

Sustainable development of plastic pollution awareness campaigns on social media

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Abstract:

The Sustainable Development Initiative adopts environmental protection as one of its important goals. It aims to save the environmental sectors, reducing the depletion of environmental resources, pollution and protecting biodiversity. To enhance environmental safety, whether in the present or in the future, this research discussed the issue of plastic pollution and the unsustainable use of those materials and its danger effect to the environment. Also, enhancing the user sustainable participation in protecting the environment and changing environmentally unsafe behaviors to reduce pollution, and to encourage the efforts to sustain the environment, to improve the balanced averment, through a Sustainable development of social media awareness campaigns. **The research problem** lies in the huge increasing in the consumption of plastic materials despite of the great harm they inflict on living creatures, environment and society, and the weak awareness of the sustainable development goals that adopt a pro-direction to preserve the environment, living creatures and public health. **Methodology:** The research followed the descriptive analytical methodology to describe and analytic four awareness campaigns specially designed for the study, besides the experimental methodology through preparing a survey questionnaire on a 5-point Likert scale adapted from (Chin YSJ., 2019; Pretto et al., 2015) to measure the impact of the awareness campaigns to raise awareness of the effect of plastic pollution before and after the exposure to the campaigns (for a sample of four groups separately) and enhancing the changing in the unsustainable behavior of the audience in the unsafe usage of plastic. The research has come to several results; the most important states that “there are statistically significant differences between the degrees of responses of the research samples towards the four awareness campaigns after the exposure” depending on the audience segmentation.

Keywords:

Sustainable Development;
Awareness Campaigns;
Social Media;
Plastic Pollution;
Facebook;
PAC.

Paper received 16th of October 2020, accepted 5th of December 2020, Published 1st of March 2021

Introduction:

The philosophy of the sustainable development initiative calls for the protection of the environment, economic and societal, and the reduction of unsustainable human habits, which affect both the present and the future of the life of all living creatures. According to that the sustainable development goals which can achieved with the participation of both governments, civil society and citizens in a humanitarian framework, and the continuation of sustainable local and global economic growth, taking into account the rights and needs of future generations in life and the protection of the environmental and ecological structure in a manner that conserves their rights to safe and healthy environment.

Due to the increase in the unsafe use of hazardous plastics in a manner that has a negative impact on the ecosystems and biological system of the environment, which in turn affects the general health of living creatures on the planet today and thus, may affect the future.

So, it's important to build public awareness

campaigns to raise the audience awareness of the unsustainable use of plastic materials danger on living creatures in general, and the enhance the public participation in sustainable development and taking into account the limited capacity of the environment to absorb plastic waste and pollution. And consider the different types of the audience, each according to its classification and how to use the appropriate advertising approach to stimulate the behavior of each of them in a manner consistent with the advertising message through social networking sites (Facebook), and changing unsustainable behavior into safe and healthy one.

The problem of Research:

The research problem lies in the huge increasing in the consumption of plastic materials despite of the great harm they inflict on living creatures, environment and society, and the weak awareness of the sustainable development goals that adopt a pro-direction to preserve the environment, living creatures and public health.

objective of Research:

The research aims to encourage users to reduce the

consumption of plastic materials as an achievement of one of the sustainable development goals to protect the environment / society from its damages by providing effective awareness campaigns for different societal groups.

Value or originality:

- The value of this study lies in providing an important starting point to improve the user awareness through awareness campaigns towards plastic consumption and its damaged effect on the creatures’ lives, environment and Society public health.
- Encouraging users to reduce the consumption of plastics pollution.
- Reminding users of sustainable development goals which adopt saving the balance between the environment and creatures.
- Saving the environment.

Hypotheses of Research:

- The first hypothesis states that "There is a statistically significant difference between the average degrees of the Alexandria population sample (women and men) to the first awareness campaign (protecting the marine environment from plastic pollution) before and after the exposure of the campaign".
- The second hypothesis states that "there are statistically significant differences between the degrees of the mothers sample responses (age from 20 to 40 years) to the second awareness campaign (protecting the future generations (children) from plastic pollution)

before and after the exposure of the campaign."

- The third hypothesis states that “there is a statistically significant difference between the degrees of responses of the “permanent customers of large markets” sample (women and men from 20 to 55 years) to the third awareness campaign (protecting the permanent markets consumers from plastic pollution) before and after the exposure of the third campaign.
- The fourth hypothesis states that “there are statistically significant differences between the degrees of the youth sample responses (women and men from 16 to 35 years) to the fourth awareness campaign (environmental protection from plastic pollution) before and after the exposure of the fourth campaign.”
- The fifth hypothesis states that “there are statistically significant differences between the degrees of responses of the research samples towards the four awareness campaigns after their exposure.”

Limits of Research:

The limits of research are confined to preparing awareness campaigns and publish it on Facebook as it is the most used by the Egyptian users and included the period of the actual measurement of the research experiment from 5/6/2020 to 18/11/2020.

Table (1)

Campaign	Campaign type	Target group
First awareness campaign	(protecting the marine environment from plastic pollution)	Alexandria population sample (women and men 20-55 years old) On Facebook
Second awareness campaign	(protecting the future generations (children) from plastic pollution)	the mothers sample responses (age from 20 to 40 years) on Facebook
Third awareness campaign	(protecting the permanent markets consumers from plastic pollution)	the “permanent customers of large markets” sample (women and men from 20 to 55 years) on Facebook
Fourth awareness campaign	(environmental protection from plastic pollution)	youth sample responses (women and men from 16 to 35 years) on Facebook

The methodology of Research:

The research followed the descriptive analytical methodology to describe and analytic four awareness campaigns specially designed for the study, besides the experimental methodology through preparing a survey questionnaire contained two parts. Section 1,

on demographic descriptors, was composed of 5 questions to check the sociodemographic respondents information. Section 2 was an “Environmental protection attitude questionnaire” composed of 18 statements on a 5-point Likert scale adapted from (Chin YSJ., 2019; Pretto et al., 2015) to measure the impact

of the awareness campaigns to raise awareness of the effect of plastic pollution before and after the exposure to the campaigns (for a sample of four groups separately) and enhancing the changing in the unsustainable behavior of the audience in the unsafe usage of plastic.

Tools of Research:

- Preparing four awareness campaigns.
- Preparing the “Environmental protection attitude questionnaire” adopted a measure (Chin YSJ., 2019; Pretto et al., 2015).
- statistical analyses and methods used in the study:
 - 1- Pearson correlation coefficient.
 - 2- Cronbach's alpha coefficient.
 - 3- Frequency and Percent.
 - 4- Mean and Standard deviation
 - 5- Chi-square

Theoretical background

The concept of public awareness campaign

PCC can be characterized as purposive endeavors to illuminate or influence behaviors in specific audiences within a specified time-frame utilizing a using an organized set of communication activities and featuring an array of mediated messages in multiple channels generally, to create noncommercial advantages and benefits to people and society (Rice & Atkin, 2009; Rogers & Storey, 1987).

It intends to increase knowledge & awareness of the target audience (target audience) to catch the eye and grab attention and increase perception or a positive assessment of an activity from an foundation or organization in order to create a good image from the community through the messages intensive with the communication procedure and time period certain sustainable ones. In a more broad or expansive sense, as per Drs.R.A Sentosa Satroepetra, advertising public relations campaign gives nonstop lighting also understanding and inspiration of the community towards a specific program actions through communication methods and intended to accomplish image and publicity (Rosalyn & Kurniawan, 2019).

Campaign designers play out a situational examination and set objectives promoting the advancement of a cognizant arrangement of strategies and actualize the mission by making enlightening and powerful messages that are dispersed through customary broad communications, innovation technologies, and interpersonal networks (Rice & Atkin 2017).

PACs from companies and organizations willing to take part in communicating the issue of plastic

waste to the community and strive to grow public awareness to understand more about issues and together take part in searching solution to the problem / issue. According to Keith Davis, participation is a matter a person's mental and emotional involvement in group situation that drives them to contribute to group goals and together responsible for the goal that is; Community participation is very important in the success of this behavior (Rosalyn & Kurniawan, 2019).

• The scope of PACs:

The extent of PACs is to decide an ideal conduct change. Coffman (2002) depicted two kinds of PACs that have various objectives: individual behavior and public will change, respectively.

- **The individual behavior** change crusades urge people to change their less socially wanted conduct to a more worthy one. It very well might be appeared in saving environment, safe sex practices, promoting healthy eating, seat belt wearing, and so on.

- **The public will campaign**, otherwise called public engagement campaigns endeavor to advance change on a more extensive scale (Coffman, 2002). These sorts of campaigns prepare individuals to take part in cycles that change associations, organizations or systems, in light of strategy and policy change (Henry and Rivera, 1998).

In any case, different specialists and experts trust it implies more than that (Leiderman et, al. 2000). Subsequently, it might urge consumers to act a specific way, needed by the social context and the strategy or policy change or it might impact the way an individual feels about an issue. Table 1 pinpoints the significant attributes of both individual and public will campaign (Leiderman et, al. 2000).

• Public awareness Implementation & Message Design (Qualitative Dimensions):

Planning and designing messages includes the key choice of substantive material and the imaginative creation of stylistic features. In building up the blend of message parts, the mission designer tries to underscore at least one of five powerful message characteristics.

- First, credibility is essentially passed on by the reliability and capability of the source and the arrangement of persuading proof.
- Second, the ideas and style should be presented in an engaging manner via selection of interesting or arousing

substantive content combined with attractive and entertaining stylistic execution.

- The third dimension underlines the determination of material and expressive gadgets that are specifically including and important, so beneficiaries see the conduct proposal as appropriate to their circumstances and necessities.
- The fourth element is understandability, with simple, explicit, and detailed presentation of content that is

comprehensive and comprehensible to receivers .

- For persuasive messages, the fifth factor is motivational incentives (Rice & Atkin, 2012).

The structure of a PACs:

The accompanying graph speaks to the various components of a Campaign set in two covering classifications:

Table (2): Taboo taxonomy

	Accepted behavior	Tolerated behavior	Prohibited behavior
Mentionable	Ordinary topic or behavior	Acceptable topic or behavior	Behavioral taboo
	<ul style="list-style-type: none"> • Divorce • Use of contraceptives • Use of condoms 	<ul style="list-style-type: none"> • Homosexuality 	<ul style="list-style-type: none"> • Racism • Use of drugs • Euthanasia
Unmentionable	Conversational taboo	Conversational and weakly behavior taboo	Conversational and behavioral taboo
	<ul style="list-style-type: none"> • Death-related services • Masturbation 	<ul style="list-style-type: none"> • Sadomasochism • Zoophilia • Suicide 	<ul style="list-style-type: none"> • Incest • Pedophilia

Source: (Ouidade, 2007)

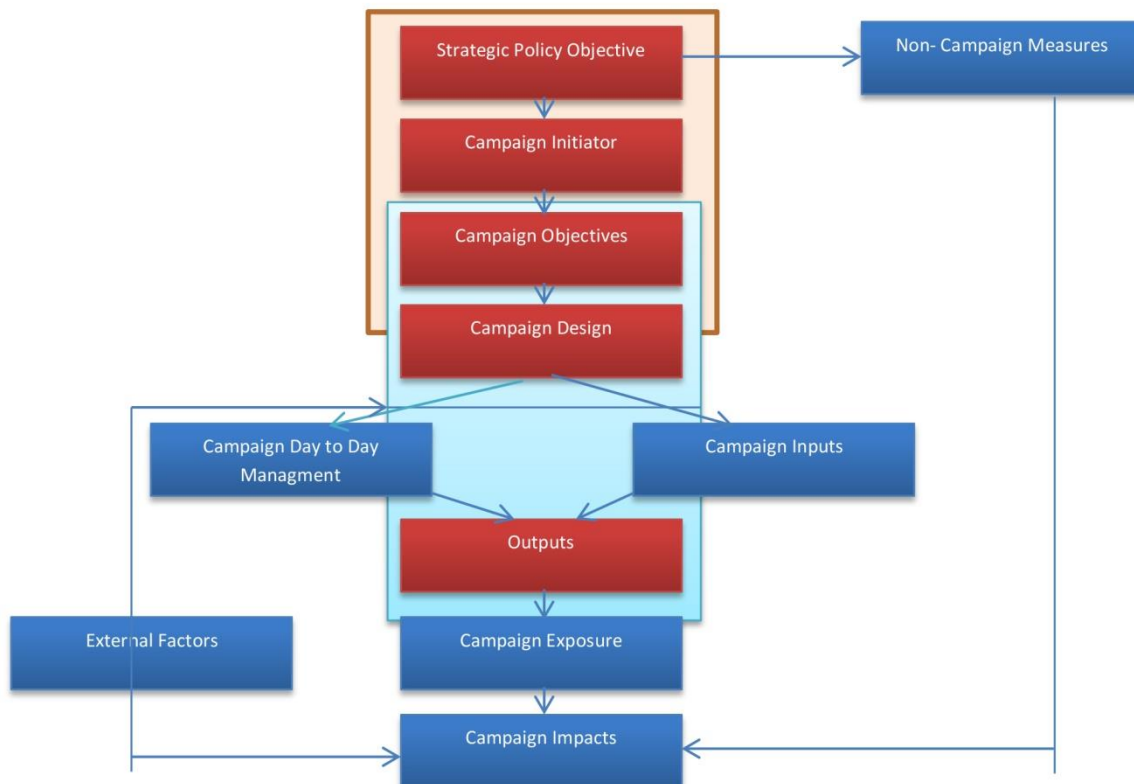


Figure (1) The structure of a PACs

1-Strategic Policy Objective: Strategic Policy Objective: These may incorporate wide target

set out in a local transport strategy or technique, or local government strategy, such

as sustainable development and reducing plastic pollution.

- 2- **Campaign initiator:** The campaign initiator the individual or organization that steps up and sets up a campaign.
- 3- **Campaign goals:** For each campaign, explicit goals should be characterized in the light of the board strategy targets for the city or locale in which they are to be actualized. They clarify what you need to acknowledge by dispatching your campaign and characterize the population group (s) to be focused on.
- 4- **Campaign Design:** This is the main parts of building a campaign, for what it's worth at this stage that choices are made around a few issues: the intended consumers (s), the campaign type, the campaign plan, the design etc.
- 5- **Non-campaign measures:** Anyone evaluating the power of the campaign should know about the impacts of different measures and should take these into account when estimating the adequacy of the campaign.
- 6- **Outer Components:** Outer components can markedly affect the usage and consequently the consequences of a campaign. These impacts can be either certain or negative. For example, another option may change the impact of the campaign to improve things, while the cost would probably have critical negative consequences for the campaign.
- 7- **Data sources:** The campaign will be resolved to the spending plan and budget, however, a piece of it is variable, for example, strengthening sponsorship. These can be increases to the financial plan, ruler commitments, for example, services and administrations, or commitments made by volunteers taking a shot at the campaign.
- 8- **Campaign release:** is the term used to depict the degree to which the intended interest group have observed or heard the message through the proper medium and estimating the campaign exposure.
- 9- **Campaign Effects:** Fall in two general classes:
 - Effects at the individual Level-concerning changes in degrees of awareness, attitudes, or in the individual behavior like using plastic.
 - Effects at the Social Framework level- Remembering the effects of plastic contamination.

https://www.eltis.org/sites/default/files/awareness_raising_communication_campaigns_6.pdf

 - **Barriers that reduce public media awareness campaigns effectiveness:**

- Meager scattering financial plans.
- Unsophisticated use of hypothesis and models.
- Poorly imagined strategic methodologies.
- It is likewise because of the trouble of the task confronting the campaigner, who might be advancing complex or difficult practices.
- Targeting resistant audience
- Coping with restricted assets/ resources.
- Audiences are continually presented to peer impacts, diversion depictions, and commercials that feature, empower, and decidedly outline adverse practices (Rice & Atkin, 2012).
- **Improving the degree of advertising awareness campaigns success:**
 - More accentuation should be given to generally feasible effects by focusing on the right segments.
 - Inventively creating exposure.
 - Moving effort assets to circuitous pathways that encourage and control the conduct of the central portion through the relational, network, authoritative, and cultural impacts.
 - The more prominent broadening of pathways, items, motivations, and channels past the methodologies traditionally utilized in public communication campaigns.
 - Portrayed by hypothetical direction and thorough assessment.
 - Substantial amount of message spread over continued periods.
 - Boundless receptivity to the pushed activity and going with influential persuasive incentives.
 - Supplementation of interceded messages by campaign invigorated factors, for example, casual relational impacts and social strategy activities (Rice & Atkin, 2012).
- **Models of behavior:**

Behavioral model is the "Stages of Change" model as it is a Social behavioural change model. The means of this model are:
- **Theory of Planned behavior:**

As appeared in the figure (3), Behavioural Beliefs interpret of into attitudes to the conduct, Normative Beliefs into what is known as the "Subjective Norm" and Control Beliefs into "Perceived behavioural control". Perceived behavioural control as indicated by the ADONIS report "eludes to an individual's recognition about his/her ability to play out a demonstration and doesn't manage the measure of control an individual has" (Forwardet al., 1998)

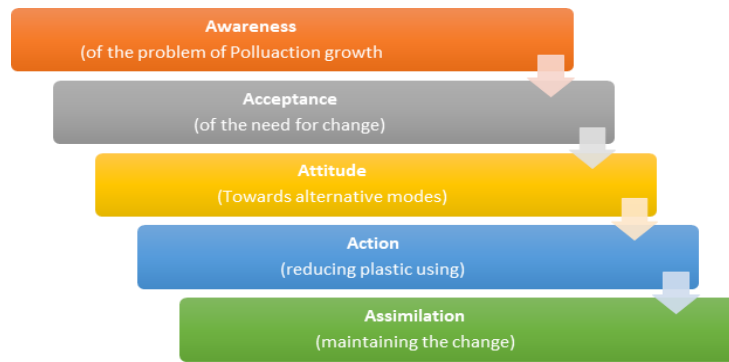


Fig (2) The “Stage of change” model. Taken from the INPHORMM Final Report https://www.eltis.org/sites/default/files/awareness_raising_communication_campaigns_6.pdf

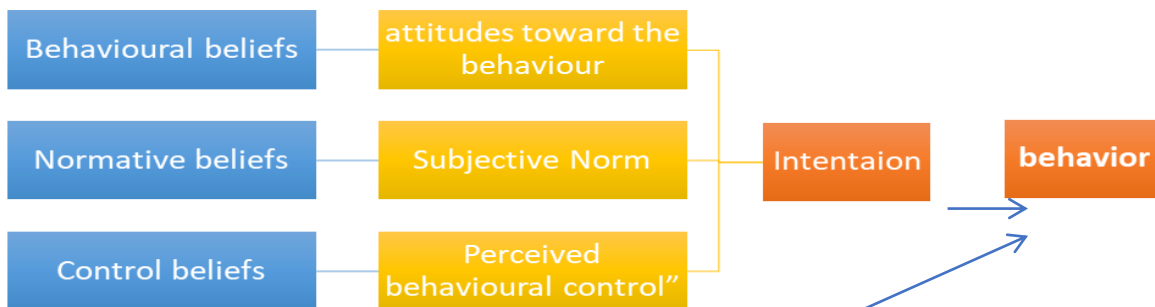


Fig (3) Theory of “Planned Behaviour” . Taken form (Forward et al., 1998)

• **Plastic Pollution:**

Plastic is one of the main polymers around the world as far as its utilization from the kitchen to industry level (Shah et al. 2008). Because of its bountiful utilization, plastic waste is being created at a disturbing rate (Shahnawaz et al. 2019). In the current situation, one of the consuming issues far and wide is plastic waste administration.

Plastic waste is one of the significant toxins of strong waste all through the world. The moderate degradation of plastic waste outcomes in the death of billions of living creatures in marine and earthbound conditions (Shahnawaz, et, al. 2019). After their entrance into the environment, plastics can continue as long as 100 years without being decayed by daylight as well as microorganisms (Rosalyne & Kurniawan, 2019).

With the development of the population everywhere in the world, plastic wastes also have expanded immensely. Then again, landfills have been overburdened and new locales are elusive. Henceforth an ever-increasing number of plastics land on soil and water bodies, accordingly defiling both of these assets. Indiscretion on a piece of both the makers and the purchasers brings about such a danger (Paul et al., 2016).

The plastic waste administration issue is in this way a significant worldwide wonder that has crawled up throughout the long term, and truly requires a worldwide and thorough arrangement that incorporates fundamental reexamines about use, creation, and reuse. It is a vital issue for non-industrial nations as well as for the created nations

too (Rosalyne, Kurniawan, 2019).

In past, individuals attempted to oversee/arrange plastic waste utilizing one of the accompanying methods, for example, incineration (consuming of plastic waste prompts the creation of different poisonous gases in the environment), reusing (changing over the plastic waste in other usable structure, exorbitant and inferior quality items were recreated, and just a small amount of the plastic waste is accounted for to be appropriate for reusing), road development (road were built utilizing the plastic waste), creation of petroleum (one of the imaginative endeavors to change over the plastic waste into a usable structure, yet its relevance is as yet a bad dream), and landfilling (the vast majority of the plastic waste winds up in landfills, where it takes a few many years to corrupt, prompts diminish the dirt fruitfulness, and so on) were accounted for to be utilized to handle the plastic burn through occasionally (Hartman, 1975; Cooper and Corcoran, 2010; Sarker 2011).

Because of its plentiful utilization in both created and immature economies, consistently 25 million tons of plastic waste is being produced far and wide and it is expanding ceaselessly at a disturbing rate (Evans et al. 2003). Plastic pollution has become an inescapable ecological issue and has increased significant consideration as of late (Brighty, Jones, and Ruxton, 2017). Since the beginning of plastic creation for a huge scope during the 1950s, the quick development in plastic creation has been shocking, outperforming most man-made materials (Geyer, Jambeck, &

Law, 2017).

Plastic marine litter is seen as a worldwide issue most remarkably given credit in Sustainable Development Goals (SDGs) (Lohr € et al., 2017). SDG 14, ' 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development' (Haward, 2018), gives a concentration to the continuous activity expected to lessen marine plastic pollution. This SDG advocates that the answer for a marine litter can be found by progressing to more sustainable methods for creation and utilization (Lohr € et al., 2017). Since people assume an immediate function in encouraging interest for single-use plastics a comprehension of their present ability to change consumption attitude is of incredible criticalness (Rensburg et, al. 2020). Destroying the unsustainable utilization of single-use plastic is not a simple assignment yet it is exceptionally reliant on the ability of residents to change their utilization propensities (Rensburg et, al. 2020).

- **Plastic waste effects:**

- **Human wellbeing and health:** Plastic pollution can act as a danger to surfers, swimmers, and scuba jumpers/ divers. Clinical wastes, for example, broken glasses and sharps can harm individuals. They can likewise communicate infectious illnesses with unsafe infections and microscopic organisms.
- **Different winged animals,** turtles, seals, sharks, and ocean lions get unfavorably affected by disposed of plastics parcels, fishing nets, pressing circles, just as, plastic pellets, and now and again these goes up to be dangerous (Derraik, 2002; Islam and Tanaka, 2004; Azzarello and Vleet, 1987; Moore, 2008; vom Saal et al., 2008; Yamamoto et al., 2001)
- **Aesthetic value:** the disturbance plastic squanders may cause is what is obvious to his eyes. This factor pulls in a ton of consideration of the media and the general population.
- **Smothering & Entanglement of marine creatures:** Creatures, for example, ocean turtles, seals, sharks, sea lions, dolphins, etc. These creatures initially get pulled into these plastic things and afterward get caught into them and die.
- **Ingestion:** Different creatures and winged animals regularly botch plastic squanders to be food and eats them, it results in suffocation or inward injury.
- **Environment decimation and outsider attack:** It can devastate delicate sea-going

occupants, corals, and sea-going plants. Plastic flotsam and jetsam frequently sink into the sea depths shaping a counterfeit floor that doesn't let daylight infiltrate, thus obliterating plants lying underneath (Sheavly and Register, 2007).

- **Sustainable development:**

The idea of sustainable development has been available in political talk for a long time. Endeavoring to accomplish it has become an overall need. Accomplishment in this field depends not just on the correct government arrangements. It is additionally a matter of social commitment. There are distinctive immediate and roundabout devices expected to advance and fortify positive changes in social mentalities/ attitudes. Among the main ones are public awareness campaigns (Borawska, 2017).

It has a wide range of definitions, however, usually, it is perceived as financial advancement in which the way toward coordinating political, monetary, and social exercises happens, while safeguarding the characteristic equilibrium and the maintainability of fundamental normal cycles to ensure the capacity to meet the essential requirements of individual networks or residents of both the present and people in the future (Ecological Insurance Law Act, 2001; Borawska A. 2017; WCED, 1987).

Because of a developing environmental crisis and huge social imbalances in worldwide turn of events, society adopted sustainable development as the main improvement model [1–4] with clear "activity guiding power" (Christen & Schmidt, 2011).

Sustainable development is an ethical objective and an issue "... on a standard with basic liberties, majority rules freedom system and opportunity" (Holden et, al., 2017). Its significance is accentuated by the United Nations General Assembly's decision that the endurance of social orders and the planet are in danger (UN, 2015). In recognition of this danger, the Assembly advanced 17 Sustainable Development Goals (SDGs) to address worldwide issues, for example, destitution, joblessness, expanding imbalances and variations identified with sex, riches and influence, political and natural dangers (Sunthonkanokpong & Murphy 2019).

The SDGs center around three mainstays of environmental quality, economic welfare, and social coherence (Böhringer and Jochem, 2007) reaffirming Fisher and McAdams' (2015) contention that sustainability can be conceptualized past its ecological measurement. The SDGs structure part of the 2030 Agenda for

Sustainable Development (UN, 2015) to guarantee that advancement ought not to trade off people in

the future's capacity to address their issues UN (UN, 1987).



Fig (4)1: 17 SDGs (UN, 2018)

• **Sustainable Development Goals**

These objectives are joined by 169 targets. Those will be "further explained through pointers zeroed in on quantifiable results". Targets "are activity situated, worldwide in nature and generally material. They consider diverse public real factors, limits, and levels of advancement and regard public arrangements and needs.

They expand on the establishment laid by the MDGs, try to finish the incomplete business of the MDGs, and react to new difficulties. Targets are characterized as optimistic worldwide focuses, with every administration setting its public targets guided by the worldwide degree of aspiration yet considering public conditions. The objectives and targets coordinate monetary, social, and natural viewpoints and perceive their interlink ages in accomplishing sustainable development in the entirety of its measurements.

1. End poverty everywhere
2. End hunger, improve nutrition and promote sustainable agriculture
3. Attain healthy lives for all
4. Provide quality education and life-long learning opportunities for all
5. Attain gender equality, empower women and girls everywhere
6. Ensure availability and sustainable use of water and sanitation for all
7. Ensure sustainable energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Promote sustainable infrastructure and industrialization and foster innovation
10. Reduce inequality within and between countries
11. Make cities and human settlements inclusive, safe and sustainable
12. Promote sustainable consumption and production patterns
13. Tackle climate change and its impacts

and marine resources for sustainable development.

15. Protect and promote sustainable use of terrestrial ecosystems, halt desertification, land degradation and biodiversity loss
16. Achieve peaceful and inclusive societies, access to justice for all, and effective and capable institutions
17. Strengthen the means of implementation and the global partnership for sustainable development

https://www.euro.who.int/_data/assets/pdf_file/0/006/264984/Sustainable-Development-Goals-and-the-European-Environment-and-Health-Process-Aligning-the-Agenda.pdf

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

• **The crisis: Current unsustainable production and consumption of plastics:**

Secured by the SDGs, the United Nations Environment Assembly (UNEA) has perceived the plastic issue as a genuine and quickly developing issue of worldwide concern, which requires a pressing worldwide reaction. At the end of the fourth meeting of the UNEA in March 2019, governments embraced a Ministerial Declaration named 'Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production' that focuses on fundamentally decrease the assembling and utilization of single-utilize plastic items by 2030 (Progress on Plastics Update, 2019).

In fact, tackling plastic pollution has become an integral part of the 2030 Agenda and its Sustainable Development Goals (SDGs). Implementing SDG 12, 14 on sustainable consumption and production patterns is especially important in curbing plastic waste generation. The mischief brought about by plastic immeasurably exceeds the advantages it brings to society, and the benefits acknowledged by organizations will never make up for the harm brought about by the

contamination it makes, including expanded ozone-depleting substance discharges, impacts on biodiversity, and effects on the tourism industry, fisheries, public wellbeing, and human wellbeing. <https://www.2030spotlight.org/en/book/1883/chapter/sdg-12-initiatives-reduce-production-and-consumption-plastics>

- **Sustainable development incorporates a more or less stable set of defining characteristics:**

(1) equity (alludes to equity/fairness in the manner in which we create and incorporates entomb/intra-generational value (not bargaining the capacity of future and current ages to address their issues/desires), interspecies equity (ecological stewardship that alludes to the endurance of different species on an equivalent premise to human endurance), geographical equity (worldwide duty in a feeling of shared however separated obligation), and procedural value (democratic and participatory governance);

(2) Dynamics (sustainable development is a process of change because the environment and society change continuously, entailing uncertainties and risks that need a precautionary approach);

(3) Integration (of the diverse sustainability standards in an agreeable way to accommodate improvement targets with ecological ones).

(4) Normativity (sustainable development is a social build and fundamentally sums to settling on regularizing choices and decisions, which are at last dependent on the qualities we keep up about how we grow, presently and later on) (Waas et al., 2011).

10- Study:

In this research we test the hypotheses through

- **awareness campaign of protecting the marine environment from plastic pollution for (Alexandria population sample - women and men):**



Figure(5)



Figure(6)

designing four awareness campaigns to different type of audiences in order to investigate sustainable development of social media awareness campaigns for plastic pollution before and after the exposure to these campaigns.

The first campaign is directed to target composed of men and women (age group from 20 to 55 years), the sample consisted of 150 respondents, from a random Egyptian sample of Facebook, and 17 were dropped due to incomplete responses, resulting in 133 respondents. Mothers target (ages from 20 to 40 years old) to the second campaign, the sample consisted of 160 respondents, from a random Egyptian sample of Facebook, and 42 were dropped due to incomplete responses, resulting in 118 respondents. Permanent customers of large markets" sample (women and men from 20 to 55 years) for the third campaign, the sample consisted of 112 respondents, from a random sample of Facebook, and 14 were dropped due to incomplete responses, resulting in 98 respondents. Youth (women and men) (age group from 16 to 35 years old) for the fourth campaign, the sample consisted of 150 respondents, from a random sample of Facebook, and 1473 were dropped due to incomplete responses, resulting in 103 respondents. Facebook has been used to this experiment because it's the most used application by Egyptians users.

11- Stimuli:

Four public awareness campaigns were designed to raise awareness of the plastic pollution dangers. To make sure that the ads options were suitable for this research, 15 specialists were asked to watch the ads, and five minutes later, they were tested to recall plastic pollution awareness messages.

- **First: Description and analyze of the first**

Concept	The idea depends on the formation of the fish for a prohibition or warning sign, which the fish creates as an indication of the harm and danger that plastic materials pose to marine life.
Audience segmentation	Alexandria population sample (women and men 20-55 years old)
Publishing websites	Facebook
Slogen	“The plastic pollution kills creatures” In the left side of the design
Logos	In the last third left of the design
Back ground	The background was based on a photograph of the seabed to reflect the realism of the advertising message
Design philosophy	The design was based on the axial center of the basic shape through the formation of the fish for the world famous prohibition sign around the plastic bag in the middle of the design.

Concept	The poster shows a close-up shot of a small part of a plastic bag containing alots of fishes as an indication of the damage caused by the plastic materials to the fish
Audience segmentation	Alexandria population sample (women and men 20-55 years old)
Publishing websites	Facebook
Slogen	“The plastic pollution kills creatures” In the left side of the design
Logos	In the last third left of the design
Back ground	A close-up view of a transparent plastic bag carrying a large number of fish
Design philosophy	The design is based on the creative anarchy theory that appears in the fish distribution inside The plastic bag in order to show the large amount of thickness that gets trapped inside the plastic materials and may lead to its death



Figure(7)(8)

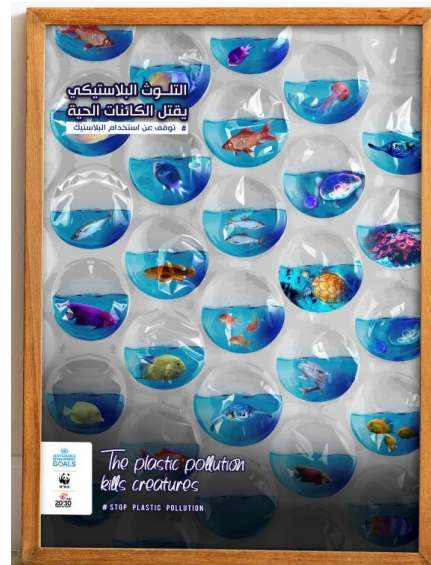
Concept	The idea of this posters depends on the use of some plastic elements like cups and spoons to form the shape of a jellyfish To
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Concept	The idea of this posters depends on the use of some plastic elements like cups and plates to form the shape of a turtle to embody the harm done to
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	embody the severe harm done to these living organisms		these living organisms
Audience segmentation	Alexandria population sample (women and men 20-55 years old)	Audience segmentation	Alexandria population sample (women and men 20-55 years old)
Publishing websites	Facebook	Publishing websites	Facebook
Slogen	“The plastic pollution kills creatures” In the left side of the design	Slogen	“The plastic pollution kills creatures” In the left side of the design
Logos	In the last third left of the design	Logos	In the last third left of the design
Back ground	The background was based on a photograph of the seabed	Back ground	The background was based on a photograph of the seabed
Design philosophy	The design philosophy is to replace the shapes of living marine organisms with repeated plastic elements of different sizes to form the body of marine organisms as an expression of the danger of plastics that eliminate and reduce living organisms as a symbol of the process The unsafe use of plastic. Based on the principle of strangeness and departure from the traditional in design.		



Figure(9)



Figure(10)

Concept	The designer deliberately integrated the sea shot with the texture of plastic materials and replaced the natural sand in the form of plastic bags as an expression of the extent of the impact of these plasticizers on marine life	Concept	The idea is based on using plastic bubbles to trap marine organisms as an expression of the danger of those substances that lead to suffocating and killing marine organisms
Audience segmentation	Alexandria population sample (women and men 20-55 years old)	Audience segmentation	Alexandria population sample (women and men 20-55 years old)
Publishing websites	Facebook	Publishing	Facebook

Slogen	“The plastic pollution kills creatures” In the left side of the design	websites Slogen	“The plastic pollution kills creatures” In the left side of the design
Logos	In the last third left of the design	Logos	In the last third left of the design
Back ground	Top view of sea beach	Back ground	Photographic shot for plastic bubbles
Design philosophy	The confrontation/antibiosis between the Semantics between the combination of the shape of the sea and its waves and its gain of the plastic texture and shape of the beach sand to show the dangerous effect of the plastic material on the beauty of the photograph and thus the effect of this pollution, whether on marine life or the effect of visual pollution.	Design philosophy	The design is based on the principle of strangeness in depicting marine organisms that are supposed to live in the seas, placing them inside plastic bubbles, and confining different forms of those living creatures with a balanced repetition inside those bubbles to create a contrast in their shapes in order to attract attention to this strange sight

- **Second: Description and analyze of the second awareness campaign of protecting the future generations (children) from plastic pollution for (mothers sample responses - age from 20 to 40 years):**



Figure (13)(14)(15)(16)

Concept	This campaign relies on the emotional approach according to the fact that the target group is mothers, so the designer used the chord of motherhood's emotion to stimulate her to unconscious defense of children, where he locked the child inside a plastic element and wrote an advertising slogan 'that motivates the protection of the child's future which may affected by the plastic pollution.
Audience segmentation	the mothers sample responses (age from 20 to 40 years) on Facebook
Publishing websites	Facebook
Slogen	“Mamy!!! Donot use plastic... Save my future” In the third bottom part of the design
Logos	In the middle of the bottom and top of the design
Back ground	White and simple back ground to focus on the design elements
Design philosophy	The design philosophy depends on the pivot by using simple elements of plastic elements such as the spoon, cup and plastic bags and using a large size reflects the unreality in its ratio to the child used inside each poster, and this principle of strangeness in proportions within the design is achieved in order to draw attention to the ads idea

- **Third: Description and analyze of the third awareness campaign of protecting the permanent customers of large markets from plastic pollution for permanent customers of large markets (sample - women and men from 20 to 55 years):**

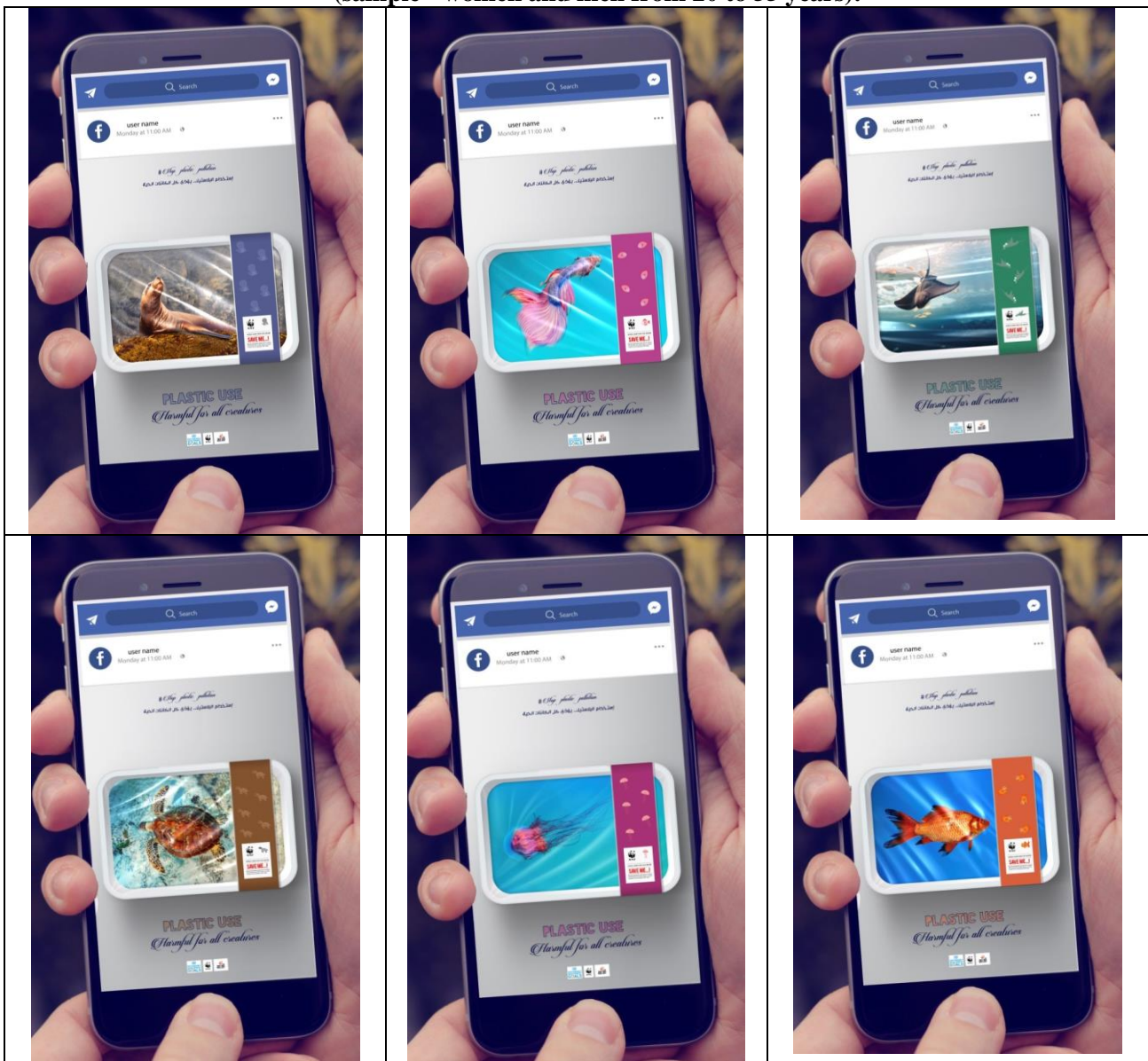
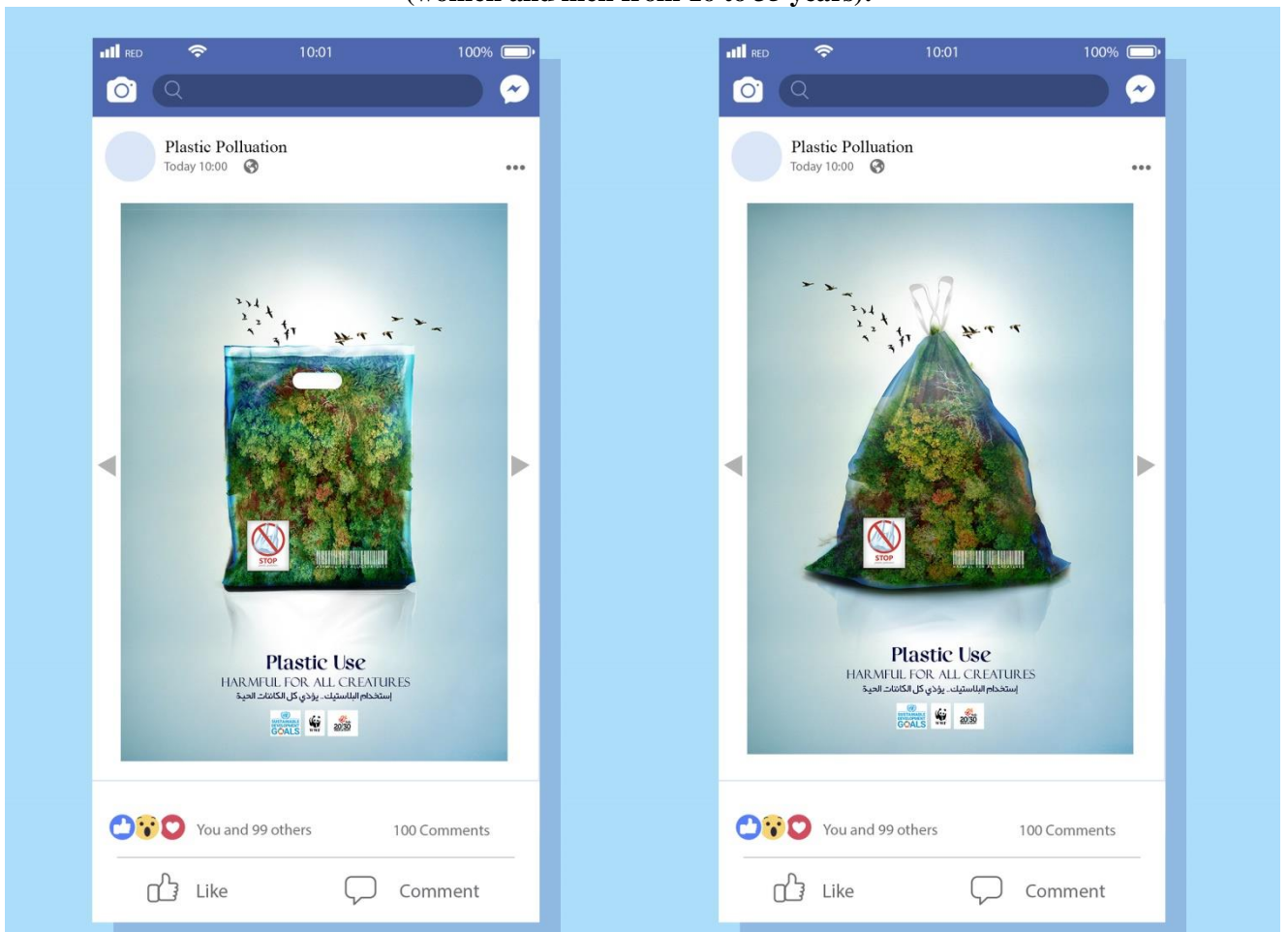


Figure (17)(18)(19)(20)(21)(22)

Concept	According to targets segmentation to this campaign (permanent customers of large markets), so the designer used one of the plastic containers that are used for frozen food, which is sold abundantly inside those stores, And put one of the photographs of a marine organism inside this container and gave it the feel of the plastic to texture to reflect the damage to the environment as a result of using these single-use plastic containers.
Audience segmentation	the “permanent customers of large markets” sample (women and men from 20 to 55 years) on Facebook
Publishing websites	Facebook
Slogen	Plastic use... Harmful for all creatures
Logos	In the middle of the top and bottom of the design
Back ground	Gray and simple back ground to focus on the design elements
Design philosophy	The design is based on the theory of “form and background”, as the design in all campaign posters depends on the same shape of the plastic package and changing the cover of the package, which consists of a photographic shot of a marine element from the marine environment and give it the tight plastic texture as an expression of the danger of the unsafe use of plastic materials on the life of living creatures

• **Fourth: Description and analyze of the Fourth awareness campaign of environmental protection from plastic pollution for youth sample responses (women and men from 16 to 35 years):**



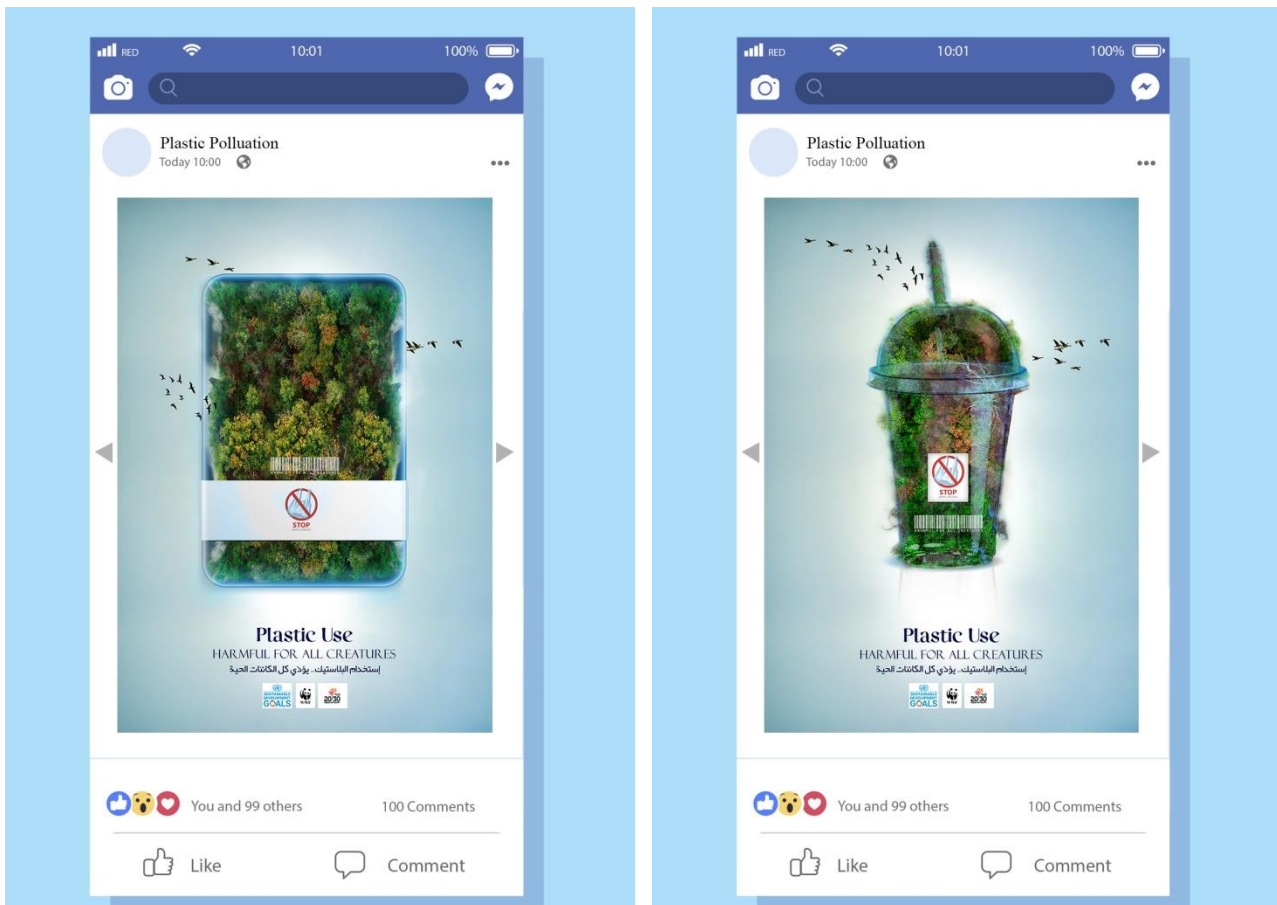


Figure (23)(24)(25)(26)

Concept

This campaign relies on combining of one the plastic elements and trees, one of the most important components of the environment and life to reflect the damage that may be caused by the increased use of these plastic materials on the environment.

Audience segmentation

youth sample responses (women and men from 16 to 35 years)

Publishing websites

Facebook

Slogen

Plastic use... Harmful for all creatures

Logos

In the middle of the bottom of the design

Back ground

Gray and simple back ground to focus on the design elements

Design philosophy

The design relies on the principles of "confinement" and "strangeness" to create a dramatic dialogue in the design, as the designer relied on locking amazing trees inside one of the plastic elements as an expression that the inflation in the use of those harmful substances seriously harms the elements of the environment, and the deliberate exit of birds outside these plastic elements because it's their natural environment, and put some signs on the plastic elements, such as the bar code and the stop using plastic signs to make it realistic scene.

12- Measures:

- The extent of exposure was evaluated before and after exposure to awareness-raising campaigns, and the study adopted a measure (Chin YSJ., 2019; Pretto et al., 2015) (appendix 1:4) to measure the impact of awareness campaigns to raise awareness of the effect of plastic pollution on the 5-Point Likert scale using base points, I strongly disagree, I strongly agree.
 - In this research, the researcher has used the statistical analyses of social sciences (SPSS 25) in the conduct of statistical analyses and methods used in the study:
 - 6- Pearson correlation coefficient.
 - 7- Cronbach's alpha coefficient.
 - 8- Frequency and Percent.

- 9- Mean and Standard deviation
- 10- Chi-square

12-1- Validity and resolution stability

- The validity of the Internal Consistency results:

To verify the internal consistency of the resolution, the researchers calculated the

correlation between the scores of each term of resolution and the overall outcome of the resolution, and the results were as shown in table (3):

Table (3): The correlation coefficients between

Item no.	Correlation coefficient	P-value	Significance
1	0.45	0.012	SN
2	0.57	0.01	SN
3	0.55	0.01	SN
4	0.56	0.01	SN
5	0.42	0.02	SN
6	0.62	0.01	SN
7	0.54	0.01	SN
8	0.51	0.01	SN
9	0.41	0.024	SN
10	0.48	0.01	SN
11	0.42	0.02	SN
12	0.70	0.01	SN
13	0.58	0.01	SN
14	0.44	0.014	SN
15	0.68	0.01	SN
16	0.64	0.01	SN
17	0.70	0.01	SN
18	0.49	0.01	SN

Table (3) shows the correlation coefficients between the statements of the questionnaire and the total scores of the questionnaire, ranging from 0.70 to 0.41, all of which are statistically significant, and therefore the questionnaire statements are believed to be consistent with what has been established for its measurement.

Results and Discussion:

- **Resolution stability results.**

To verify the persistence of resolution, the researcher uses the method of the Cronbach's alpha coefficient and the results are as shown in the Table (4):

Table (4): Shows the results of Cronbach's alpha resolution test.

	Items	Cronbach's Alpha Coefficient
Questionnaire	18	0.86

Table (4) shows the persistence factor of resolution (0.90), which is high, reassuring the

researchers of the results of the resolution.

13-1- Statistical results of research:

The frequencies, the arithmetic mean, the standard deviation, and the "Ka2" test were used to indicate the differences between the responses of the targets of the research sample about the questionnaire statements for the 4 campaigns according to a 5-point scale graded as follows:

I strongly agree, I agree, neutral, I disagree, I strongly disagree "in weights of (5, 4, 3, 2, 1) in order, and the range was calculated by placing the smallest weight of the highest weight on the scale (5-1 = 4), to determine the actual length of each level that is (4 ÷ 5 = 0.80), which means that the level "strongly disagree " is between value (1) and less (1 + 0.80), the level is " Don't agree" between value (1.80) and less (0.80 + 1.80), and the level is " neutral " between value (2.60) and less (2.60 + 0.80), and the level is "agreed" between value (3.40) and less (3.40 + 0.80), and the level is " very agree " between value (4.20) to (5).

- Thus, the weighted weight of the answers to each of the words is as follows:

Table (5) The significance differences between the average scores of the responses of Alexandria population sample (women and men) before and after the exposure to the public awareness campaigns

First campaign Alex. population sample	Mean	SD	Agreement	Chi-square		Effect size
				X ²	P-value	
Before campaign	2.38	1.33	I don't agree	1325.59	0.001	(0.62) Large
After campaign	3.92	1.31	I agree			

Table (5) shows the results of the "Ka-2" test for the significance of the differences between the scores of the responses of the sample of Alexandria populations (women and men) before and after the first campaign was implemented. The arithmetic mean of the responses before the campaign was implemented reached (2.38) with the level of "I don't agree." The arithmetic average

- 1-1.79 (I strongly disagree)
- 1.80 - 2.59 (I disagree)
- 2.60 - 3.39 (neutral)
- 3.40 - 4.19 (I agree)
- 4.20-5 (I strongly agree)

The total iterations of each campaign (number of campaign sample members x number of questionnaire statements) were used to calculate the value of "Ka2" and the arithmetic mean and standard deviation of each campaign before and after the exposure of the campaign.

Results of statistical hypotheses tests of research

• Results of the first hypothesis of research:

The first hypothesis states that "There is a statistically significant difference between the average degrees of the Alexandria population sample (women and men) to the first awareness campaign (protecting the marine environment from plastic pollution) before and after the exposure of the campaign".

of the responses after implementing the campaign was (3.92) with the level of "I agree", and the size of the effect was (0.62), which is a large impact, indicating the effect of the campaign awareness towards protecting the marine environment from plastic pollution.

Figure (27) indicates that:

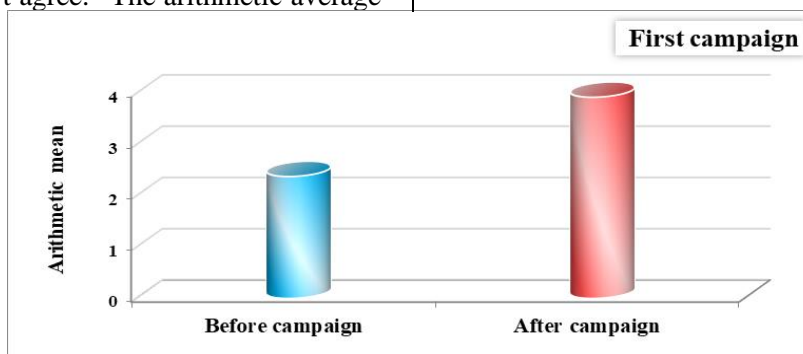


Figure (27) shows the average scores of the responses of Alexandria population sample (women and men) before and after the exposure to the public awareness campaign

From Table (5), its results, and graph (27), the first hypothesis of the research is realized.

Results of the second hypothesis of research:

The second hypothesis states that "there are statistically significant differences between the

Table (6) The significance differences between the average scores of the mothers sample responses (age from 20 to 40 years) before and after the exposure to the second public awareness campaigns

Second campaign	Mean	SD	Agreement	Chi-square		Effect size
				X ²	P-value	
After campaign	2.53	1.23	I don't agree	1102.04	0.001	(0.59) Large
After campaign	3.88	1.23	I agree			

Table (6) shows the results of the "Ka-2" test for the significance of the differences between the scores of the mothers sample responses (age from 20 to 40 years) to the second awareness campaign (protecting the future generations (children) from plastic pollution) before and after the exposure of the campaign. The arithmetic mean of the responses before the campaign was implemented reached (2.53) with the level of "I don't agree."

degrees of the mothers sample responses (age from 20 to 40 years) to the second awareness campaign (protecting the future generations (children) from plastic pollution) before and after the exposure of the campaign."

The arithmetic average of the responses after implementing the campaign was (3.88) with the level of "I agree", and the size of the effect was (0.59), which is a large impact, indicating the effect of the campaign towards awareness mothers about protecting the children future (children) from plastic pollution.

Figure (28) indicates that:

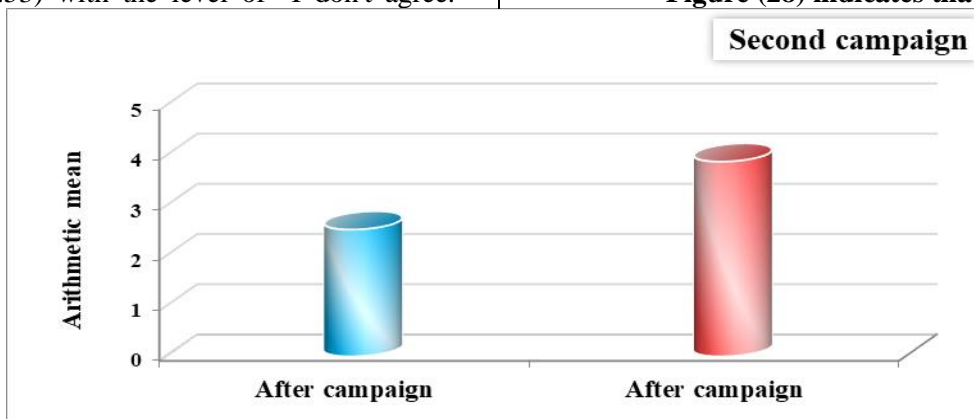


Figure (28) shows the average scores of the mothers sample responses (age from 20 to 40 years) before and after the exposure to the second public awareness campaign."

From Table (6), its results, and graph (28), the second hypothesis of the research is realized.

• **Results of the third hypothesis test:**

The third hypothesis states that "there is a statistically significant differences between the

Table (7) The significance differences between the average scores of the permanent customers of large markets sample responses (women and men from 20 to 55 years) before and after the exposure to the third public awareness campaigns

degrees of responses of the "permanent customers of large markets" sample (women and men from 20 to 55 years) to the third awareness campaign (protecting the permanent markets consumers from plastic pollution) before and after the exposure of the third campaign.

Third campaign	Mean	SD	Agreement	Chi-square		Effect size
				X ²	P-value	
After campaign	2.45	1.31	I don't agree	733.50	0.001	(0.51) Large
After campaign	3.74	1.35	I agree			

Table (7) shows the results of the "Ka-2" test for the significance of the differences between the scores of the permanent customers of large markets sample responses (women and men from 20 to 55 years) to the third awareness campaign before and after the exposure of the campaign. The arithmetic mean of the responses before the campaign was implemented reached (2.45) with

the level of "I don't agree." The arithmetic average of the responses after implementing the campaign was (3.74) with the level of "I agree", and the size of the effect was (0.51), which is a large impact, indicating the effect of the campaign towards awareness permanent customers of large markets about plastic pollution.

Figure (29) indicates that:

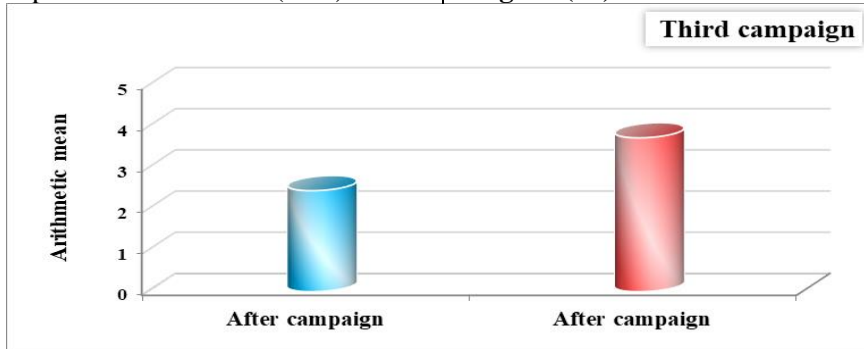


Figure (29) shows the average scores of the permanent customers of large markets sample responses (women and men from 20 to 55 years) before and after the exposure to the third public awareness campaign."

From Table (7), its results, and graph (29), the second hypothesis of the research is realized.

• **Results of the fourth hypothesis test**

The fourth hypothesis states that "there are statistically significant differences between the

degrees of the youth sample responses (women and men from 16 to 35 years) to the fourth awareness campaign (environmental protection from plastic pollution) before and after the exposure of the fourth campaign."

Table (8) The significance differences between the average scores of the the youth sample responses (women and men from 16 to 35 years) before and after the exposure to the fourth public awareness campaigns

Fourth campaign	Mean	SD	Agreement	Chi-square		Effect size
				X ²	P-value	
After campaign	2.33	1.33	I don't agree	869.14	0.001	(0.55) Large
After campaign	3.78	1.33	I agree			

Table (8) shows the results of the "Ka-2" test for the significance of the differences between the scores of the youth sample responses (women and men from 16 to 35 years) to the fourth awareness campaign before and after the exposure of the campaign. The arithmetic mean of the responses before the campaign was implemented reached (2.33) with the level of "I don't agree." The

arithmetic average of the responses after implementing the campaign was (3.78) with the level of "I agree", and the size of the effect was (0.55), which is a large impact, indicating the effect of the campaign towards awareness the youth sample about plastic pollution.

Figure (30) indicates that:

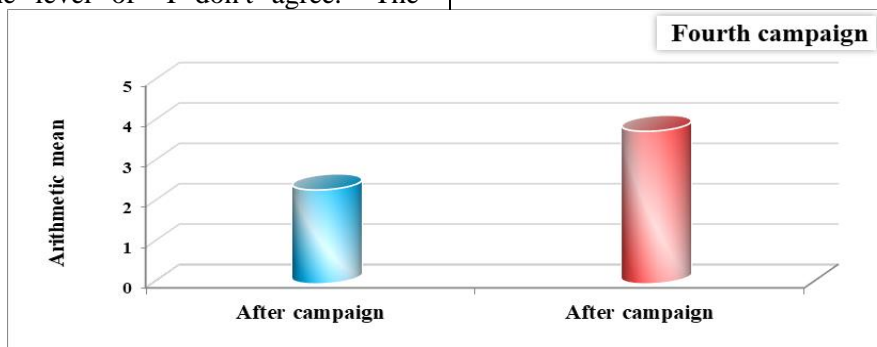


Figure (30) shows the average scores of the youth sample responses (women and men from 16 to 35 years)

before and after the exposure to the fourth public awareness campaign."

From Table (8), its results, and graph (30), The second hypothesis of the research is realized.

• Results of the fifth hypothesis test:

The fifth hypothesis states that "there are statistically significant differences between the

degrees of responses of the research samples towards the four awareness campaigns after the exposure" depending on the audience segmentation.

Table (9): the significance differences between the degrees of the research sample responses towards the four awareness campaign.

Campaigns	Mean	SD	Agreement	Chi-square		Effect size	Rank
				X ²	P-value		
First campaign	3.92	1.31	I agree	128.88	0.001	0.62	1
Second campaign	3.88	1.23	I agree			0.59	2
Third campaign	3.74	1.35	I agree			0.51	4
Fourth campaign	3.78	1.33	I agree			0.55	3

Table (9) shows that there are statistically significant differences between the degrees of the research samples responses towards the four awareness campaigns after their exposure. The "Ka-2" value was (128.88) with the level of significance (0.001). The first campaign came in first place with an arithmetic mean (3.92) and an effect size (0.62), followed by the second

campaign with an arithmetic mean (3.88) and an effect size (0.59), then the fourth campaign with an arithmetic mean (3.78) and an effect size (0.55), and in the last place is the third campaign with an arithmetic mean (3.74) and an effect size (0.51).

Figure (31) indicates that:

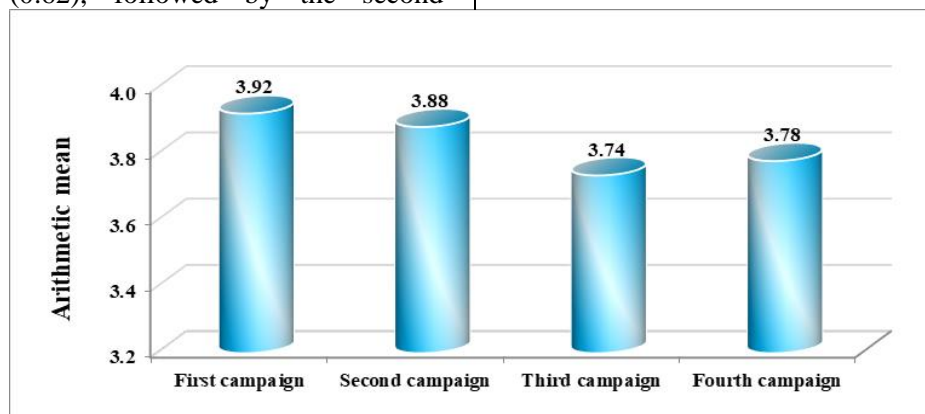


Figure (31): shows the averages of the research samples responses towards the four awareness campaigns after their exposure.

From Table (9), its results, and graphic (31), the fifth hypothesis of the research is realized.

14- Recommendations:

- Necessity of studying the awareness campaign effect on the audience gender and their responses.
- Utilizing social networking sites to stimulate sustainable behavior for the Egyptian audience to protect the environment.
- Benefiting from important presidential initiatives to preserve the environment and activating the role of advertising awareness campaigns to influence the users behavior.

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Appendix (1) Questionnaire form for the target group of Alexandria population sample (women and men 20-55 years old)

Name: Age:..... Gender:.....

City:..... Marital status:.....

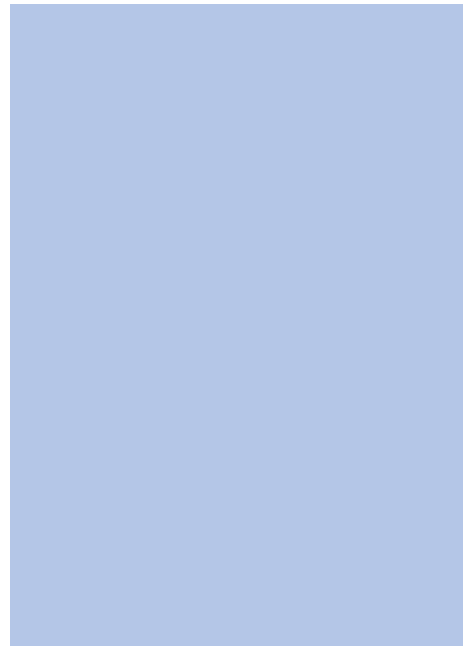
Kindly answer the following form, which is aimed at scientific research,

“Sustainable development of social media awareness campaigns for plastic pollution”

So I ask you to fill this form with utmost objectivity by marking (√) in front of each phrase:

First campaign Statements	before				
	Very agree	Agreed	N	Don’t agree	Strongly don’t agree
1 Taking care of the environment is something I really care about					
2 In order to protect the environment from plastic pollution we need economic growth					
3 I would contribute part of my income if I were certain that money would be used to prevent plastic pollution					
4 The environment quality is getting better because of reducing plastic consumption					
5 We worry too much about the plastic using and its effect on the environment and degrading human health					
6 Education younger generation about the knowledge of plastic					

- 7 pollution in important
- 8 A lots can be done by me or family /friends to improve the current environmental situation
- 9 I do not mind in increasing in takes if the extra money is used to prevent further plastic pollution.
- 10 Protecting the environment should be given priority , even it causes slower economic growth and some loss in jobs
- 11 I often cut back on using plastic for environmental reasons
- 12 Everyone should saving environment form plastic pollution
- 13 Plastic pollution should not be a fair price to pay for economic development
- 14 I don't mind paying more money to use alternative which led to less plastic pollution
- 15 The environmental protection now in important than economic growth.
- 16 I am willing to accept cuts in my standards of living in order to protect the environment
- 17 Plastic pollution is extremely dangerous for health
- 18 I have confidence that the plastic pollution will improve.
- 19 The government has to reduce the plastic pollution but it should not cost me any money.



Best regards,

Appendix (2)
Questionnaire form for the target group
of the mothers sample responses (age from 20 to 40 years)

Name: Age:..... Gender:.....
City:..... Marital status:.....

Kindly answer the following form, which is aimed at scientific research,

“Sustainable development of social media awareness campaigns for plastic pollution”

So I ask you to fill this form with utmost objectivity by marking (√) in front of each phrase:

First campaign item	Statements	before				
		Very agree	Agreed	N	Don't agree	Strongly don't agree
1	Taking care of the environment is something I really care about					
2	In order to protect the environment form plastic pollution we need economic growth					
3	I would contribute part of my income if I were certain that money would be used to prevent plastic pollution					
4	The environment quality is getting better because of reducing plastic consumption					
5	We worry too much about the plastic using and its effect on the environment and degrading human health					
6	Education younger generation about the knowledge of plastic pollution in important					
7	A lots can be done by me or family /friends to improve the current environmental situation					
8	I do not mind in increasing in takes if the extra money is used to prevent further plastic pollution.					
9	Protecting the environment should be given priority , even it causes slower economic growth and some loss in jobs					
10	I often cut back on using plastic for environmental reasons					
11	Everyone should saving environment form plastic pollution					
12	Plastic pollution should not be a fair price to pay for economic development					
13	I don't mind paying more money to use alternative which led to less plastic pollution					
14	The environmental protection now in important than economic growth.					



- 15 I am willing to accept cuts in my standards of living in order to protect the environment
- 16 Plastic pollution is extremely dangerous for health
- 17 I have confidence that the plastic pollution will improve.
- 18 The government has to reduce the plastic pollution but it should not cost me any money.



Best regards,

Appendix (3)

Questionnaire form for the target group of the “permanent customers of large markets” sample (women and men from 20 to 55 years)

Name: Age:..... Gender:.....
 City:..... Marital status:.....

Kindly answer the following form, which is aimed at scientific research,

“Sustainable development of social media awareness campaigns for plastic pollution”

So I ask you to fill this form with utmost objectivity by marking (√) in front of each phrase:

First campaign		before				
item	Statements	Very agree	Agreed	N	Don't agreed	Strongly don't agree
1	Taking care of the environment is something I really care about					
2	In order to protect the environment from plastic pollution we need economic growth					
3	I would contribute part of my income if I were certain that money would be used to prevent plastic pollution					
4	The environment quality is getting better because of reducing plastic consumption					
5	We worry too much about the plastic using and its effect on the environment and degrading human health					
6	Education younger generation about the knowledge of plastic pollution is important					
7	A lot can be done by me or family /friends to improve the current environmental situation					
8	I do not mind increasing in taxes if the extra money is used to prevent further plastic pollution.					
9	Protecting the environment should be given priority, even it causes slower economic growth and some loss in jobs					
10	I often cut back on using plastic for environmental reasons					
11	Everyone should save environment from plastic pollution					
12	Plastic pollution should not be a fair price to pay for economic development					
13	I don't mind paying more money to use alternative which led to less plastic pollution					
14	The environmental protection now is important than economic growth.					
15	I am willing to accept cuts in my standards of living in order to protect the environment					
16	Plastic pollution is extremely dangerous for health					
17	I have confidence that the plastic pollution will improve.					

- 18 The government has to reduce the plastic pollution but it should not cost me any money.



Best regards,

Appendix (4)
Questionnaire form for the target group
of youth sample responses (women and men from 16 to 35 years)

Name: Age:..... Gender:.....

City:..... Marital status:.....

Kindly answer the following form, which is aimed at scientific research,

“Sustainable development of social media awareness campaigns for plastic pollution”

So I ask you to fill this form with utmost objectivity by marking (√) in front of each phrase:

item	Statements	First campaign before				
		Ver y agre e	Agre ed	N	Don' t agre ed	Stron gly don't agree
1	Taking care of the environment is something I really care about					
2	In order to protect the environment form plastic pollution we need economic growth					
3	I would contribute part of my income if I were certain that money would be used to prevent plastic pollution					
4	The environment quality is getting better because of reducing plastic consumption					
5	We worry too much about the plastic using and its effect on the environment and degrading human health					
6	Education younger generation about the knowledge of plastic pollution in important					
7	A lots can be done by me or family /friends to improve the current environmental situation					
8	I do not mind in increasing in takes if the extra money is used to prevent further plastic pollution.					
9	Protecting the environment should be given priority , even it causes slower economic growth and some loss in jobs					
10	I often cut back on using plastic for environmental reasons					
11	Everyone should saving environment form plastic pollution					
12	Plastic pollution should not be a fair price to pay for economic development					
13	I don't mind paying more money to use alternative which led to less plastic pollution					
14	The environmental protection now in important than economic growth.					
15	I am willing to accept cuts in my standards of living in order to protect the environment					
16	Plastic pollution is extremely dangerous for health					
17	I have confidence that the plastic pollution will improve.					
18	The government has to reduce the plastic pollution but it should not cost me any money.					

Best regards,