coefficient	validity
price	0.96	0.980
the service	0.96	0.980
Promotion	0.957	0.978
Reverse marketing	0.954	0.977
The economic dimension	0.96	0.980
The environmental dimension	0.961	0.980
The social dimension	0.958	0.979
sustainable development	0.954	0.977
Questionnaire in general	0.963	0.981

Source: Statistical Analysis Data 2020

\* Validity: is the root of the values of stability (the source is an introduction to descriptive and inferential statistics using spss, written by Dr. Ezz Hassan Abdel Fattah, Dar Al-Khwarizmi for Publishing and Printing First Edition 2008).

Table (3) shows that the values of Cronbach'sAlpha ranged between (0.954- 0.961) for the variables and dimensions of each dimension, which is greater than (0.70), and this indicates that the variables and dimensions have an appropriate internal consistency, while the internal consistency coefficient (Cronbach's Alpha for the scale) In total, its value was (0.963), He enjoyed a high evaluation, and these results indicate that the study scale (the resolution) has a high level of stability, and this is evidence of the extent of its internal consistency, the stability of its paragraphs, and evidence of the extent to which the scale can be repeated and give the same results, and thus other statistical tests can be performed based on these Results.

# 2- The Stability of the questionnaire by using Split–Half method.

The Split-Half method is used in measuring reliability, which is summarized by finding the correlation coefficient between the scores of individual questions and the degrees of even questions in the questionnaire, and the correlation coefficient is corrected by the (Spearman-Brown) equation, When applying this method, it was found that the correlation coefficient of the resolution reached (0.874), which means that, with its different measures, it has good stability and can be adopted at different times and for the same individuals and give the same results.

#### **Third: Testing the existence of the problem Multicollinearity**

This assumption is that there is no high correlation between the independent dimensions, i.e. between them (DeVaus, 2002:  $(327)^2$ , because in the event that there is a high correlation between the independent dimensions, we will have a problem of so-called multicollinearity, So when two independent dimensions are linked at a high level between them, we should get rid of one of them when analyzing, because the high correlation between them indicates that they measure the same thing (Bordens & Abbott,  $2017: 476)^3$ , It is impossible to distinguish between the effect of each one of them on the dependent variables, hence the main objective of conducting this test because it will keep us away from any problem when testing hypotheses (DeVaus, 2002: 327), As this problem can be revealed through the Variance Inflation Factor-VIF, and the Tolerance value (DeVaus, 2002: 327). (320: Hair et al, 2019.P)<sup>4</sup> sees that the value of Tolerance should be (0.10) or greater, and the inverse of the contrast amplification factor (VIF should be (10) or less as an indicator of the absence of Multicollinearity (Hair et al, 2019: 320), For the purpose of ascertaining whether or not this problem exists, these two tests can be performed through the program. SPSS V.23 as shown in the following test:

		ce of the problem of linear is of reverse marketing
Dimensions	VIF	Tolerance
Price	3.143	0.318
The service	4.233	0.236
Promotion	3.709	0.270

Source: Program. SPSS V.23

It is evident from the results of Table (4) that the factors of variance inflation (VIF) for all the reverse marketing dimensions, which ranged between (3.143-4.233), are less than (10), and the tolerance value for the independent dimensions, which ranged between (0.236 - 0.236). 0.318), that is, it is greater than (0.10), and this indicates that there is no problem of Multicollinearity

<sup>&</sup>lt;sup>2</sup>D.A. De Vaus "Surveys In Social Research" Fifth Edition Published In 2002.

<sup>&</sup>lt;sup>3</sup>Kenneth S. Bordens Bruce B. Abbott" Research Design And Methods: A Process Approach, Tenth Edition" Indiana University—Purdue University Fort Wayne, Tenth Edition, 2017.

<sup>&</sup>lt;sup>4</sup>Joseph F. Hair Jr., William C. Black, Barr Y J. Babin, Rolph E. Anderson" Multivariate Data Analysis"Eighth Edition© 2019, Cengage Learning Emea

within the search dimensions of the independent variable Inverse Marketing.

# Fourth: The constructive confirmation validity.

The purpose of constructive confirmation validity is to verify the dimensions and component paragraphs according to their fixed theoretical structure in the literature, in the sense of ensuring that the dimensions composing the scale and the paragraphs representing it in the sample data match their origin in the theory and related literature, This type of factor analysis is one of the applications of structural equation modeling that was implemented through the statistical program (AMOS v.23), through which it is possible to test the stability of scale and other types of validity, It is the sincerity of convergence and the sincerity of differentiation, and the validity of the affirmative construction can be verified through a number of indicators, as the indicators shown in Table (5) were used to show indicators of good conformity to the variables under consideration. As the search consisted of two main variables represented by the reverse marketing variable, which consists of five sub-dimensions (price, service, promotion). As for the second dependent variable represented by sustainable development, it included three sub-dimensions, which are (the economic dimension, the environmental dimension, and the social dimension).

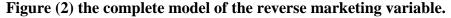
1- Goodness Of Fit Index         -       Chi square X <sup>2</sup> -       Degree of freedom (Df)         -       The ratio between X <sup>2</sup> and the degree of freedom (Df)         -       Goodness Of Fit Index (GFI)         -       Goodness Of Fit Index (GFI)         The Root Mean Square Error of Approximation	Freedom (X <sup>2</sup> / degree of freedom) less than 5
<ul> <li>Degree of freedom (Df)</li> <li>The ratio between X<sup>2</sup> and the degree of f (Df)</li> <li>Goodness Of Fit Index (GFI)</li> </ul>	ξ ų į
<ul> <li>The ratio between X<sup>2</sup> and the degree of f (Df)</li> <li>Goodness Of Fit Index (GFI)</li> </ul>	ξ ų į
(Df)     Goodness Of Fit Index (GFI)	ξ ų į
- Goodness Of Fit Index (GFI)	less than 5
The Root Mean Square Error of Approx	Greater than 0.90
	Between 0.05-0.08
(RMSEA)	
- Trophic Level Index (TLI)	Great than 0.09
2- Standard regression weights (standard satura	tions) Acceptable weights $\geq 0.5$

Table (5) shows indicators	(goodness-of-Fit) for	the variables under study.

Source: Prepared by the researcher 2020, depending on the indicators listed in the table.

# 1- The Confirmatory factor analysis of the reverse marketing variable.

Figure (2) shows the confirmatory factor analysis of the reverse marketing model, which consists of three basic dimensions and is composed of (14) paragraphs. Subsequent statistical analyzes. It was also found that all the paragraphs of the three dimensions were significant at the level of significance (0.05) and that all the values of the standard regression weights of the reverse marketing dimensions are equal to or greater than (0.50), which is a good indicator.



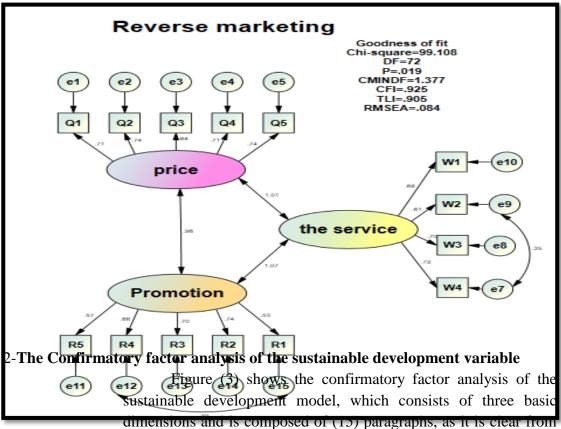
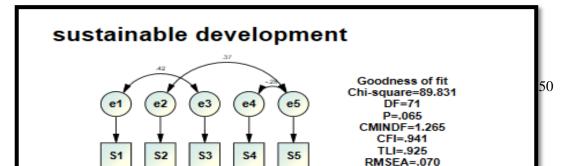


Figure (3) that all indicators of goodness of fit are. It was within the standard and is a good and sufficient indicator for subsequent statistical analyzes. As it can be seen from Figure (3) that all the paragraphs of the three dimensions were significant at the level of significance (0.05) and that all the values of the standard regression weights of the dimensions of sustainable development are equal to or greater than (0.50), which is a good indicator. It should be noted here that paragraph O4 From the social dimension in light of the recommendations of the amendment indicators, in addition to being non-significant.

Figure (3) the complete model of the sustainable development variable.



#### Fifth: Descriptive analysis of the research variables

This part of the analysis seeks to identify the reality of the independent variable, reverse marketing, and the dependent variable, sustainable development for a sample of the Ministry of Water Resources's 55 respondents in light of their response and will be relied on the arithmetic mean, which represents the most important measure of central tendency, the most famous and most important in the various scales. The value of the arithmetic mean represents the value around which all the different values of the variable are centered, the standard deviation, as it is considered one of the most important statistical measures of dispersion, and the coefficient of variation<sup>5</sup> as it is used for comparison, dispersion as the lower the value, the more this indicates the lack of dispersion of the answers of the researched sample. Order importance on its basis, Finally, determining the level of response to the opinions of the surveyed sample according to their answers. The research relied on the five-year Likert scale in the sample answers to the questionnaire, in that the level of each variable ranged between (1- $5)^{6}$  with four levels, and Table (6) illustrates this, and includes two levels in the case of an increase from the hypothesis of (2.61 to

$$_{5}CV = \frac{S_{X}}{\overline{X}} \times 100$$

<sup>&</sup>lt;sup>6</sup>Source: Introduction to Descriptive and Inferential Statistics, p. 541, edited by Dr. Ezz Abdel Fattah Dar Al-Khwarizmi for Printing and Publishing 2008).

3.40). It would be good if it ranged between (3.41 to 4.20) and very good as it increased from (4.21 to 5). It also includes two levels if it falls below the hypothetical mean (2.61 to 3.40), then it will be weak if it ranges between (1.81 to 2.60) and very weak if it decreases. About (from 1 to 1.80).

Table (6) Shows the weighted average and the answer level.			
Weighted average	Answer scale	Answer level	
From 1 to 1.80	I don't totally agree	Very weak	
From 1.81 to 2.60	I don't agree	Weak	
From 2.61 to 3.40	Neutral	Average	
From 3.41 to 4.20	Agreed	Good	
From 4.21 to 5	Totally agree	Very good	

Source: Prepared by the researcher 2020

#### 1- Reverse marketing

It is clear from Table (7) that the highest arithmetic mean for the dimensions of reverse marketing reached at the price dimension, as it reached (3.691), which is higher than the hypothetical mean, It ranged between (2.61 to 3.40) and with a good level, as its standard deviation reached (0.539) and the coefficient of variation (14.593) as this dimension came to the second level in terms of relative importance, As for the lowest general arithmetic mean, it was at the promotion dimension, as it reached (3.524), with a good level, a standard deviation (0.506), and a difference coefficient (14.346), as this dimension came at the first level in terms of relative importance.

# 2- Sustainable development

It is evident from Table (7) that the highest arithmetic mean for the dimensions of sustainable development in general reached at the environmental dimension as it reached (3.589), which is higher than the hypothetical mean, which ranged from (2.61 to 3.40) and at a good level, as its standard deviation reached (0.491) and the coefficient of variation (13,667), As this dimension came at the first level in terms of relative importance, as for the lowest general arithmetic mean, it was at the social dimension, as it reached (3,491), with a good level, a standard deviation (0.554), and a difference coefficient (15,856), as this dimension came at the second level in terms of relative importance.

Table (7) shows the variation and the relation		<i>,</i>	· · · · · · · · · · · · · · · · · · ·	
Dimensions of	Arithmetic	Stander	coefficient	Relative
search variables	mean	deviation	of	importance
			variation	

Price	3.691	0.539	14.593	2
The service	3.545	0.605	17.062	3
Promotion	3.524	0.506	14.346	1
Reverse marketing	3.587	0.513	14.310	The second
The economic dimension	3.531	0.571	16.177	3
The environmental dimension	3.589	0.491	13.667	1
The social dimension	3.491	0.554	15.856	2
Sustainable development.	3.537	0.501	14.153	The first

Source: Program. SPSS V.23

#### Sixth: Test the research hypotheses

#### 1- Correlation hypotheses

It is clear through the data of Table (8) the results of the values of the Pearson Correlation between **the reverse marketing variable with its dimensions(price, service, promotion) and the sustainable development variable**.

- A. Test the first research hypothesis: which states(there is a significant correlation between reverse marketing and sustainable development) as the correlation coefficient between reverse marketing and sustainable development is (0.777 \*\*) at the level of significance (0.000), This means that there is a good level correlation relationship with a moral significance, and this indicates that reverse marketing has an active and essential role in achievingsustainable development.
- B. Test of the First Sub-hypothesis: Which states (there is a significant correlation between the price dimension and sustainable development), as the correlation coefficient between the price dimension and sustainable development reached (0.701 \*\*) at a significance level (0.000). This implies a good level correlation and it has a moral significance.
- C. Test of the second Sub-hypothesis: Which states (there is a significant correlation between the dimension of service and sustainable development), as the correlation coefficient between the service dimension and sustainable development reached (0.699 \*\*) at a significance level (0.000), This implies a good level correlation and it has a moral significance.
- D. Test of the third Sub-hypothesis: Which states (there is a significant correlation between the dimension of promotion and sustainable development), as the correlation coefficient between the dimension of promotion and sustainable development

Table (8) shows a cmarketing and sustain		he dimensions of reverse
Dimensions of reverse marketing	Correlation value and level of significance	Sustainable development
Price	Correlation	$0.701^{**}$
Price	Sig	0.000
The service	Correlation	0.699**
The service	Sig	0.000
Dramation	Correlation	0.784**
Promotion	Sig	0.000
	Correlation	0.777**
<b>Reverse marketing</b>	Sig	0.000

**reached** (0.784 \*\*) at a significance level (0.000). This implies a good level correlation and it has a moral significance.

Contention is significant at the 0.01 level (2

Source: Program. SPSS V.23

#### 2-Impact hypotheses

This part is concerned with testing the impact hypotheses that were identified in the research, for the purpose of determining the possibility of judging them to accept or reject the impact analysis test between the independent variable dimensions of reverse marketing and represented in (price, service, promotion) and the dependent variable (sustainable development), as the following hypothesis will be tested. (There is a significant influence relationship between the dimensions of reverse marketing in sustainable development), and (a) represents the constant amount, and this relationship means sustainable development. (Y) is a function of the real value of the reverse marketing dimensions represented in (price, service, promotion), As for the estimates of these values and their statistical indicators, they were calculated at the level of the research sample of 55 of The Ministry of Water Resources, as Table (9) shows the statistical indicators between the dimensions of reverse marketing in sustainable development.

A. The second major research hypothesis test: Which states (there is a significant effect between reverse marketing in sustainable development) as the value of (F) computed between reverse marketing and sustainable development reached (80.758), which is greater than the tabular value of (F) of (4.02) at the level of significance (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**, as the impact value reached (0.777). This indicates that increasing reverse marketing by one unit will lead to an increase in sustainable development by (77%). As its coefficient of determination (R2) reached (0.604), meaning that **reverse marketing** is able to explain what percentage (60%) of **the sustainable development variable is**, as is evident in Table (9).

- B. Test of the first Sub-hypothesis: Which states (there is a significant effect between the price dimension in sustainable development) as the value of (F) computed between the price dimension and sustainable development is (51.245), which is greater than the tabular value of (F) of (4.02) at the level of significance (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, as the impact value reached (0.701), and this indicates that an increase in the price dimension by one unit will lead to an increase in sustainable development by (70%), as the determination coefficient reached (R2) for it (0.492) that is, the price dimension is able to explain what percentage (49%) is of the sustainable development variable, as is clear in Table (9).
- C. Test of the second Sub-hypothesis: Which states (there is a significant effect between the service dimension in sustainable development) as the value of (F) computed between the dimension of service and sustainable development is (50,524), which is greater than the tabular value of (F) of (4.02) at the level of significance (0.000), which is It is smaller than the significance level at (0.05), which means that there is a significant effect between the service dimension in sustainable development, as the impact value is (0.699), This means that there is a significant effect between the dimension-service in sustainable development, as the impact value reached (0.699) and this indicates that an increase in the price dimension by one unit will lead to an increase in sustainable development by (69%), as the determination coefficient reached (R2) for it (0.488) that is, the price dimension is able to explain what percentage (48%) of the sustainable development variable is, as is clear in Table (9).
- D. Test of the third Sub-hypothesis: Which states (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 (84.336) is greater 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 (0.784), This means that there is a significant effect between**the dimension promotion in sustainable development**, as the value of the effect reached (0.784), and this indicates that an increase in the dimension **promotion** by one unit will lead to an increase in sustainable development by (78%), as the determination coefficient reached (R2) has (0.614), meaning that the dimension **promotion** is able to explain what percentage (61%) of the variable is **sustainable development** as is evident in Table (9).

Table (9) shows the statistical indicators of dimensions of reverse marketing in Sustainable development.

d s	Dimensions of reverse marketing	Fixed limit A	Marginal propensity	R2	F test	sig	Significance
Sustainable development	Reverse marketing	0.819	0.777	0.604	80.758	0.000	Signified
nabl	Price	1.132	0.701	0.492	51.245	0.000	Signified
e nt	The service	1.487	0.699	0.488	50.524	0.000	Signified
	Promotion	0.803	0.784	0.614	84.336	0.000	Signified

Source: Program. SPSS V.23

# **The fourth Section**

#### **Conclusions and Recommendations**

This Section includes determining the most important conclusions that came out of the research, which represent an interpretation of the final results, and through which the researcher was able to present a set of recommendations in light of the results where the recommendations came as in the following:-

#### **First:- Conclusions**

- 1. 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.
- 2. It is clear from the results that adopting the concept of reverse marketing in the Ministry of Water Resources and intensifying

marketing efforts and employing its dimensions can achieve sustainable development for this ministry.

- 3. It was found that there is an active and essential role for reverse marketing in achieving sustainable development, and this means that there is a significant correlation relationship between the research variables.
- 4. It has been concluded that reverse marketing seeks to regulate the consumption of harmful products to the greatest extent possible, direct the consumer towards responsible consumption and encourage sustainable development patterns.
- 5. Reverse marketing plays a critical importance as it is the most effective strategy in rationalizing water consumption, as the application of its methods contributes to solving the water demand crisis.
- 6. The results showed that reverse marketing in its various dimensions is one of the methods that lead to achieving sustainable development.
- 7. The results revealed that reverse marketing has the effect of raising awareness among citizens about consumption harmful products and rare products (water).
- 8. The results show that the price dimension is the most important among the other dimensions of the marketing variable reverse.
- 9. The results showed that the environmental dimension is the most important among the other dimensions of the sustainable development variable.
- 10. The results showed that there is a significant effect of reverse marketing on sustainable development, and this indicates that the Ministry of Water Resources, if it wants to achieve sustainable development, can pay attention to reverse marketing by raising awareness among citizens more.

#### Second: Recommendations:

Through the results that have been reached, some recommendations can be drawn up as follows:-

- 1. The study recommends that organizations and academic bodies alike search for more research and field studies on reverse marketing.
- 2. Increasing interest in reverse marketing with its various dimensions (price, service, promotion), as this has a positive impact on achieving sustainable development, and thus preserving scarce resources.
- 3. Sustainable development can be achieved by several means, methods and strategies, and reverse marketing is one of these methods, so organizations that seek to achieve sustainable

development must pay attention to the application of reverse marketing.

- 4. Organizations have to support workers in the field of marketing as this is positively reflected on their behavior and thus on the organization as a whole, and thus this is reflected through the application of reverse marketing to the environment and its relatively scarce resources.
- 5. Work on developing strategies and methods of reverse marketing and adopting technological development in the renewal of means and influence.
- 6. Applying the reverse marketing strategy to other organizations and products because of their positive role on these organizations and their products.

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# Appendix ----- Questionnaire

Best Wishes. After Greetings : We put in your hands a questionnaire for the purposes of scientific research on the topic (reverse marketing and its impact on achieving sustainable development) an applied study in (departments of the Ministry of Water Resources).

Please kindly answer all the expressions contained in the questionnaire with accuracy, clarity and frankness, bearing in mind that the information that will be collected through your answers will be kept completely confidential and will not be used except for scientific research purposes only.

# Thank you for your cooperation with us....

\*Note: Please fill in the following information by ticking (True).

Researcher

No.	The question	Strongly Agree	Agree	Neutral	Not agree	Not agree totally
	A - The price					
1	The Ministry is working to increase water consumption prices to rationalize water, support the national economy and preserve natural resources.					
2	The ministry undertakes to increase water consumption prices permanently or temporarily.					
3	The Ministry uses the Progressive Water Price Policy to reduce the level of personal water expenditure per capita.					
4	The ministry follows the pricing of the water bill according to the activity (commercial, industrial, household).					
5	The ministry pledges to impose additional taxes and fees to reduce the level of water consumption.					
	<b>B-</b> The service					
6	The Ministry sets plans and programs to limit the demand for service.					
7	The Ministry is working to cut out of the service temporarily to rationalize water consumption.					
8	The Ministry is responsible for providing the service with water throughout the country.					
9	The Ministry shows the negative aspects of the excessive consumption of water service through posters.					
	C- Promotion					
10	The Ministry provides visual advertisements to educate consumers about the harms of water consumption and its impact on environmental degradation.					
11	The Ministry provides audio advertisements to educate consumers about the harms of water consumption and its impact on environmental					

	degradation.			
12	The ministry provides posters and flyers to change consumer attitudes to preserve natural resources.			
13	The ministry uses brochures as educational tools to preserve water wealth.			
14	The Ministry holds seminars to highlight the negative and harmful effects of excessive consumption and its impact on the environment and the economy.			
	Second:- Sustainable development.			
	A- The economic dimension.			
15	The Ministry increases the number of services provided on an ongoing basis to raise the level of work.			
16	The Ministry seeks to provide services at reduced prices, taking into account the economic situation.			
17	The Ministry supports economic strategies that reflect the economic, environmental and social goals to advance the country's economic reality.			
18	The Ministry follows up on developments in the economic fields that come from the public authorities and which may have an impact on the ministry.			
19	There are programs at the Ministry for the benefit of the economic sector that are specifically directed towards sustainable development.			
	B- The environmental dimension			
20	The Ministry seeks to legislate laws and regulations for consumers to rationalize water consumption.			
22	The Ministry supports programs to preserve water resources to support environmental development.			
22	The Ministry seeks to raise media awareness that urges to preserve the environment through			

	rationalizing water consumption.			
23	The Ministry pledges to improve the service of utilizing drinking water and modernize sanitation networks to reduce environmental impacts.			
24	The ministry supports combating desertification and drought to preserve vegetation cover.			
	C- the social dimension			
25	The Ministry seeks to objectively address consumer complaints, regardless of the method of submitting them.			
26	The Ministry seeks to develop the level of health and educational services to contribute to planning for sustainable development.			
27	The Ministry takes measures that encourage initiative and creativity among employees.			
28	The Ministry always strives to raise the levels of competency of the employees through training.			
29	The Ministry seeks to carry out its work in line with the requirements of environmental laws and legislation, such as the Environmental Protection Law.			