

The Role of Graphic Design in Raising Awareness of the Dangers of Excessive Use of Plastic Bags

Mahmoud Salama Muhammad Asaad¹, Professor Dr. Ahmed Hussein Wasseif²

¹Full-time graphic design lecturer at the Palestine Technical University- Kadoorie

²Professor of Design at Minya University Faculty of Fine Arts

Abstract

Individual awareness and perception play an important role in reducing any phenomena or problems that threaten society or the environment. This research paper provides an important overview of individual perceptions of the risks associated with the use of single-use plastic bags. The researcher used a descriptive exploratory approach to examine the most relevant literature relevant to the subject of the study. The study concluded that there is a strong awareness of the environment and health at individual level, which is a positive indicator to build on when developing environmental policy in Palestine. However, the results reveal a gap between theoretical knowledge and practice, especially as regards the availability of alternatives, the effectiveness of campaigns and the role of government in the process. There is a lack of government and official efforts to take the necessary measures to reduce plastic bag use and to promote and activate environmental awareness campaigns for the replacement of single-use plastic bags. There is also considerable discontent in Palestinian society about the use of single-use plastic bags. The results show that institutional efforts need to be stepped up, either through enforcement (e.g. environmental taxes) or by supporting social and economic projects. The study also made a number of recommendations, the most important of which are: to intensify awareness campaigns using different media outlets to reach a wider audience, focusing on practical aspects rather than just on theory; to support environmental alternatives financially and logistically, particularly in the light of the difficult economic situation, to ensure that individual beliefs are translated into practical actions; Activating and monitoring government environmental policies, whether through legislation or through partnerships with the private sector and civil society; supporting scientific research and student and youth initiatives on environmental sustainability; and linking research findings to relevant government decisions.

Keywords: *graphic design, perception, plastic bags*

1. INTRODUCTION

We cannot ignore the important role that graphic design plays in our everyday lives. It is present in the phones we use, the Internet we use, the streets we walk through, the public transport we use, the TV, magazines, movies and public markets. It's become an integral part of everyday life. . Design has thus become a necessary activity in human societies, irrespective of their level of growth and development. It has turned from a private undertaking into a public undertaking that transcends all borders, barriers and cultures of peoples (Al-Taeb, 2017). Plastic is an integral part of our everyday lives. It can be found in everything from food bags and plates to water bottles and sandwich bags. It can be found in everything from food bags and plates to water bottles and sandwich bags. But the quest for convenience has gone too far, and we are not using plastics with care and care, which is leading to waste and damage to the environment. Excessive consumption of plastic and poor management of plastic waste are a growing threat, choking rivers and filling up landfills (Alqudah, A. Z., 2021). They are a major threat to the great marine ecosystems and have a negative impact on many key sectors of the economy, including shipping, tourism and fisheries. (Mora, Alfonso Garcia, 6 January 2021) Globally, plastic waste accounts for about 400 million tons of waste each year, and plastic has penetrated into many of the most remote and pristine areas of the planet. The threat from the plastics industry has become a major threat to soils, as plastic waste is deposited there, changing the composition of soils and affecting biodiversity. (Nature, 2023).

2. Study Objectives

- raising awareness of the harmful effects of plastic waste on the environment, on land, sea and air and on human health.

- Support and promote awareness-raising campaigns on environmental pollution issues, in particular on the excessive use and abuse of plastic bags.

–Encouraging the Palestinian Government Decision Centre to focus on awareness-raising campaigns on plastic pollution and to take the necessary decisions to reduce the use of environmentally harmful plastic materials.

3. Significance of the Study:

The aim of the study is to enrich the knowledge of researchers by studying this phenomenon and the related problem and then working to solve it. This is achieved by a practical experiment carried out by a researcher in accordance with international standards and measured in order to exploit the results of the research. The researcher also hopes that the study results will benefit the following parties:

- Responsible authorities in the Palestinian Authority and decision-makers.
- Health organizations and the Ministry of Health in the Palestinian Territories.
- Advertising agencies within the Palestinian Territories.

4. Study Questions and Hypotheses:

The Palestinian territories under the Palestinian Authority suffer from a lack of environmental awareness among individuals and lack of coordination between authorities and institutions dealing with environmental protection. There are no campaigns to raise citizens' awareness of the dangers of the excessive use of plastic bags, which have a negative impact on the environment and on the health of citizens.

Accordingly, the study hypothesis is as follows:

- There is no statistically significant effect at the level ($\alpha \leq 0.05$) on the degree of individuals' awareness of the dangers of excessive and misuse of plastic bags on the environment and human health.

Therefore, this study attempts to answer the following question:

- What is the degree of individuals' awareness of the dangers of excessive and misuse of plastic bags on the environment and human health?

5. Study boundaries:

Spatial borders: Palestine, Palestinian National Authority territory. Time frame: 2023-2025.

6. Study limitations:

- □ The scarcity of references related to the study topic within the Palestinian territories.
- □ The possibility of changing policies and decisions within the Palestinian territories.
- □ The refusal of some official institutions to provide any information or data on the subject of plastic bag manufacturing in Palestine.

7. Theoretical Literature

7.1 Health Awareness

Awareness is the ability of an individual to perceive and understand events or to feel them or to be able to perceive them directly. It can also be described as the state in which a person is aware and aware of a particular piece of information when it is directly available to him, and capable of influencing a wide range of actions and behaviours (Stanley, 1995). Health awareness can be defined as a process aimed at teaching people new healthy behaviours and healthy health habits and helping them reject and combat unhealthy attitudes and beliefs and replace them with healthy behaviours using methods of mass communication (Alqudah, A. Z., 2021). It can also be seen as a process of personal awareness and awareness of the surrounding health conditions, and of developing attitudes and mental perceptions about the general health of society (Ahmar, 2006).

7.2. The Role of Health Awareness Campaigns in Raising Awareness

Advertising campaigns aim to address the challenges society faces and seek solutions using scientific methods. This is achieved by a well-designed, precise, attractive and clear campaign plan, which is consistent with the campaign theme and the data available. These data will contribute to analysing the situation and finding solutions to these issues. Advertising campaigns gather a great deal of information

for the target population on the problems they face and on the various humanitarian services that are of benefit to them, and help to achieve social balance in society.

They influence knowledge, behaviour and attitudes in ways that serve the public interest by spreading and repeating messages, intensive coverage and repetition in order to achieve desired outcomes (Suleiman, 2022).

7.3. Effectiveness and Impact of Advertising Campaigns

- An advertising campaign can create a strong image of a particular and important issue.
- A campaign can aim to change a certain stereotypical image of an issue or draw society's attention to solutions for specific social issues.
- An advertising campaign can change behavior that is incompatible with the social environment, by convincing the individual that what they are doing is incorrect or by clarifying the dangers and negative consequences of such behavior—thereby prompting a behavioral change.
- Educating citizens and clarifying their rights and duties in society.
- Drawing the attention of public opinion to a particular issue or marginalized groups in society, such as campaigns highlighting the problems of people with disabilities, the homeless, disaster victims, or street children. Such campaigns aim to promote solidarity, compassion, or cooperation with these groups (Yousef, 2018).

7.4. The Role of Campaigns in Modifying Behavior

Behavior modification is achieved through what is called behavior modification campaigns, which focus on altering behavioral attitudes. These are considered among the most challenging types of campaigns because their goal is to address and change behavior, which is a form of habit. This makes it a sort of “battle.” Examples include anti-drug campaigns or anti-smoking campaigns (Suleiman, 2022).

7.5. Persuasion

Persuasion plays an important role in our daily lives and is needed in all aspects of human activity. It is a key element in the promotional process. Persuasion is one of the most important tools used in designing advertising campaigns and can take several forms—whether through design, content, or traditional verbal methods.

In concept, persuasion is the ability to influence a target group to achieve a specific goal. It aims to influence a particular audience to change or adjust its behavior regarding a specific issue. Persuasion is based on creating an interactive environment between the parties involved through a specific philosophy implemented in organized, sequential, and interconnected steps grounded in logic and knowledge. It can be described as “the process of enticing through reason, logic, and knowledge—a process carried out by a person to guide an individual or group toward specific directions they hold, using reason, logic, and knowledge” (Farjani, 2017, p. 67).

7.6 Excessive Consumption of Plastic Bags in Palestine

In light of the large and growing consumption of plastic bags in Palestine, it is estimated that the annual per capita consumption ranges between 400 and 500 bags. Data from the Palestinian Ministry of Local Government show that plastic constitutes 14.6% of total solid waste in the West Bank—the second-highest proportion after organic waste (Atmeh, 2019).

7.7. Plastic Pollution and Its Risk to Nature and Humans in Palestine

Plastic is one of the main components of solid waste in Palestine, accounting for 16.4% of total solid waste in the West Bank, while in Gaza Strip, plastic waste constitutes 14.0% of total solid waste. At the same time, Palestine suffers from the absence of recycling of plastic waste by joint service councils for solid waste management—except for some treatment activities in the governorates of Jerusalem and Jericho and a few private facilities (Palestinian Central Bureau of Statistics, 2023).

7.8. Reasons for Not Legislating a Ban on Plastic Bags in Palestine

In an interview with Dr. Abdel Rahman Al-Tamimi, Director of the Palestinian Hydrologists Association and Head of the Palestinian Green Party, he identified three reasons delaying the enactment of a law to regulate plastic bag consumption: First: The lack of willingness among politicians to issue regulations or laws on plastic consumption reduction, fearing conflicts with factory owners.

Second: A large portion of Palestinian politicians do not appreciate the importance of environmental issues, considering them to be a luxury or mere aesthetic interest.

Third: Palestinian environmental institutions are not making sufficient efforts to push for legislation on this issue or to pressure the official authorities.

Al-Tamimi added that the party—established in the early 1990s as a body to monitor social and economic policies with significant environmental impacts—is currently not following up on the issue of plastic bags, as it is focused on strengthening its position in the Palestinian public sphere and building its internal structure. However, he stressed the need to start reducing plastic bag consumption, as they are widely used and 90% of them are unhealthy due to a lack of knowledge about the materials used in their manufacture, their production process, and the extent of oversight (Anabtawi, 2017).

8. RESEARCH METHODOLOGY

This study adopts the descriptive survey research approach, which aims to describe the reality of problems and phenomena as they exist. The descriptive method was employed to review the most relevant literature related to the topic of the study.

– Population and Sample

The study population consists of individuals from the Palestinian community across all governorates of the West Bank and Gaza Strip, covering diverse age, professional, and educational groups. Given the importance of raising awareness about the dangers and harms of plastic bags in the Palestinian context—especially amid growing environmental and social challenges represented by pollution and the damage caused by plastic bags—raising awareness on this issue is considered an urgent necessity to safeguard the health of Palestinian citizens, protect nature, and increase individuals' interest in positive environmental behavior.

– Research Instrument

The researcher relied on a questionnaire as the main tool for data collection from the sample members, given its ease of distribution and application, as well as its high capacity to collect accurate quantitative and qualitative information within a timeframe appropriate to the study's context. The questionnaire was designed to align with and fulfill the objectives and questions of the study and included several items organized into two main axes that cover the variables under investigation. The researcher presented the initial version of the questionnaire to a panel of expert reviewers, including university faculty members specializing in the study's subject, academic research experts, and an Arabic language specialist. They were asked to provide feedback regarding the clarity of the items' wording and their suitability to the relevant axes. Based on their observations, modifications were made to ensure the tool's face validity for measuring the intended variables.

– Internal Validity (Internal Consistency of the Questionnaire Items)

To assess the internal consistency validity, the questionnaire was applied to a pilot sample of 35 individuals from outside the main study sample. Internal consistency was calculated through Pearson correlation coefficients between each item's score and the total score of the axis to which it belongs, followed by the necessary statistical analysis.

Table (1): Pearson correlation coefficients between each item's score and the total score of its corresponding axis

Item No.	Correlation Coefficient (Axis 1)	Item No.	Correlation Coefficient (Axis 2)
1	0.81**	1	0.78**
2	0.75**	2	0.82**
3	0.69*	3	0.74**
4	0.77**	4	0.77**
5	0.80**	5	0.67*
6	0.77**	6	0.79**
7	0.70**	7	0.75**
8	0.78**	8	0.74*
9	0.79**	9	0.80**
10	0.85**	10	0.88**
11	0.82**	11	0.75**
12	0.82**	12	0.69*

Item No.	Correlation Coefficient (Axis 1)	Item No.	Correlation Coefficient (Axis 2)
13	0.75**	13	0.77**
14	0.68*	14	0.79**

*Significant at the 0.05 level.

**Significant at the 0.01 level.

The table above shows that all correlation coefficients between each item and its total axis score are statistically significant, indicating that the items are coherent and valid for application to the study sample (Odeh, 2014).

Results Related to the Study Question

First: Results related to the study question:

“What is the degree of individuals’ awareness of the dangers of excessive and improper use of plastic bags on the environment and human health?”

To answer this question, means, standard deviations, percentages, and ranks were calculated for the items related to individuals’ awareness of the dangers of excessive and improper use of plastic bags on the environment and human health.

Table (2): Means, standard deviations, and percentages for the axis “Awareness of the dangers of excessive and improper use of plastic bags on the environment and human health”

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	SD	Mean	%	Rank	Level
1	I believe excessive use of plastic bags harms human health.	1	3	22	141	213	0.667	4.48	89.6%	3	High
2	I believe excessive use of plastic bags harms the environment.	1	6	9	107	257	0.642	4.61	92.3%	2	High
3	I have seen an awareness campaign in Palestine to reduce plastic bag use.	28	94	105	121	32	1.092	3.09	61.8%	12	Medium
4	I have seen an awareness campaign in Palestine to replace plastic bags with eco-friendly bags.	28	108	90	97	57	1.193	3.12	62.5%	11	Medium
5	I believe advertising campaigns will be effective in influencing Palestinian society to reduce plastic bag use.	4	26	48	197	105	0.879	3.98	79.6%	7	High

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	SD	Mean	%	Rank	Level
6	I see eco-friendly or cloth bags in the hands of Palestinian shoppers.	53	105	94	101	27	1.169	2.85	57.1%	13	Medium
7	I support banning plastic bags used for packaging products in supermarkets.	5	14	29	143	189	0.864	4.31	86.2%	4	High
8	I support replacing plastic bags with eco-friendly bags.	1	2	9	108	260	0.584	4.64	92.8%	1	High
9	I feel dissatisfied when using single-use plastic bags.	1	14	85	159	121	0.845	4.01	80.3%	6	High
10	The harsh economic conditions in Palestinian society do not allow replacing plastic bags with eco-friendly bags.	36	50	84	145	65	1.191	3.40	68.1%	8	Medium
11	I support imposing a tax on the use of plastic bags in supermarkets.	17	71	106	117	69	1.117	3.39	67.9%	9	Medium
12	The authorities previously took necessary measures to limit plastic bag use.	89	116	108	45	22	1.142	2.46	49.2%	14	Medium
13	The government currently shows no interest in replacing plastic bags.	5	5	47	163	160	0.815	4.23	84.6%	5	High
14	Replacing plastic bags with eco-	34	67	98	135	46	1.148	3.24	64.8%	10	Medium

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	SD	Mean	%	Rank	Level
	friendly bags is currently a luxury that is difficult to generalize.										
Overall axis score:		Mean = 3.702,		SD = 0.392		→		High			

The results indicate that the study sample's awareness of the dangers of excessive and improper use of plastic bags on the environment and human health was high, with an overall mean score of 3.702 and a standard deviation of 0.392. This suggests that respondents possess a good level of awareness of the risks posed by plastic bags, both environmentally and health-wise. Item means ranged from 2.46 to 4.64 (49.2% to 92.8%). The highest mean was for item (8) at 4.64 (92.8%), reflecting strong support for replacing plastic bags with eco-friendly alternatives—an indicator of clear environmental awareness and readiness to accept more sustainable options. Similarly, item (2) scored 4.61 (92.3%), showing strong recognition of environmental risks, while item (1) reflected comparable awareness of health risks. Items (7, 9, 13, and 5) also scored highly, highlighting support for banning plastic bags in supermarkets, dissatisfaction with their use, acknowledgment of the government's current inaction, and realistic expectations regarding the impact of awareness campaigns. These results point to strong individual awareness, coupled with a recognition of institutional shortcomings. In contrast, items (3, 4, 6, 10, 11, 12, and 14) reflected medium awareness, suggesting variability in certain aspects of awareness. Possible explanations include limited exposure to awareness campaigns in Palestine (items 3 and 4), indicating media and educational gaps; low visibility of eco-friendly bags in actual use (item 6), highlighting a gap between awareness and behavior; and acknowledgment of economic constraints (item 10) and the perception of eco-friendly alternatives as a luxury (item 14). The lowest mean (2.46) was for item (12), reflecting skepticism about the effectiveness of past governmental measures to limit plastic bag use, which undermines public trust in regulatory bodies and underscores the need for clearer political and legislative interventions.

9. CONCLUSIONS

In light of the above findings, the researcher concludes the following:

1. There is strong individual-level environmental and health awareness, which is a positive indicator that can be leveraged in developing environmental policies in Palestine.
2. However, the results reveal a gap between theoretical awareness and practical practices, particularly regarding the availability of alternatives, the effectiveness of campaigns, and the governmental role.
3. There is a governmental and official absence in taking the necessary measures to reduce the use of plastic bags and in supporting and activating environmental awareness campaigns focused on replacing single-use plastic bags.
4. There is significant public dissatisfaction within Palestinian society regarding the use of single-use plastic bags.
5. The results indicate the necessity of enhancing institutional efforts, whether through the enactment of legislation (such as an environmental tax) or by supporting social and economic projects that facilitate the use of alternatives.

10. Recommendations

Based on the above and in light of the findings, the researcher recommends the following:

1. Intensifying awareness campaigns using various media channels to reach a wider segment of the population, with a focus on the practical aspect rather than just the theoretical.
2. Providing financial and logistical support for environmental alternatives, especially in light of the difficult economic situation, to ensure the transformation of individual conviction into practical behavior.
3. Activating governmental environmental policies and monitoring their impact on the ground, whether through legislation or partnerships with the private sector and civil society.
4. Encouraging scientific research and student and youth initiatives in the field of environmental sustainability, and linking research outcomes to relevant governmental decision-making.

REFERENCES

1. Ahmaro, Riad. (2006). *The Health Inspector in Jordan: His Duties and Responsibilities*. Amman, Jordan: Dar Arm for Publishing, p. 19.
2. Al-Taeb, Masoud. (2017). *Fundamentals of Advertising* (1st ed.). Cairo.
3. Anabtawi, Ruba. (July 1, 2017). Like Many Countries Around the World, Even the Poorest... When Will We Say Goodbye to Plastic Bags in Our Stores? Palestine. Retrieved on (12/8/2024) from: <https://www.maan-ctr.org/magazine/article/1587/>
4. Atmeh, Raghda. (September 4, 2019). To Save What Remains of the Palestinian Environment: Youth Initiatives to Eliminate Plastic. Palestine. Retrieved on (11/8/2024) from: [link not provided in source]
5. Abualrejal, H. M., Alqudah, A. Z., Ali, A. A. A., Saoula, O., & AlOrmuza, T. K. (2021, April). University parcel centre services quality and users' satisfaction in higher education institutions: A case of Universiti Utara Malaysia. In K. Arai & R. Bhatia (Eds.), *Proceedings of the International Conference on Emerging Technologies and Intelligent Systems* (pp. 885-895). Springer International Publishing. https://doi.org/10.1007/978-3-030-67716-9_83
6. Farjani, Ali. (2017). *Public Relations and Communication Strategies*. Amman, Jordan: Dar Amjad for Publishing.
7. Mora, Alfonso Garcia. (June 6, 2021). Plastic Waste: A Growing Threat and a Missed Opportunity. World Bank Blog. Retrieved on (18/7/2023) from: <https://blogs.worldbank.org/ar/voices/alnfayat-alblastykyt-khtr-mtzayd-wfrst-dayt>
8. Nature. (2023). Plastic Waste is Everywhere – Countries Must Be Held Accountable, p. 222.
9. Stanly, J. Baran & Davis, Dennis K. (1995). *Mass Communication Theory: Foundations, Ferment, and Future*. New York: Wadsworth Publishing, p. 226.
10. Suleiman, Al-Rasheed Dawood Adam. (2022). The Role of Media Campaigns in Spreading Health Awareness to Limit the Spread of the Coronavirus: The Media and Public Relations Department at the Ministry of Health, Khartoum State as a Model (January 2020 - November 2021). *Al-Qulzum Journal of Islamic Studies*, Issue 5, 149-178. Retrieved from: <http://search.mandumah.com/Record/1207385>
11. Suleiman, Al-Rasheed Dawood Adam. (2022). The Role of Media Campaigns in Spreading Health Awareness to Limit the Spread of the Coronavirus: The Media and Public Relations Department at the Ministry of Health, Khartoum State as a Model (January 2020 - November 2021). *Al-Qulzum Journal of Islamic Studies*, Issue 5, 149-178. Retrieved from: <http://search.mandumah.com/Record/1207385>
12. Yousef, Atef. (2018). *Planning Advertising Campaigns*. Egypt, p. 39.