





## Consumer Protection Mechanisms from Information Pollution in the Digital Environment

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### Abstract:

Information has shown to be the weapon on which global economic institutions depend, namely with the intensification of competition and the rapid technological development that the world is nowadays witnessing in light of the digital information revolution. Thus, lots of negative aspects came into sight from the use of such digital revolution on the consumer, most notably the information pollution as regards various products, the issue of which will be addressed in our present study, as we aim to shed light on the information pollution in the digital environment and its impact on the consumer behaviour, together with identifying the causes and risks thereof. In closing, we will bring to mind the mechanisms and the ways to protect the consumer from such type of pollution. We conducted a field study that included a sample of 305 interrogated individuals for consolidation purpose of the obtained results.

**Keywords:** Information pollution; Digital environment; Electronic consumer protection.

**JEL Classification Codes:** M31,O14, O32.

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## **Introduction :**

Modern and digital technology is one of the most important factors that have brought about today's development and change. Its use has expanded in many fields, areas, and activities, especially economic ones, which are linked to daily and continuing transactions between consumers and sellers, this technology plays a major role in guiding consumer behavior by providing various information that contributes to directing such behavior both positively and negatively. The availability of appropriate information has greatly contributed to the saving of time and effort. This modern technology has opened the way for the transmission, provision, and dissemination of information on the one hand. On the other hand, many negative aspects arising from their lack of credibility and uncertainty about their source have emerged, resulting in a gap in the digital informatics environment.

Therefore, consumers need mechanisms and methods to be protected from this type of pollution, which significantly affects their consumer decision-making.

## **Problematic:**

From the above, we will try to discuss the following problem:

What are the mechanisms to protect consumers from information pollution in the digital environment?

## **Importance of the study:**

The importance of this study is to shed light on a type of pollution that negatively affects consumer behavior and has spread significantly on digital platforms, trying to find ways and mechanisms to address the problems of misrepresenting and falsifying information about products and leading to sound consumer purchasing decisions.

## **Objectives of the study:**

This study aims to

- Understand the nature of information pollution in the digital environment.
- spreading a consumer culture about the risks and problems of information pollution and its influence on consumer behavior in the digital environment.

- Identifying sources and factors affecting information pollution in the digital environment
- Identify mechanisms and ways to reduce the negative effects of information pollution on the consumer.

### **Methodology applied:**

This study relied on the analytical-descriptive approach. Various aspects of the theory of digital information pollution, as well as various mechanisms that help protect consumers from it, were described. We also conducted field research by distributing an electronic form to a sample of 305 interrogators and analyzing and discussing its results using Excel.

#### **I. General information on Digital Information Pollution:**

##### **1.1 The Concept of Digital Information Pollution**

There is a significant difference among researchers in determining a uniform definition of information pollution. This is mainly due to the lack of a uniform and precise definition of the concept of environmental pollution. Hence, this led to the appearance of many definitions of contamination of the information environment.

Information pollution with many hyperlinks is difficult to contain because information is a key element for the installation of any event, issue, or fact. And so any imbalance in it results in contamination on that subject or the issue at hand; accordingly, the contamination of the information environment results in widespread rumors and misinformation that falsify and circulate facts in a problematic manner and lead to the collapse of societies. In general, information contamination occurs in cases where falsification, misrepresentation, or fraud of facts and information takes place. Hence, we can provide a definition of the term "contamination of the information environment" in the light of those terms (Al-Habati, 2020, p. 298).

In his study, Talal Al-Zahiri linked him to forgery and counterfeiting, stating that "information contamination means an increase in or misrepresentation of original

information with undesirable, low-value, negative, or even positive information that is not relevant to the original information."

The concept of information contamination in studies on intellectual security stated that "information contamination affects intellectual security in all its political and social components, as information contamination results from its subjects' intellectual insecurity" (Kiblan, 2015, p. 4).

While addressing it in terms of Internet risks, some said that contamination of the information environment "In two forms of information pollution, the first is information per se, on the Internet, and the risks, distortions, diversity and multiplicity of sources in the network and the many contaminants that affect the culture and education of societies and changes in human concepts and values. The second form of information pollution is caused by the computing industry and information and communications technology, which effectively sabotages humans' natural environment. The contamination of the information environment results in the spread of misinformation, falsification and rumors that it knows to be "Information and news misrepresentation across networks, with shocking effects" while scientists and sociologists know rumors that it "News or a bunch of fake news that spreads rapidly in society and circulates among the public we think is true, and it is always naughty and exciting, and this rumor usually lacks the reliable source that holds evidence of its validity." as defined by psychologists as "promoting unsubstantiated experience and deliberately exaggerating, intimidating and distorting news in a manner other than in order to psychologically influence local or global public opinion for economic, political, social or military objectives". In the light of the technological development, so-called electronic rumors, known as the rumors spread across the Internet and social media networks traded by people resulting in contamination of the information environment, emerged (Level, 2015, p. 66).

Information contamination is thus defined as "a process carried out by a group of people through the use of ICT technologies in the process of misrepresenting, falsifying,

and disseminating information and facts through the Internet and various social networks for the purpose of spreading rumors and disseminating misinformation, which has shocking effects on society and its individuals in all different areas." (Al-Habati, 2020, p. 298).

It is also defined as "anything that distances from common sense thinking, contravenes human values, harms the civilization of society, encourages unintended superficial thinking and behavior, or has a clear negative impact" (Kiblan, 2015, p. 4).

We can therefore define "digital information contamination" as a process of misrepresenting, falsifying, and disseminating information through the use of ICT technologies. This information is contrary to human values, encourages improper thinking based on incorrect information, and has a negative impact on society, especially on attitudes and social networks.

The emergence of information pollution in the digital environment was the cause of a number of users' wrongful practices of rights and freedoms in the digital environment as a result of harmful ideas. particularly in light of the lack of legislation and protection of information security. (Fawzi, Homus, 2019, p. 12)

### **1.2 Reasons for information pollution:**

There are many reasons for the contamination of information in the digital environment. The individual must be aware of these factors in order to avoid the risks of the phenomenon and better deal with it. Among the reasons we find: (Hamza, Alhaseel, 2020, p. 101)

- Technical factors: resulting from the spread and increased use of technological means, enhancing dissemination, interaction, and access to information but without technical controls and information assessment mechanisms
- Scientific factors: The world is experiencing a growing and enlarged intellectual production, so that other disciplines have arisen and interlinked, adding some complexity to accurate access to information, as well as the differences in many

studies and their results, as well as the phenomenon of individual translation without supervision, specialized evaluation, or even agreement among specialists. Everything that has been experienced in today's society often represents a disruption of information, which ultimately leads to the contamination of information.

- Personal factors: There are some personal problems that will be influenced by contaminated information, and here we talk about the level of awareness of the phenomenon itself, the research skills, and the assessment of information, plus problems leading to a lack of understanding or misunderstanding, including a lack of language proficiency or a lack of specialization in the information that the individual receives, whether through directed research or through browsing.

### 1.3 Problems and risks of information contamination in the digital environment

Through some studies on the effects of information pollution on the digital environment, information pollution has several implications (Kiblan, 2015, p. 6–11):

- Misleading measurements of information production: The problem of information pollution will result in unreliable data and statistics on the volume of information production. Among these measurements will be information that is not useful for the development economy, with the burden of production and procurement expenses falling on individuals and institutions as service activities.
- Invalidity of data and statistics of economic and social returns of information: The use of information should have returns on the local and international community that take on different dimensions of development and knowledge growth for the consumption of information, thereby reducing the degree of confidence in information sources, institutions, and producers in general and forcing society to re-invest in the most visible natural and physical sources.
- Reduce the real value of the cost of information and the effort to produce it: The presence of untruthful, correct, or contaminated sources of information, as they are termed in this research, with no precise criteria for evaluation, results in a

reduction in the cost of producing information in its first seminars, particularly its financial costs related to authorship or the primary source of information production, which increases the problem of the scarcity of information production and its low cost, affecting the quality factors of the vital developmental information and processes underlying it.

- The continued cost of spending on information awareness programs: The diversity and increase in sources of information pollution mean that the expenditure on information literacy programs continues and does not go beyond its stage to the stage of growth and economics, which is reflected in development in general, although this varies from country to country.
- Reflection of information pollution on important development sources: in health, education, social issues, the environment, and awareness in general, but not at the level of its programmers.
- Increase in public expenditure: Most state institutions are allocating additional budgets on information security and intellectual security, etc.; these funds could be allocated to overall development rather than disbursed for programs and activities that address information pollution.
- High probability of inadequate decision-making: Information is known to play a key role in decision-making, and the success rate of the decision increases according to the amount, accuracy, and credibility of the information available to it, and vice versa in an environment where information pollution increases.

#### **1.4 Consumer protection mechanisms against digital information pollution**

The online consumer expects vendors to provide much more effectively than in traditional sales processes. It expects lower prices, faster and better delivery systems and the provision of all product-related data and information, whether commodity or service. (Abu Fara, 2009, p. 416).

In order to protect consumers from the contamination of information in the digital community, all actors in the field must work together. This is by clarifying and activating the role of all constituent parties of society that are considered the most important to

reduce the severity of the contamination of the information: Hamza, Laqaz, 2020, p. 104-105.

- **Government role:**

Through the enactment of rules to protect the control of content and ensure its safety while combating all threats to information in the community it serves And this is achieved by taking blocking strategies for sites whose content is incompatible with the characteristics of society, In addition, procedures for the dissemination of information within the country can be regulated in coordination with social experts in cooperation with experts in information science and technology. There are many international experiences that have followed such strategies. Between a proponent and a rejector of the idea of blocking the Internet or certain sites, it remains that reality obliges us to keep up with the outside world. Blocking the Internet completely is not a solution. It is necessary to control content and its periodic follow-up, as well as the procedures for use by adopting laws that ensure the management of information in the digital environment, social, scientific and political management.

- **Family role:**

The family has the task of socialization, under which it is the task of intellectual or mental upbringing. Many studies indicate that since its inception, the individual fully accepts his family's ideas and makes them Muslim. This explains the persistence of social customs and traditions over the years.

- **Personal role:**

The personal role lies primarily in developing awareness and building personality according to valid elements. This is achieved by the extent to which an individual has sound knowledge to acquire through information. He may obtain it by means of directed research or randomly obtaining it while using the Internet, but memory and mind must be immunized from accepting any information in order to follow the methodology of analysis.

- **Institutional role:**

Educational and information institutions, as well as information institutions, all have the educational role according to the characteristics of society and the alerting role of the Internet's risks and their effects on the individual and society, all within the framework of social performance at their responsibility. Information institutions, such as libraries, research centers, and others, are endeavoring to make publications available on the other hand for information -- negative information, information contamination -- and to make available publications and guides on the Internet's equal use and methods of handling information in general, not to mention the basic function of such institutions in analyzing and revising various information and then making it available positively to society.

- **Dissemination of information and awareness:**

The term "information awareness" first appeared in a report by Paul Zerkowski. Paul G. Zurkowski is named after the National Committee for Libraries and Information Commission. Zerkowski used this term to describe the techniques and skills of information literacy "to take advantage of a wide range of information tools, as well as primary sources in designing information solutions to their problems."

Later, a lot of efforts were made to develop a better concept that illustrated his relationships with other skills and other forms of illiteracy. Although other educational objectives, which include traditional illiteracy, computer literacy desk skills, and critical thinking skills, were linked to information awareness and are important basics for its development and social and economic well-being, information awareness itself has emerged as a distinct, independent skill set that is key to the increasingly complex social and economic well-being of an information society.

The prominent event in the development of the concept of information awareness was the establishment of the Presidential Committee for Information Awareness at the American Library Association, which, in its 1989 final report, demonstrated the importance of this concept. The report defined "information awareness" as the

"susceptibility" to detect information when it is needed and to have the ability to locate it, evaluate it, and make effective use of the information whenever it is needed. It also highlighted information awareness as an essential skill for lifelong learning and making conscious and successful citizens. (Sutter, 1998, p. 85)

## II. Applied Study

In order to enhance our theoretical study and drop the concepts we have previously addressed about the causes of digital information contamination and consumer protection mechanisms against this phenomenon on the ground, we have prepared an electronic questionnaire on the subject and posted it on various websites and social media pages in order to access as many answers as possible, and, finally, after reviewing the responses recovered and excluding the incomplete and invalid ones, we have retained a sample of 305 individuals, the results of which are analyzed below.

### 1.2 Analysis of general data (sample individuals)

The sample, which includes 305 people, is made up of 41% men and 59% women, as was already mentioned. 55 interrogators, or 18% of the sample, were between the ages of 18 and 30, making them mostly young. The pro-form further demonstrated that the remaining 45 people were over 45 years of age, with the estimated 205 people in that age group accounting for 59% of the total population.

Figure 01: Distribution of sample by age

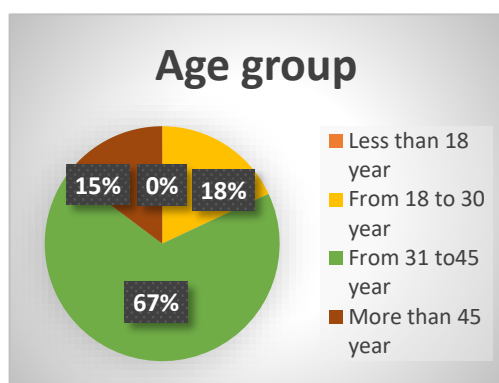
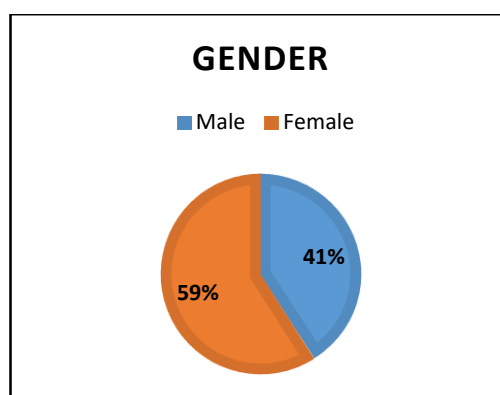


Figure 02: Distribution of sample by gender



Source: Prepared by the two researchers based on the questionnaire's results

## 2 .2 Information pollution and the use of digital platforms

The reality of respondents' uses of digital platforms to make purchases, access information, and assess their susceptibility to digital information contamination, as shown in the following table, seemed important to address before discussing the causes of digital information contamination and strategies to reduce it.

**Table 1: Information pollution and the use of digital platforms**

%	No	%	Yes	Expressions
29.5	90	70.5	215	Do you use digital platforms to buy products (goods or services
6.6	20	93.4	285	Do you use digital platforms to get information about the products you want to buy?
14.8	45	85.2	260	Before purchasing products, are you certain that the information on digital platforms is accurate?
11.5	35	88.5	270	Do you think that information pollution is widespread on digital platforms?
45.9	140	54.1	165	Have you ever bought products and when you tried them, it showed that the published information was misleading or inaccurate?
98.4	300	1.6	5	Do you deal again with digital platforms that spread false or fake information ?
9.8	30	90.2	275	Do you look for other alternatives if you are sure that the published information about pollution is certain for some products?
36.1	110	63.9	195	Are you attempting to inform consumers on digital platforms about the products you have tried to raise awareness about?

**Source: Prepared by the two researchers based on the questionnaire's results**

Due to the growth of electronic commerce globally and the use of smart devices and modern technology to improve consumers' daily lives, Table 01 above reveals that sample individuals have a strong propensity to buy online and obtain information about products to be purchased across various digital platforms. This phenomenon has increased significantly during the COVID-19 pandemic and the quarantine and

distancing measures imposed by the government. As a result, the majority of them affirm that they won't engage with sites that post false or fake information again because they lose their credibility, which prompts them to look for other sites where they can make more assured and reliable purchases.

When it comes to purchasing products, the information that has been published about them is either false or misleading. A total of 54.1% of those surveyed said they had been exposed, with the remaining 45.9% also saying they had. This is a result of the various product marketing websites or platforms for purchasing and purchasing products. Contrary to some counterfeit platforms that lack authentic tags and aim to maximize profit, especially in service products, some of the most well-known brands in the world and registered marks have a reputation in the market, do not disseminate false information, and do not use electronic deception.

### 3.2 The Sources of digital information pollution

In order to find out the most important causes of information pollution via digital platforms, we asked many questions to the interviewees and their answers were as shown in the following table

**Table 02 : The Sources of digital information pollution**

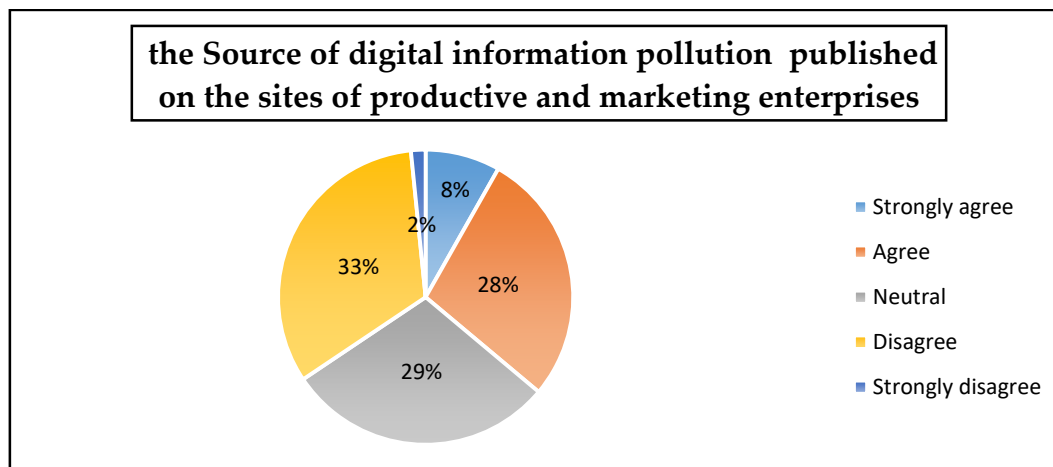
Strongly disagree	disagree	Neutral	Agree	Strongly agree	Expressions
0	8.2	31.1	42.6	18	Do you think that reference groups in chat platforms are the source of the pollution of products' digital information?
0	11.5	19.6	57.4	11.5	Do you think social media sites are the source of ?the pollution of products' digital information
1.6	32.8	29.5	27.9	8.2	Do you think that information published on the sites of productive and marketing enterprises is the source of digital information pollution ?
5	26.7	25	28.3	15	Do you believe that manufacturers use digital platforms to spread misleading and inaccurate information about their goods?

1.7	23.3	25	43.3	6.7	Do you think buyers' and experimenters' comments on products are the source of the digital information pollution of products?
0	8.3	15	53.3	23.3	Do you believe that the widespread dissemination and misrepresentation of information is the main cause of the digital information pollution of products?

**Source: Prepared by the two researchers based on the questionnaire's results**

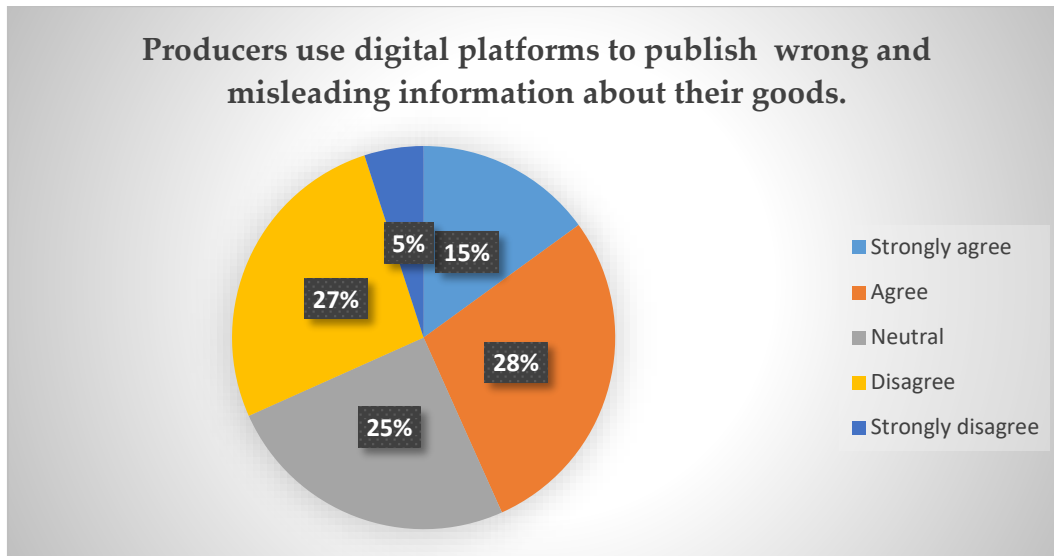
According to the responses of the sample population, the frequent circulation and misrepresentation of information is the most important factor in the spread of digital information pollution, as shown by the results of Table No. (02). More than 76.6% of respondents agreed and strongly agreed of the impact of this factor, compared to more than 68% who of social media sites and only a few (11.5%) who did not. These respondents did not see these sites as a source of contaminated digital information. According to the interrogators' assessments, the contribution of information found on the websites of businesses engaged in production and marketing, as well as the spread of false and misleading information about their products through digital platforms, was average.

**Figure 03: Contamination of digital information due to information published on the sites of productive enterprises.**



**Source: Prepared by the two researchers based on the questionnaire's results**

Figure 04: Digital information pollution due to the dissemination of misinformation on digital platforms

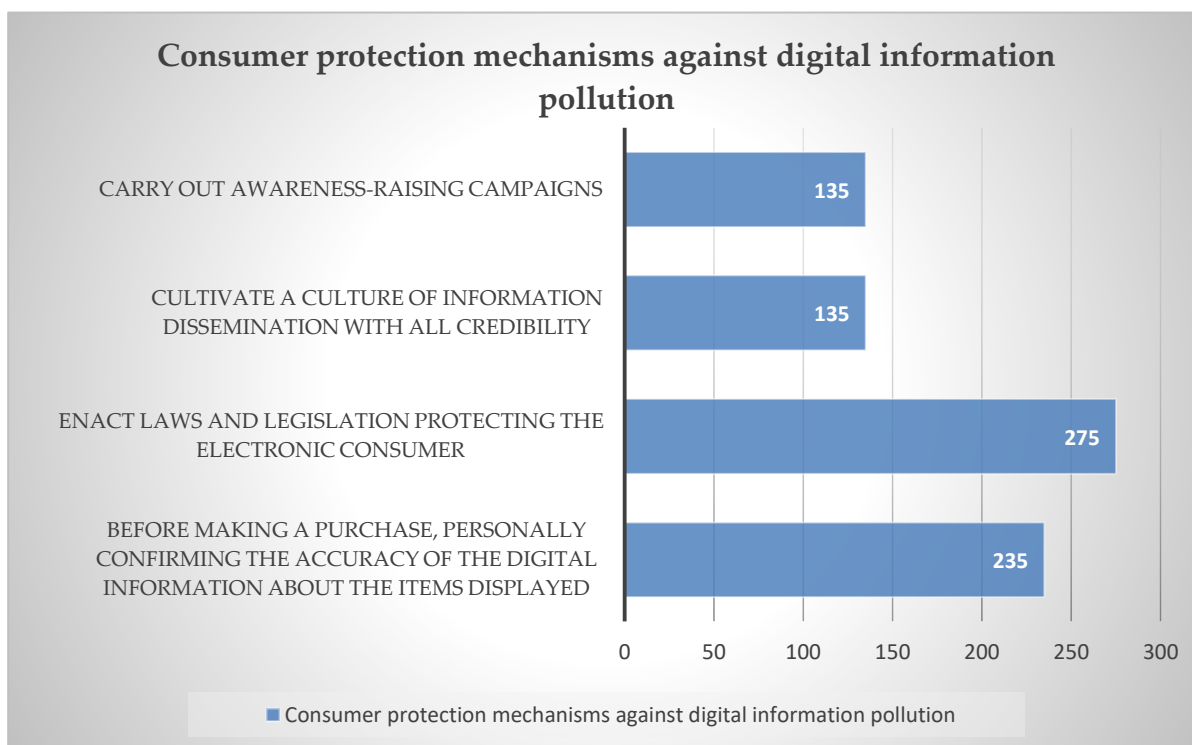


Source: Prepared by the two researchers based on the questionnaire's results

#### 4.2 Consumer protection mechanisms against digital information pollution

Due to the growing taint of digital information, a number of security measures must be put in place to protect electronic consumers' most fundamental rights and the freedom to make decisions without interference from outside parties. The most crucial of these mechanisms are awareness-raising campaigns for community members, the adoption of laws and regulations protecting electronic consumers, the full dissemination of credible information, and confirming the validity of digital information about products presented prior to purchase. The following format illustrates the interrogators' opinions on how well these mechanisms work to lessen the contamination of digital information:

Figure 05: Consumer protection mechanisms against digital information pollution



Source: Prepared by the two researchers based on the questionnaire's results

Figure N.05 shows that the majority of respondents believe that the best way to reduce the pollution of digital information is to pass laws and legislation protecting electronic consumers. Governments should make an effort to focus on digital platforms and impose penalties for any offenses or information that is published that could damage digital consumers or expose them to electronic deception. Unfortunately, we observe that there are almost no legal frameworks governing these practices. On the other hand, we observe that the majority of interviewees prefer and are advised to personally verify the information about products published on digital platforms before purchasing them using a variety of sources and media. According to interviewees, awareness-raising campaigns and educating people on the culture of disseminating information with all credibility can reduce information contamination, but not as effectively as the previous two mechanisms. This is because thorough personal research on the product to be purchased reduces the contamination of widespread information.

## **Conclusion:**

Through our research on the subject of information pollution in the digital environment, we have come to understand the significance of this issue in the modern era, particularly in relation to the validity and reliability of information published on digital platforms, as well as the credibility and reliance on them for decision-making. The most significant results that we have attained are:

- Two types of information pollution exist. Information about the Internet itself, its risks, distortions, variety of sources, and other pollutants is included in the first form. The second type is the ICT and computer industry, which essentially destroys the environment.
- Information contamination across digital platforms carries a number of risks and has a negative impact on consumers' decision-making.
- To reduce information pollution, many nations adopt temporary blocking of the Internet and social media sites in favor of internal networks.
- In addition to the government's role, all actors in society, including the family, civil society organizations, and institutions, must work together to protect consumers from the pollution of digital information.
- Interviewers stressed the idea that the most important source of contamination of digital information is social media sites that trade information so frequently and quickly as to misrepresent it.
- Interviewers emphasized that the most effective mechanism for reducing the contamination of digital information is the enactment of laws and legislation that protect the electronic consumer from this.

Based on the findings, we propose a number of recommendations, which are the most important:

- Before making a purchase decision, the customer must independently confirm the accuracy of the information provided on digital platforms and inquire about the opinions of customers who have used the products.

- States and governmental organizations should enact laws and legislation to protect consumers from information pollution on digital platforms and guarantee their rights.
- To avoid misleading customers and influencing their purchasing decisions, legitimate businesses and websites that market goods and services must follow the standards of credibility and integrity.

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