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## **USER SATISFACTION REGARDING HEALTHCARE EDUCATION SERVICES FINANCED THROUGH THE EUROPEAN SOCIAL FUND**

**Abstract.** *Education is the most important component within a state, as it contributes to economic growth and to the overall development of the country. EU funded projects in this area offer beneficiaries the opportunity to specialize in a different field, to collect new information from various areas of activity and acquire new skills that they can later apply effectively. In Romania, there are a number of projects financed under EU funds, aimed at the development of individuals and their specialization in various areas of activity. Projects developed in healthcare education area enables beneficiaries to gain new knowledge, both regarding their particular field of interest and in related areas as well. The purpose of this paper is to determine user satisfaction on the quality of services provided both in the traditional as well as the online environment. The work comprises two quantitative studies that have been conducted among project beneficiaries: "Professional training for implementing new technologies in healthcare system". Data resulted from the research were analysed using IBM SPSS Statistics 20.*

**Keywords:** *customer satisfaction, conceptual model, online marketing, medical education, European funds.*

**JEL Classification: M31, C52**

### **1. The use of online tools in the field of healthcare education services**

Technological developments in recent years have led to significant changes in the behavior of consumers. „Generally, by evolution we understand that particular change which means the alteration of the qualitative identity of a system (phenomenon). In turn, the evolution can get three different forms: development (evolution generated by the pure quantitative change), transformation (evolution generated by the implementation of purposes) and progress (evolution generated by the implementation of values).” [Dinga, 2014] The needs and desires of individuals began to be increasingly diversified, as traders began to work assiduously in order to satisfy their needs, by providing a superior market offer. Philip Kotler noted that the level of satisfaction or dissatisfaction felt by a user depends to a high degree on the performance of the available supply or the offer existing on the market [Kotler, Keller, 2008].

The advent of the Internet has brought a number of benefits for both consumers and suppliers. Internet, from a technological approach, has major implications for socio-economic environment, it imposes in particular on companies and institutions through structural, behavior and managerial transformation. [Popescu, 2008]

The Internet, along with specific online commercial services were those that led, in time, to the emergence of online marketing. Digital marketing is the special medium that has the ability to electronically connect the consumer and traders by means of computer systems [Kotler and Armstrong, 2003]. This new communication medium gave traders the opportunity to differentiate, individualize and personalize their offer, according to the needs and desires of each individual.

In the online environment, customers are constantly interacting with vendors. Thus, they benefit from support both before conducting the transaction, during the transaction, and after this process [Kalyani and McIntyre, 2002]. In the virtual environment each component of the marketing mix has undergone some changes, generated mostly by the particularities of this environment. Furthermore, two additional components were introduced: interactivity and databases. Wehing [2006] reported the existence of at least six advantages of applying online marketing to the environment, namely: the Internet is global, allowing companies to communicate with their consumers in any part of the world; "it is self-selective"; is an interactive environment; is an integrated environment, being able to offer a wide range of activities; enables a customized marketing (one-to-one); it has the ability to generate sales. Online marketing has been successfully applied in services, as well [Cătoiu et al., 2014]. However, tools and technologies that were used in the virtual environment have been customized in accordance with the main characteristics of services: intangibility (services can not be perceived through the senses before purchase), the inseparability (production and consumption of the product are performed simultaneously), perishability (services can not be stored for a subsequent sale) and variability (they vary from one benefit to another, from one individual to another) [Mill and Ronald, 1997].

„The existing tools and technologies were used in the online environment over time to improve activities in the medical field” [Bradea et al., 2014]. When a

company sells its services on the Internet, it must take into account the main characteristics identified in the area of marketing policies.

In terms of price of services we must mention that, in addition to financial costs involving the purchase of a service, consumers take into account other non-financial costs, namely: [Lovelock, 1991]. Also, it is important to attract european funds, and „an important measure for improvement of absorption capacity consist in the subordination to the Prime Minister of the Coordination Agency of Structural Instruments which is considered to give a strong capacity of action and implementation to SOPs.” [Zaman and Cristea, 2011]

In the online environment, the distributin of efforts is achieved easily, their involvement being a much lower one. As regards promotion, it requires the effort of the company, in the production and distribution of messages that have the ability to attract the consumer to choose the marketed products, or the ability to boost the product towards the intended target segment [Popescu, 2003].

In the online environment, an important role in the promotional activity is owned by company’s website. The website of a company communicates all information on services offered by the company and maintains regular contact with users [Georgescu et al., 2011]. Technologies and web tools existing on the market have brought changes at the level of educational services too. Lately, many teachers, and students were directed to the digital environment, being able to collect the information they need in a very short time and at a low cost [Wu et al., 2008].

“Studies have previously shown that educational multimedia components used in teaching the courses contribute to a high extent improve to the entire educational process. Using such interactive tools, young people tend to be attracted to the information transmitted and processed easily.”[Homocianu et al., 2014] “Moreover, in the last years, beside the the e-learning concept began to be used the concept of mobile learning. The developed studies in this field, showed that young people are open to use mobile technologies to assimilate new information. The main perceived advantages on the opportunity to learn through your mobile device are: usefulness, ease of use, rapid speed of information processing, low cost, accessibility, etc.”[Pocatilu et al., 2012]

## 2. Study 1: Research Methodology & Results

The first study was aimed at highlighting the main factors that have the ability to influence user satisfaction regarding healthcare education services developed online. As such, we have conducted a quantitative research on a sample of 434 people who have benefited from a number of medical educational services made available through EU-funded project: "Professional training for implementing of new technologies in the healthcare system". Information was collected from respondents during 12 to 15 February 2013, in Bucharest and physically collected questionnaires were recorded on the esurveyspro platform, the next month.

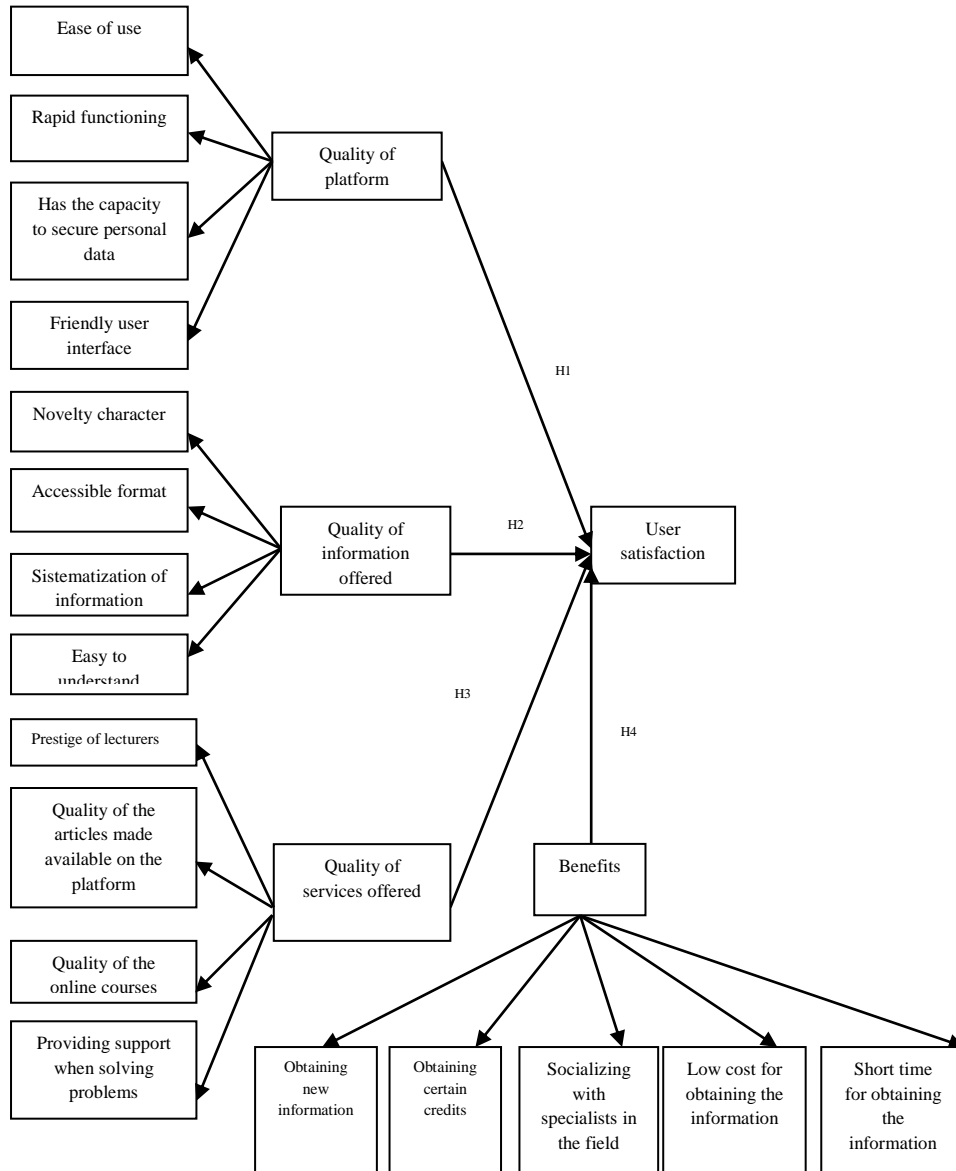
In order to observe the main factors that influence the satisfaction of users who choose medical education services, we made a model that seeks to highlight the

manner in which a number of attributes are reflected in the degree of satisfaction of its beneficiaries. Within the previously model presented there were made the following assumptions:

- H1:** There is a direct and positive relation between the quality of the platform and the satisfaction of those who use the medical educational services online.
- H2:** There is a direct and positive relation between the quality of the information provided and the satisfaction of those who use the medical educational services online.
- H3:** There is a direct and positive correlation between the of quality services provided within the platform and the satisfaction of those who use the medical educational services online.
- H4:** There is a direct and positive correlation between the benefits of taking online courses and the satisfaction of those who use the medical educational services online.

Within the conceptual model developed there were taken a number of variables from the specialized literature. In order to have an overview of the subject analyzed there were added other relevant variables too. The initial model that laid at the basis of the research was conducted by Delon and McLean in 2003. The items used in the research model were measured using Semantic Differential scale with 10 steps, where 1 means "Not at all", and 10 means the "In a very large extent". The conceptual model proposed is the following:

## User Satisfaction Regarding Healthcare Education Services Conducted within EU Funded Projects



**Figure 1 –The proposed conceptual model**

As a result, the overall user satisfaction model hypothesized in our research could be denote as:

$$Satisfaction_i = \beta_0 + \beta_1 QP_i + \beta_2 QI_i + \beta_3 QS_i + \beta_4 QB_i + \varepsilon_i \quad (1)$$

where,

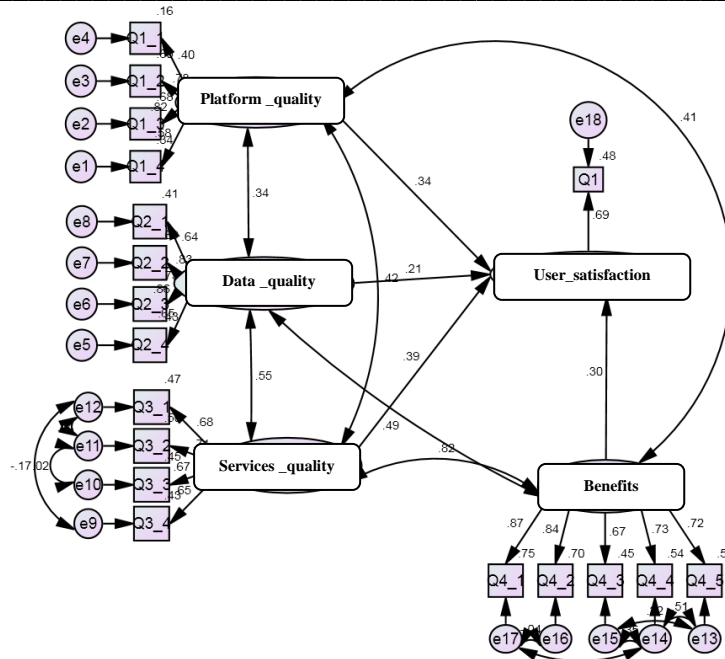
- Satisfaction<sub>i</sub> = individual satisfaction of each user regarding healthcare education services developed online
- QP<sub>i</sub> = perception with regard to platform quality of each user (based on scores with regard to platform easy to use, quick operation, privacy and user-friendly interface)
- QI<sub>i</sub> = perception with regard to information quality provided by the platform for each user (based on scores with regard to platform format accessibility, time relevance, readability, and course structure)
- QS<sub>i</sub> = perceived service quality provided by the platform for each user (based on scores with regard to instructor interactions quality, reading materials quality, course quality and academic support quality)
- QB<sub>i</sub> = perception with regard to platform benefits for each user (based on scores with regard to information acquisition, social tools and social interactions within the platform, cost/benefit ration and expert access)

The conceptual model developed within this work was tested using IBM SPSS AMOS. The information obtained after collecting all relevant were introduced in SPSS and verified so that there is not he case of missing information or duplicate cases. The analysis method used in this research was the confirmatory analysis used to validate the proposed model.

Considering the analysis undertaken within this study, we can see that the foregoing assumptions are confirmed. Thus, the respondents are of the opinion that the quality of the platform heavily influences the degree of satisfaction felt by them after taking the courses online. In addition, beneficiaries agree that the quality of services provided in the online environment, as well as the quality of the information made available, both have the ability to influence the satisfaction felt after learning such courses.

After completing the current research we can easily notice that the benefits achieved after participating in these healthcare education online courses, have the ability to increase the satisfaction of individuals.

## User Satisfaction Regarding Healthcare Education Services Conducted within EU Funded Projects



**Figure 2 – The conceptual model proposed**

Research results have shown us that in order to increase the satisfaction of those who use healthcare education services online, must steadily improve activities undertaken both within their online platform - regarding the services provided, the information provided, as well as those activities taken in what concerns the benefits that can be obtained after completing such courses.

Regarding the indicators obtained in the model created, we may notes that the CMIN / DF indicator registered a value of 2.521 <3. This value suggests that the model created is accepted.

In addition, GFI (Goodness of Fit Index), an indicator that shows us the differences between the covariances predicted by the model of interest and those of the population, registered a value of 0.929.

RMSEA - Root Mean Square Error of Approximation (the average square roots of the approximation error) was EUR 0.05, while CFI - Comparative Fit Index or comparative fitting reached 0.953, which suggests that the model is adequate.

The model fit indices were calculated according to **Kenny (2015)**:

$$CFI = \frac{(\chi^2 - df)_{nullmodel} - (\chi^2 - df)_{model}}{(\chi^2 - df)_{nullmodel}}$$

$$RMSEA = \frac{\sqrt{(\chi^2 - df)}}{\sqrt{df(N - 1)}}$$

$$GFI = 1 - \frac{v_{residual}}{v_{total}}$$
$$CMIN/DF = \frac{\chi^2}{df}$$

### 3. Study 2: Research Methodology & Results

The second study carried out in the current paperwork was aimed at determining the degree of satisfaction felt by individuals who participated in symposia conducted through the project: "Professional training for implementation of new technologies in the healthcare system". This project was conducted on an online platform allowing users to interact with each other, to get information on a range of topics of interest and to post new information that they discovered in their field of working.

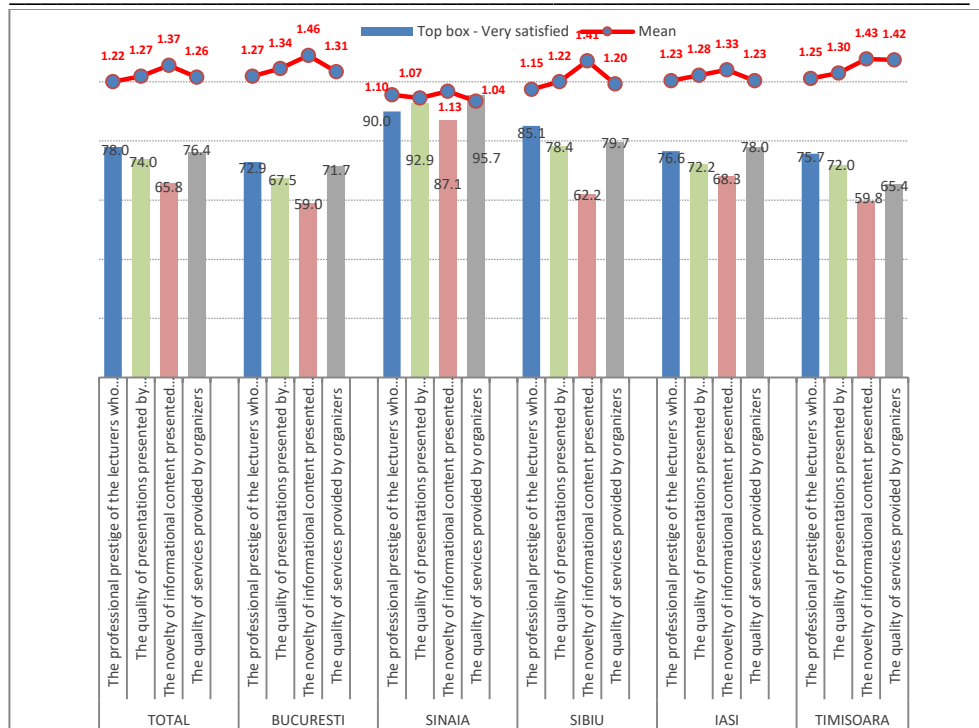
Thus, this project aims to combine traditional healthcare education services (through symposia) with online services, through web technologies and tools that allow them remote communication. The five quantitative surveys were conducted online via the platform eSurveysPro, in cumulative periods throughout the symposiums from the project held between 2012-2014. Research was conducted on a sample of 622 respondents. The questionnaire was distributed to those who attended the symposia within the project, in one of the spots provided, namely: Bucharest, Sinaia, Sibiu, Iași and Timisoara. The study collected a range of information on user satisfaction concerning: quality of medical education services, the utility of attending symposiums and the manner they were developed.

#### **- Identifying the degree of satisfaction felt by users regarding the quality of healthcare education services**

When we refer to the quality of healthcare education services that are provided overall within developed symposia, we may note that most respondents are very satisfied with the professional prestige of the lecturers within this field (78% of all respondents).



## User Satisfaction Regarding Healthcare Education Services Conducted within EU Funded Projects



**Figure3- The degree of consumer satisfaction regarding the quality of healthcare education services**

This feature has recorded the highest percentage values in Bucharest (72.9% of all respondents), in Sibiu (85.1% of all respondents) and in Timișoara (75.7%). 3 out of 4 respondents said that they are very satisfied with the services provided by the organizers, being followed by those who evaluated the quality of presentations as being very satisfactory (74% of all respondents), as well with those who said they were very satisfied with the novelty of the informational content provided in the lectures (65.8% of all respondents).

The last place in terms of respondents' level of satisfaction was the novelty of the information obtained, and only 2 out of 3 respondents declared themselves very satisfied with this characteristic. This order of characteristics can be found in Sinaia as well.

In Timisoara, 3 out of 4 respondents said they were very satisfied with the professional prestige of lecturers, being followed by those who assessed the quality of presentations as being very satisfactory (72% of all respondents), and those who affirmed that they were very satisfied with the quality of services provided by the organizers (65.4% of all respondents). As compared to previous analysis we easily observe that the novelty of information transmitted occupies the last place, as only 3 out of 5 respondents declared themselves satisfied with this characteristic.

***- Identifying the degree of satisfaction felt by users regarding the usefulness of participating in symposia developed within the project***

Regarding the usefulness of participating in these conferences, overall, 2 out of 3 respondents have mentioned their agreement on this issue. Participants agreed with this statement in Bucharest too (63.9% of all respondents), in Sibiu (77% of all respondents), in Iași (73.2% of all respondents) and in Timișoara (63.6% of all respondents). Thus, we can observe that the results obtained in Bucharest differ significantly from those obtained in Sinaia, Sibiu and Iasi, where this particular feature has recorded higher values.

67.5% of all respondents who attended these symposiums have affirmed their agreement on the organization of events, and considered that symposiums went as expected. 2 out of 3 respondents mentioned they were impressed by the quality of presentation held, while 2 out of 4 respondents agreed with the fact that they received valuable information that will be of use in activities which will take place later on. 48.9% of all respondents expressed agreement regarding the opportunity offered by these events to establish relationships with other participants.

When referring to Sibiu, we observe that most respondents (77% of all respondents) were in total agreement about the usefulness of the symposium. This value differs significantly from that obtained in the case of the symposium held in Bucharest, where only 63.9% of all interviewed respondents agreed with this fact.

Regarding the results obtained in Iasi, we can observe here, as well, that most respondents (73.2% of all respondents) expressed their agreement regarding the usefulness of participating in the symposium. 70.2% of those surveyed consider that the symposium fell short of their expectations.

In addition, 59.8% of respondents agree that presentations were highly qualitative, while 52.3% of participants have expressed their agreement regarding the amount of information obtained. In this case, as well, only 44.9% of respondents agreed with the possibility of establishing links, within the symposium.

As a conclusion, we may easily notice in this case, as well, the fact that respondents did not fully agree with the statement that symposia helped them establish links with other participants. Thus, in the future, this aspect should be improved by means of carrying out specific activities that allow participants to better interact with each other.

***- Identifying the degree of user satisfaction regarding the attributes specific to the organization of symposia***

When talking about the attributes specific to the organization of symposiums, we may observe that 3 out of 4 respondents are very satisfied with the ambiance and equipment of exhibition halls allocated to such events. This feature is on top of the preferences among respondents who participated in symposia from Bucharest (68.1% of all respondents), Sinaia (95.7% of all respondents), Sibiu (85.1% of all respondents) Iași (77.1% of all respondents) and Timișoara (69.2% of all respondents). Moreover, 63.7% of those interviewed declared themselves satisfied with the diversity of the menu and the quality of meals served. 62.9% of

## User Satisfaction Regarding Healthcare Education Services Conducted within EU Funded Projects

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participants were satisfied with the organization of events in general, 56.8% appreciated the hotel room ambience, while 52.7% of respondents were satisfied with the parking services provided. The lowest rate was recorded in what concerns the accessibility of the event hall, as only 51% of participants declared themselves satisfied with this feature.

Regarding the symposium held in Sinaia, we may observe that the highest value is recorded among ambience and the equipment of the halls allocated to the symposium (95.7% of all respondents). This value differs significantly from those recorded in symposia held in Sibiu, Bucharest, Iași and Timisoara. The vast majority of respondents affirmed they were generally satisfied with the overall organization of the event, while 90% of participants were satisfied with parking places provided by the organizers. At the Sibiu symposium we noticed that 6 out of 7 respondents said they were satisfied with the atmosphere and the equipment of the halls allocated to the symposium. This value differs significantly from the values obtained in the symposia held in Bucharest and Timisoara, where respondents have shown a high degree of satisfaction in this regard.

Regarding the symposium held in Iasi, 77.1% of those surveyed were satisfied with the atmosphere and the equipment of the halls allocated to the symposium. A large proportion of respondents (73.2% of all respondents) said they were generally satisfied with the organization of the symposium.

This value is significantly different from those obtained at symposia held in Bucharest and Timisoara, where recorded values were much lower. 61.5% of participants said they were pleased with the diversity of the menu and the quality of the meals served.

If we refer to the symposium held in Timisoara, most respondents (69.2% of all respondents) said they were pleased with the ambience and the equipment of the halls allocated to the symposium. 64.5% of them were satisfied with the availability of the room, as well.

In the analysis that we have conducted, there were taken into consideration a number of variables that are meant to give us an overview of the satisfaction felt by individuals who participated in symposia conducted through the project "Professional training for implementing new technologies in the healthcare system". Thus, in the current research, we have noted a lower degree of satisfaction regarding the novelty of the information provided in the lectures. The highest value was obtained in what concerns the professional prestige of the lecturers. As such, we consider necessary to maintain a high level of this value, which subsequently will lead to improved satisfaction amongst participants.

The lowest value was recorded regarding the possibility of establishing future ties with other participants who attended the event. As such, we consider it necessary to undertake activities in order to determine a permanent interaction among all people involved in symposium.

As a conclusion, we can observe from the current analysis that the main problems encountered when referring to symposia are represented by the overall availability

to the event halls and the number of parking spaces provided by the organizers. Thus, in the future, these aspects should be considered and it is desirable that all activities undertaken at these levels be improved.

#### **4. Conclusions and discussions**

Medical services conducted online education bring a number of benefits to users, giving them the possibility of acquiring new information and knowledge in a very short time and with minimal cost. An important role in the provision of educational services in the online environment, it is owned by the e-learning platform, this being the link between users and those providing medical services.

For this reason, this web tool should be as accessible, easy to use and fast. As we have seen in the previous research conducted, these variables influence to a quite high extent the degree of satisfaction felt by users after accessing healthcare education services. Along with these variables which relate to the organizational structure of educational services conducted online, an important role is owned by the issues related to quality of services and information provided.

User satisfaction regarding medical education services conducted online, often puts the mark on their degree of recommendation for the services. Identifying a higher degree of satisfaction of users has the effect of increasing the number of recommendations made among relatives.

In conclusion, we believe that the development of healthcare education online courses represents an opportunity for both learners and for lecturers, as it contributes significantly to saving time and improving knowledge available in the field. In addition, online platforms allow users, besides attending certain courses, the opportunity to socialize with various specialists in the field. For this reason I believe that this study is of particular importance for those working in this field, this research illustrating the main factors that influence the ability of satisfaction felt by those who use healthcare education services conducted online.

#### **5. Limitation of the research conducted**

The two quantitative studies conducted within this paper aimed at illustrating consumer satisfaction regarding the healthcare education services, on the one hand conducted in the traditional environment, and on the other hand, those conducted online. Both surveys were based on a number of variables that have the ability to influence users' satisfaction. Apart from these, there may still be other variables, which, for some reason were omitted in the current study.

For this reason, we consider necessary to conduct further research, both quantitative and qualitative, meant to illustrate the influence of many other variables on the satisfaction of users who access healthcare education services. In addition, this research should be undertaken not only among those who participated in the European-funded project, but among all individuals who have participated

over the years in such courses. By carrying out such quantitative studies we can form a much clearer vision on the phenomenon studied.

In addition, by conducting research on representative samples, we can better understand the behavior of individuals, which can further help us in creating and developing healthcare education courses conducted both online and in traditional media, as well.

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