
Wide- Scale Survey on the Population of Rhodes Island, Greece, Regarding the Implementation of Environmental Education on Adult Education. The Significance of the Age Variable in Recording General View and Attitude

Dr. Moustakas Loukas and Moustaka Maria-Anastasia

Corresponding author email id: lmoustakas@aegean.gr

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Abstract – The main purpose of the present research is to identify all those parameters that can define a framework for the effective implementation of Environmental Education programs in adults. Both the statements of the respondents regarding issues related to environmental education and the attempt to indicate the parameters that actually differentiate among people of different age are of service to our initial objective. The analysis of the respondents' statements regarding their views on lifelong learning clearly suggests that the population in general, considers learning as a means to overcome effectively any form of adversity in everyday life and there is great interest in participating in corresponding educational programs, provided that certain conditions are met. These conclusions show a significant number of differentiations in relation to the participants' age, which highlights the complexity of this issue and signifies the need for further study and research.

Keywords – Adult Education, Attitudes, Environmental Education, Quantitative Research, Age.

I. THEORETICAL CONTEXT

A. Lifelong Learning - Lifelong Training

Lifelong learning includes any form of learning activity that takes place over a person's lifespan and aims at acquiring or improving knowledge and skills. Lifelong learning contributes to shaping an integrated personality, social cohesion, economic and cultural development, professional integration and progress, as well as active citizenship with social and environmental issues as they have been identified since antiquity by Greek philosophers like Socrates, Plato and Aristotle [1], [2], [3].

On account of the fact that society imposes specific roles on its members, who, over the time, change and are subject to modifications and adaptations to the current prevailing circumstances, people, in general and mostly adults, in particular, are consequently, required to acquire the necessary knowledge and skills that are useful for them to cope with the growing and more complex roles they undertake. Since the late 1970s, Cross has emphasized that lifelong learning is becoming more and more necessary for people on the one hand, because it improves the quality of life and indicates self attainment and on the other hand, because those who lack basic knowledge and skills are bound to face tremendous problems in their life [4].

In the context of the study on the identification of lifelong learning and in particular the ongoing implementation of Environmental Education and Sustainable Development, three important phases are distinguished. The first phase covers the early years of an individual's life before joining formal education, when a person grows and is nurtured within their family during which period the informal educational process begins. The second phase extends to the years of an individual's attendance at school or university that covers the formal education

spectrum. Last but not least, the third phase covers the years after graduation from formal education spanning from their adulthood to their death, which essentially refers to adult education, in which the adult person for specific reasons, which will be extensively analyzed in the next section, participates in learning experiences.

B. *Adult Education*

Adult education spans the major part of an individual's educational active engagement beginning with the completion of compulsory or primary education and extending through informal processes throughout their life [5]. Adult education is that part of lifelong learning addressing adult learners [6]. UNESCO formulated in 1976 that "adult education is every educational process, of every content, level and method, whether formal or not, or a process that extends over time or replaces initial education in schools, colleges and universities through which individuals who are considered adult from the society to which they belong, develop their skills, enrich their knowledge, improve their technical and professional qualifications or turn them to different orientation and bring about certain changes in attitude and behaviour so as to achieve both their ultimate personal growth and their active participation in an autonomous socioeconomic and cultural development" [5].

Adult education according to its orientation is distinguished in [7], [8]:

- Adult education with subjective orientation, where the primary objective is to acquire knowledge and skills that the instructor offers to the classroom,
- Adult education oriented towards the "consumer-client" trainee, with the aim of meeting the overriding needs of trainees by the trainer, who assumes the role of "facilitator" and
- "Liberating" adult education, in which free trainees are involved in educational experiences that promote critical thinking and contribute to the integration of participants.

The term adult is often identified with his / her biological - age dimension, that is, the stage of the life cycle of a person, following puberty and youth, ignoring the social or psychological dimension. But we also encounter problems with the age-related definition of adulthood, as it is often not clearly defined in the same society, since different social or legal processes determine the boundaries of this specific age at a different age [9]. It is often the case within the same society to have a different age at which an individual is granted the right to vote, to obtain a driving license, to consume alcohol, to participate in a particular type of entertainment or even to be brought before the court and to serve a sentence.

In other cases it is attempted to determine adulthood in connection with the completion of a certain training cycle. But in this case, similar issues arise as this period in the human lifespan differs from state to state, but it is often the case for many people that the period of primary education is extended for a longer time than expected and as a result, these people go beyond the age limit that is preordained according to legal, administrative or religious institutions that are in force. On the other hand, it is often possible for a person to attend only compulsory education, so that the completion of their initial educational effort falls short chronologically of all the age requirements imposed by the society in which they live to be considered an adult. Therefore, it is necessary to define the term "adulthood" before analyzing adult education [10].

The main objective of adult education is to contribute in a way that adult participants become aware of their abilities, emancipate, gain greater sense of social responsibility, and learn how to learn having awareness of their choices as "autonomous learners". Moreover, it provides the individual with the opportunity to develop as an

independent entity that will, in due course, be able to integrate into different social groups, creating authentic associations that will advance not only the person itself but the society as a whole [11], [12].

The characteristics and priorities of adult education according to the goals and specificities of the participants can be summarized in the following proposals [13], [14]:

- Exploiting the experience of adult trainees,
- Using a student-centered training model,
- Selection of experiential and collaborative methods, emphasizing more on practice than on theory,
- Use of a variety of methods,
- Encouraging learner participation and dialogue,
- Creating conditions for critical thinking,
- Engaging learners at each stage of the program, from planning to evaluation,
- Progressive transfer of "power" to the members of the training group,
- Planning of the program and activities by means of the application of intensive and short-duration stimuli,
- Engaging in subjects of greater interest to participants,
- Use of material relevant to their interests and needs,
- Guiding learners so as to link new elements to existing,
- Learning the feedback process and implementing it frequently,
- Emphasis on understanding and an attempt to refrain from processes that promote memorization.

C. Conditions for Participation

Adult learners make the decision to take part in a learning process to meet some of their specific needs, although it is obvious that in some cases their motivation does not stem from the existence of a particular need. It seems that there is a twin-track motivation system where there is a "vague and not clearly defined sense of need" on the one hand, and on the other, there is the desire to learn something specific or to deal effectively with a certain problem [10].

By "motivation" we mean "all those factors that affect patterns of behavior which are organized for a purpose". It is the inner force that prompts a person to act in a specific way. With regard to motivation for learning, we might as well consider it the driving force that activates the individual to learn, and then keeps it close to the educational process. These factors may be either external, distinguished by inducement or pressure forces, or endogenous - inherent, often stemming from the internalization of external factors and contributing as an internal impulse or desire to make a decision for a learning change. The motivation can be considered to be either an inner momentum that seeks to meet certain needs or the learning outcome or even the acceptance of the targeting by a person [10].

Before proceeding with the process of analyzing educational needs, it is appropriate to use the semantic approach of the concept of "need" itself. The psycho-sociological approach perceives needs as an inclination,

which is expressed in the case where a person or a group realizes they are deprived of something generally acceptable. The cultural approach refers to the importance of values and beliefs in the shaping of needs as a result of cultural factors being active. The constructivist perspective states that human needs are the fruit of the structures in which people operate and the roles they adopt [15].

According to Maslow's theory, there are categories of needs that are classified and follow a hierarchy in a pyramidal form, with the basic needs being at the base of the pyramid and those referring to the highest levels of needs being placed at the top. The hierarchy of needs is predominantly governed by the principle of "pre-fulfillment", according to which in order to create a need for the individual, the needs of the previous levels must be met to the greatest extent, although in some cases different levels of needs may influence the individual at the same time. At the lower-primary level of the base of the pyramid, Maslow felt that there are biological needs to satisfy like those of hunger, thirst, clothing, etc. At the next levels on the way to the top he placed the need for security, social needs, like the need of a person to belong to and be accepted by a group, then the psychological needs of recognition of the EGO, namely, the acquisition of self-respect, recognition and self-esteem and finally the need for self-realization and self-fulfillment [16], [15], [10].

The needs of the trainees according to Maslow's theoretical approach are, respectively, at the lowest level of comprehension (biological - basic needs), i.e. their ability to understand what is happening and what is taught in the curriculum, which is extremely important to be ensured with knowledge of the level of the participants in a program and their peculiarities. At the next level (security needs) there is a need for the educational process to help the trainee feel safe and calm, a condition that is achieved by eliminating all those factors that could cause anxiety and fear to the participants.

In a classic research case in 1965, Johnstone & Rivera categorized the motives of the participants in their research sample as follows [17], [15]:

- Search for a new job,
- Progress in current employment,
- Better information,
- Entertainment in leisure time,
- House-centered occupations,
- Coping with everyday life,
- New acquaintances,
- Escape from daily routine,
- Other...

D. Participation Restrictions

Adults very often face difficulties that prevent their participation in educational programs as most of them have a lot of engagements and their living conditions and social roles are complex. These restrictive factors can be divided into three main categories, the first one including factors related to the organization of the educational

process, the second one referring to their social obligations and duties, and the third one dealing with internal obstacles related to the personality and psychology of those involved [5].

In particular, in the first category all those factors which refer to the organization of educational activity are grouped together and mainly include issues concerning the place where the education will be held, the cost of the tuition, the educational materials or even the transfer of the trainees, the time and the duration of the activity, the infrastructure provided, the general conditions, the selected educational and evaluation methods of teaching, the coordination as well as the information on the existence of educational programs in general [16], [15], [10].

The second category includes limiting factors related to the duties and tasks of adults, which are relevant to their diverse roles, at work, in the family and society in general, or everything that has to do with their financial status and the support they may get [16], [15].

The third category refers to the internal obstacles that arise in a person, mainly due to their personality, psychology and / or health [16].

E. Environmental Education - Training for Sustainable Development

Environmental Education (EE) emerged as education's own response to the general growing concern about the environment in the '60s – '70s, following large-scale environmental accidents, which aimed at raising public awareness on the negative impact of man's modern way of life on the environment [18]. Since the early 1960s, a growing concern occurred over the environmental hazards that followed the poisoning of the Minamata population in Japan in 1956, and the grounding of the Torrey Canyon oil tanker in 1967, near Cornwall, Britain, which caused pollution in the North Sea from 117,000 tons of oil [19]. In the 1970s, large-scale environmental accidents continued to occur with the Seveso disaster in Italy and the Love Canal region in New York being the most distinctive of that time, which questioned the economic growth model and raised the concern about the environment. In the aftermath of this all, the Declaration of the United Nations' Conference in Stockholm and "The Limits to Growth", which expresses concern about the pace of economic growth, the depletion of natural resources, and the countries of the Third World [20].

During the Rio Conference in 1992 and the international Conference in Thessaloniki in 1997, the term "sustainable development" was defined and also its connection to Environmental Education. The Thessaloniki Declaration confirms that "in order to achieve sustainability, substantial coordination and combination of efforts are required on many critical areas, as well as a rapid and radical change in attitude and lifestyle, including a change in the models of production and consumption. To this end, appropriate education and awareness of citizens should be recognized as one of the pillars of sustainability along with legislation, economics and technology "(UNESCO & the Greek Government, 1997).

The main directions of the E.E. objectives which were introduced with the Belgrade Charter in 1975, were ratified at the Tbilisi Conference in 1977. It was emphasized that it should be directed to solve environmental problems, to approach the future with severity and to be a continuous and lasting process. It is imperative to be incorporated within the existing education as a new dimension and to adopt those teaching methods that would favor the trainees' experience and participation. According to the reports of the environmental conferences and Hammerman's research paper in 1979, the objectives of Environmental Education are set in an effort to help [21], [22]:

1. Raise awareness on the part of individuals and societies that the environment is an entity and as such, faces complex and severe problems, the resolution of which people are called upon to play a decisive role,
2. Acquire knowledge about the environment, the nature of problems and the human factor,
3. Acquire eco-friendly attitudes, social values and willingness to actively participate in resolving environmental problems,
4. Acquire the necessary skills to overcome environmental problems,
5. Evaluate effectively the environmental measures and educational programs in relation to their ecological, economic, political, social, aesthetic and educational dimensions,
6. Develop a sense of accountability towards the environment in order to ensure active engagement individually or collectively in solving environmental problems.

It should be noted that the objectives of environmental education, as well as the environmental strategy itself, though documented as it may be, cannot deliver if it has not ensured awareness and active citizenship due to various reactions, on account of ignorance or self-interest [23]. It is imperative that the state and especially local authorities create the appropriate conditions [24] and the corresponding structures for the integration of citizens into participatory processes, through which, and in due course [25] they will understand the impasse of the current development option and will work together to protect the environment and achieve sustainable development locally. The "Environmental Council", which has been implemented in various parts of the world, has such an informal type of structure, having as members representatives of the local community, institutional and non-governmental, aiming to participate in the process of defining Local Agenda 21 [23].

II. METHODOLOGY

A. Purpose and Objectives of this Work

Empirical research to identify educational needs and the specificities that govern adult education on the island of Rhodes. The present research aims to identify the parameters that make up the framework for an effective Environmental Adult Education, to define the general attitude towards lifelong learning, to explore the real needs of the population for these issues, and to identify all those particular elements that are in the position to prevent or encourage adult participation in these programs.

B. The Methodological Framework

Reference Population and Survey Sample

The survey population was defined as the total population of the island in the age range of 15-60 years, which, according to the census of 2001, numbers approximately 77,688 inhabitants. The sample, according to population size and demographics, was set at 1,100 people. According to the population stratification data, the strategy of distributing the questionnaires across the island was designed and as its central axis were the schools of the island.

Sample Identity

According to data from the statistical analysis, the sample of 1.088 residents of Rhodes Island consists of 522 men (48.0%) and 566 women (52.0%). With regard to age, 161 respondents (14.8%) said they were under 20

years of age, 249 (22.9%) between 20-29 years old, 327 (30.1%) between 30 - 39 years old, 241 (22.2%) between 40-49 years, 87 (8.0%) between 50-59 years and 23 (2.1%) over 59 years.

Analyzing the figures on the educational level of the sample individuals, it appears that 16% did not attend or did not complete their studies in high school, 47% graduated successfully from this level and 37% pursued further studies either in tertiary education with undergraduate or postgraduate studies or by attending a Vocational Training Institution.

III. RESULTS

A. Descriptive Research Results

In this part, the views and attitudes of the sample for Environmental Education for Adults, its necessity and the way of its implementation in the population are recorded. This module introduces the respondent to the subject of Environmental Education with a multiple choice close-ended questions, as to whether they have ever participated in such an educational program. Three open-ended questions for data collection follow, about the implementation agent, the subject of the program or the reasons for not participating in it. Then, there are four five-point -scales of agreement (likert) to collect data on their views on lifelong environmental education, on the reasons that could motivate or prevent an adult from participating in such programs and, last but not least , on the way they get information about environmental issues. In this section there are four multiple-choice questions, which refer to the interests of respondents in attending environmental programs, to those who would trust their training and to the selected mode of implementation.

In many cases, in the result description process, and in particular, where grading scales are used, the average and the standard deviation are shown as central stress and dispersion measures, respectively. Five- Likert scales were used in the questionnaire, so the maximum agreement value of the respondents for a particular proposal is an average: 5.0, with the absolute measure of disagreement being expressed by an average of 1.0.

B. Module - Perceptions - Views on Environmental Adult Education

This section refers to the necessity, availability and potential of adults to participate in Environmental Education and Awareness programs. In particular, the tenth question asks respondents to answer if they have ever participated in an Environmental Education program. The analysis of responses shows that only 150 people (13.8%) stated they had participated in a similar program, and in particular, 66 participants (51.6%) attended programs of this sort during their formal education and only 62 (48.4%) of those asked, in another institution after their graduation. In particular, 17 respondents (13.3%) reported a Local Government Organization, 14 of them Universities or Technological Institutions, 9 of them a specific Ministry, 7 NGOs, 8 Vocational Training Centers, only 2 their working environment and 5 other institutions.

Most of the respondents in our survey who said they had participated in similar projects, were involved mostly with recycling and forest conservation (17.6% and 16.0%, respectively). About 40% of the participants were concerned with issues related to environmental protection, regarding specific areas and species, and also sustainable development and various environmental questions. Finally, about 22% attended courses related to human-environmental interactions, energy, waste management and some other specialized environmental issues.

Those participants who had no participation in an Environmental Education program as stated in a previous qu-

-estion, 420 (58.3%) did not do it on account of personal reasons and 259 (36.0%) due to educational or organizational reasons. The remaining 5.7% stated that their non-participation in these programs was due to professional, family and economic reasons.

The next question refers to issues that would interest respondents if they attended a future Environmental Education program. Almost half of them 534 (49.4%) chose that of "energy and the environment", whereas an impressive 38.4% of the sample favored "human rights". More popular topics of interest, such as "global environmental problems" (34.8%), "eco-household" (34.1%), "environmentally friendly crops"(31.8%), follow, with the same rates approximately, being higher in their preference, though. A large part of the sample expresses a keen interest in the issue of sustainable development (21.8%) and in "local tradition and ecology" (19.9%). A significant proportion of 17.9% of respondents would like to attend an "eco-driving" program whereas only 3 would opt for "green entrepreneurship".

A presentation of the research data follows, on the degree of agreement of the respondents on specific proposals concerning the implementation of the Environmental Adult Education programs. In particular, the vast majority of the respondents (95.2%) agree to some extent with the first statement which reads as follows: "Environmental Education in general can positively influence the development of environmentally friendly attitudes". The responses varied accordingly in the following statement: "Environmental Education should continue after school or university in the form of flexible programs geared to adult needs", in which the average of the degree of agreement was 4.39, which in itself highlights the positive image expressed in a previous question related to the overall preference of Environmental Education for all ages, as the most effective measure to address environmental problems. The next four proposals raise the issue of dealing with environmental problems at the local level ("local environmental problems are of concern to local communities and as a result they should be resolved in this context"), by an organized Local Government ("Municipalities can take action with qualified personnel working on the environmental awareness of citizens"), which thanks to the appropriate environmental - educational structures ("the establishment in every municipality of a specialized body focusing on environmental citizenship could be an effective practice ") will be able to offer valuable services on this field (" the implementation of such programs in specific areas such as in a Municipal Environmental Center renders participation feasible and effective"). This approach appears to be accepted by the majority of respondents as the degree of agreement in these proposals ranges from 4.03 to 4.40.

In the last two questions of this module respondents fully agree with the proposition that "the implementation of such programs close to the place of residence renders participation feasible and effective", (average degree of agreement 4.32), while at the same time they seem to dissociate themselves from distance- learning practices through internet in relation to the implementation of environmental programs ("the implementation of such programs from a distance through internet renders participation feasible and effective"), (average agreement rate 3.38).

Then, there is a presentation of the research data on the degree of agreement of the respondents on specific proposals, regarding the motivation of adults to participate in Environmental Education and Awareness programs. According to the respondents' statements, the prevailing reasons for their participation in such programs are environmental (average agreement grade 4.31), personal pleasure (average grade 3.93), labor (grade 3.86), social (grade 3.79), willingness to share common concerns (grade 3.75) and economic reasons (average grade 3.73). For

a large number of respondents 605 (55.7%), the reason was "to learn more eco-friendly ways to manage everyday issues". Another equally important reason for motivation for 45.3% of the sample is the acquisition of skills that will play a decisive role in the protection of the environment. The concern for future generations, and the effort to determine the severity of what is heard about the environment were motivation reasons picked by 36.0% of the sample, but for 32.3% of the sample the objective is to perceive the measure of individual accountability. Finally, 212 (19.5%) recognize that it is their duty to take the initiative but do not know exactly what to do, while 123 (11.3%) feel they need to be informed about human rights.

The next set of questions, whose research findings are presented, refer to the reasons that may limit or prevent adult participation in environmental education programs. Questions are divided into subgroups depending on the content of the inhibitory reasons, for which an index is rated which underscores the degree of impact of the respective category:

- Personal reasons - 3.04
- Family reasons - 3.23
- Financial reasons - 3.27
- Labor reasons - 3.56
- Social reasons - 2.72
- Educational / Organizational Reasons – 3.81.

From the analysis of the data, respondents seem to consider that the educational - organizational index as well as that of labor are very important, while, on the contrary, they attach less importance to the social one.

With reference to the effect of personal reasons on the process of blocking participation (average grade of agreement 3.04), respondents consider that the lack of preconditions and overlapping schedules to be serious reasons (average grade 3.62), while the lack of means of transport, health grounds, age and general attitudes to lifelong learning, influence to a lesser degree their participation in relevant programs (average grade of agreement 2.52-3.07). In the second group, which refers to family reasons, the corresponding indicator is 3.23. From the data analysis of the corresponding questions, it seems that the lack of time due to family obligations (average grade 4.17) is a very serious reason. Less significant, as a constraint, is the lack of support from the family environment (3.21), as well as the refusal of guardians (2.40). Third in line is the group which is related to economic reasons the effect of which appears modest with a factor of 3.27. According to the statements of our survey participants, moderate importance is attributed to the high cost (average grade 3.46) and the lack of financial resources (average grade of agreement 3.63) and little importance to the lack of means of transport (average grade of agreement 2.70). The next category refers to factors of a working nature, which may have a negative impact on the participation of adults in educational programs and has a factor of 3.56. According to the sample statements, moderate importance is attached to limited work utility (average grade 3.46) and lack of support by the employer (average grade of agreement 3.66).

A smaller effect is attributed to social considerations (index 2.72) since the average degree of agreement on the negative attitude of the social environment is 2.35 and the negative attitude towards lifelong learning is 3.07. Finally, a greater impact is attributed to the educational-organizational reasons, as the relative index was set at

3.81. According to the data analysis of the answers in this category, the respondents consider important the lack of appropriate educational structures (average grade of agreement 4.10), the lack of training programs in general (4.07), the non-implementation of programs at a close distance (3.78), the limited information on how to conduct them (3.86) and the implementation of programs at inappropriate hours (3.75). Less importance is attributed to the high cost (3.46) and to the existence of long-duration programs (3.39).

It appears that 929 respondents (85.7%) reported to be well informed when asked the following question: "Are you aware of the environmental issues that concern your place or humanity?" as the analysis of the research data suggests.

With regard to the means used by the sample in order to be informed about environmental issues that concern either the whole planet or the island of Rhodes, television takes up the first place (average frequency 4.31) according to the analysis of the data. Interestingly, 72.3% of the sample chooses the newspaper at a high frequency as a means to be updated (average frequency 3.95). Internet follows in the third place, with respect to the frequency stated (average frequency of 3.84), as 445 people (45.4%) use it frequently enough to get information about the specific subject. At almost the same frequency, the newsletters and magazines (frequency grade 3.80 and 3.76 respectively) follow, leaving radio in the last place (frequency index 3.60) as 770 respondents (78.4%) said they were using it to a large extent for their updating.

Then, there are six sources of information that present a moderate frequency of preference as the recorded answers were placed in the middle of the frequency range by means of the statement "sometimes". This section includes references to: personal contact, acquaintances (average grade 3.27), colleagues (frequency grade 3.12) and relatives (average grade 2.98) as well as the typical ones, books - encyclopaedias (average grade 3.28), cinema and DVD (average frequency 2.67) and finally visits - tours in specific places (frequency grade 2.53).

The last section presents three sources of information, which according to the respondents are rarely used for their information. These are lectures and/or presentations held by associations (average frequency 2.45), exhibitions (average frequency 2.32) and ecclesiastical sermons (frequency of 1.77).

An analysis of the data on the effectiveness of certain institutions shows that 50% of the respondents consider the municipalities and the Ministry of the Environment to be the most effective bodies for the implementation of adult education programs. In particular, 550 respondents (50.8%) believe that Municipalities could cope effectively with this challenge. The same view is expressed regarding the Ministry of the Environment, which is high in the list of the participants' preferences (50.6%) in the survey. The Ministry of Education and the Prefectures follow in line with 28.8% and 21.6% respectively, while NGOs make up 20.5% of the preferences. Very close to 10% of the sample are the Environmental Education Centers and the Regions (10.2% and 9.5% respectively), while private enterprises are selected by only 81 respondents (7.5%).

The research data coming from the last question of the questionnaire follows next, as regards the selection of the most effective actions that can contribute to the environmental awareness and education of the entire population of the island. In particular, 476 respondents (44.0%) believe that participation in voluntary activities could have very positive effects on the awareness of the population. The same tendency is also expressed for TV environmental programs (39.2%), a percentage that is fully explained by the fact that 835 respondents have stated in a previous question that TV is their major preference when seeking information on environmental issues. Next

we can see three actions which are more closely related to the procedures and practices of Environmental Education programs and refer to environmental seminars (37.7%), educational environmental days (37.5%) and experiential activities (34.0%). Then, 293 respondents (27.1%) estimate that TV environmental messages are highly effective, as well as information pages on the internet, answers which respond to 25.6% of the sample preferences. The more traditional types of print media, such as environmental inserts in newspapers and magazines as well as purely environmental prints, are also recorded reaching 20.5% and 19.1%, respectively. Finally, only 13.7% believe that eco-friendly films can make an effective contribution to the environmental sensitization and education of the Rhodes Island population.

C. Survey Results based on Inductive Statistics

It is clear from the examination of the descriptive results of the survey that the views of the respondents vary significantly in many cases, and for this reason it is imperative to check whether there is a differentiation in their statements in relation to various demographic and other elements. The interpretation and the attempt to understand the elements where significant differences lie are of equal importance in order to enrich the general debate on Environmental Education for Adults. The resulting conclusions may perhaps contribute to some extent, in combination with other findings of similar research attempts, in the study and planning of an efficient framework for the implementation of environmental awareness and adult education programs. The values of the variables of interest are checked in relation to each of the other questions in the questionnaire in order to ascertain the existence of statistically significant differences. At this point, it should be noted that for reasons of economy only those cases where statistically significant differences have been identified are presented. The following sections present the results of comparing survey data in terms of age and gender.

The analysis of the table shows that 47.8% of respondents under the age of 20 would like to attend a human rights program, unlike the rest, whose preference rates range from 32.2% (individuals 40-49 years of age) and 39.0% (individuals 20-29 years of age), ($\chi^2(4) = 10.085$, $p = .039$). In relation to the next question of interest, "energy and the environment", the highest preference values were recorded among people under the age of 20 (51.6%), among people at the age of 40-49 (55.2%) and among people over 49 (56.0%), ($\chi^2(4) = 10.115$, $p = .039$).

For the "eco-household", the lowest value was measured in young people (16.1%) and the highest in subjects aged 30-39 (42.6%), ($\chi^2(4) = 36.393$, $p = .000$) while in the case of global environmental problems, the highest value was in people under 20 (48.4%) and the lowest in people aged 40-49 years (29.7%), ($\chi^2(4) = 17.318$, $p = .002$). The same tendency was observed in the case of "environmentally friendly crops", where the highest price was recorded at the age of 30-39 years (38.3%) and the lowest in young people under 20 (22.4%), ($\chi^2(4) = 23.436$, $p = .000$).

Finally, younger people appear to be more concerned with endangered species, as large proportions are found in young people aged less than 20 (38.5%) and young adults aged 20-29 (33.7%). At the rest of the ages, a decreasing trend is observed, depending on the age, with a lower value in the age of over 49 years. 22.0% ($\chi^2(4) = 17.533$, $p = .002$).

With regard to the proposals aimed at looking into the views of respondents on how to implement the Environmental Education and Awareness programs for adults, it is clear that questions that show a statistically

significant difference in this group, show a higher degree of agreement in older age groups. The only exception to this trend is the responses of those aged 20-29 to the following questions "the establishment in the municipalities of a specialized body for the environmental citizenship could be an effective practice" ($f(4/1080) = 5.831$, average: 4.14 - 3.98 - 4.24 - 4.26 - 4.37, $p = .000$) and "the implementation of such programs in special places such as in a Municipal Environmental Center renders participation feasible and effective" ($f(4/1080) = 3.958$, average: 4.01 - 3.86 - 4.03 - 4.13 - 4.17, $p = .003$). These respondents, although they agree, have a lower degree of agreement than expected.

Looking into the questions that show a statistically significant difference in the group referring to the reasons of motivation for attending Environmental Education and Adult Education programs, there is the prevailing trend in two cases, namely the increasing degree of age-related agreement, but in another two cases there is the exact opposite. In particular, the participants, according to their age, recorded environmental reasons as being a stronger motivation for their participation in relevant programs ($f(4/1076) = 18.815$, average: 4, 04-4, 24-4, 35-4, 44-4, 46 $p = .001$) as well as their willingness to share their concerns with others ($f(4/1070) = 11.328$, average: 3.51 - 3.75 - 3.81 - 3.86 - 3.69, $p = .023$). On the contrary, peer groups seem to motivate to a greater extent those of younger age than the older ones ($f(4/1072) = 6.235$, average: 3.15 - 2.79 - 2.77 - 2.69 - 2.54, $p = .000$) and also fashion ($f(4/1072) = 10.846$, average: 2.46 - 2.23 - 2.11 - 2.12 - 1.99, $p = .028$).

As to the motivation of the participants for attending adult environmental education programs (apart from the environmental reasons mentioned earlier), according to age, it appears that the interest in human rights shows a downward trend, as a motivation for participation depending on age (<20: 20.5% -> 49: 7.3%), ($\chi^2(4) = 20.193$, $p = .000$), whereas the concern for future generations shows an upward trend depending on age (<20: 25.5% - 40-49: 43.3%), ($\chi^2(4) = 16.275$, $p = .003$).

With regard to the reasons for obstruction on behalf of the adults in attending environmental education programs, it is initially noted that as the age increases, the lack of appropriate educational structures is considered to be more of an obstacle to adult participation in them ($f(4/1063) = 2.465$, average: 3.95 - 4.05 - 4.15 - 4.14 - 4.19, $p = .043$). The same behavioral pattern also occurs with regard to the absence of programs, ($f(4/1063) = 2.776$, average: 3.94 - 4.01 - 4.13 - 4.07 - 4.23, $p = .026$). The exact opposite is observed regarding the psychological reasons ($f(4/1061) = 2.067$, average: 2.84 - 2.75 - 2.59 - 2.59 - 2.50, $p = .043$) and the refusal of the guardians ($f(4/1056) = 2.436$, average: 2.57 - 2.45 - 2.38 - 2.36 - 2.12, $p = .046$), where the highest prices appear among respondents of younger age, and as a result in this range of age they are considered an obstacle to a greater extent to adult Environmental Education participation.

When evaluating limited work utility as a blocking participation factor in these programs, the lowest value of degree of agreement (average: 3.26) appears in the age range of 40-49, and the highest in the category <20 (average: 3.60). An analogy was also noted for the role of the negative attitude of the social environment, where the degree of agreement among young people <20 is 2.59 and the lowest values in categories 30-39 (average: 2.24) and > 49 (average: 2.12). Last but not least, the responses regarding the statement "limitations on account of age" are of interest as a limiting factor for participation, since young people have an expected higher degree of agreement (average: 2.88), although this does not happen in subjects aged > 49 (average: 2.42), ($f(4/1048) = 4.285$, average: 2.88-2.54-2.40-2.48-2, 42 $p = .002$).

The analysis of data on the frequency of updating on environmental issues through specific sources of information shows, that in the case of the newspaper and the radio ($f(4/977) = 6,265$, average: 3.13-3.72- 3.66-3.65-3.69, $p = .000$), the frequency of information increases according to age. Conversely, with respect to the relative seen as a source of information, the highest value occurs in young people under the age of 20 (average: 3.29) and the smallest in the elderly (average: 2.58), while in the case of the peer group the highest value is again recorded among young people (average: 3.49) and the lowest among the older ones (average: 2.97). Expected are the trends that emerged in the use of internet as a source of environmental awareness, in which preference frequencies are inversely proportional to age ($f(4/935) = 3,935$, average: 4.13-3.88 – 3.76-3.87-3.48, $p = .004$) as well as those of cinema and DVDs ($f(4/974) = 2.552$, average: 2.91-2.74-2.61-2.60-2.51, $p = .038$).

From the respondents' replies, regarding their opinion on the effectiveness of various environmental education programs, according to age, it appears that for the Ministry of the Environment the rate of preference decreases according to the respondents' age (<20: 64,0% > 49: 44,5%), ($\chi^2(4) = 16,913$, $p = .002$), whereas the opposite is precisely the case with the Prefectures, where the preference rates increase in older individuals (<20: 8,1% -> 49: 27.3%), ($\chi^2(4) = 23.057$, $p = .000$).

IV. CONCLUSIONS

The present research paper on the attitude of adults towards lifelong environmental education clearly indicates they are aware of their inadequacy regarding the theoretical background but they also favor the possibility of a lifelong learning process and active involvement. Taking into consideration the comparative research implementation of educational environmental programs carried out in two age groups, it is suggested that programs for young people with appropriate adaptations could be made suitable for adults. Regarding their participation in environmental education programs, the highest percentage considers EE particularly important (average 4,49) and would like to participate for environmental, labor and social reasons, provided they did not face personal or educational / organizational problems (58.3% and 36.0% respectively). A large number of them (44.0%) would prefer their participation in educational programs to be combined with volunteering, while a large proportion of respondents opted for education through television education programs (38.0%).

A significant part of the sample believes that Environmental Education and Sustainable Development Education should be lifelong (average 4.39), covering all age groups since environmental data is constantly changing as the participants themselves. In support of this ongoing process adults value the important role the Municipalities are called to play (4.40), by establishing specialized structures (4.19) addressing both the citizen and the problems themselves (4.09).

From the analysis of the demographic data, the independent age variable shows 46.5% differences in the variables related to lifelong learning, while 36.5% related to gender. In particular, the analysis of the research data identifies 54 statistically significant differences related to age, as well as two dominant trends of differentiation, according to which the differences are either increased or decreased depending on the age of the respondents. Most differences were found in the sections related to the exploration of environmental knowledge, views, perceptions and habits as well as the stance of respondents towards lifelong learning.

In particular, the level of knowledge of the term "sustainable development" and the position of the sample towards lifelong learning and the environment improves with increasing age, notably on energy issues, manage-

-ment of natural resources and markets. The same trend appears in identifying the word environment with its anthropogenic dimension, with human environmental attitudes, with sustainability and with various environmental characteristics. On the contrary, the physical dimension and protection are chosen more by the smaller age groups.

At the same time, younger people experience a decrease in interest in Environmental Education issues related to human rights, energy, global environmental problems and threatened species. On the contrary, the eco-household and ecological farming focus the attention of older age groups.

With regard to adult motivation to follow educational environmental programs, there is an increasing trend proportional to age increase when environmental reasons are involved as well as intergenerational solidarity and inversely proportional to human rights and peer group. Older people consider to a great extent the absence of structures and programs as being the main reason for obstructing their participation in such educational processes. On the other hand, the reasons the younger refrain from participating in educational processes of this nature differentiate significantly as they do so due to psychological reasons, their guardians' refusal, specific social parameters and age restrictions.

In the media, adults of older age choose the newspaper and the radio in relation to the younger and, on the contrary, the younger choose internet, relatives and acquaintances. With regard to the way the programs are carried out, the differentiations involve the selection of a specialized municipal or prefectural implementation body at local level supported by older people. The opposite trend appears in the awareness - raising activities of the target population, from which younger people choose to participate in voluntary efforts and to watch ecological films.

An analysis of the research data of approximately 1,100 respondents pertaining to respondents' attitudes towards lifelong learning has shown that residents of the island are largely sensitized and regard learning as a "weapon" to tackle the difficulties that arise in their life. This finding is extremely encouraging for the implementation of educational programs for the whole population as long as the specific conditions that have been identified in the chapter of the theoretical approach to these issues are addressed and efforts are made to reduce the difficulties that adults face in relation to lifelong learning.

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AUTHORS PROFILE'



Dr. Moustakas Loukas

Dr Moustakas Loukas is a Postdoctoral Researcher at the University of the Aegean and a lecturer in "New Education and Learning" and "Environmental Education" Postgraduate Studies and in Undergraduate Research Courses in the field of social research, statistical analysis (SPSS) and adult education. His doctoral dissertation involved the link between lifelong learning and sustainability, while innovation in education is currently the scope of his postdoctoral research.



Moustaka Maria-Anastasia

Moustaka Maria-Anastasia is student at the Department of Computer Engineering & Informatics of the University of Patras.