QUALITY OF SERVICE IN LOCAL GOVERNMENT UNITS AND DIGITAL EXCLUSION OF ELDERLY PEOPLE - EXAMPLE FROM IMPLEMENTING THE AVATAR PROJECT

Nowakowska-Grunt J., Dziadkiewicz M., Olejniczak-Szuster K., Starostka-Patyk M.[*]

Abstract: The aim of the research conducted as part of the presented article is to present the expectations of seniors in terms of service in local government units and the resulting needs for the use of modern digital solutions contributing to the improvement of their quality of life, together with digital exclusion, which was the basis for the research in the creation and implementation of the Avatar project effects. The article presents research on the assessment of the quality of service in the office, supplemented with practical solutions in the form of a virtual assistant for the elderly, which in turn improved the level of service in the perception of older people. The article uses the Servqual methodology to determine the level of satisfaction of older people with service in the office and indicates the limitations related to digital exclusion in these people, as well as the effects related to supporting the elderly through an avatar - a virtual assistant.

Key words: service quality, digital exclusion of elderly people, Servqual method, virtual assistant – avatar

Introduction

Quality in public administration units can generally be divided into two areas: substantive (objective) quality and perceived (subjective) quality. The substantive quality of the service concerns the objective result, i.e. the settlement of the case in the office (full or partial settlement of the case, in accordance with the current legal conditions and technical possibilities). The perceived quality is related to the subjective feelings of the office client regarding the care they have in the office, the perceived level of competence of officials, convenience in dealing with the case, etc. Both areas of quality are difficult to measure and require the use of specialized research tools. A lot of research on quality and its measurement in public administration units has already been conducted in the world (Löffler, 2002; Caddy et al., 2002; Folz, 2004; Kovač, 2011; Palm at al., 2017). The Servqual method is a

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measurement method that allows to assess the level of customer service in government units by clients perspective (Orwig at al., 1997; Osborne, 2010; Hirmukhe, 2012; Engdaw, 2020; Ocampo at al., 2019).

With regard to the elderly, digital exclusion also seems to be a significant problem. By analyzing the use of modern technologies, one can observe their enormous impact on human life. In the contemporary economic and social environment, it is impossible to function without the use of modern technologies in such areas as: remote work, customer service, sales through electronic distribution channels or communication with the environment (Setia et al., 2013). However, in order to make it possible to use modern technologies, it is necessary to have appropriate conditions and competences enabling the implementation of this process. The necessary element is to ensure the conditions necessary for communication in the form of having a computer, smartphone, as well as access to the Internet, and above all, knowledge of how to use the devices. In this context, older people have difficult access to modern technologies, then becoming socially excluded (Charmarkeh, 2017), the difficulties relate to certain limitations and barriers, which on the one hand are an internal component of an elderly person, and on the other hand may result from external conditions (Ruppel et al., 2016; Cioca et al., 2008). Also, the natural phenomena that characterize seniors, i.e. the sense of loneliness and the resulting social and cultural isolation, negatively affect the increasing distance between seniors and the economy (Fernandez et al., 2017).

Taking into account the above dependencies, the purpose of this article can be indicated, which is an attempt to determine whether, in the light of expectations as to a specific level of service quality in public administration units and digital competences and skills of older people, the use of a modern solution in the form of an avatar installed in the public administration office contributes to the increase of satisfaction with the service.

The consequence of this article's goal was to ask the following research questions:

RQ1: How do seniors assess the level of service in public administration offices?

RQ2: Which parts of the service process do they think require special improvement?

RQ3: Do seniors show interest in using the support offered by new technologies?

RQ4: How do they rate the use of the new technology in the form of an avatar in the context of improving the level of service in the office?

Theoretical Framework

The quality of the service is created in the process of its performance, and consists in the interaction of the contractor with the client. The differences between a service and a tangible product have resulted in the development of many service quality models. They are used to measure and improve quality in service enterprises. Most models assume that service quality is a relationship between the quality expected and the quality received by the client, hence the service quality models include the so-called gaps, or discrepancies between expectations and

reality, e.g. the model of service quality by Parasuraman at al., 1985. The starting point for creating this concept was the assumption that the assessment of the quality of services performed by the client results from the discrepancy between his expectations and observations, which reduce the quality of services provided. Therefore, the difference between the customer's expectations (E - expectation) in relation to the service and its actual quality (P - performance) should be assessed. This QoS approach is to maximize the difference (P-E). Measuring service quality is more difficult than measuring the quality of industrial products, as it is not only based on the result, but also involves an evaluation of the entire delivery process. The gaps identified in the model result from defects in the subsequent stages of the preparation and provision of services, which means that during the entire process of providing services, discrepancies may arise between the service provider and the recipient (Lee, 1995; Durvasula, 1999; Long, 2004).

The Servqual method is used to assess the gap between the quality of service and customer expectations as to its level. The concept was developed after conducting in-depth interviews with managers of large service companies in four industries: retail banking, credit cards, securities trading and device service, and focus groups of customers using these services. Research has found that there are discrepancies (gaps) between the perceptions of service quality by service company managers and the individual elements related to the delivery of these services to customers, and that these gaps can be major obstacles to delivering services that customers will perceive as high-quality.

The research by Parasuraman et al., 1985, identified the following five gaps:

Gap 1: Difference between customer expectations and managers' perceptions of those expectations. There is a discrepancy between customer expectations and the perception of these expectations by service providers. The source of this discrepancy is the lack of reliable knowledge about customer expectations. This deficiency may result from deficiencies in the conducted marketing research, errors in using the results of these studies and deficiencies in communicating with clients. Poor perception of expectations may also be the result of an overly complex organizational structure of a service organization, often separating top-level management employees from the full stock of information about customer expectations, and, consequently, making wrong decisions by the management board.

Gap 2: The difference between managers' perceptions of customer expectations and the specification (design) of the service. discrepancy between the service organization's perception of customer expectations and the quality specification of the service. The reason for this discrepancy may be the lack of confidence of the service organization's management about the ability to meet customer expectations, as well as the adequate protection of the service process with tools, devices and appropriate procedures.

Gap 3: Difference between the quality of service specification and the service actually delivered. The source of this difference may be such factors as: ambiguity

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and conflict of roles fulfilled by employees, low qualifications of staff, inadequate technology, poor selection of employees working in a team and improper supervision over the service process control system.

Gap 4: Difference between the quality of service delivered and external communication. Often, in practice, there is a disproportion between what the advertisement and the seller of the service promises and the performance of the service and the fulfillment of the promises previously made by the service provider. This may be the case when there are differences in the procedures for the provision of services at a service organisation's sites and agencies.

Gap 5: Difference between customer expectations for service quality and the perceived quality of the service received. There is a fundamental discrepancy between the service expected and the service received, which determines the quality of service perceived by the customer. Therefore, a more general conclusion can be drawn that the foundation in the implementation of a customer-satisfactory service is the thorough understanding of their expectations and skillful processing of these expectations into the goals and tasks of the service organization.

The use of modern technologies has a significant impact on the socio-economic development. This is primarily due to the fact that modern technologies affect many aspects of our lives, facilitating and simplifying a number of processes and procedures. The influence of technology can be observed both in professional and private life. However, the use of modern technologies requires having the appropriate infrastructure and digital competences. The lack of any of the above-mentioned factors limits the possibility of using modern technologies. As a consequence, it leads to increasing social exclusion (Polat, 2012). Digital exclusion is a complex problem that covers a wide spectrum of issues, from infrastructure and access to it, to the use of applications and results (Park et al., 2015). As Koss, 2001 points out, digital divide negatively affects both individuals and enterprises, affecting their ability to access information and communication technologies. In other words, it is possible to indicate the gap between users and those who do not use modern technologies (Wilson et al. 2003). Digital exclusion seems to be one of the most important problems of the modern world. Both theorists and lawmakers call for free access to digital communication technology for all social groups (Park et al., 2013). Research by Brännström (2012) and Mossberger (2009) show significant discrepancies in digital exclusion, depending on country, age, income, education, gender, ethnicity, geography and race.

In this context, the elderly are the social group that is more exposed to digital exclusion, especially in the time of the COVID pandemic. This is due to several factors:

- elderly isolation is being forced because of the pandemic.
- traditional ways of dealing with matters in administrative units are limited.
- there are specific difficulties among older people in keeping up with technological progress (Helsper, 2008).

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- there is a reluctance among seniors to use new technologies, but such an attitude causes more and more isolation. If they want to function normally in life, they should use various forms of communication (Saracchini et al., 2015).

Fernandez at al. (2017), van Dijk, (2006) and Dziadkiewicz (2018) indicates that modern technologies have a positive effect on the functioning of older people. The use of modern digital technologies brings a number of benefits. These include: establishing new social contacts, increasing access to culture and education, and stimulating them cognitively. A similar position is presented by the studies by He et al. (2020), according to which modern technologies cause, inter alia:

-ensuring the possibility of digital participation in society,
-connecting older people with friends and family,
-involving older people in social activities,
-obtaining social support by seniors,
-have a positive effect on physical and mental health,
-strengthen social ties.

Methodology

The research methodology presented in this paper has a multi-stage character. The first stage of the research was a pilot survey. It was carried out in the first quarter of 2020, in connection with the implementation of the international research project entitled "Innovative model of helping an avatar of an elderly caregiver". The pilot was aimed at verifying the correctness (elimination of defects) of the assumed research procedure: the selection of the subjects and the research tool used (questionnaire). It was not used to verify hypotheses, but to provide information enabling the construction of a good research plan. The study was qualitative (questionnaire test) and was carried out in the form of a meeting of people from a deliberately selected sample with the size of N = 20. The pilot was carried out using the conventional method (verification, among others, if the respondents understand all the questions asked correctly? Is the instruction attached to the questionnaire clear to the respondents?/additions to the scope and type of questions, analysis of the target group of respondents). The sample size ensured the statistical significance of the results (the pilot studies are described in detail in Maśloch 2020).

A similar position is presented by Stern et al., 2009, who distinguished three such groups, including: access, which can be largely achieved through interventionist policies, and skills and opportunities.

At the moment, the degree of computerization of the contacts between citizens and public entities is very low in Poland. The existing solutions are very fragmented, they constitute "islands", there is no deeper conception of the interaction of these systems. This problem is particularly important among the elderly. On the one hand, older people rarely or reluctantly use innovative IT solutions, on the other hand, there are no comprehensive solutions, and there are also some concerns on the part of public administration as to the effectiveness of such solutions.

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The next stage of the research procedure was the assessment of the functioning of the public administration office by a group of 146 elderly people (aged 60+), using a questionnaire. The results of the survey were verified using the Servqual method, and as a result of the Servqual modeling, the service gaps and customer service expectations were identified (Khodaparasti, 2015). The parallel stage of the research was the assessment of the degree of digital exclusion of older people (the results of research on digital exclusion of older people are presented in detail and broadly in the work: Olejniczak-Szuster at al., 2020. The assessment of the satisfaction level of customers of public administration offices was then confronted with the results of measurements made in the clients of public administration office from the Mazowieckie Voivodeship, in which the avatar device was installed, used to improve the customer service process. This article presents conclusions and recommendations from the conducted research.

The tools used to collect data for surveys assessing the level of customer service in public administration units were two types of surveys:

- a survey examining customer expectations in relation to the type of organization, which is a public administration unit ("ideal office"),

- a survey examining customer ratings in relation to the service received at the indicated office.

The survey questionnaires were designed together with a record, which contained additional information, namely age, education and income. The survey was carried out on the surveyed group of respondents - elderly people, randomly selected clients of the office, who were asked to fill in the questionnaire form, which consisted of three stages, and more precisely, the assessment of perception and expectations and the assessment of the importance of dimensions. The scale of grades was adopted in the range from 1 to 7, where 1 means - I completely disagree with the statement and 7 - I completely agree with the statement. The questionnaires contained 22 statements in accordance with the methodology developed by the authors and were adapted to measure administrative service. The statements were divided into five dimensions of service quality:

Tangibility - the equipment owned by the office, the aesthetics and visual appearance of the rooms, the clothes and appearance of officials, a legible website and accessible information materials of the office - 4 statements.

Reliability - performance of the service within a strictly defined time limit, willingness to help solve the problem, help clients and verification of any errors detected, competence and reliability of clerks employed, precise information for the client about deadlines for settling matters - 5 statements.

Reacting - the speed of dealing with the client's affairs by officials, the willingness of officials to provide help and advice to clients, providing appropriate information and assistance in the event of a client's mistake (e.g. calling the wrong department), courtesy and manners of officials - 4 statements.

Confidence - certainty that their case is a priority for the clerk, trust in clerks, politeness and friendly attitude of clerks towards the client, knowledge of clerks

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and substantive competence in answering and explaining client's questions - 4 statements.

Empathy - adjusting the office's working hours to the client's expectations, identifying the office with the goals and needs of its clients, understanding and patience of officials towards clients, individual approach to the client and the ability to recognize the specific needs of each of them, customer service just before the office's working time expires - 5 statements.

Then, in accordance with the original version of the Servqual model, the technique of dividing the pool of 100 points by the participants of the study into 5 dimensions of quality was used in order to determine their importance (significance) for customers.

The selection of respondents was random. The respondents first assessed their expectations towards the office ("ideal office"), and then assessed the service received in the surveyed unit.

Results and Discussion

In the first stage of the Servqual analysis, the differences between the level of perception assessment and the level expected in relation to the five indicated dimensions were calculated, the results of these measurements are presented in Table 1.

Table 1. Expected and perceived quality of services in the examined office

	Features	Expected	Performances	Servqual
Tangibility	Equipment owned by the office	5	4.83	-0.17
	Aesthetics and visual appearance of the rooms	4	2.18	-1.82
	Dress and appearance of officials	3	2.76	-0.24
	Clear website and accessible information materials of the office	6	3.26	-2.74
SERVQUAL standard for Tangibility: **-1,24**				
Reliability	Performance of the service within a strictly defined time limit	5	3.83	-1.17
	Willingness to help solve the problem	7	3.79	-3.21
	Help clients and verification of any errors detected	7	6.25	-0.75
	Competence and reliability of the clerks employed	6	6.67	0.67
	Precise information for the client about the deadlines	5	5.23	0.23
SERVQUAL standard for Reliability: **-0.85**				
	The speed of dealing with the client's affairs by officials	7	6.82	-0.18

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	The readiness of officials to provide assistance and advice to clients	7	5.66	-1.34
	Providing appropriate information and assistance in the event of a client's mistake	6	6.69	0.69
	Courtesy and manners of officials	5	6.28	1.28
SERVQUAL standard for Responsiveness: **-0.11**				
Assurance	Certainty that their case is a priority for the clerk	7	5.36	-1.64
	Courtesy and friendly attitude of clerks towards the client	7	7.45	0.45
	Trust in clerks	5	2.72	-2.28
	Knowledge of clerks and substantive competence in answering and explaining client's questions	6	7.39	1.39
SERVQUAL standard for Assurance: **-0.52**				
Empathy	Adjusting the office's working hours to the client's expectations	5	2.31	-2.69
	Identifying the office with the goals and needs of its clients	6	4.78	-1.22
	Understanding and patience of officials towards clients	7	6.21	-0.79
	Individual approach to the client and the ability to recognize the specific needs of each of them	6	5.88	-0.12
	Customer service just before the office working time expires	5	1.85	-3.15
SERVQUAL standard for Empathy: **-1.59**				

Based on the comparison of the results from Table 1, a P-O chart was prepared, which contains the results of the Servqual Perception and Expectation method (Fig. 1). Figure 1 characterizes the graphic form of the results obtained in the Servqual method. In six cases out of 22 possible, the effect of customer satisfaction with the service in the office was achieved, while in the remaining 16, unfortunately, there is no satisfaction with the service.
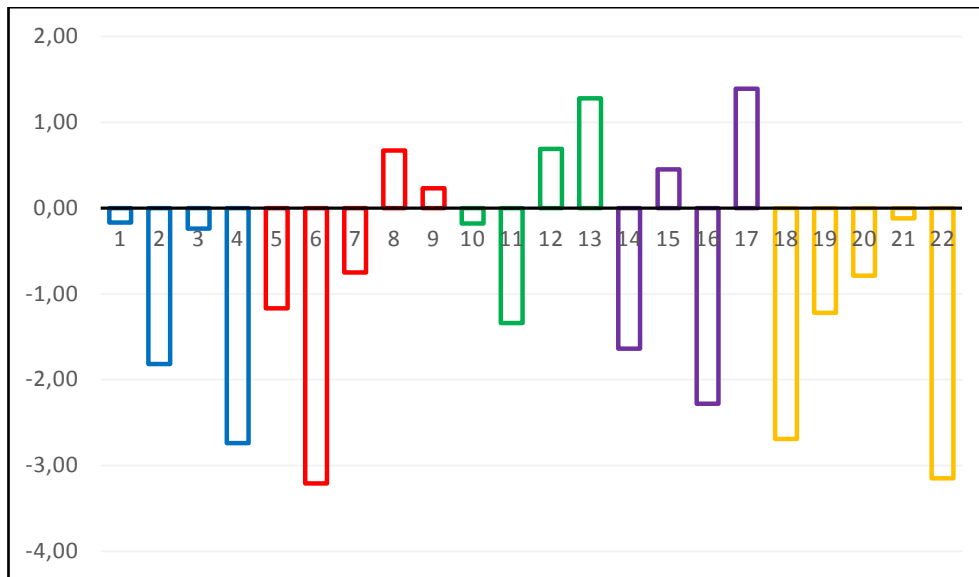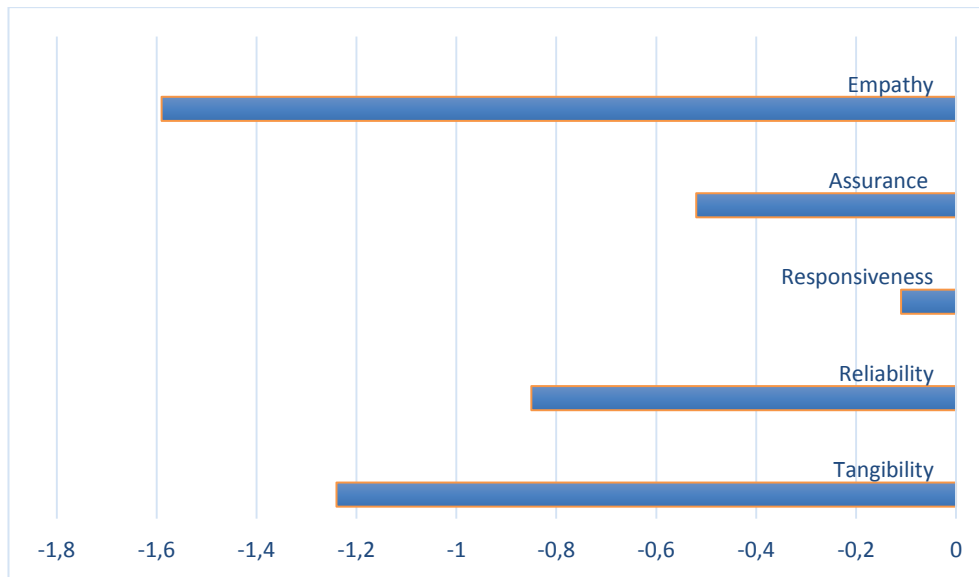
Figure 1: Diagram of the Servqual analysis

The obtained results of the research made it possible to identify those factors that show the dissatisfaction of customers with the service provided, as well as show the areas that should be improved.

The most satisfactory factors for the respondents include: competence and reliability of employed officials, precise information for the client about deadlines for settling matters, the willingness of officials to provide assistance and advice to clients, and the courtesy and personal culture of officials.

In turn, the least rated service elements include: clear website and accessible information materials of the office, willingness to help solve the problem, trust in clerks and adjusting the office's working hours to the client's expectations.

In terms of the best and the worst assessed areas, it can be indicated that the best results were obtained in the area of responsiveness, and the worst in the area of empathy.

Figure 2 shows the results of the calculation of the arithmetic mean for each of the examined areas of the Servqual method.

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Figure 2: The result of the arithmetic mean for the dimensions of the Servqual analysis of the audited office

Negative values of the arithmetic means for all areas mean the lack of complete satisfaction with the given service. Therefore, remedial changes to all dimensions are recommended in order to satisfy customers. The lowest level was achieved in the area of Empathy and Tangibility.

The next step in the calculation procedure in the Servqual method is to calculate the total arithmetic quality of service measure, which is calculated from the formula:

S = sum of averages of all areas / 5

Thus, in the tested example, the result of the actions is as follows:

S = [(-1.24) + (-0.85) + (-0.11) + (-0.52) + (-1.59)] / 5 = -0.86

The last stage of the survey concerned the assessment of the importance of five dimensions. The respondents were to distribute 100 points among the quality criteria mentioned. Table 2 characterizes the importance of five research areas.

**Table 2. Weights of the five dimensions for the subject's Servqual analysis**

Feature	Rating	
Tangibility	19.61	0.2
Reliability	15.07	0.15
Responsiveness	27.12	0.27
Assurance	22.16	0.22
Empathy	16.04	0.16
Total points	∑100	∑1

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The mean scores were used to calculate the weighted mean of the individual dimensions as well as the total weighted mean of the Servqual method, and are presented in Table 3.

Table 3. Weighted averages for the Servqual analysis of the audited office

Feature	Weights of criteria ∑=1	Weighted average
Tangibility	0.2	-1.24×0.2 = -0.25
Reliability	0.15	-0.85×0.15 = -0.13
Responsiveness	0.27	-0.11×0.27 = -0.03
Assurance	0.22	-0.52×0.22 = -0.11
Empathy	0.16	-1.59×0.16 = -0.25
Sum of weighted averages of five dimensions		-0.77
Total weighted average Servqual		-0.77/5= -0.15

The results of the analysis of weighted average measures of service quality in five dimensions of service quality indicated the lack of full customer satisfaction, which confirms the previous calculations. The obtained results are presented in Figure 3.
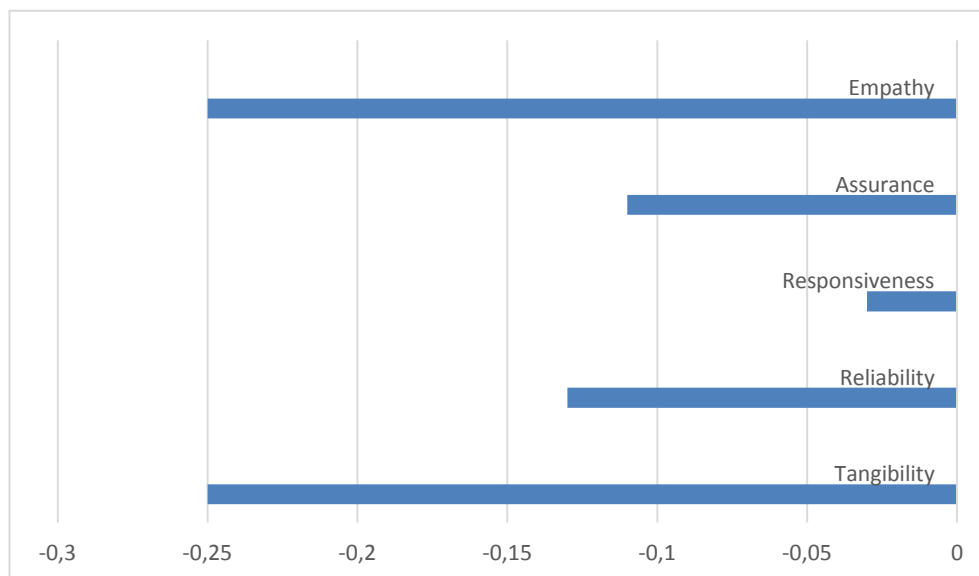
Figure 3: The result of the weighted average for the dimensions of the Servqual analysis of the examined office

The areas that most need change are Tangibility and Empathy, while the Responsiveness dimension is very close to zero, which means that it is close to the expectations and requirements of customers.

Summarizing the results of the Servqual analysis, it can be indicated that the surveyed seniors are not fully satisfied with the level of service provided to them in the surveyed office. The presented research procedure allowed therefore to answer research questions RQ1 and RQ2.

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Another activity, therefore, was the implementation of an innovative solution in the form of the avatar system, which is currently used in two institutions that are partners of the project "Innovative model of assistance avatar of an elderly caregiver", i.e. the two public administration offices from the Mazowieckie Voivodeship. The main goal of the project is to improve the functioning of local government units by developing and implementing an innovative model of support for people with special needs with the support of a transnational partner. The planned effect of the project is to facilitate access to services offered by offices for people with special needs. This will contribute to increasing the satisfaction with the quality of life in the elderly and people with disease. Thanks to the implementation of the project and its main goal, a new solution will be developed and implemented - a virtual assistant for the elderly, created thanks to cooperation with a foreign partner, which will contribute to increasing the effectiveness of other activities supported under the European Social Fund.
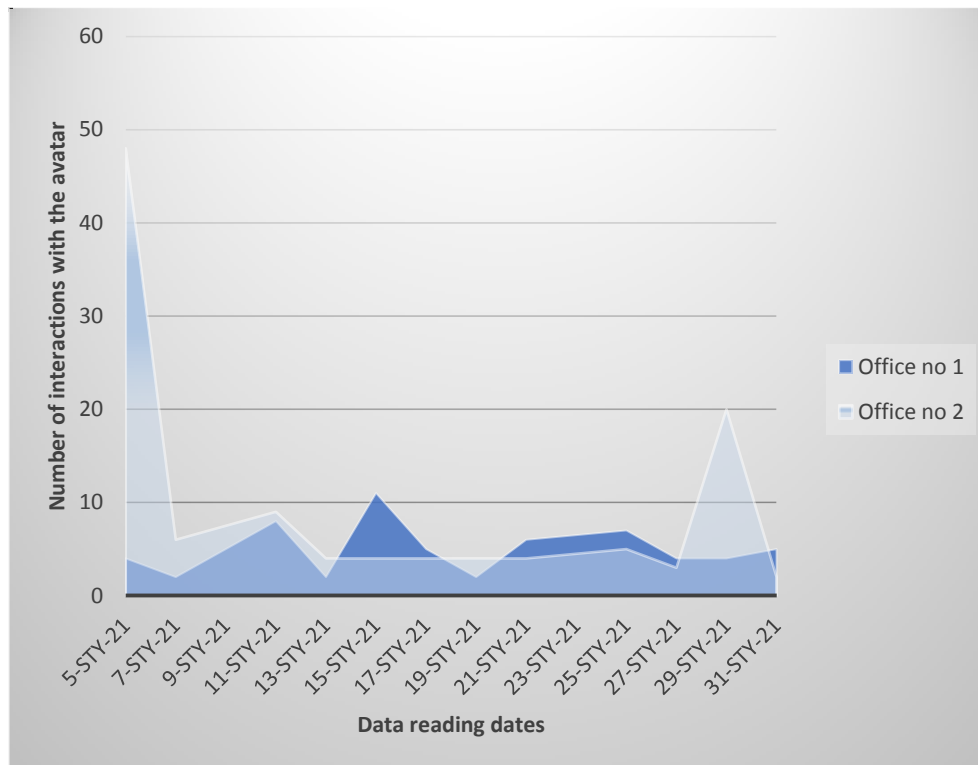
Advantages of a virtual assistant:
-permanent availability at fixed hours
-is not sick
-applies equally to everyone - uniformity of procedure
-can indicate a room
-may indicate the department responsible for carrying out the case
-can show you what the completed forms should look like
-is not emotional
-can repeat the same commands over and over again
-relieves in simple, repetitive activities
-will limit the number of additional questions
-allows you to call an employee
-allows you to limit unnecessary contacts
Disadvantages of a virtual assistant:
-must be connected to electricity and the Internet
-will not help in dealing with complicated matters
-does not lead a full conversation
-must be updated adequately to changes in the location of a given department, legal changes, etc.
-there is a concern about using the device due to a pandemic

However, despite the weaknesses of the avatar system presented above, when it was used in selected offices, a large number of interactions were noted, i.e. the device was used by customers to support the service process. The interactions recorded in individual offices indicate great interest of the elderly in the help of a virtual assistant, which is illustrated in Figure 4, which presents data obtained from the surveyed local government offices of the Mazowieckie Voivodeship. This means that despite certain barriers related to digital exclusion, customers are interested in using modern technologies, and therefore the RQ3 research question can be positively answered.

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Figure 4: Number of interactions (using the avatar's help) by the elderly people in the surveyed offices

Interaction statistics vary widely (from 1 interaction to a maximum of 50 on the day). It should also be borne in mind that some elderly people prefer direct contact with the office, and the creation of IT systems supporting their care is often difficult to accept at the initial stage, due to the feeling of "being watched". Acceptance requires showing individuals the individual benefits they achieve in connection with the use of the presented technology. Their understanding of these benefits will lead to an increase in the sense of security and, in the final stage, will contribute to an increase in the willingness to use the proposed solutions.

Free interviews conducted with elderly people using the support of a virtual assistant indicate that this is a solution that improves the level of customer service. The more so that the virtual assistant is developed and supplemented with new functionalities, related to, in addition to fulfilling the informative role, also performing the function of a kind of "guide", which indicates to clients what forms are to be filled in, wanting to settle the matter with which they reported to the office, or also which room they are supposed to go to. These attributes of a virtual assistant mean that the support they provide to the elderly is perceived positively

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by them and it improves the level of service offered in the office, which is the answer to RQ4.

By analyzing the results obtained in the presented research procedure, one can indicate their innovative nature. While both the problem of assessing customer service in public administration offices and the digital exclusion of older people are widely discussed in the literature (see the work Caddy 2002), and the latter issue is even a topic discussed at the European Commission (European Commission 2007a, 2007b), the link between these two issues has not been analyzed so far. Senior customer service with the use of a virtual assistant - avatar is an innovative and unique solution on a European scale. Until now, supporting the customer service process with an avatar was used only for commercial purposes, while its use in a state administration unit is a novelty. Therefore, the results of the analyzes carried out are difficult to discuss and compare to the works already published.

Indicating the directions of future research, we can mention mainly those that result from the possibility of assessing the applied solution in the form of customer service support - a senior through a virtual assistant - an avatar, after a longer period of more than one year's use. This will provide an opportunity to estimate the gap between the expectations that arose from the managers of the customer service process in local government units, and the users using this solution. In addition, it will be possible to indicate limitations in the perception and competences that seniors have during cooperation with the avatar, and thus to estimate the actions that should be taken in order to minimize the limitations in this area and increase the digital competences of users.

Conclusion

The analysis of the questionnaire studies clearly shows that the main factor hindering older people from using modern IT and telecommunications is the inability to use modern electronic devices, which often require the assembly and connection of many different services and tools in a way that exceeds the capabilities of most users. There is also the fear of embarrassment when using public vending machines, terminals, etc., which in many cases leads to a specific technophobia. An equally important problem is various functional disabilities related to age.

The use of modern ICT techniques to improve the lives of elderly residents may bring significant, measurable effects, among others because in a number of areas the current system of public administration (especially local government) turns out to be ineffective and is associated with high, although sometimes hidden costs. The existence of an efficient, non-electronic way of solving problems would, in turn, be a premise for the abandonment of many traditional projects and the removal of many barriers (including those indicated by the elderly, e.g. communication or architectural barriers).

The adoption of the above solutions will undoubtedly affect the decrease in the number of seniors affected by the problem of digital exclusion, as well as the

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improvement of the quality of life of seniors in terms of dealing with official matters (e.g. within the so-called e-administration).

The survey responses of the elderly clearly indicate the need to pay more attention to the need to provide the elderly, often with disabilities, with special telecommunications equipment solutions. Nowadays, the key role of the computer and the Internet means that research and development works focus on creating friendly websites and providing the elderly and often disabled recipient both passive and active use of Internet resources. In this respect, new challenges arise for Polish local governments, which by introducing innovative solutions for communication with residents or supporting the process of their service, should precede them with information and promotional campaigns as well as training in the field of their operation and use. It should be remembered that the deterioration of cognitive functions resulting from the aging process, including, inter alia, slower acquisition of new skills and more difficult remembering, makes the elderly less open to the use of ICT. It must therefore be taken into account when implementing new solutions. As shown by the answers given by the respondents, this can be achieved by appropriate adaptation of solutions to the basic expectations and needs of elderly people.

The reluctance of older people towards the implemented solutions based on ICT may result from the fear of dehumanization of offices. Therefore, it is important for the elderly to understand that the purpose of the activities undertaken is only to support the commune office, and not to replace them.

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JAKOŚĆ USŁUG W JEDNOSTKACH SAMORZĄDU TERYTORIALNEGO I CYFROWE WYKLUCZENIE OSÓB STARSZYCH – PRZYKŁAD Z REALIZACJI PROJEKTU AVATAR

Streszczenie: Celem badań przeprowadzonych w ramach prezentowanego artykułu jest przedstawienie oczekiwań seniorów w zakresie obsługi w jednostkach samorządu terytorialnego i wynikających z nich potrzeb w zakresie wykorzystania nowoczesnych rozwiązań cyfrowych przyczyniających się do poprawy ich jakości życia, wraz z wykluczeniem cyfrowym, które było podstawą badań w zakresie tworzenia i wdrażania efektów projektu Avatar. W artykule przedstawiono badania dotyczące oceny jakości obsługi w biurze, uzupełnione praktycznymi rozwiązaniami w postaci wirtualnej asystentki dla osób starszych, co z kolei poprawiło poziom obsługi w percepcji osób starszych. W artykule wykorzystano metodologię Servqual do określenia poziomu zadowolenia osób

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starszych z obsługi w biurze oraz wskazano ograniczenia związane z wykluczeniem cyfrowym u tych osób, a także efekty związane ze wsparciem osób starszych poprzez awatara – wirtualnego asystenta.

Słowa kluczowe: jakość usług, wykluczenie cyfrowe osób starszych, metoda Servqual, wirtualny asystent –awatar

地方政府部门的服务质量和老年人的数字排斥一

实施阿凡达项目的例子

摘要:作为本文的一部分进行的研究的目的是展示老年人对地方政府单位服务的期望以及由此产生的使用现代数字解决方案有助于提高他们的生活质量的需求,与数字排斥一起,这是阿凡达项目效果创建和实施研究的基础。文章介绍了办公室服务质量评估的研究,辅以老年人虚拟助手形式的实用解决方案,从而提高了老年人对服务质量的感知。本文使用Servqual方法来确定老年人对办公室服务的满意度,并指出这些人与数字排斥相关的局限性,以及与通过虚拟形象(虚拟助手)支持老年人相关的影响。

关键词: 服务质量, 老年人数字排斥, Servqual方法, 虚拟助手–头像