

The Mobile Phones Consumers Protection

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Doi:10.5901/mjss.2012.v3n16p53

Abstract

This paper analyzes the issue of promoting the interests of mobile consumers, from two perspectives. The first is designed to evaluate and highlight the awareness, knowledge and education of the Romanian consumers regarding the impact of the mobile phone use on the health and body integrity, and the second analyzes the behavior which the same consumer takes in environmental problems that the use of conventional mobiles may generate. For a pertinent analysis, a survey questionnaire was developed, that includes three sections. The first consists of questions that test consumer awareness about the impact that mobile phone has on their health. Sections two and three examine the ecological behavior of mobile phones consumers.

Keywords: consumer protection, environmental mobile phones, conventional mobile phones

Introduction

Mobile telephony has revolutionized how we communicate and has become the mainstay of the daily life of the people. For this reason, one of the most requested types of entities in the contemporary period are that of the companies providing mobile products, because the mobile phone is one of the most used durable good offered by our society. With the expansion of the range of mobile phones, with the mobile communication services development, the consumer concern is increasing, because of the effects which these goods could have on the consumer health, as well as on the environmental balance (Csorba, 2010).

The purpose of this paper is - based on an extensive research of the mobile telephony market, given the assortment of the mobile phones and consumer behavior of such products - to assess consumer awareness of the risks they are exposed when using mobile phones and to educate them regarding the necessity of using green phones, the only ones able to provide the necessary conditions of a real protection of the environment.

1. The mobile telephony services consumers' protection

Consumer protection is part of social policy pursued by any modern state. The consumer became a real partner of the market, whose position occupied within it is strengthened with the development of the society. His buying behavior affects increasingly more entities, organizations, bodies and institutions. Therefore, the consumer is given increasing attention. The complex relationship

between businesses and consumers generate various issues that may be the subject of the consumer protection programs in an efficient manner (Patriche, 1998).

In the business of buying and using goods and services, consumers must be assured by the appropriate framework for unbundled access to products and services they need. In this context have been set the basic consumer rights: consumer freedom to choose products and services as it deems best suited to consumer needs, the right of protection against the risk of buying a product or a service, the right to be informed fully, fairly and precisely regarding the essential characteristics of products and services, the right of free access to markets, shops, suppliers that assure a wide range of products and services, the right to compensation for damage caused by poor quality of products and/or services; the right to organize themselves in various associative forms, such as associations, foundations, unions, federations, etc. (Dinu, 2001)

Two of these are essential for the modern man, as a consumer: the right to be informed fully, fairly and accurately about the features of products they buy and the right to be protected against the risk of purchasing a product or providing a service. Implemented in mobile telephony, these rights can raise the following questions: Are harmful for the consumers' health, the use of mobile phones? At what kind of risks is exposed a person which uses mobile phones? Are consumers informed about the insecurity use of mobile services? What impact does the mobile phone production and consumption have upon the environment? We seek answers to these questions in this analysis.

1.1. Security of mobile phones and GSM antennas - pros and cons

We are surrounded by electromagnetic fields. These can be divided into two categories: fields generated by natural phenomena and those caused by man-made electronics (Bandar, 2009). For many years, the International scientific community studies the effects of electromagnetic fields on human health. Frequency fields are under study by researchers about 70 years, and studies on mobile phone are done a few decades. Some scientific studies have shown a direct link between using mobile phones or radio stations near the mobile network and their impact on human health. Other studies deny the existence of negative effects on consumer health. For a complete and accurate information of the mobile consumers, is good to know the functioning of the mobile networks, which are the safety standards and which are the results of the scientific research in that field. (Pascu, 2006)

In our country, the limits of the intensity of electromagnetic field emitted by mobile phones and mobile network antennas are set by government standards developed by The Ministry of Health, Ministry of Labor and Ministry of Communications and Information Technology. They must be in accordance with the European standards, harmonized with the international limits. Radio activities are supervised and controlled the by the General Inspectorate for Communications and Information Technology (IGCTI), public institution subordinated to the Romanian Government, which manages the radio electric spectrum. In the case of mobile phones, exposure standards for radio frequency fields is based on measuring the Specific Absorption Rate (SAR), which is the amount of energy absorbed by the body, relative to 1 kilogram. The limit recommended by the International Commission on Non-Ionizing Radiation Protection and exposure to electromagnetic radiation is 0.08 W/kg. Maximum permissible SAR EU Council is 2w/kg (<http://studentpenet.ro/stiri/radiatii-telefoane-mobile-lista-indice-sar/>).

In the table below are some examples of cell models together with the SAR certification. In the left column we show models with the lowest, and in the right column with the maximum SAR index.

Table no 1. Top 10 mobile phones based on SAR certification

Top 10 phone minim SAR index	Top 10 phone maxim SAR index
1. Beyond E-Tech Duet D8 0.109	1. Motorola V195s 1.6
2. Samsung Eternity SGH-A867 0.194	2. (equality) Motorola Zine ZN5 1.59
3. Samsung Blue Earth 0.196	2. (equality) Motorola Rival 1.59
4. Samsung SGH-G800 0.23	4. Sony Ericsson Satio (Idou) 1.56
5. Samsung Soul 0.24	5. (equality) Kyocera Jax s1300 1.55
6. Samsung Impression A877 0.27	5. (equality) Motorola VU204 1.55
7. Samsung Innov8 0.287	7. (equality) BlackBerry Curve 8330 1.54
8. Samsung A107 GoPhone 0.3	7. (equality) BlackBerry Curve 8330 1.54
9. Beyond E-Tech Duet D888 0.32	7. (equality) BlackBerry Curve 8330 1.54
10. Samsung SGH-T229 0.383	10. (equality) Motorola Crush 1.53
	10. (equality) Nokia E71x 1.53

Source: <http://www.mobbi.ro/valori-sar/>

Specialists say that mobile phones sold legally on the Romanian market comply with the existing SAR standards. In these circumstances, involves risks to human health or not, using a mobile phone? What effects does have on consumer safety, the GSM antennas installed on buildings? What is the impact of mobile phone use upon the environment? The answers given to those questions are contradictory.

Local and central authorities, research institutes and mobile companies in Romania, always receive complaints from consumers, as well as a series of questions about how to respect the rules of protection against electromagnetic radiation. Consumer Protection Association from Romania made an analyze of the possible impact the GSM antennas have on human health, due to the increasing number of complaints it has received from people living in areas where GSM antennas are located. Consumers complained most often: the location of antennas on residential buildings without the consent of tenants, the location of relays in rural areas without the consent of owners in their neighborhood, the people's health is threatened because of the radiation emitted by antennas placed near the buildings (cardiovascular disease, back pain, headaches, insomnia, fatigue, depression, temporary memory loss, hair loss, endocrine dysfunction, discomfort, etc.). Survey results were not positive for consumers. Following these findings, APC municipalities sent an open letter that called for stopping the aggression of mobile telephony operators in central areas, near schools, kindergartens and hospitals (Csorba, 2010). Municipalities responded to the efforts of the association, developing in recent years hundreds of permits to build communications networks. Thus, some recommendations have been implemented. This provides: (Csorba, 2009)

- the existence of barriers that prevent access to the areas of exposure;
- up to 30 meters in front of the antenna there is another high building;
- to have an environmental and building permit for installing the antennas;
- the level of radiation is measured by accredited companies;
- to avoid placement of antennas in areas with schools, kindergartens, hospitals;
- tenants to obtain consent (and the neighbors) before installing the antennas.

The National Environmental Protection Agency confirms the results of investigations made by APC Romania and states in turn (in letter no. 3445/IG/1.05.2006) that: "The main action of electromagnetic fields on the human body aggravated or accelerated the heart, vascular, neurological and psychological disease". This affirmation attends a tacit recognition that, the radiation emitted by GSM antennas and generated by mobile phones are harmful to human health.

Around five billion people currently use mobile phones, almost three quarters of the world population. The world market of mobile phones increased by 17% in the first quarter of 2011, supported by strong demand for smart phone devices, especially iPhones Apple products, say market research companies. (Reuters, according to Mediafax). But, the fear that machines could cause cancer dates from the 70s, when first phones appeared. Since then, researchers try to find a link with the increased incidence of cancer.

Types of radiation emitted by mobile phones are called non-ionized. They are not similar to the radiations emitted by radiography, but rather to those emitted by microwave ovens, but to a lower intensity. Radiations of microwave ovens have the same effects on the body as the food, which means they "cook" brain. So, in addition to contributing to cancer and tumors, mobile phone can have negative effects on the cognitive function of the brain.

The European Environment Agency supported in turn making more research, saying that mobile phones are as dangerous as smoking, asbestos and leaded gasoline. A prominent member of the University of Pittsburgh, which deals with the study of cancer, sent a memo to all employees of this institution, advising them to reduce cell phone use because of the risk of contracting cancer.

If until recently there were only suspicions, there is already official the confirmation made by The World Health Organization which, on 1st June 2011 said: "Mobile phones can us get sick of brain cancer." 30 WHO experts from 14 countries analyzed for 8 days in Lyon, the harmful effects of mobile phones. Experts concluded: "Evidence continues to accumulate that are quite strong to say that mobile phone use can lead to cancer." It is a high risk of glioma, a form of brain cancer. More specifically, the risk increase by 40% in people who spoke an average 30 minutes per day phone. What were the reactions to mobile phone companies warning issued by WHO?

The first who reacted were U.S. mobile companies. Some manufacturers warn their customers to keep devices away from the body. Apple - for example - wrote the safety manual of the iPhone 4, that when calls are made or data is transmitted wirelessly, the device must be held "at least 15 millimeters away from the body". The Blackberry Company warns its customers to take the device "at least 25 millimeters from the body when the phone transmits data".

The WHO makes the following two main recommendations for the consumers of mobile services:

1. To take precautions in the use of mobile phones and hands-free devices, such as: do not talk long on the phone; do not carry the device nor the neck nor in the pockets of pants; not to speak in the car, in the absence of an external antenna connected properly; do not use mobile phone when traveling by train; do not sleep with the phone near the head; children and pregnant women to give up its use.
2. To avoid the radiation emitted by GSM antennas mobile operators

Even the support of the national and international bodies dealing with conducting research in that field, it is obvious that anyone who uses mobile phones is exposed to radiation with effects on human health, even if they are not immediate. European Commission's recommendations come to support a better protection of the mobile consumers, noting that when there are sufficient specific elements, even in the absence of absolute certainty or evidence, the authorities must protect above all the citizens against the risk and damage caused by the exposure to electromagnetic fields. Member States should implement protective measures according to the duration of exposure, body parts that are exposed, age and health of the public. EU states are able to provide a superior level of protection laid down in the European Commission's recommendations.

1.2. The mobile telephony market in Romania and the consumers complaints

Despite these problems, the mobile telephony market in Romania - as well as globally - has known an explosion in recent years. Years 2005 and 2006 were - in telecommunications - years of great changes. In the mobile segment, there were two new players: Cosmote and Connex Vodafone. The brand Cosmorom was extracted brutal from the market, not doing practically any commercial relation with the new company Cosmote; Vodafone choose to "recycle" the Connex brand, to use it until exhaustion, in a process to change brand identity, which lasted almost a year. Vodafone directly took over after its launch, more than 5 million customers, while Cosmote only about 80.000.

In Romania are four mobile operators, who had more than 29.3 million users at the end of 2010. Related to population, mobile penetration has exceeded 130%. Orange Romania is the largest, with 10.5 million customers at the end of 2010, followed by Vodafone Romania with 9.8 million users, 6.9 million customers Cosmote Romania, RCS & RDS (Digi Mobile) with over 2.1 million customers. Orange claims that in 2010 were the leader in terms of net new subscribers, thanks to new tariff plans launched in 2009. Also, in 2010 recorded a total of 78.000 net new subscribers - compared to 34.000 for Vodafone - and a loss of 32.000 at Cosmote - a company that was concerned with integrating Zapp. (Seceleanu, 2011)

On the other hand, in 2010, only rivals Vodafone and RCS & RDS have increased their market shares, calculated in terms of number of clients. Orange is number one with a 36.7% share, down from 37.5% in 2009.

At this point, every company on the Romanian market is trying to identify themselves in a certain way. Vodafone and Orange have the largest part of the Romanian mobile users, stating that Orange started in 2006 as the market leader. Orange and Vodafone compete on all levels, attacking all segments and have similar offers, sometimes complementary.

With the expansion of the mobile telephony market in Romania, there are a number of consumer complaints of mobile services. Consumer demands refers mainly to: aggressive advertising by SMS (also known as SPAM), frequent interruptions of the signal, incorrect invoices, coding of a particular mobile network and - last but not least - mobile consumer health safety.

Headaches, memory loss, problems of rest, increased blood pressure, cancer (especially leukemia) or increased traffic accidents caused by drivers talking on the phone while driving, are the harmful effects of the mobile phone use and realities that can be seen as a result of their continuous use.

If, as a consumer you are faced with problems arising from failure of the legislation by vendors, operators or manufacturers of such services, the complaint should be addressed directly to those who should solve the problem occurred, i.e., the three categories already mentioned. If they do not solve the request, complaints are made at the Regional Commissariat for Consumer Protection and at The Consumer Protection Associations.

1.3. Conventional mobile phones VS ecological mobile phones

Producing goods from environmentally friendly materials must be the purpose of any modern business. In the mobile sector, much of the conventional phones are already recycled in advanced countries, the process generating profits. In this way, each year is recovered over 3.000 kilograms of silver and hundreds of kilograms of gold.

More and more, greener technologies make their way in the world of telecommunications, from equipment to terminals. The same thing happens in mobile telephony, where he began to

focus on organic products from recycled materials. Many mobile phone models that are offered for sale to consumers on the world market are made from a special plastic that has the ability to decompose quickly, when it left the ground. So, even if cell phones would likely be thrown in the forest, for example, they do not have a negative impact upon the environment. With a special design, small and lightweight, recyclable materials phones have become a true marketing strategy to be taken by more and more external experts in the field of mobile telephony.

Samsung is the mobile phones company that introduced on the market in Europe the first ecological phone made from bio-plastic extracted from plants, such as corn. Samsung E200 Eco invention is a true eco gadget. It is delivered to consumers in a green paper box. Samsung SCH-W510 and F268 mobile phones are all green, there are on the market by summer 2008 and, besides being made from recyclable materials, are equipped with complex functions, being built under Energy Star standards for efficient energy. Another green phone model is S3030 Eco, which is produced together with the mobile operator T-Mobile. This new terminal is made of "bio-plastic", for whose production have not been use heavy metals, but the product coating is soluble. This model accessory - charger and headset - are also environmentally friendly, as packaging is. (<http://www.acasa.ro/telefoane-ecologice>)

"Blue Earth" is the world's first solar phone launched by Samsung Electronics. It comes with touch-screen and is loaded from the sun using photovoltaic panel located on the bottom of the phone, which generates enough energy to achieve a call at any time. Blue Earth is made from recycled plastic called PCM, who is extracted from plastic bottles. Neither the device, nor its charger does contain environmentally harmful substances such as beryllium and bromine.

Ecological range of Nokia mobile phones delight in performance and design. 3110 Evolve eco-phone is the first on the list developed by Nokia. This is a candy bar type phone (it is less than 1 cm thick), a true eco handset (has bio case of recycled materials). 3110 Evolve mobile phone looks good, excellent battery life comes with MP3 player, Bluetooth connectivity, memory card slot, FM radio and automatic accumulator stop when the battery is fully charged.

Motorola Mobile Phone Company launched the Motorola Renew, 100% recyclable is considered to be the first carbon-neutral phone in the world. This phone has the basic functions of any device, but has no camera, nor 3G or even EDGE data access. But, the company will invest in the future more "green" in the production of mobile phones. Wood-Touch phone prototypes, with wooden case - obtained not by deforestation, but by cleaning the branches of trees or the removal of vegetation unnecessary suffering - was the idea of Japanese mobile operator NTT DoCoMo. These ingenious devices are more durable than plastic, are not artificially colored, have immunity from water and insects, due to careful treatment of wood.

Greenheart concept is created by Sony Ericsson phone based on Sony Ericsson W880i model, with a nice design and a content of biodegradable materials.

Researchers at Good Guide - publication that provides information about energy efficiency and performance of products and companies - have conducted a study about the impact of mobile phones upon the environment. They analyzed nearly 600 phones, having regard in their research the energy consumption of appliances, the materials used, the working conditions of the employees and what will happen with the devices, after being removed from use.

Thus, Nokia C6 has been declared the greenest phone, while at the other end of the scale lays BlackBerry Bold 9650 Smartphone, believed to be the most harmful phone for the environment. The study also shows that consumers are interested in appearance and phone options, not in its impact upon the environment. Ranking of the greenest phone is: Nokia Cell Phone C6 (is the most environmentally friendly), Blue Earth Samsung Mobile, Motorola Cell Phone Citrus, Palm Pixi

Smartphone, Sony Ericsson Cell Phone, Naite Greenheart. Phones with the harmful environmental impact are (in order): BlackBerry Bold 9650 Smartphone, LG 160Cell Phone, Garmin, Asus Garminfone, Casino G'zOne Cell Brigade, STX-2 Sharp Smartphone.

In early 2011, Greenpeace rated the most environmentally friendly electronic products worldwide, from 18 manufacturers. The research results show significant progress, such as manufacturers have eliminated the most dangerous chemicals from electronic devices and products have higher energy efficiency and a design that makes them easier to reuse or recycle. Representatives of Greenpeace state that "the next challenge for industry is to create organic products that last longer and can be repaired rather than replaced every few years." Top mobile ecological view Greenpeace representatives are, as follows: Samsung GT-S7550 - Blue Earth Mobile, Sony Ericsson Elm J10i, LG Electronics GD510, Nokia X3-02, MotorolaA45-Eco.

This year was made a top ten Mobile phones sold worldwide. The ranking is as follows (Dancu, 2011):

1. Nokia 1100 (over 250 million copies, launched in 2003)
2. Nokia 3210 (over 160 million copies, launched in 1999)
3. Motorola RAZR VR (over 130 million copies, launched in 2004)
4. Nokia 3310 (over 126 million copies)
5. iPhone 3GS (over 30 million copies)
6. Nokia 2100 (over 20 million copies)
7. iPhone 3G (over 15 million copies)
8. LG Chocolate (over 15 million copies, launched in 2006)
9. Nokia 5800 Xpress Music (over 13 million copies, launched in 2008)
10. BlackBerry Pearl (over 10 million copies, launched in 2006)

By comparison we deduce that, unfortunately, global consumption of mobile phones is not in ecological Top 10 rankings.

Mobile phone of recyclable materials meets all performance requirements and design. Also, they are environmentally friendly. They are made of very small quantities of substances harmful to the environment, such as lead, mercury, cadmium, brominates. Their batteries are more durable than non-ecological mobiles, saving energy. The production process is similar to conventional phones; there are no significant differences in price between the two types. Plastics and metals in the composition of conventional phones are harmless when using them, but if not processed correctly after their removal from service, can be dangerous for both, the environment and the consumers' health. For this reason, the recycling of these devices by purchasing green mobile phones, we can generate a considerable reduction of global pollution. However, the problem of radiation emitted by mobile phones is not solved by increasing market share of green phones. Their harmful impact is felt not only in the health of the consumer, but also balance the world fauna. For example, from studies conducted in Switzerland to determine the cause of significant reduction of bee populations has been established that cell phones carry a large part of the blame. Mobile signal disorients the insects, which eventually die; research has shown in Lausanne, where more than 83 experiments had similar results, write Inhabitat publication cited by www.green-report.ro.

According to a study by researcher Daniel Favre, when mobile phones were placed near hives in dial mode, bees felt signals and produce a powerful hum. They were perceived as a warning signal to leave the hive; they were confused because of the frequency, flew erratically, and then died. Study results also show that bee's buzz 10 times stronger when a phone is used, or when signals are transmitted. In the U.S. and Britain, bee populations have dropped to almost half in the last 30 years; range coincides with the explosive multiplication of mobile devices. Reducing bee

population has significant effects on ecosystems, since they are vital in the ecological systems and agriculture, because they have essential role in pollination of plants and crop.

2. Analysis of the education and consumer awareness of mobile phones. Case Study

To check empirically awareness and education of the users of mobile phones and their attitude towards the environment or regarding the impact that their use has on human health, a survey was conducted on a representative sample of consumers in Arad County.

Research objectives

- the evidence of the sources of information and of the factors underlying the decision to purchase a mobile phone;
- the analyze of the information and education level of the consumers regarding the effects of the mobile phones upon their health;
- to evaluate the ecological behavior of the consumers.

Methodology

Quantitative research was conducted and used as a working tool the questionnaire of inquiry. It took place between February to August 2011 in the municipality of Arad and in cities like: Curtici, Pecica, Lipova, Ineu and Sebiş.

The method of questionnaire was face to face, using for this six interviewers. Were distributed a total number of 1000 questionnaires from which have been validated a number of 820 questionnaires. Elimination of the questionnaires was based on objective criteria (lack of answers, mismatch between answers and questions). The number of persons investigated corresponding to the sample is calculated using the formula:

$$n = \frac{t^2 * p * q}{e^2}$$

where,

t= corresponding theoretical probability value with which we are working (we took P=95.5%, and z=2)

p= percentage of the investigated population possess sample feature

q= 1-p

e= allowed representativeness error limit

$$n = \frac{2^2 * 0,5 * 0,5}{0,035^2} = 816.32$$

As a result of the calculations, the sample is 817 people.

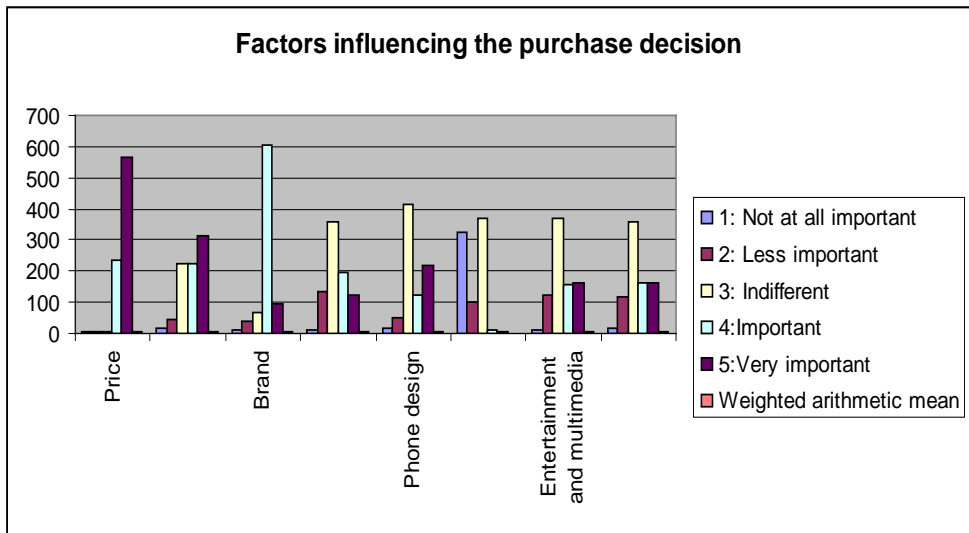
Results

From the investigated consumers, 54% have two mobile phones, 37% have one phone, and 9% more than two mobile phones. 37% of the respondents speak daily an average between 60-90 minutes, 34% speak between 90-120 minutes, and 21% speak between 30-60 minutes. In table no. 1 or chart. 1, we present the factors which influence the purchase decision of the consumers, when planning to buy a mobile phone.

Table no. 1. Factors influencing the purchase decision

Criteria	1: Not at all important	2: Less important	3: Indifferent	4: Important	5: Very important	Weighted arithmetic mean
Price	5	6	7	234	568	4.6512195
Access to latest technology	17	45	222	224	312	3.9378049
Brand	14	38	66	605	97	3.8939024
Call quality	10	132	359	194	125	3.3560976
Phone design	17	48	413	125	217	3.5817073
Desire to have a product "environmentally friendly"	327	103	371	13	6	2.1073171
Entertainment and multimedia	10	123	368	157	162	3.4121951
Internet, e-mail and docs	17	116	360	165	162	3.4134146

Chart no. 1

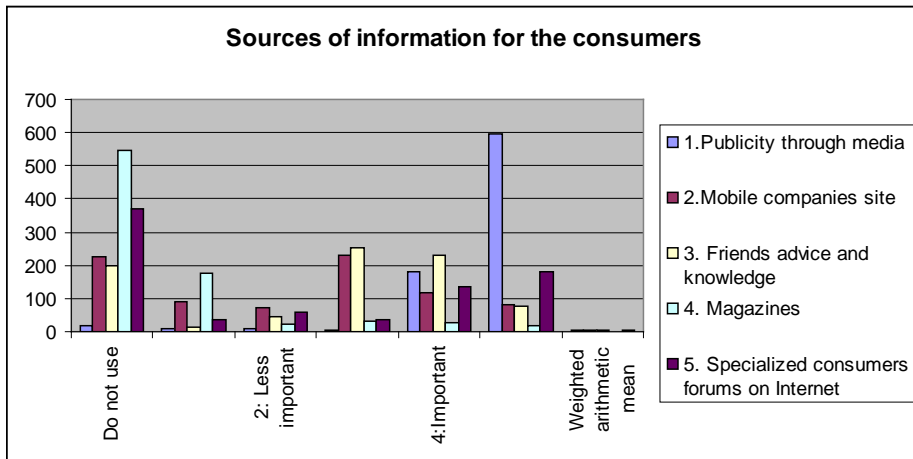


A percentage of 59% of the consumers use the services of Orange network, closely followed by Vodafone with 56%. Cosmote and DigiMobil networks are 17% and 11%. In table no 2 and chart 2, sources of information are captured and their importance for consumers of mobile phones.

Table no. 2. Sources of information for the consumers

Information source	Do not use	1: Not at all important	2: Less important	3: Indifferent	4: Important	5: Very important	Weighted arithmetic mean
1.Publicity through media	18	9	11	3	182	597	4.679551
2.Mobile companies site	228	89	74	231	116	82	3.047297
3. Friends advice and knowledge	198	12	46	254	231	79	3.512862
4. Magazines	547	178	24	30	25	16	1.81685
5. Specialized consumers forums on Internet	369	37	59	38	136	181	3.809313

Chart no. 2



68% of the consumers surveyed inform themselves before buying a cell phone about the SAR value index, which indicates a concern of consumers for their own health. A 12% do not know the significance of this index.

In table and chart no. 3 we present investigated consumer views about the influence of the mobile phones on their health.

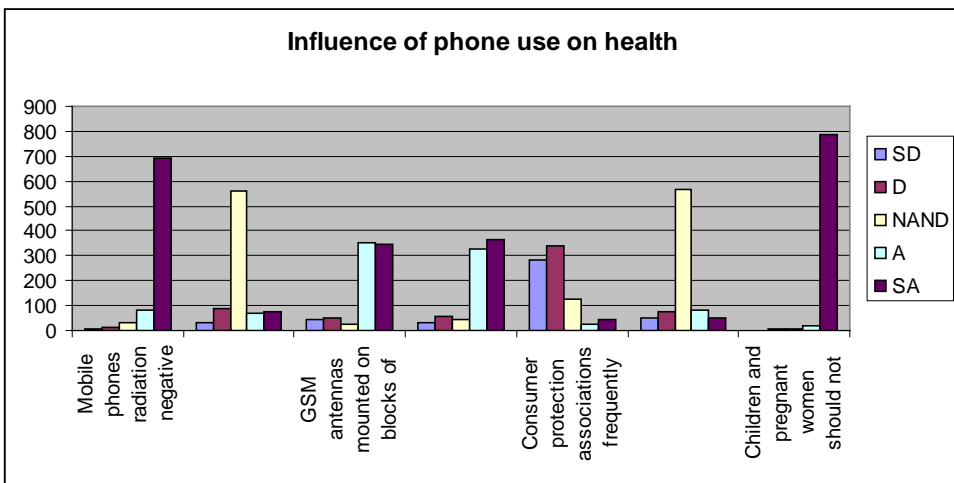
Table no. 3. Influence of phone use on health

Affirmation	SD	D	NA ND	A	SA	DK/DA	Weighted arithmetic mean
Mobile phones radiation negative influence on health	4	11	32	80	693		4.764634
Mobile phones sold in Romania respect SAR rules in effect	31	85	563	67	74		3.082927
GSM antennas mounted on blocks of flats/offices adversely affect health	46	49	25	352	348		4.106098

Long and frequent calls to mobile adversely affect health	31	54	43	327	365		4.147561
Consumer protection associations frequently and correctly inform about the health dangers of mobile phone use	284	339	127	25	45		2.034146
Using your mobile phone in personal car or trains adversely affect the health	52	74	564	81	49		3.00122
Children and pregnant women should not speak on mobile	2	5	8	16	789		4.932927

Where: SA -Strongly agree, A – Agree, NAND - Neither agree nor disagree, D – Disagree, SD - Strongly disagree, DK/DA don't know, don't answer

Chart no. 3



Question number I watched consumer awareness regarding the health effects of mobile phone. In first place (54% of respondents), consumers complain headaches as negative effect, followed by traffic accidents increased by 34%. It is worth noting that although the other choices were negative, they were not known by consumers, comprising less than 5% percent. An 8% did not know the answer or have not answer.

We measured the ecological behavior of the consumers in the sample with a multiitem construct. (Fraj, Martinez, 2006). The results are summarized in table 4.

Table no. 4. The consumers' ecological behavior

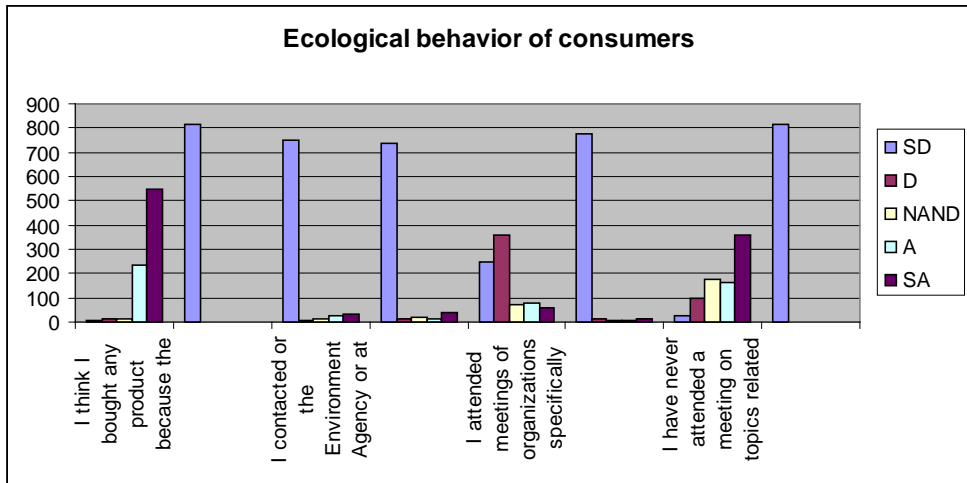
Affirmation	SD	D	NA ND	A	SA	Weighted arithmetic mean
I think I bought any product because the may have a lower pollutant	8	15	14	234	549	4.5865854
Keep records of parliamentary votes that I sympathize because they involved in environmental issues	818	2	0	0	0	1.002439

I contacted or the Environment Agency or at least an NGO whose main activity is environmental protection, to see what I can do to combat pollution	748	5	12	23	32	1.2756098
Make special efforts to buy products only in recyclable containers	736	11	19	13	41	1.3073171
I attended meetings of organizations specifically concerned about improving the environment	250	361	73	78	58	2.1865854
I gave up the consumption of products for environmental reasons	778	14	6	8	14	1.1292683
I have never attended a meeting on topics related to ecology	28	96	176	163	357	3.8841463
I subscribed to publications focused on ecology	813	3	2	1	1	1.0170732

7.93% of the respondents had heard of the existence of ecological phones and a percentage overwhelmingly of 92.07% is not aware of their existence. From the 65 consumers who have heard of the existence of green phones, 72% mention the Nokia green mobile phone maker and a 64% the Samsung Company. The same hierarchy is respected for holding such a phone.

Next, we wanted to find out the ecological mobile phone brands held by consumers surveyed. Of all those who have heard of the existence of ecological phones, only 11 people have such a phone: 7 have the Nokia brand and 4 Samsung brand. It is worth noting that all the 11 consumers who own a green mobile phone have purchased it abroad, none of them buying it from a shop in Romania.

Chart no. 4

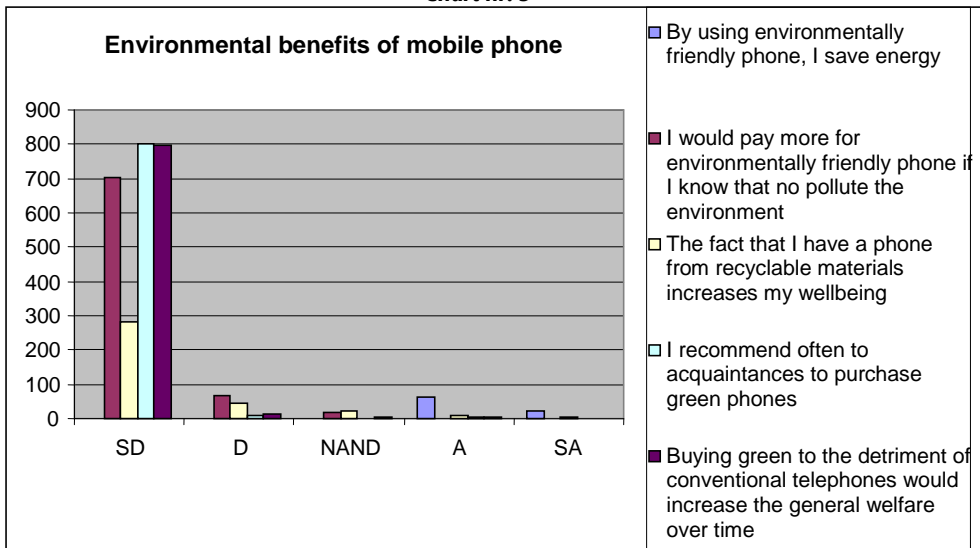


The last table presents a view of the green mobile phone consumers, regarding the benefits they bring to the owners and to the society.

Table or. 5. Environmental benefits of the mobile phones

Affirmation	SD	D	NA ND	A	SA	DK/ DA	Weighted arithmetic mean
By using environmentally friendly phone, I save energy	1	1	1	61	22	734	4.186047
I would pay more for environmentally friendly phone if I know that no pollute the environment	705	67	16	2	2	28	1.142677
The fact that I have a phone from recyclable materials increases my wellbeing	281	47	21	8	5	458	1.367403
I recommend often to acquaintances to purchase green phones	803	11	2	3	1		1.034146
Buying green to the detriment of conventional telephones would increase the general welfare over time	798	12	5	3	2		1.047561

Chart nr. 5



Discussions and recommendations

From the analysis of the questionnaire we concluded that in our country, consumers are not aware of the existence of the green mobile phones.

From the analysis of the ecological consumer behavior using a scale validated in another research context, we noted lower scores in almost all dimensions that characterize this construct. Thus, we can appreciate the existence of a low environmental awareness of consumers in the sample investigated. If we correlate this finding with the low number of consumers who have heard and, respectively, hold a green phone, we can assume that efforts should be made towards

improving environmental awareness. Studying the link between the environmental behavior and the purchase/consumption of the organic products, we have to note that this may be a future research direction.

Moreover, the fact that the 11 consumers who hold green phones have purchased them abroad, leads to the assumption that these products are missing from the trader. This happens because of the lack of information regarding the utility and the role of these phones, the lack of demand, and also the indifference exhibited by the consumers for these products. Based on these findings, we propose the creation of a partnership among the Consumers Associations, The National Authority for Consumer Protection, ANCOM (The National Authority for Management and Regulation in Communications), the mobile phone manufacturers and the major operators in this market, for the design of the communication campaigns and consumer information on the advantages of the mobile ecological ownership

Surprising was the fact that a large number of consumers know the meaning of the SAR index. Given these realities, we believe that the implementation of the survey questionnaire had a dual role: to test the mobile telephony market in Romania, the mobile phone consumers' behavior regarding the environmental protection and to inform the consumers/traders about the benefits of the green phones existing on the Romanian market, but too less known.

Consumers may have a green behavior, even in the conventional mobile phone use. Therefore, even if we have a conventional phone, we can save energy, as follows:

- pulling from the outlet the phone charger when not in use. While not put the phone on charge, but the charger is left plugged in, it consumes electricity, without a specific purpose.
- limiting the illumination period of the screen.
- hanging up, when not in use. At film, theater, on the plane or in an important meeting, you don't answer, therefore, it makes no sense to leave it open. This only serves to waste the battery. Calls and messages are received after opening the phone.
- if the mobile has the option, use its GPS guidance, especially when driving. It saves time and fuel.
- replace the phone only when necessary. Do not buy a new mobile, if the old one is functional. When buying a new one, recycle the old one.
- use phone alarm to awaken in the morning. In this way, you save the electricity used by the clock meant for this purpose.
- using light from the screen or camera to illuminate the road at night, instead of flashlight. It makes no sense to still have another device at you, if your phone already has this capability.
- charge the phone only when necessary. To save electricity, load it only when the battery is completely discharged.
- read news on your phone. If your phone model permits, you can read newspapers and magazines directly, saving the paper consumed.
- instead of using sheets of paper to make your various notes, write directly to your mobile phone, most of them having calendar function.

Energy consumer, but also a source of pollution, the mobile phone is essential for the modern man. Over time, increasingly more manufacturers will gain significant market share in selling "green" mobiles.

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